

THE SOMERS SYSTEM OF ASSESSING CITY LOTS.

Being Extracts from an Address Delivered by W. A. Somers Before the Chicago Real Estate Exchange and Paragraphs from Mr. Somers' Booklet
"The Valuation of Real Estate for the Purpose of Taxation,"
with Accompanying Scales and Diagrams.

The method of arriving at the value of city lots for the purpose of taxation, which it is my privilege to present to you, is not an accident or the result of an accident. It is rather the logical development of an idea founded upon a careful study of the fundamental principles underlying the value to man of the use of the earth.

The study of the subject was forced upon me on being appointed as Deputy Assessor of Ramsey County, Minnesota, where I learned first to my surprise, then to my consternation that there are no rules for arriving at the value of city lots and that there was no way to check the work; no matter how carefully it may be done there is no possible way of proving its accuracy. In fact, the only protection or defence that the Assessor has is in the impossibility of anyone else being able to correct the irregularities. It may be easily shown that as between certain lots one may be assessed at a greater proportion of its true value, than another, but it will be impossible to prove which of the two shall be changed to make them more nearly correspond to the whole assessment.

The time for making the assessment is limited and the Assessor is confronted with the fact that it is physically impossible in a large city for one person to pass upon and determine the value of each lot, and that to attempt to divide the work among a number of independent workers must result in multiplying the discrepancies and adding to the confusion. He, therefore, is forced to take up the old assessment as made by his predecessor in office which has been condemned by some as being too low, by others as being too high, and by all as being full of inequalities. But this, imperfect as it is, is the only guide in existence, and to get the work done he must use it. Not only that, but he must follow it quite closely. He may scale it up or down or by a percentage, but this will leave all of the inequalities without correction. He may make an attempt to adjust a few lots when between adjacent lots great difference exists, but in doing this there is no way to determine the correct figures because there is no knowledge of the relation between the old assessment as a whole and the true value of all the properties. It will be claimed by some that the old assessments represent only six or eight per cent. of the true value, while others, with equal authority, will claim that the figures are at least 50 or 60 per cent. of the true value, and there is no possible means of determining the exact percentage.

Some six years ago a committee of your citizens took up the work of examining and estimating the value of each lot in the heart of this city, covering nearly, if not quite, all of the land lying within the elevated loop. This work was probably the best work of the kind ever done in Chicago or any other city, and while it only covered a small portion of the city, if it had been paid for at a rate commensurate with the services rendered and the time occupied, the cost would have been so great that any attempt to cover the whole city by use of the same good judgment and knowledge applied in the same manner would be clearly impracticable on account of the expense.

Notwithstanding the great care exercised by your committee six years ago in carrying out this work, it was criticised most unmercifully and most unjust-

ly, and I think it can be made clear to you why this occurred and why such unjust criticism will always occur when the work is done by attempting to value each separate tract of land by itself, and how it can be avoided by the use of a uniform unit of value from which the value of each tract can be calculated and the calculation checked.

The cause of this great difficulty and confusion is directly traceable to the fact that value is not a definite and fixed sum that is recorded some place where the Assessor can find it and copy it into his book, but that value is the result of an effort on the part of man to measure or compare his desires. This effort is a purely mental process, carried on in the mind of each individual independently, and when expressed, is expressed as an opinion. Being only an opinion it is subject to change and, the basis or foundation being only an individual idea, an average of the opinion of two individuals will not be accepted as a true statement of value by either of them. Therefore, the true value of a thing can only be determined by a person for his own use and cannot be determined by one person or another.

The value of many of the common commodities used by man is limited by the market price of the articles. I do not mean that the value is fixed by the price, but that the value of anything can never be more than the cost of reproducing the thing or articles in question, and by the same reasoning the value can never be considered less than the amount or price for which the article can be sold.

Where there are quantities of any article offered for sale, and at the same time offers are being made to purchase quantities of the same article it may be said that the value of the article in question is fixed within the limits of the price offered as the lowest value and the price for which the article can be sold as the highest value, and this may be called an expression of the community opinion of the value of the article.

This community opinion becomes more definite and clearly defined in proportion as the article is in common use and in proportion to the ease with which it can be transported from place to place.

A city lot being only a fixed location upon the surface of the earth cannot be moved, and when used is generally used for considerable length of time by the same individual. It follows that it is very seldom possible for a community opinion of its value to be fixed. In fact, it can only occur in a limited sense and to a limited degree at the best, as in a case where a tract of land is subdivided into lots and put on the market for sale at a certain fixed price, when, if the lots are sold at this price, it may be said that this represents the community opinion of the value of the property. But this will only hold good until all the lots are sold, when the new owners will each have an independent opinion of the value of his own lot.

Now, let us go back to the origin of the city. A cross-road between two or more farms where there is a demand for a blacksmith's shop, a store and a post office.

The farmers of the vicinity, say in a township, are each one well informed as to his own and his neighbor's farms. One of the common topics of discussion is the value of the land. Through this discussion and as a result of it, there grows up a well defined community opinion of the value of each farm, and when it becomes necessary to take a few lots at the junction of the road to accommodate the new business, each member of the community will be familiar with all the purchases and sales of all the lots, and there will exist a well defined community opinion of the value of these lots. The difference in value will be small, the lots being worth but little more than the broad acres of the adjoining farms.

As the city grows, the surrounding farms are cut into lots, and in this great

city of Chicago, there is about four hundred farms of 160 acres each cut into about 450,000 lots. Some of these lots have been sold at a price for each square foot of the surface, that is at least ten times as much as the original farms were worth by the acre.

In place of the dozen or twenty farmers who knew the value of their land, we now have a community of over two million members, and as a community opinion is that opinion which is held in common by a majority of the members of the community, it must be admitted that it is impossible for such opinion to exist in this city as to the value of specified lots.

Our laws are drawn to give the impression, and many of our best informed business men appear to think that the Assessor has only to go out, look at a lot, and then when he does this there will be revealed to him the value of the lot.

You, gentlemen, of the Real Estate Exchange, know that the value of the lot is not marked either on the ground or in the records, or in any other place and that if it was so marked, this value would not be accepted in the purchase or sale of the property, because of the fact that the value of specific things cannot be fixed by one for another.

In looking for a remedy, I was impressed with the fact that there is a well-defined community opinion of the comparative value of the city streets. This opinion is held in common by a very large proportion of the population, and is very clearly defined in the minds of all citizens whose business takes them about the city. The members of the Real Estate Exchange will, perhaps, be the best informed as to the relative value of the streets, but every business man in the city will have a clear and definite idea of the value of the streets on which he does business as compared with other streets.

To make use of this Community Opinion of the relative worth of the streets, it is necessary to find some common term that can be used to express their comparative value as a unit in all parts of the city. The value of one foot in width for 100 feet deep is the best measure for this purpose, because of its common use and its applicability both to gauge comparative value of streets and real value of tracts. Starting with the value of such a unit on the best street and of the most valuable property, pushing out always along the lines of the most valuable, the work of recording these units will be easy of accomplishment.

By assuming in every case that the unit of one foot frontage is located in the center of a block, that is, half way between the cross streets forming the block, the most disturbing element, viz., the corner influence, will be entirely eliminated from this portion of the problem, and the judgment required in fixing the value of the units will be reduced to a simple comparison of street values.

Provided the value of the units has been fixed at the true and full cash value of the property, the most delicate shading of difference as to comparative value of streets may be accurately recorded in dollars, and any citizen can quickly and easily compare the work and judge of its accuracy, both as to the relative value of the streets and the actual value of the property.

The work of fixing the units can be best accomplished by a committee of citizens who shall determine the most valuable part of the city, and indicate by marking upon maps prepared for the purpose, the value of the units, or the value per front foot for a certain fixed depth in the middle of each side of each block, within the district selected. Then other maps should be prepared of district surrounding and adjoining the central one, upon which should be marked the value of the marginal units fixed in the first or central district. New committees selected for these districts will have to guide them the values as fixed in the central district, and their work will be to extend these proportionate values over their respective districts.

On the completion of this second group of districts, all members of the various

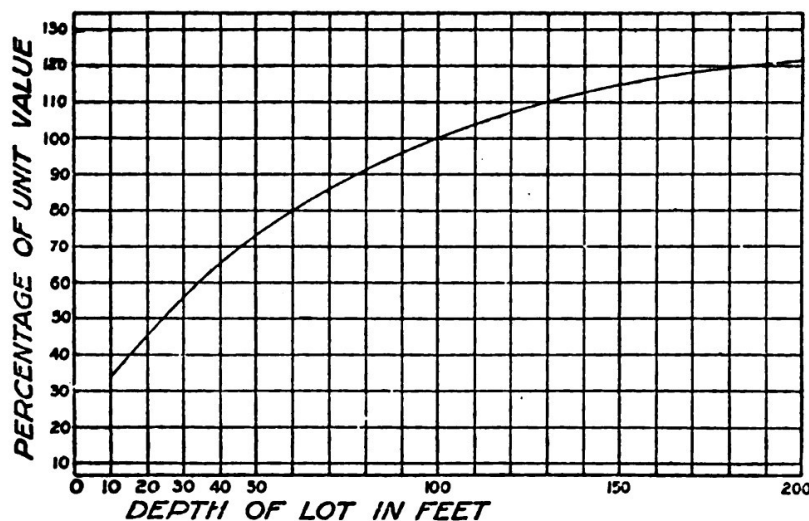
committees will come together with their maps, and the trifling inequalities and discrepancies occurring along adjoining lines may be quickly and satisfactorily corrected, and any errors or careless work that may have occurred in any district will be easily detected and corrected.

In large cities it may require several groups of districts to cover the whole city, in which case each group should be made complete and finished before an attempt is made to fix the value of units in the next larger group. As the work spreads from the center and reaches into the less valuable property, the districts may be made larger without adding to the work of the committee, because of the greater uniformity in values.

All questions of inaccuracy of judgment must be tested by an examination of the unit values recorded on the map. Any taxpayer, by an examination of the unit values, can very quickly learn the relative difference between the assessment of his property and any other property in the city, knowing that the values recorded indicate the value per front foot for the same fixed depth in all parts of the city. It is therefore necessary that this map, or copies of it, should be made a public record, accessible to all citizens and taxpayers.

The unit values being fixed for a certain depth, while the lots themselves may vary in depth, it is necessary to determine the ratio of the unit value to be used for different depths. The different uses of the property will require the use of different ratios. For example, a very shallow lot in the retail district is worth a greater proportion of the unit value than a similar lot in the wholesale district. However, it will be found that three sets of ratios will cover all the different conditions.

The difference between properties used for different purposes and the relative value of different depths are practical questions which must be determined by the committees already formed. They should be called upon to fix the ratio for several different depths of lot in each class of property, as the foundation for the construction of scales, by the use of which the same relative proportions can be read for any depths between the points thus fixed. By the use of the scale to determine the frontage value, the value of any lot may be ascertained by a simple multiplication of the width of the lot by its frontage value, as in the following illustrative scale:

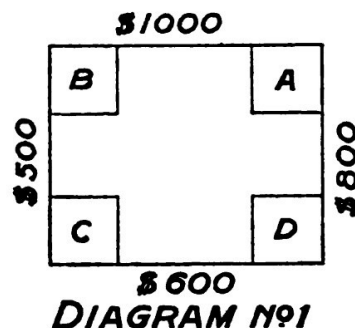


Scale A, showing percentage of unit value to be used for different depths of lots in a retail business district, 100 feet being the depth of unit.

The point of intersection of the line indicating the depth of lot with the curved line will show on the horizontal lines the percentage of the unit value to be taken for that depth of lot. The following are examples, based upon a unit value of \$1,000:

100 feet in depth reads 100 per cent.....	\$1,000 a front foot
60 feet in depth reads 80 per cent.....	800 a front foot
140 feet in depth reads 113 per cent.....	1,130 a front foot

The subdivision of the blocks being made before the building of the city, in many cases the business growth has not followed the ideas of the original surveyors, and the best business streets may be what was originally laid out for cross streets. As a result, the corner influence must be considered to affect an equal frontage on each street forming the corner, and therefore becomes a square. In practice, it will be found most convenient to assume that it covers two lots. The corner lot is very largely affected, but to a much smaller degree, while the third lot will not come within the corner influence. Referring to Diagram 1, the squares affected by the corner influence correspond to the squares A, B, C and D. The frontage value of the unit is shown on this diagram on each side of the block. It is evident that corner A is more valuable than corner C because of the difference in the frontage values of the two streets forming these corners. It is equally clear that corner B is not worth as much as corner A, although they both have an equal frontage on the same street which is valued at \$1,000 a foot, because the cross street bounding corner B is worth only \$500 a foot, while the other cross street is worth \$800 a foot.

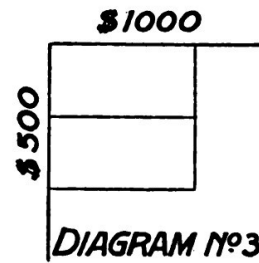
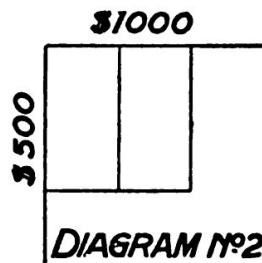


To make the unit values the basis for determining the value of the corner it is necessary to get an expression of opinion under several different conditions, or values of cross streets, as a foundation for the construction of scales by which this opinion may be applied to the determination of the value of any lot or subdivision of a lot coming within the corner influence.

Two or three sets of scales are necessary because of the different uses of the property. In a retail district the corner properties are relatively more valuable because, where each passer is a possible customer, the facilities for attracting attention afforded by the double frontage are very valuable, while in a wholesale district this double frontage adds to its value only on account of additional light and accessibility.

As it seldom occurs that a corner square is held as one tract, and the most common subdivision of the corner is into two lots, which may be formed by a line running either parallel with, or at right angles to, the best street, scales must be constructed to show the value under both of these conditions. The

necessity for this will be clearly understood by reference to Diagrams No. 2 and No. 3, which are intended to show the same corner square, No. 2 being di-



vided by a line running at right angles with the more valuable street, while No. 3 is divided by a line running parallel with the more valuable street. In the case of the division as shown in No. 2, both lots have an equal frontage upon the better street, and while the corner lot is worth considerably more than the inside lot, the difference is not so great as in the case shown in Diagram No. 3, where the inside lot has no frontage on the better street, while the corner lot has its long frontage on the better street, making it a much more valuable lot than the inside one.

The construction of the scales must be made to meet the conditions. It is easily imaginable that in a very valuable section of a large city it would not only be desirable, but necessary, to arrange the scales to read to a much smaller division of the corners where the actual ownership is frequently smaller than the standard lot, and where the values are so great that inaccuracies liable to occur by attempting an adjustment of the values without the use of scales corresponding to the divisions, would cause serious inequalities in the assessment. The scales may be constructed to give the value of any rectangular piece coming within the corner influence. A scale for testing the work is also used, by which the value of a corner square may be read, so that any inaccuracies occasioned by irregular divisions will be detected. Illustrative scales are shown on succeeding pages.

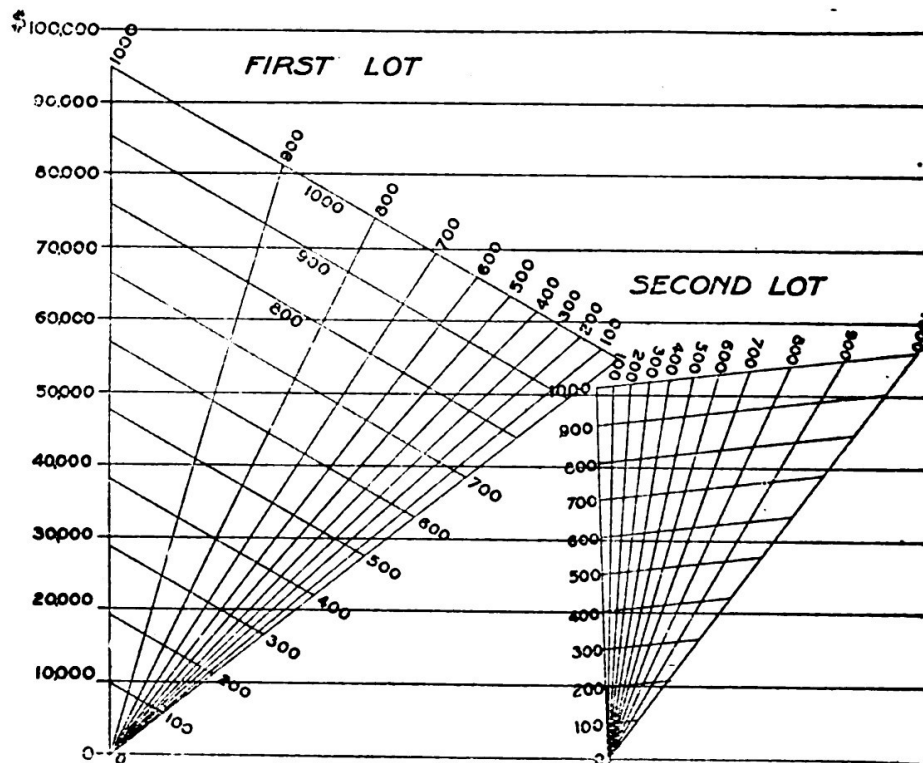
It will be remembered that in each case the committee is called upon to fix the value of lots under several different conditions, and from the values thus fixed the scales and rules are constructed and formulated by which the values of specific tracts throughout the city are determined.

The fact must not be lost sight of that these scales are merely the most convenient tools that can be used for this purpose, and are not arbitrary indicators of value.

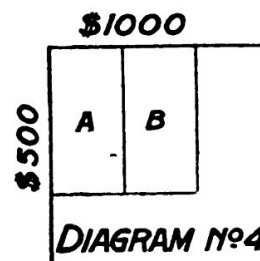
The unit values having been determined and marked upon the map upon each side of each block throughout the whole city, and the necessary rules and scales, based upon the Community Opinion of value as expressed through the committees, having been formulated and constructed, the actual assessment of the value of the land is completed. The balance of the work, that is, the determination of the value of each particular tract throughout the city, is purely clerical, and may be computed by anyone having a knowledge of the rules and understanding the use of the scales.

An assessment to be successful must be satisfactory to a great majority of the members of the community. This can only be attained through their general knowledge of the work, and confidence in its justice and equity, and no matter how carefully and accurately the work may actually be carried out, unless the methods used inspire this confidence, the work will not be satisfactory. The method of dividing the work among a number of committees, consisting of

citizens qualified to judge, and who have the confidence of the community, will result in giving the best possible expression of the comparative street values. The fact that the unit values are fixed and marked upon the map without regard to the size, shape or ownership of the lots, and the further fact that these figures are always accessible by the public, precludes the possibility of one property owner being favored at the expense of another, and must tend to create in the minds of all citizens a confidence in the justice and equity of the work.



CORNER SCALE B, for finding value of two lots short frontage to better street, as shown on Diagram 4.

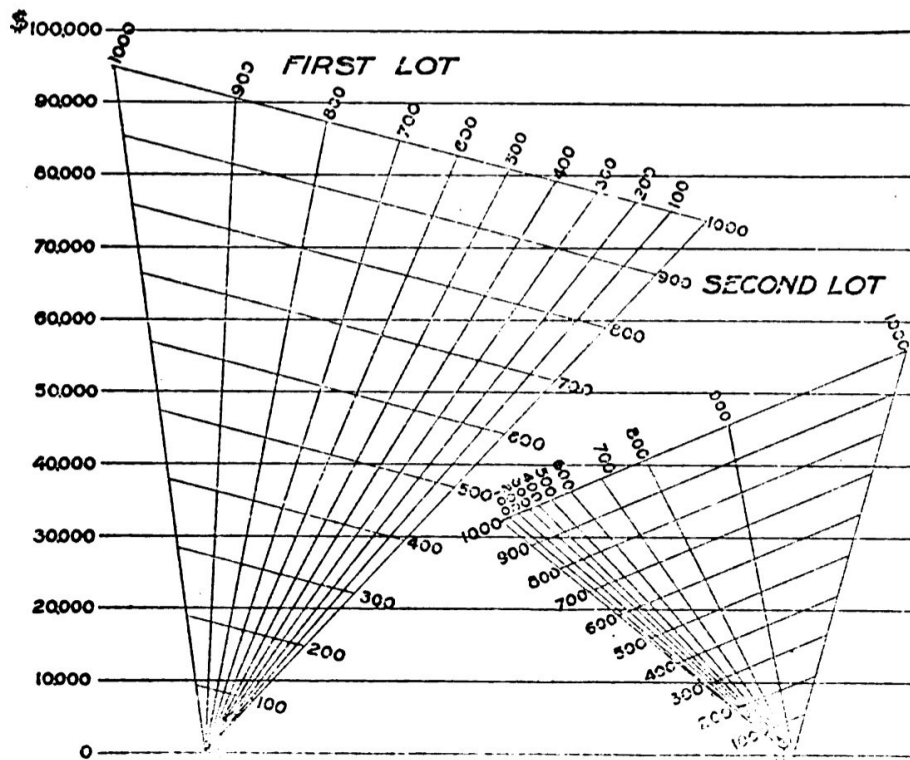


These scales should be constructed upon paper engraved with horizontal parallel lines to indicate the value in dollars, as marked on the margin of the scale. The larger triangle, marked "First Lot," is to give the value of the corner or more valuable lot marked A on the diagram, and the smaller diagram, and the smaller triangle is to give the value of the inside or less valuable lot, marked B on the diagram.

The ten parallel lines marked from 100 to 1,000 at their lower ends, are used as indexes corresponding with the values of the better street from \$100 to \$1,000. The eleven lines radiating from the zero point at the bottom of the scale, and crossing the parallel lines referred to, correspond to the values of

the less valuable street. The first, or zero, line has no value, the second line corresponds to a street of one-tenth the value of the better street, the third line corresponds to a street having two-tenths the value of the better street, and so on to the eleventh line, which corresponds to a case in which the streets are of equal value. This explanation applies to all the corner scales.

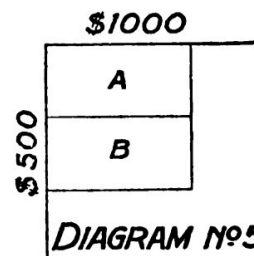
To find the value of Lot A, as shown on the above diagram, the unit values being fixed as marked, the best street being valued at \$1,000: on the scale marked "First Lot" find the parallel line corresponding to this figure (marked 1,000), follow this line upward to its intersection with the radiant line corresponding to the value of the cross street—500. This point of intersection falls between the \$60,000 and \$70,000 horizontal lines, and reads, if the scale were large enough to show the divisions, \$63,500. To find the value of Lot B, read in the same manner from scale marked "Second Lot," from which it will be found that the value is \$52,500, making the total value of the square \$116,000.



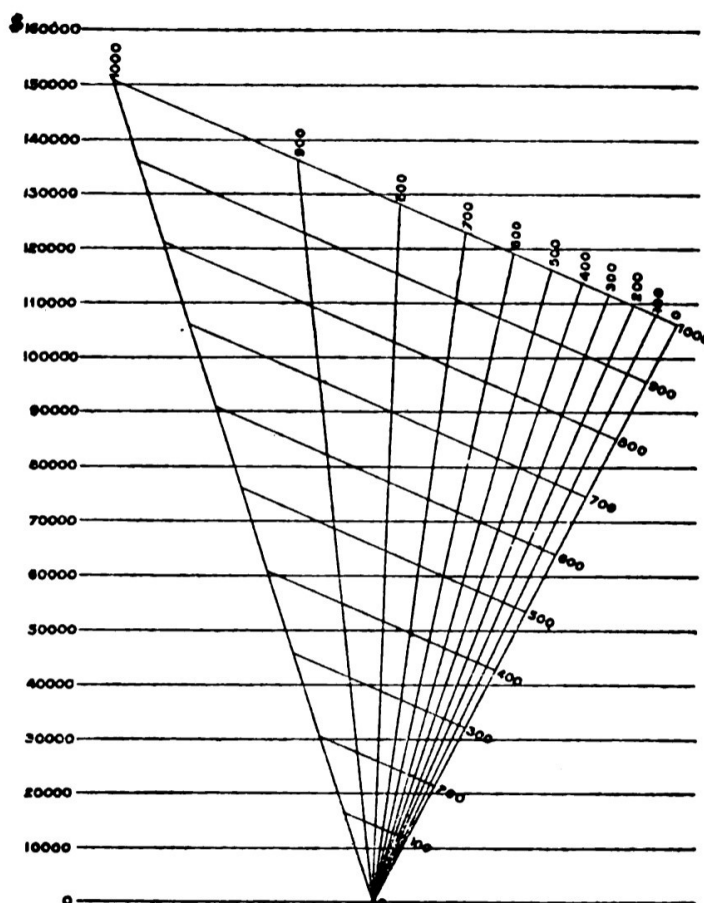
CORNER SCALE C, for finding value of two lots short frontage to street of less value, as shown on Diagram No. 5.

To find on these scales the value of Lots A and B, follow the rules given on preceding page, which will give the value of Lot A as \$81,000, and the value of Lot B as \$35,000, making the total value of the square \$116,000.

The value of the corner square, with values indicated as shown on the accompanying diagram, is found in the same manner as in the preceding cases, by following up the 1,000 parallel line to its intersection with the 500 radiant line, which point indicates the value on the horizontal lines as \$116,000.



SOMERS' ASSESSMENT SYSTEM.



CORNER SCALE D, for finding the value of corner square as a whole, as shown on Diagram No. 6.

The value of the corner square being fixed by the unit values of the streets forming the corner, it is evident that the division or subdivision of the square does not change its value. Therefore, the fact that the scales give the same total in each case demonstrates their accuracy. The scales shown herewith are for illustrative purposes. Scales for practical use should be large enough to admit of marking the values of intermediate cross streets along each parallel line, by which the value of any corner bound by streets of units of \$1,000 or less, may be read. To set at rest any doubts as to the practicability of the methods, it is only necessary to call attention to the fact that the assessment of the City of St. Paul and Ramsey County, Minnesota, was made in accordance with the foregoing principles and methods, under the direction of the writer, and proved satisfactory not only to the taxpayers, but to the state board of equalization as well. In connection with this work there were 25,000 buildings actually measured and their values estimated, and something over 15,000 different lots or tracts of land were examined and valued, covering in the City of St. Paul alone 55 square miles.

The committees of citizens called to assist in this work were composed of 38 prominent, well-known and substantial taxpayers. The committees were easily secured, and the members became deeply interested in the work, which they carried out thoroughly and completely by holding some twenty short sessions.

