

CHAPTER VI

MAN AND SOCIETY *VERSUS* MACHINERY

I

IF only the material elements of the problem are considered, socialism is so largely a conflict over the ownership of machinery that little headway can be made until its difficulties have been faced. That the world's inventions should have become a private possession is to the socialist the tragedy of modern industry.

In the exclusive power which this ownership gives, the socialist sees the intensifying of every cruelty in the industrial struggle for existence. Largely to this ownership he attributes the slavish dependence of the workman, the panting scramble of competition with its chaotic production and waste of human life. Let this ownership, together with the earth's area, pass again to the people, and a swarm of evils under which we now stagger shall fall from us. That these "means of production" should be taken from the control of the few and given into the control of all, is to pass from slavery to a free and self-directed life. It is of course true that socialism does not trust alone to the mere material fact of this transfer of possession. It has its own ethical idealism and a very noble appreciation of a more prolonged and thorough train-

ing for every child. Socialism sees that these spiritual values are to be counted in, if men are to enter into its new brotherhood. The economic side of this endeavor turns, however, on the machine and the "footing on which it rests."

It is to be noted that there is in this view no objection to machinery *as* machinery. The objection is against its individual ownership. Generations of workmen have objected to the machine as such, while other objectors, who cannot be classified, show a keen antipathy because of its effects upon the man or upon society.

Emerson says manhood has been shrunk and belittled by machinery. "The robust rural Saxon degenerates in the mills to the Leicester stockinger, to the imbecile Manchester spinner — far on the way to be spiders and needles. The incessant repetition of the same hand-work dwarfs the man, robs him of his strength, wit, and versatility, to make a pin-polisher, a buckle-maker, or any other speciality;" Ruskin, in a style brilliant as fire, preached against the "wheels" of progress for forty years. Morris begins the prologue to the "Earthly Paradise" with the words: —

Forget six counties overhung with smoke,
Forget the snorting steam and piston stroke,
Forget the spreading of the hideous town.

In one of his art lectures he speaks of machines that "have been so used that they have driven all men into mere frantic haste and hurry, thereby destroying pleasure, that is life, on all hands; they have, instead of lightening the labor of the workmen, intensified it, and thereby added more weariness yet to the burden

which the poor have to carry." Nor is it alone the poet and seer who see the ugly side of all this cunning artifice. I once asked an engineer to whom great honor has been given, why so many men of high intelligence felt this disapproval. He replied: "Their instinct is as right about it, as the suspicion of the workman. I have grown up with machinery, have watched its effect for years in shops of every description. I say Zola's phrase, 'La Bête Humaine,' is an exact description. The great machine is a beast and claims its victims as constantly as any monster in the old fables." He had no illusions about "throwing more men out than are set to work." His censure was because so much of this power has to be worked in places and under conditions that slowly dehumanize a great multitude of men, women, and youth.

President Hadley, in a chapter on Machinery admirable for discrimination, admits that, "The charge that the factory system tends to deprive the laborer of independence, and reduce him to the position of a machine, is not so easily set aside. The substitution of mechanical for intelligent labor is often a very serious evil in modern manufacturing, . . . large classes of men who were most useful citizens in the past are being driven out of existence by the stress of modern competition."

John Stuart Mill was as severe in his upbraiding as the poets when he expressed the conviction that machinery has not even lightened the toil of the race. The sewing-machine does twenty times the work of the unaided needlewoman. As a consequence, cloaks, with more than one hundred thousand stitches, are

now made. Here is no lessening of toil, but only heavy accumulation of useless and stuffy ornament. At this point many of the artists cry out against machinery. They insist that although it gives us mountain piles of objects ; gives us infinite quantity of things, it deprives us of beauty and delicacy. The nobler object of life is certainly not first quantity, but quality. Quantity as such does not necessarily represent any good whatsoever. The newspaper is called the educator of the democracy. It is an educator in a good sense to the extent that it has excellence of quality. But presses in a single office may turn out half a million of yellow journals in a day. They make a Sunday edition of thirty-two pages, some of it good, some of it rubbish, and a part merely despicable.

The opinions just quoted are a challenge to the frisky optimism of this machine age. The engineer spoke from experience, Mill from a singularly cool judgment. Morris, printer, designer, weaver, dyer, working half his life as a practical craftsman, yet like his master, Ruskin, never lost his hatred of most machinery as now used. Even if these critics do not exaggerate the evil side of machine influence, it is evident from the extracts given that they ignore the immense service of the thing they blame.

Mechanical invention represents in point of magnitude the all-dominating force of our time. It would leave no human experience uncontradicted if an energy so stupendous did not, like the whole world of force, have its pain and shadow side.

James Nasmyth, in his *Autobiography*, after rejoicing in the triumph of his Bridgewater foundry, —

increasing the skilled workmen and raising their wages, — adds, that habits of steady application among large numbers of men showed a tendency to lessen as the machinery grew more perfect. This is the spirit of a fairer attempt to balance evenly the gain and loss.

Since Emerson's imprecation, we have learned to connect some unexpected virtues with machinery. It has become so interwoven with our entire social being that it reflects our common character. If machinery symbolizes greed, it also symbolizes many forms of improved conduct and activity.

The requirements, especially of the great public machinery like the railroad, make for better manners as well as for temperance, promptness, and accuracy. What railroad could to-day hold its own in competition, if it tolerated the brusque and boorish ways common among its employees less than a generation ago? Whatever lack of civility remains, the change on many lines has been prodigious. The neat uniform that has replaced the slouchy and indistinguishable dress, is a change no more marked than the deportment toward passengers. The superintendent of the Chicago Telephone Company told me: "Politeness, of course, we will have, but we demand much more. If we can't bring a girl to talk in pleasant tones, we don't keep her. Neither is extreme discourtesy tolerated from those who hire our telephones. We take them out of a man's house or office if he talks brutally or coarsely to our employees."

The electric street car is now a part of the great machinery. As the new improvements have come, a far higher grade of men is employed upon it. Upon

the old New York horse cars, a large proportion of the drivers and conductors were so inferior in general appearance, dress, and behavior that one seemed to be in the presence of tramps. The slovenly and lumbering car is disappearing before a clean and luxurious vehicle. Yet this spacious carriage is not more of an advance over the clumsy thing it displaces, than the men who serve it are superior in grade to their predecessors.

It is the nature of the machine to test and to select the sort of capacity fitted to operate it. That it should require, where it touches the public, greater sobriety and a more courteous bearing, is in part a tribute to mechanism. The telephone so impinges upon the public nerves that a pleasant voice adds to its value. When the telephone is at last in every home, and every operator is taught a proper intonation, pleasant voice tones will become a commercial asset. This invention will then be found to work as effectively against the bad voice, which all foreigners note, as the railroad is now working for temperance.

That the service of invention has not been confined to material profit is seen in the aid rendered to our political development. In 1800, few of the wiser men believed that the country, as we know it, could be held together. Whatever other causes have contributed, the machinery of steam transportation and the telegraph have perhaps alone been powerful enough to prevent disunion. The great property interests have been both distributed and united, as families have been scattered and yet bound together. So, too, specific problems of dense city populations are likely to have more help in their solving from

electric and railroad facilities than from any other source.

Our concern with machinery is here, however, rather with the problems raised by labor and socialistic agitation. As this, in the view of the writer, is the most fundamental of the purely practical issues, it will be considered at length.

That which glares at us on the surface is the machine's capacity to multiply the product which makes our wealth. This is kept to the front by all who sing the praises of invention. Industrial history nowhere furnishes so many brilliant illustrations as this story of mechanical achievement adding to the creature comforts. Where there was no tool or only primitive ones, the race lived from hand to mouth, and not even that continuously. Where machinery is highly developed, wealth increases far more rapidly than population. Even if its distribution is unfair, the higher wages and fewer hours that follow are traceable, first of all to the swelling product of the machine. Many printers upon one of our great papers receive six and seven dollars a day. If the printing tools of a half century ago were still in use, the wages would not be half this sum. With the old tools they could not make that quantity of papers which attracts the advertiser. The machine alone makes possible the hundred thousand edition with its world of readers. It is to reach these that the advertiser so roundly pays. Here is the source that makes the high wage a possibility.

A well-known conductor on one of our great roads, who has lived thirty-three years of his life on moving trains, tells me that the comfort of the trainmen has

increased with all the most important mechanical improvements. "Every five years I can see the conditions of work are a little easier, and I think safer. When I began as a brakeman, the life was cruelly hard, but now automatic devices do the heaviest work. It is so much easier that about the only difference that I see between the brakeman and the passenger is that the brakeman doesn't have to pay for his ride." These improvements may be noted on every decent railroad in the United States. This improvement is quite as much moral as it is material. The conductor was telling the story of a score of roads when he added: "We used to have few men on the road who did not drink to excess. They visited saloons freely at the station during working hours, and half of them carried whiskey openly in the train. All that has been changed so entirely, that I do not know a more temperate set of men than trainmen. We simply can't keep our places and have it known that we drink in working hours, or drink too much off time. The risk is too great to allow a man in the business who has any intemperate tendency." The value of this evidence is great because it answers conclusively one of the oldest arguments against machinery, that it necessarily lowers the quality of the man. As a generalized statement this is now seen to be false.

The economic section of the committee of fifty found this so true that it could substantiate Carroll D. Wright's previous judgment, "The greatest single influence in the United States, making for temperance, is the railroad."

The cheapness and abundance of grain foods is

explained when the story of machinery has been told. Mr. Holmes of the Agricultural Department has traced the history of the plough. One wonders at the existence of any type of mind that would not be fascinated in John Deere's works at Moline, Illinois, where these marvels of human invention are produced. Could Ruskin have been patient to watch these processes, and still be satisfied to load the result with abuse? They are as strictly triumphs of imagination as any most brilliant page that he ever wrote.

The steam-gang plough, combined with a seeder and a harrow, has reduced the time required for human labor (in ploughing, sowing, and harrowing) to produce a bushel of wheat, on an average, from 32.8 minutes in 1830 to 2.2 minutes at the present time. It has reduced the time of animal labor per bushel from 57 to $1\frac{1}{2}$ minutes; at the same time it has reduced the cost of human and animal labor in ploughing, seeding, and harrowing per bushel of wheat from 4 cents to 1 cent.

As a boy I watched men shelling corn by hand across the edge of a shovel, or grinding one ear against another. One may now see a machine that shells a bushel every minute, besides packing it into a sack ready for delivery. This means abundance and cheapness.

Before Whitney's invention it required the work of one person ten hours to take the seeds from one and a half pounds of cotton. The machine will now do, in the same ten hours, more than four thousand times as much. That ten million bales can be marketed in a season, and that cloth is so cheap, is no longer a wonder.

A linen sheet that once cost thirty days' labor can now be made in seven hours. A steam shovel will do in eight minutes what one man can do with difficulty in ten hours. The dirt may be unloaded from a train of cars in six minutes, that would require, with the shovel, a day's work of ten men. A stone-crusher will perform the work of six hundred men. Few material blessings bring more comfort to every class in the community than good roads. To none is the advantage greater than to large sections of the relatively poor, as in country districts. Yet the rapid growth of these highways is almost exclusively the result of the machine. I choose this more striking form of invention because it is largely against such that labor has raised its most angry protest.

To comfortable people generally this cry of the workman against machinery is a plain imbecility. "Does he know his interest so little as to object to a labor-saving contrivance? Does it not heap up the product out of which his wages and well-being come? There is of course great inconvenience now and then to the individual, but it is merely incidental. You laborers must trust to the 'long run.' The machinery that throws you out, or cuts your wages, makes more work here or elsewhere. The thing it makes falls in price, which is but another way of raising your wages." It was thought that labor should be docile after this explanation of the distant and ultimate good which machinery brings. But the race of hand-to-mouth workmen that would be satisfied with such advice is, happily, not yet born. Only a rare few, even among business men, act upon the "long run" motive. The average employer is concerned with

the profits of the next six months, *i.e.* with "the short run." The uncertainties about tariff changes, about the permanence of good times, and, above all, about the pressure of competition, often make this the only practicable course to follow. The trade unions are only copying the employers when they reply: "We cannot postpone our share until years of time bring, if they do bring, cheaper products. The employer may be able — aided by patent laws — to keep all the good to himself for years. We have a right to every good that organization can give us at the time."

Better than all outside advisers, labor has known the dangers which threatened it. It has watched the troop of women and children pouring in as competitors among the men. It saw that these were taken solely because they would work for less. In this country labor soon learned that machine industries demand a "reserve army." Then, if business presses, workmen are at hand; when it slackens, they can be turned off.

Where machinery has brought high and quick profits, it has put a premium upon every form of cheaper labor, — woman, child, and immigrant. This it is which has introduced among the laborers a competition as merciless as any that employing capitalists bewail among themselves. To press the "long run" view upon the laborer, under these conditions, is to assume an innocence that he did not possess even two generations ago. Labor's relation to machinery has been darkened by dangerous economic illusions, yet the tenacious instinct that the implements of toil should be far more under his own control was sound from the beginning. It is in this rooted faith that one

sees far off the hope of a genuinely democratic society. When separate tools were joined and fitted into more elaborate instruments, they slipped from labor ownership because labor was weak from ignorance and poverty. It was in no way fitted for such proprietorship. The modern social question has largely risen out of the conflict between capitalistic ownership and the workman's sense of lost mastery. In the earlier stages, when inventions multiplied so rapidly, the laborer struck at them savagely, as at an enemy. He saw his fellows constantly dropped, and customary wage payment upset and readjusted. In his ignorance it appeared to him that his very hold upon life was lost.

From the larger social point of view it is very simple to show the error into which the workman fell.¹

If machinery were upon the whole robbing him of work, then a relatively smaller part of our population must, decade by decade, be occupied with machinery. Every investigator knows that the exact opposite of this is true. There is no decade since 1850, in which it cannot be shown that machinery has set a larger and larger proportion of people to work. The proportion of those earning a livelihood directly by the help of machinery was never so great as at the present moment.

¹ The dire conflicts in the cities of Midland England, in the first half of the nineteenth century, have had, even by the novelists, most dramatic recital. Boston trade unions had this subject under frequent discussion about 1830. Five years later a New York publicist wrote, "It is well known that many of the most violent and lawless proceedings have been excited for the purpose of destroying newly invented machinery." Albany printers struck against a machine to print Bibles, although the book could thus be delivered "folded" for four cents a copy.

It is seen that hundreds are thrust aside, it is less easily seen that masses are set to work. One has only to analyze the indirect services which invention creates to admit the force of this. Upon the old handloom one could weave forty yards of shirting in the week. To-day the weaver may produce in a week sixteen hundred yards, or forty times as much. If the making and delivery of the raw material and the distribution of the finished product, forty times as great be taken into account, no one will doubt that the machine stimulates more activity than it displaces.

Printing machinery has been especially selected as illustrating the displacement of labor. Yet it can be proved to a certainty that far more men and women are occupied in this industry than ever before. The inventions have so cheapened processes as to make possible innumerable products like the *Munsey* and *McClure* magazines, in the making and distributing of which a new army of persons has been set to work.¹

The Hoe press prints, folds, cuts, and pastes seventy-two thousand eight-page journals in a single hour. To gather the material, make and deliver the raw paper, finally to distribute the printed sheets daily in twenty states, must bring occupation to many more than the machine dislodged.

¹ I once listened to a discussion of this subject before a trade-union gathering in which three printers began by maintaining that invention was doing each year a larger part of the work and men a lessened part. When a clear statement had been made of the numbers set to work by more than twenty new periodicals, — paper-making, machine-making, distributing, and even printing, — it was finally conceded by all that the results of the new instruments had made occupation for many more men than had been displaced. The concrete effects of a single machine before the eyes had alone been taken into account.

Invention has created hundreds of new industries. The railroad alone employs more than a million. The telegraph, telephone, bicycle, illustrate new vocations made outright for millions of workers. The railroad displaced the coach, but the express business, affiliated with the railroad, has set to work many men where the old coach employed one. The telegraph and telephone have made work for many times more than can ever have been displaced. The moment that the indirect services which invention produces are estimated, the case appears stronger still.

These showy achievements have been thought to be the final and crushing answer to labor's complaint. The answer is not final. The workman has learned the indirect, long-run advantage of much machinery, but he is incontestably right in striving, with his full associated strength, to get all possible immediate advantages from the invention; to lessen individual and short-run evils. This half-blind instinct of labor is at one with what we are all slowly learning; namely, that they who own much of the great mechanism, especially if it rest on a natural monopoly may get and long keep to their excessive fattening, privileges and resources that should be far more open to the general enrichment. If we add political control to this private control of machinery and natural opportunity, we have that against which the whole storm of social discontent will beat in the next generation. Labor's relation to some specific forms of industrial machinery, as now owned and guarded, is precisely that of our own wider relation to certain monopolized privileges.

The philosophic advisers of the workingman have rarely been fair to him in this frantic contest with

the new inventions. There was from the beginning a heart of truth even in his wildest errors. It is often the very nature of a successful new machine to disturb the normal local wage in such way as to make it seem an enemy to those affected by it. I can illustrate this by an experience once given me by one of the most influential socialists in this country. "I was trained in an English machine-shop, coming to the States for better chances here offered. My wages finally reached \$4 a day, when a new invention cut me down to \$2.50. I again reached \$3.50, when another contrivance cut me to \$3. I got a little above this, only a third time to be docked to \$2.50. When I became convinced that with the best effort I could make there was no chance to get beyond a certain line, I quit trying, and have since done all I could to further the cause of socialism among my fellows." There are, of course, many varieties of machine work in which this experience is untrue. There are probably more in which it accurately describes what is continually occurring.

It frequently happens that a foreman's personal advancement depends upon the good showing he can make to the employer in his own department. To do this, he is often able to use new inventions (as in the above case) to keep wages low among as many of his men as he can force or induce to accept the situation. Special skill may at the same time be considerably advanced, while others with only average ability, but with some sort of disposition or qualities that require prudent handling, may still receive the old wage. I have heard these processes described with no concealment by several foremen. In Pitts-

burg one told me: "I must keep as many men down as I can keep down (in their wages), or my report to the boss would be against me. If I didn't do it, he would find plenty of men who would."

It is in these almost infinitely varying details of the actual workshop that one learns the limitations to all buoyant generalizations about machinery. Let us look at another very common case.

In an Illinois foundry I heard it said with some indignation, "Talk about healthy men; look at them for yourself; there isn't a man who suffers from it." The work was ten hours for six days in the week. It was thought absurd that the men should want a Saturday half-holiday. Here were several hundred men living amidst hideous surroundings. Thirty saloons were within ten minutes' walk. They were the natural recreation places for the larger part of the men when their work was done. It was the opinion of a foreman that those who did not habitually go to them and spend a larger part of their wages were in the minority. "Most of us go, of course," said one; "what else is there to do? The free lunch will give us food and whiskey, too, for ten cents." I went into one of the most popular saloons. It was filled with these men between nine and ten o'clock. They were reading the *Police Gazette*, playing cards and pool, and throwing dice for drinks. If one could have looked upon the entire picture, others would have been seen, some at their homes, some at the library a mile away, but these were the few against the many. It would be as silly to blame these men, as to call the employer hard names. The nature of the business, the sharp rivalry of competing firms, left small margin

for philanthropies. If work must be carried on under those conditions so strenuously and with so little relief, society must pay the price. "My machinery is such," said the employer, "that it must be run fast and continuously, or I should shut down and turn them all off. It is not a pleasant place, but I am forced to be close to the river and close to the freight depots." This is a fair description of thousands of mills and shops. The machine, in the large sense in which the word must be used, including the railroad, shipping lines, etc., seems too often to compel the selection of working places that are beset by every unwholesome influence that can play upon the laborer's life. Too often his family must be reared hard by, in surroundings as loathsome as many of those, for instance, that disgrace the neighborhood of the great Chicago packing houses.

As long as the machinery practically requires so beggarly and mean a setting as this, we cannot consider the environment as an unrelated part of the evil. Modern machine industry has gathered the workers into towns and cities, or grouped them in masses in mines and factories. It has set them to work upon a mechanism so complicated that its effects can only be truly imaged, when we think of the railroad, telegraph, telephone, steamship, power loom, and all other seemingly isolated machines, locked together into one stupendous engineery. About this, in it, and through it the swarming millions are at work. The tides of commerce play upon it sluggishly for a time, leaving a third or a fourth of the attendants in chronic idleness, then, every belt and axle are hot to meet the clamor for all the

products that can be thrown upon the market. The army of operatives has to do the bidding of this monster feeder of human wants.

All that portion of machinery that is of necessity overdriven and placed in extremes of dampness, heat, or dust, as it often is, is not an unmixed blessing. I asked an engineer on an ocean steamship about the life of the stokers working in an atmosphere of one hundred and ten degrees Fahrenheit. He said, "Oh, it makes beasts of them, but we can't help it." Whenever machinery cannot be used except in conditions that brutalize life, we call it an evil, even if a necessary one. If the speed is so great that the average man or woman cannot stand the strain beyond a half of one's natural life, it is an evil, and an evil far beyond its effect on the individual, for it strikes at parenthood, producing a devitalized offspring that constitutes the chief horror of many industrial centres.

With the manager of one of the great iron industries in Pennsylvania, I watched several hundred men working a full eleven-hour day in a deafening noise and in an atmosphere murky with dust. A portion of the work, which continued unremitting through the twenty-four hours, was done by "double shift." This required a twelve-hour day. The speed throughout was as high as the men could be induced to take. Unprompted, the manager said: "It is a pity that men have to work like this, but there is no help for it. The machinery drives us at a gallop as well as the men. To clean the place up decently and run it eight hours, would shut it up in a week. Our worst competitor, in —, drives harder than we do, and gets

more out of his men." I asked about the wages. "The men with skill are well paid, — \$2.50 upwards to \$3.00, and even \$4.00, — but the mass of unskilled get perhaps \$1.50, just enough to exist. If they have families, I don't see how they manage it." Let it be admitted that machinery is, in general, a blessing; but what sort of a blessing does it bring to such as these? It is better than starvation, but what rational end of life can be attained with eleven or twelve hours' daily toil in these surroundings? The manager made it clear why nothing better could be done. "The boom has come, and while it lasts our success depends upon driving as if life was at stake." This description is accurate, — "While the boom is on, our success depends upon driving as if life was at stake."

To such straits have these organized forces brought us: first a hot race with competing rivals, then a glutted market; first the boom, then the depression; first long and crowded hours, then lack of work and men adrift. This sorry see-saw in the industrial world is the puzzle of the economist and the despair of the practical man. This network of great inventions cannot be put down as the exclusive cause of the evil, but that the evil is enhanced by this cause is certain. This means that we are half enslaved by a great deal of our own mechanism. It means that we honestly care more for the machine's output in wealth, than we care for manhood, womanhood, and wholesome family life. It means that we do not first and profoundly care for citizenship and a reputable society. If these workers can keep their animal strength and tend the machine, is it not enough? The absolute requisitions of culture of any kind—

a minimum of unexhausted leisure, of real freshness of body and mind—would take at least two hours off every working day. It affronts our intelligence to say that the average man can do that kind of work more than eight hours daily, and have left over the leisure, the moral and intellectual surplus of energy, for humanizing objects. The loss to good citizenship, to social peace and safety, is an abiding threat to social peace. If we were not the easy victims of wont and usage, accepting the actual as natural, we should one and all revolt against this awful waste of human values. That the future will class it as a form of slavery, seems to me assured.

A very large proportion of capitalistic investment is now embodied in machinery of the most delicate and costly character. When the complex enginery is once started, it has to be "tended" precisely as if it were the most frail human life or plant. It is as safe to shut up and desert a hothouse of dainty flowers, as to close up and desert modern machinery. Every hostile element attacks it as if bent on instant destruction. To prevent this devastation, mills are often run at great loss, when trade is dull, thus piling up the product of an overstocked market.

Another type of evil in the Western rural districts that cannot be dissociated from machinery is described in the following words by a competent local observer:—

"The influence of large farms on country life is unquestionably deplorable. The summer population of the big wheat farm is composed mainly of a drifting class of laborers with no attachment to the soil and with no interest in their work beyond getting

their pay. In the winter they go to the pineries or hang about the cities looking for odd jobs. The winter population of the farm is reduced to a few men who take care of the stock, and perhaps one of the foremen who has a family. Usually the manager and his family go to some town to pass the dead season."

The Hon. C. A. Ficke of Iowa, speaking of ordinary farms, tells me: "From an acquaintance with every county in the state, I should say that the drifting character of this hired farm help is an almost unqualified evil. Many of our farmers carry on their work by the help of machinery in such way that they can dispense with the 'hands' except for a few weeks in the year. These men are well paid during this time, then they scatter in search of desultory jobs, many of them seeking the large towns and cities, where the uncertain nature of their employment ruins hundreds of them. Thousands of farmers in these parts will not hire a man accompanied by his family. The results of this are equally bad."

In all this the employer is often as much a victim as the employed. His mill, too, is but a cog in a vaster mechanism. It turns now swiftly, now lazily, according to the throb of the great markets which are its life. The individual employer takes the breathless pace, because it is the pace of the army in which he marches. It is partly because he is swept on by forces greater than himself, that he must snatch so eagerly at the little power within his grasp. The inventions under his own hand, he can in some degree appropriate as absolute property. "Trade secrets," royalties, and patents he can secure for a little space.

In this scramble a new machine appears upon the scene. If the employer can put it in, on his own conditions, — no questions asked, — he may, if hard pressed by a competitor, drive a very sharp bargain with his workmen. Now he drops men, now he introduces girls and boys, now he cuts wages. In this moment of possible difference between the felt interests of employer and workmen over the introducing of a new invention, a large part of the social-ist problem springs into existence. The test question often arises, who shall have the new increment of gain which the machine brings? Shall the employer have all the good of it because the invention is his? Again and again I have heard it asserted, "I have bought it, and all the advantage that comes with it is my own." It is doubtful if this claim would be challenged, if in introducing the machine no disturbance to labor were caused, but the more perfect the invention, the more likely is it to derange the labor group that used the discarded machine. The new machine is usually the death of the old one which it replaces. The attempt of the union to divide the advantage of the new invention with the employer has been the heart of an immemorial strife. When ignorance gives place to enlightenment, the union will not "oppose machinery." This the intelligent ones have long since learned. Neither will they yield the pivotal point of doing all in their power to secure as much immediate benefit as the organization can effect.

This point is so vital that it should have ample illustration. An improved invention is perfected and brought to the mill or factory for introduction. The employer, especially if he is plagued by unionism,

uses extreme caution in putting the new device to work. In countless cases, he first selects the most alert and vigorous among his workers and practises them, to see how fast the new invention can be run, and how large a product it can be made to turn out. When the best it can do is discovered, the employer tries to make the result the standard for all the other workers. If he can do this unchecked, he may secure all the immediate advantages, and leave the inconveniences to the workers. From the very beginning of the machine era, the trade union has had to struggle against this tendency to force the pace of the average workman, by the tested skill of the most vigorous. I have seen in a New England factory a machine working with such rapidity as to excite wonder that any one could be induced to follow it nine hours a day. Upon inquiry, the foreman told me how it had been managed. "This invention," he said, "is hardly six months old; we saw that it would do so much more work that we had to be very careful in introducing it. We picked the man you see on it, because he is one of our fastest. We found out just what it could do before we put it into the room. Now they will all see what it can turn out when it is properly run." "Properly run" meant to him run at its very highest speed. This was the standard pressure to which all who worked it must submit. I have known a manufacturer to leave a strong trade-union shoe town and go to the country because "the trade union try to slow up my machine. If I attempt to get all the good out of it, they are bound to put a check on me somehow."

When the New England shoe laster was perfected a few years since, it was seen by employer and employed that if put to general use it would strike an almost final blow to the strong union of the lasters. The company owning the invention had it first tested in its own rooms and then offered to put it into the manufactory, *sending its own man to run it*. The union in Brockton instantly struck. I asked a local manufacturer his opinion. He answered: "I think the union entirely justified in this strike. If I were one of them, I would be at the front of it." There was doubtless complete legal justification in selling (or buying) this machine together with the lasting company's man to run it. Why, then, should this employer acknowledge that the strike, which worried him, was just? It was because he was large enough and fair enough to see that it was asking far too much of an old and established labor organization, to see this new invention applied under conditions which involved, not only its immediate dissolution as a union, but a rapid displacement of many members from the shops.

If it is to be assumed that men can be treated exactly as machines are treated, this union had no ground for complaint when its fate was decided. Its members had merely to say: "Shoes can now be lasted automatically; we are out of the game. Let us drop our tools and learn a new trade." This would have given the entire benefit of the invention at once to its owners, to the manufacturer, and to the consumers. To the labor organization it would be said: "You must take the whole sacrifice, distressing as it is. It is deplorable that, after years of service,

you have to look elsewhere for a livelihood; but progress and the good of the greater number demand it. However, shoes will eventually be somewhat cheaper, and this compensation will be yours." If the final and supreme end of the world's toil were cheapness of product, the routed union and the displaced laborers would have to take this counsel and act upon it. They refuse to do this because they are human beings with the rights which their humanity implies. This is what the employer meant who said the strike of the lasters' union was just. He saw the human interests at stake and rightly balanced them against certain business hindrances. He thought it fairer and wiser in this instance to sacrifice a part of the material benefit rather than the human.

But no judgment as to the fairness or wisdom of this employer's concession is quite possible until it is explained what the union proposed to do. There is a sense in which these men were "fighting the machine." They did *not* propose to stand out against its introduction. They admitted that the machine had come to stay. The struggle was not against the machine, but wholly over the conditions of its use. They asked that members of the union should be chosen to run it. In other words, that the union should *then and there* participate in the advantages which the machine brought with it. The public has been deceived as to the nature of the strife, because the older unions did fight the machine as machine. Now and then, new and ignorant unions do this still. Often unions in the building trades secure a local monopoly which they abuse to the

point of absolutely preventing the use of some new invention.¹

Grave as these exceptions are, they are exceptions, and should not blind us to the main facts. Labor organizations, as a whole, aim to get their share of utility when the disturbing invention is applied. They do not propose to abolish it, or even to hinder it, if applied with due regard to labor interests.

I believe it to be simple justice to labor organizations to admit that the main purpose of their long contention has been to free machinery from the abuses of a too narrow capitalistic interest. It was of course unavoidable that labor should work toward this great end, through the earlier stages of unionism, ignorant of its own goal. Its history and its literature are nevertheless filled with proofs that its purpose, deep and unalterable, has been to force machinery into its proper place, where it should serve man rather than enslave him.

It cannot be denied that weighty questions of industrial progress and of the rights of property are raised by this attitude of the unions. Yet governments and municipalities without number have already taken the trade-union ground, and many first-rate business men act on the assumption that the union contention (stripped of its abuses) is just. It is the essence of this assumption that business management should take on a more democratic character. Or to

¹ The unions pay dearly for these rank abuses, since they go far to justify the public in believing that labor organizations are merely mulish in their opposition to industrial progress. The medieval attitude of certain unions at the national capital in using their political influence to retain clumsy and outworn devices has brought upon the cause of labor much deserved contempt.

give the statement another form, the contest of organized labor takes for granted what is essential to the spirit of partnership in the business. The strident tones in which the harassed employer announces, "This is my business, and I propose to have no dictation how it is to be carried on," is itself a sign that the unions claim a sort of partnership, however absurd it may be. On the other hand, the grim and tenacious purpose of the unions, in time of strike, to beat back scab labor, has the same implication of group rights in the business. Such an assertion on the part of labor is now thought to be monstrous. I wish therefore to give the testimony of the president of one of the best-known corporations in the United States. His opinions are submitted, because they have the authority of a conspicuously successful business management, as well as that of a singularly conscientious student. For years he has been as eager for the best literature on the social question as any economic instructor. The trade unions are strong, and frankly recognized by the management. In many consultations with this gentleman he has told me how he came to think the old term "my business" less true than the term "our business." "We are a body of directors, stockholders, and workmen. These latter we encourage to come to us, buy homes, and settle permanently about us. In a very real sense there is a kind of partnership, though of course in no legal sense. The rights are not all with me or with the investors. I shall fight for the control, because that is a necessity. Our men could make the product, but they could not market it. The buying and selling is at present beyond their capacity. If I should

give them the business, they would go down before our rivals in a year. A century later, when the workmen are properly educated, I should probably be the hired manager."

When I pressed the question about the nature of the partnership which he recognized, he replied, "It is a partnership in the sense that I do not hold them off at arm's length. They have a right 'to dictate' in many ways. When I put in a new machine, it usually involves a change in the wage scale among a portion of the men. We talk this over together and see how the machine can be adjusted so as to do the *least possible injury* to the group which is affected by it. That is itself an acknowledgment that something like a partnership exists among us. Some inventions would enable me to break up the union. Most mechanical improvements of any importance involve turning off men. It is my duty to talk all this over with them and make them see it. It is also my duty, when one set of relations is broken up by a new machine, and wages and conditions changed, to do all in my power to let them have just as much of the advantage and as little of the harm as possible. I have found thus far, that with proper sympathy from my foreman, we can redistribute the workers in such way as to keep the peace and make them feel that they are fairly dealt with."

Here, obviously, is the temper and the method that would save forthwith half the strikes in the United States. I should like to hang beside this another picture. It is that of an industry larger and not less successful than the other.

Nowhere more than in this business does machinery

play a greater part. Nowhere does one invention follow another with more startling rapidity. As a consequence, nowhere can one better mark the splendid achievements in augmenting the mass of products and in lowering their price to the user. It was in part this visible plethora of ever swelling profits that roused discontent among the more intelligent and better paid workmen. The strike that followed was ridiculed because started by the "labor aristocrats." After the conflict had subsided, I heard the story on the spot from several of the men who had suffered from it. There were many regrets that it was unwisely begun and unworthily handled. "The pay," said one, "was good, and you could trust what they told you."

"Why, then, was the strike?" From the most thoughtful man among them I got this answer. "I think now the strike was stupid, but I shall always think there was cause of just complaint on our part. We had sacrificed much to build up a strong labor organization, but we were as helpless as any belt upon the great wheels. Except the pick of the men, we were liable to be dropped any moment without a word of explanation. New contrivances are being put in so fast, wages altered, and men turned off exactly as if no union existed. I have seen, in a single section of my union, one man in nine thrown out, exactly as if they were screws and didn't fit. We are not fools enough to object to the new inventions they put in, but they have no business to put them in without the slightest regard to us as human beings. They have absolute control of the machinery and of every bit of the new wealth which the inventions make for them. Millions go into their pockets because they have the

power to take it. The ordinary unskilled workman does not get enough to make it safe to raise a family. A dozen men have palaces and money to burn, while two-thirds of those they employ will not, if they are wise, try to buy the most modest home. They must live in cheap tenements, in order to be free to move at a moment's notice. Hundreds of men, who have made part payment on a house, have lived to regret it."

With the foremost active manager in this business I talked over this complaint about machinery. "But the inventions," he said, "belong to us. The chief nuisance of a trade union is, that they want to haggle and delay over every bit of old iron we throw out. It is one great advantage we have over the foreigner, that we can put in the invention instantly, and not fool with a trade-union committee." Here again the heart of the struggle is laid bare. "To fool with a trade-union committee" meant to talk over the conditions of readjustment brought about by the new appliance. It was to acknowledge that the union had some right to discuss the changes which concerned its very life as an organization. The aims of the union seem often to have nothing whatever to do with machinery, — as in its contention for an eight-hour day, — yet behind all is the one great purpose, to get the largest possible share of the product which labor creates.

Now if mechanical invention is in the unrestricted possession of the employer, labor feels itself baffled in striving for all the wealth it creates, or believes it creates. The constant putting in of new machines, with every immediate utility passing to the owner, seems to leave the laborer on the hopeless margin of wage dependence.

In the last business referred to, the masterful director held that this dependence was justified. All thought of a partnership in any sense was scouted. In the instance first given the president held, on the contrary, that labor was defrauded unless it were frankly admitted to discuss the changes that always follow successful and disturbing inventions. It is possible that the uncompromising method of absolute ownership, and not less absolute dependence, will prevail, while the conception of a partnership will fail. The formula, "This is my business," may prove victorious in the struggle, while the fraternal, "Our business," vanishes with that great company of amiable follies in which mammon worship has not been the sole object.

If it prove true that we have too little good will and intelligence to organize industrial affairs more and more along the lines of "our business," the outlook is not cheerful. It would mean, to a certainty, that every turgid agitation which justifies a miserable discontent is fastened upon us for an unknown and ominous future. It would mean a gloomy succession of strikes, dragging in their train those fatal excesses with which local authorities cannot cope. It would mean a danger darker still in democratic society: the soldier equipped with weapons of death led out against a mass of his fellow-citizens.

II

Only the nature of the machine problem is presented in this and the previous chapter. The specific solution which socialism offers will be considered in the pages which are given to that subject. Mean-

time, a more detailed illustration is necessary to show that one of the most deadly results of machine industry need not go without a remedy.

Economic phraseology is impotent to state the full gravity of these misfortunes. Those that manage the trade-union benefit fund, workers in the Associated Charities, and at College Settlements know what it means for the family man to be thrust aside before fifty. It is here among the weaker and older workers that the completer measure of the ills can be taken. It is a common answer that these ills may be real, but that they are temporary. In the larger curves of time, readjustments are made, and the individual hurt is lost in the general good. I have tried to show that this sleek optimism is misleading. The "long run" is no more real than the "short run." With only the "long run" in view, the most serious charges against machinery are still unanswered. These charges are concerned with the perpetual succession of "short run" and individual hardships, whose gathered atoms constitute a very massive and persistent fact. It is with this that the future of voluntary association and social legislation will have to do, in the attempt to modify the struggle for existence on the industrial field.¹

But first let us see in a given instance what these short run phenomena are. I was allowed recently to

¹ "The most conspicuous, if not the most serious distress connected with hard times is found in those lines where there has been great duplication of machinery; lines where the machines and the laborers together are far more able to supply the popular demand for products and devices at rates which will keep the workman and his family alive." — "The suffering from this source is terribly severe." — *President Hadley*, "Political Economy," p. 344.

attend a sitting of heads of departments in one of the larger industries of the United States. There was one hour and fifty minutes of rapid and concise discussion upon the possible economies to be effected in the different branches of the business. At least one-fourth of the discussion turned upon the practicability of discharging unnecessary labor. Every superintendent was put under fire of general criticism. He must show that he was producing the highest results with the least expenditure of means. "You," said the chairman, "have thirteen men on such a job, F—— suggests that ten men could do it as well, what do you say?" The superintendent appealed to made his defence or admitted that two or three men could be discharged.

These superintendents represented several thousand workmen. The kindness and consideration on the part of the employers were a model of good will. So far as convenient, other positions were found for those displaced, but no year passed in which "several hundred" men were not dismissed. I asked an owner active in the business what became of the discharged men. He answered: "Of course we can know nothing about that. Our affairs are too large to admit of any considerable personal supervision. When a man begins to look shaky, we have to let him go." If large numbers of men are worked weekly six full days of ten and eleven hours, if made "shaky" by long and special service at minute processes, they are replaced at forty or forty-five years of age by young men; there may be in all this a great cruelty to the individual, and mischief to society. Let us look at this last evil. Not alone the quickened speed of

machinery, but its costlier and more delicate nature calls for an operator with every nerve and muscle at their best. The work upon much of the swiftest machinery can be rapidly learned, so that youth is naturally selected. An Eastern shoe manufacturer, visiting Western shoe shops, told me that competition with the East had so increased that he determined to know the reasons. The chief thing that had struck him was the general appearance of the workman as he looked through the Western shops. "It often seemed to me," he said, "as if I were in a high school. The older hands are hard to keep with us, but they have disappeared altogether out here." I have a series of photographs representing large numbers working in hat, shoe, and garment industries. The group effect is that of a boy's school with here and there a man in middle life. I have heard a manufacturer of machines say that among the greatest changes he had known in forty years of business was this elimination of men who showed the least sign of age. Another employer told me: "It isn't so much that we turn off men when we see the gray hair and spectacles, but we don't any longer, as we used to, take on men of forty. The fellow of eighteen or twenty, even if pretty green, can be quickly taught, and then he is good for twenty years. Where the older men have special skill, or some quality that we want, they are kept, but not the average men." It is these average men in the forties and early fifties that are thrown out by thousands each year in the great industries. Many take lighter routine work as watchmen and gatekeepers. Many turn to odd jobs. Many are supported by their children. In most of the older

businesses there is honest and kindly effort made by the employer to find work about the premises. This sense of responsibility is now seen to disappear entirely in the case of certain trusts that have replaced smaller corporations. A Boston man who sold an old family business to the trust tells me, "I got a good price, and was willing to stop, but I have one unpleasant regret, the kindly personal ties I always had with my men and their families are simply wiped out by the big organization."

The separation between the owners of fixed capital and the laborer has long been noted; but with vast federated plants, managed by hired intermediaries, it is unavoidable. There will be brave attempts to meet the difficulty by alluring philanthropies, by "doing something for the workingmen." If merely philanthropic, these will fail as they deserve. Benevolent schemes that bear the slightest taint of charity have at last got the contempt of the intelligent wage-earners.

Importunate and never again to be silenced, their demand is that they get their benefits, not as gifts or favors, but as recognized rights. Philanthropies are a dangerous substitute for honest wage payment, shorter working time, and increased influence over the conditions of the labor contract. What may be called the Great Bluff of our time is to put gratuities and benefactions in the place of justice. There is no donation, however gaudy, that can fill the place of justice. The attempt of the ruling class to do this is the oldest trick in history. It was the opinion of a Roman emperor, "Magnificence in gifts may deceive even the gods." The crowd could then

be quieted by the brutalities of a pageant, the butcheries in the arena, by fleets of stolen grain scattered among the people, as a Tammany heeler scatters gifts and personal kindnesses before the election. We are at least civilized so far that we demand more decorum, and a certain humanizing of our largesses. They must bear the image of charity and good-will to men. They must be educational, artistic, and in all ways incentives to good morals and religion.

Now it would be both untrue and offensive to deny that these later bounties are vast improvements upon the free circus of Caligula. No wise man would check a generous instinct of any multi-millionnaire. The books, pictures, churches, and schools take their places among the welfare institutions of our time. They are influences which deserve the honest and grateful approval of the public.

Yet when this tribute to good motive and good result has been paid, the story is not finished. We are hoodwinked, unless we see that there ought to be, and possibly may be, a still better way than this to acquire individual and social morality. The sturdy self-respect in any community that should build its own church, school, library, dispensary, — paying every honest bill as it goes, — would show an exhilarating superiority before which every one of us would hasten to pay respect. We must be grateful to our princely givers, but the mistake would be fatal to accept this method of splendid subsidies as a finality. What we really want is the ability and the instructed will to pay our own bills, even if the pace of our civilization halts a little. I know a group of Flemish socialist

working men and women who slowly bought with hard-earned money two thousand well-selected volumes for their common library. Not ten in the entire membership ever got \$2 a day in wages. What comparison is there between the educational value of that sacrifice and the easy acceptance of a building choked with gift books?

The unspoiled instinct in the labor and socialist movement is to do precisely this thing, to gain competence and leisure, to win these luxuries for itself. The *flair* of this instinct is unerring when it scents danger in benefactions. In spite of noble exceptions among employers, labor knows that these bounties may confuse the relation in which it hopes to stand toward the employer. There will be much mockery at this by well-bred people. It will be easy to mock, because the claim is so obscure. The labor phrase has become very familiar, "We will have justice, not charity."

The public, critics and students alike, all find fault with this use of the word because of its vagueness, yet it can be made perfectly clear what "justice" here means. Last year I visited a mill to which many pretty additions had been made, — a library, resting room, gymnasium, etc. The manager said, "This ought to make them contented, hadn't it?" I asked a friend, who is a stockholder in the mill, to find out for me just what the men and women working there thought of these new sources of contentment. The answer I got was this: "The most intelligent ones tell me they should much prefer to have the expense of these things added to their wages. They take it good-naturedly enough, and think the employer is a

good man, but they seem to believe he will in the long run get his labor a little cheaper, and can attract a certain class of labor in these ways." This is fast coming everywhere to be the feeling. It is sometimes bitter, but oftener merely cynical.

Let us further examine this claim, in what is perhaps the most tragic element connected with machine industry. It should enable us to see first what labor means by "justice" in a definite instance; second, a special form of evil connected with machinery; third, the general direction of more immediate and conservative remedial action.

I select an industry which has reached the very highest point in mechanical evolution, the Carnegie Steel Company. Nowhere have I seen more lordly and generous provision for those who are maimed at their work. I found instances in which the recompense was four times as high as the greatest amount ever given under the German State Insurance. In my surprise at these amounts I asked Mr. Schwab, then president of the company, for more information about their method. He replied, "We have no method except to see to it that our own injured men are generously dealt with." In a letter received later from Mr. Schwab, he says: "If a man is injured at our works, we send him to a hospital at once, where he has the best possible medical attention, all of which we pay for. If he has a family to be taken care of during his enforced idleness, his wages, or part of them, is given to his family in weekly instalments until his recovery, and until he is able to resume his duties. In case such injury makes the person unfit for his usual occupation, something suiting

his physical condition is found for him. Many of our workmen who are injured are foreigners, and one peculiar feature is that the great majority of injuries is to workmen of foreign nationality. In such cases they usually want to return to their own country, if their injury is a serious one. When this is the case, we provide transportation for them to their homes and allow them sufficient money to either start them in some small business, or provide a place for them in some institution. Where the accident results fatally, the family is always taken care of financially. If there are children, provision is made for their education. If we cannot provide means by which the wife can take care of herself, we allow her a pension, or house to live in, or something of that description. If they have grown-up children, we provide them with work. In brief, each case must be treated independently. We have no fixed rules." Here is benevolence open-handed and in its least objectionable form. That it was done honorably and in good faith I do not question.

It is to instances of this character that those point who would convince us that voluntary good will is a surer friend to labor than anything which the law can effect in the form of legally applied justice.

Some of the best Southern mill-owners show much indignation at those who ask for legislation to check the desecration of child life in their mills. They urge, instead, that voluntary agreement and personal good will can meet the evil better than legislation. That ancient query, "Can you make people moral by legislation?" has in it so much truth for a whole class of social evils that there is little difficulty in

throwing doubt upon all law as an aid to industrial betterment. There is nothing, however, that is now better known than the power of legislative enactment to help mightily in the case of definite industrial evils. Child labor is one of these. Uniform law includes the weak employer and the bad one. The difficulty is rarely with the best and strongest employers. They can afford to be fair, but the hard-pressed employer and the meaner ones will take every petty advantage which public indifference and the necessities of the poor throw in their way. It is for these that the law is a necessity.

No more can industrial accidents be left to the generosity of exceptional corporations. Only the rare few can afford to imitate the Carnegie Company. The average business now insures against accidents in some private company, whose skilled lawyer knows every device to beat the injured workman in the courts. On the other hand, when the workman's hurt is known, he may be visited by some attorney who spurs him on to beat the company. It has come to be mainly a blind hunt to fix personal responsibilities under industrial conditions which make this impossible.

An injury that deprives a man of half his working power should be recompensed in like proportion. The "capitalizing of accidents," in proportion to their disabling results, is a discovery to which the future will give far higher rank than we now accord to it. It has passed the stage of theory, and is now put to practice on a scale that leaves no doubt as to its possibilities, among persons willing to inform themselves of the facts. The principle on which it rests is that of insurance — insurance under which the mass

of unmerited misfortunes is distributed among those who can, and who in justice ought to bear it. As it comes to be understood in its application to the appalling average of industrial casualties, it will be found to satisfy, more perhaps than any other remedy, the growing ethical sense of society.

In the anthracite coal fields one would like to *begin* reform by applying this systematized insurance to that frightful list of stricken laborers that are now thrown back upon themselves or their families with recompense so uncertain and niggardly as to shock the most primitive sense of social justice.

Let us now see in a given case what the workman means by asking for justice. In the matter of industrial accident he asks to have legal rights so systematized that he shall receive definite and calculable compensation for injuries.

The relation of industrial accidents to machinery is direct and obvious, yet neither their number nor their treatment has been in the least realized in any community until a long and arduous propaganda has been made. Previous to the accident insurance in Germany it was thought that there might be thirty or forty thousand injuries due to machinery that would be covered by the insurance. The first investigation showed three times this number; when the investigation became more complete, six times the number. It was found that in many dangerous callings the accidents were concealed from the outside world. But for the forced public regulation of railroads, we should have no hint of the full tragedy that goes on, day by day, in the United States. The authoritative statement of the Commission for 1901

reads as follows: "The total number of casualties to persons on account of railway accidents, as shown for the year ending June 30, 1901, was 61,794, the number of persons killed having been 8455 and the number injured 53,339. Of railway employees, 2675 were killed and 41,142 were injured."¹

From railway machinery alone, 8455 killed and 53,339 injured in a single year.² One has to read and reread these figures before their gruesome significance is in the least clear. If we add the mining, iron, and lumbering industries,—portions of which are more dangerous than the railroad,—some conception is possible of the mutilated life due to machinery as it is now run.

Yet if all the cunning and sympathy of the race were exhausted in the attempt, this slaughter could not be stopped. It can be greatly curtailed by improvements like the automatic car coupler, and by throwing pecuniary responsibility upon the owners. Wherever the slaughter is sudden and dramatic enough to shock the public,—as in the machinery of mining and transportation,—it has become possible to compel the ownership to pay heavily for its accidents. In countless lesser and private industries,

¹ Commenting on this report, the *New York Evening Post* says: "In reverting to their figures, it will be interesting to compare them with the last report of casualties in the British army in South Africa during the recent war, which, it will be remembered, lasted nearly three years:—

Killed on American railways, three years ending June 30,	
1900	21,847
Killed (British forces) during South African war (including deaths from disease	22,000"

² Fairness requires that discrimination should be made between the casualties of employees and the casualties to others called by the railroad "trespassers."

where the blows fall singly and silently, as deaths in a hospital, though the numbers may be as 10 to 1 greater, there is thus far in the United States only the crudest attempt at fair dealing with the victims or their families.

From a group of several hundred cases, of the type collected in the Bulletins of the New York Department of Labor, I give a commonplace instance. A Swede working with a derrick, while removing an old building in Chicago, was struck by a falling beam, which broke his arm in three places. He settled for the sum of \$80. His son, a waiter in the Union League Club, told me a year later that of this amount \$68 went to the doctors. He was still unable to work, and never again could have free use of his arm. It is the commonest case of taking advantage of the laborer's ignorance. He could have secured counsel to fight the case in court. But for this he was too ill informed.

In most of our states our method of indemnifying industrial accidents is as crude as it is abnormal. Justice requires some approach to equality of procedure, but a crushed hand may bring nothing to the sufferer, it may bring \$50, it may bring \$500. Whether it bring anything, much or little, depends, for the great majority of workmen in this country, upon the most incalculable chances.

We still act as if in an age of primitive tools. When every man controlled a simple tool, like hammer and plane; when it did not move except when he willed and as he willed, it was not unnatural to hold him responsible for incidental hurts. It was not unnatural that if one workman injured another it should be

held to be the fault of that workman and not of the employer. There was then some sense in the formula, "The responsibility of the fellow-servant." From the older and simpler conditions, rules like "common employment" have come down into the age of huge instruments driven by the powers of steam and electricity. The difference is as great as that of breaking boulders by fire or vinegar and blasting with dynamite. During the long experimental struggle to harness electricity, workmen in the United States daily fall to the street, withered by the touch of a live wire. What in common has this manner of death with the older accidents when labor moved and controlled the simple tools?

That the corporation and every stockholder in it should escape responsibility, by allowing a lawyer to plead ancient saws, shows that the strong and successful of our age have as little taste for justice as their ancestors. It is the scale and complexity of modern machine industry that has made the old rules, like the "common employment," "contributory negligence," grotesque in their unfitness to present facts. What the French fitly call the "accident anonyme," the accident over which the victim has no control, has come to be a terrible reality in machine industry.

In "common employment," under this rule, the laborer was said to contract with his employer to take all the usual risks that were incident to the business. Thus the employer so far escaped responsibility. One of the commonest of these risks was an accident brought about by the carelessness of a fellow-laborer. Early in the century, when machinery was of the simplest sort; when the employer was the owner and

lived among his workmen, the doctrines of "common employment" and "contributory negligence" were intelligible. In a modern mill, factory, mine, or in railroad service, they are as much out of date as a distaff, or as bleeding for miscellaneous diseases. The cause of accidents in these days of great machinery and of the army of subcontractors, becomes so obscure that the law, many years since, became charged with a casuistry as subtle as that of the scholastics. The cases are filled with metaphysical terms like the following: "*causa causans*," "principal cause," "determining cause," "proximate cause," and "cause directly contributory" to the accident. I have heard the dean of one of our law schools call this common legal casuistry "rubbish of the worst sort," as applied to the facts and exigencies of the present-day industry. Most civilized communities outside of America have already made the same acknowledgment by framing new laws that mark an era in a juster social legislation.

Switzerland came first in 1881, Germany in 1884, Austria in 1887, Norway in 1894, and England, France, Italy, and Denmark in 1898. One and all have taken the first definite steps toward the organization of justice in this matter of industrial accidents.

In an entire day's discussion of this subject in 1901, before the American Social Science Association in Washington, the judgment was practically unanimous that our methods of recompensing accidents by machinery are as clumsy as they are unjust. There is in the United States no well-informed student of this question known to me who has in general a different opinion.

The justification which a layman feels in using strong language about this inhumanity, is that wherever the facts have had thorough discussion, both lawyers and politicians of highest eminence agree in condemning conditions like those now existing in the United States. It was of these that Sir Frederick Pollock said, "I think the doctrine of the American and English courts is bad law as well as bad policy." Of these same conditions (the English act of 1880) Mr. Asquith used the words, "a scandal and a reproach to the legislature, an elaborate series of traps and pitfalls for the unwary litigant, and producing litigation which, in proportion to its difficulty and cost, is absolutely barren of result." Lord Salisbury and Mr. Chamberlain have both used language scarcely less severe. When the discussion began in the House of Commons, twenty years ago, scores of able men hotly defended these laws. It is now said that no first-rate man in the house will even attempt a defence. At the international congresses for the discussion of accident insurance, the part which "common employment" has played in our legislature has invariably elicited surprise and disapproval.

Mr. Willoughby, in his admirable book on "Workmen's Insurance," at the end of the chapter on this subject in the United States, puts the case of our own backwardness in these words: "It would be difficult to think of another field of social or legal reform in which the United States is so far behind other nations. The most depressing feature of the situation lies in the fact that the very principles involved in this gradual evolution from the limited liability of employers to that of the compulsory indemnification by

them of practically all injured employees, are as yet not even comprehended in the United States."

Nowhere can the ethics of social responsibility be studied to such advantage as among these accidents and deaths due to the manner and places in which complicated machinery is now used.

The United States stands preëminent for its inventive faculty. Nowhere has the great machinery developed so swiftly or taken such perfect and effective form. Nowhere has a race profited so greatly and so continuously by the cheapened product due to mechanical devices. It would be a very elementary form of justice for a public so enriched to say: "We get the good of it; our incomes and our luxuries increase with every new embodiment of the inventor's cunning. We, who are loaded with extra gifts, come off unscathed, yet the vast processes which work for our comfort are followed by a fatal train of blighting injuries. Ought not we who get the good, to see to it that the inevitable death or mutilation should be decently recompensed?" Yet we as the nation which receives most from the machines make the most niggardly return to the victims. Semi-public corporations have been compelled, in a degree, to do their duty. Here and there private corporations act honorably toward their injured workmen, but the general mass of crippled life in our country is indemnified, if at all, with a meanness, with a fickleness and uncertainty that is a reproach to our civilization. No civilized nation can match our hot pace and our careless disregard of human life. We insist that the hurry is but a name for enterprise and progress, and that it is unavoidable if we would lead the world in industrial

achievement. If this be so, let justice be done to the victims of all this greatness.

The principle through which, at least, a beginning of justice is possible, is now clearly worked out for our instruction. It has been developed from the same causes in Switzerland, France, England, and Germany. The facts of industrial accidents were first exhaustively studied with a view to uniform and equitable procedure. The illustration from Germany is best only because the investigation of their accidents has been most systematic and thorough. When Germany had our "Employers' Liability" as it now exists in most of our states, she had what we have, endless and expensive haggling in the courts with every extreme of uncertainty to employer and employed, as to amount of indemnity. It was found there, as with us, that perpetual injustice resulted because of the laborer's ignorance in using the common law. The first German authority upon this subject, Dr. Zacher, says: "The heavy burden of proof laid on the party seeking redress almost frustrated the beneficent intentions of the measure. The limitation of responsibility to cases, in which the blame rested with managers or overseers, left uncovered not only cases originating from personal fault or neglect, but likewise that large class of injuries caused by chance or fellow-workmen. The inability of the responsible parties to pay an indemnity, often compelled the applicant to fall back upon public charity, and the increasing number of lawsuits seriously embittered the relations between employers and employed."

Twenty years' experience under the German act has made it clear that more than half of the industrial ac-

cidents are neither the fault of the employer nor of the employed. They come with the regularity of the tides, and can be dealt with by exact actuarial methods. This evidence had a powerful influence in England in their decision to stop this hunt for impossible personal blames, and put this whole matter where it belongs, — upon a basis of carefully regulated insurance. The long and searching discussion of this problem in eight countries is practically a unit upon this point. The expense of accidents (barring cases of gross negligence) should, like insurance, be thrown upon the costs of the business. The general body of consumers must then, in the long run, when readjustments are made, pay the bill for the disabilities incident to production. This ends, once for all, a world of petty personal bickering that is wasteful from every point of view.

One of the first results of the study was to show how easily the employer escaped responsibility under the rules which came down from primitive industry. A group of 15,970 “grave accidents,” published by the Imperial Bureau in 1887, reads as follows:—

3156 due to fault of employer,	or 19%
4094 due to fault of victim,	or 25%
711 due to fault of both,	or 4%
524 due to fault of fellow-workmen,	or 3%
6931 due to risks which were incident to the employment,	or 43%
554 due to unknown cause,	or 3%

Here about three-quarters of the employers would escape under the old rules as they are frequently interpreted in the United States. These figures are not exceptional. The Swiss tables showed that less than eighteen per cent of accidents could be *proved*

against the employer. In Belgium it was shown that the old law (like our own) left three-fifths of the injured workmen without legal rights of indemnity.

Just as clearly do these preliminary studies in social justice bring out other startling phases of cruelty on the one hand and of immediate possible improvement on the other.

To see that one kind of work has a per capita risk of accident or death, eleven times greater than another, in which the wages are quite as high, shows what unfair burdens we are willing to thrust upon the weak and ignorant. The insurance of the German type now compels the business with extra risks to pay an insurance *proportioned to the peril*. If unusual casualties attend any business, it should bear the burden. The old theory that hazardous toil receives higher pay, is now seen to have no general truth whatever. It is like the conjured objection to the ten-hour day in the English mills, that the profits were made in the last half hour and "therefore the working day could not be shortened."

Again it appears in many industries, where the nervous strain is great, that the ratio of accidents rises in the tired hour before the work is stopped. There are industries in which the accidents are twice as numerous in the last hour of the day as they are in the hour following dinner. The bearing of this upon a shortened day in these industries is obvious.

These illustrations of the danger and loss side by no means exhaust the account, but they fairly show that if the service of machinery is great, the maiming effects of it are also great.

No sane person, however, suggests that machinery

be either destroyed or discontinued, not even the wrathful Ruskin, if he is carefully read. Machinery is with us doing our work, and it is here to stay. It is strictly the creature of man's devising brain. Not a cog, a lever, or a wheel that was not a thought before it was a thing. There is no enginery however vast that is not thus a creature of man's mind. The first of all questions about machinery is how far we shall allow this by-product of our thinking to become our master.

No one will claim that the evil is primarily in the machine. Such evils as there are, must be in the ways in which we allow it to be used. We permit it often to be badly placed, recklessly run, too irresponsibly owned or put to specialized uses that dwarf the operator.

These are the evils with which the coming time has to cope. The most obstinate of them will be met only by a uniform, well-ordered extension of factory and social legislation of the types illustrated by child labor and industrial accidents.

It is now pretty safe to say one thing to those who assert that this uniformity cannot be reached because separate states will stand out in order to secure every competitive advantage. Monopolized privilege in the United States will almost certainly engender abuses which public opinion will not continue to endure. Almost certainly we shall have (as in the great strike of 1894 and the coal strike of 1902) trouble profound enough to create a new habit of mind in the American people. Through these extreme disorders and inconveniences the public will learn its hard lesson of demanding those activi-

tics of government that will at last give us a body of uniform, industrial, and social legislation that will stand in some real relation to the actual facts of an industrial life that is no longer an affair of state boundaries, but of one common national area. Not to do this, means a still more rapid development of socialism. Meantime the questions raised by machinery have to be faced, one by one, until they are better understood. No single illustration can better bring out these facts as they bear upon the social question than the tragedy of industrial accidents and the whimsical incongruities of our present legal methods. The average of injuries is appalling in extent, but possibly one-half of them are due to avoidable causes. Those that cannot be avoided, can be honestly and humanely recompensed. It is not destiny that the casualties from coupling cars in 1889 should have been 5235. If quarrying stone is fifteen times as hazardous to life and limb as making paper or cloth, it is not fate that the extra peril should be borne by the quarrymen without some corresponding compensation. It has been proved in theory and in practice that a rough money equivalent can be given. It is not fixed by nature that men should operate machinery so many hours and in conditions so unwholesome that the springs of life are exhausted before life is half lived out.

For these and kindred evils, traceable to machinery, as now owned and operated, socialism appears upon the scene with proposals of its own.

It is a fundamental assumption of the socialists, and more and more of organized labor, that if the "means of production" were controlled by the community, rather than by private persons and corpora-

tions, the evils now connected with machinery would pass away. It is thus implied that the evils are inherent not in the machinery, but in the nature of its ownership and control. The collectivist therefore asks that the state take over the mines and the machinery necessary to work them. Let it give a minimum living wage to every worker, with hours not exceeding eight; in a word, the people have power to use machinery as it will. First, enlarge the public possession of this machinery, then the community shall have the profits, and what is perhaps a greater good, it shall use the machinery for the common weal. It has yet to be proved whether or not socialism can make this promise good. New Zealand and Australia have adopted this policy of using railroads, telegraph, telephone, etc., first for social service. Strictly business and dividend reasons are consciously subordinated to this higher interest. We watch this daring venture anxious to know if the new principle will work. Can they work this machinery through politics first for the public good, without loss of efficiency and a too heavy burden of costs? If this can be done, it will mark an era in social improvement.

While we await results, our task with the corresponding machinery is chiefly that of "regulation"; to subject these forces to such control that human and social interests shall not be too much endangered. In many countries the proof is now complete that uniform legal control can work incalculable social benefits. The limits of this control and its efficiency as compared with the collectivist principle can be known only through that further experience that is now rapidly accumulating for our guidance.