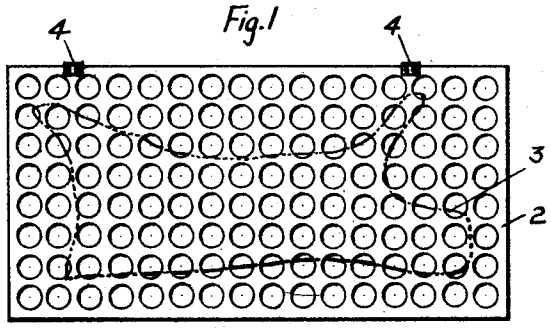
Jan. 5, 1926. 1,568,183

M. H. REYMOND

QUALITY GAUGE FOR LEATHER

Filed Oct. 24, 1921

Fig. 1



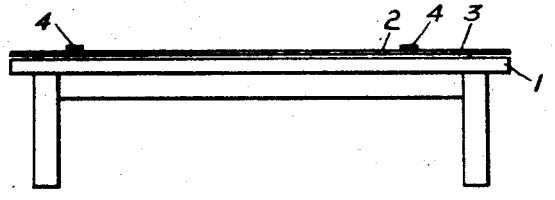


Fig. 2

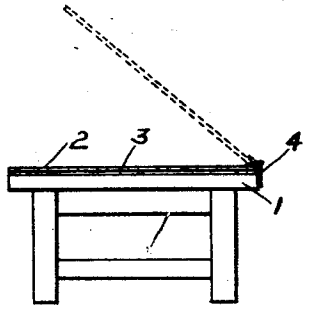


Fig. 3

Martin H. Reymond INVENTOR

Patented Jan. 5, 1926. 1,568,183

UNITED STATES PATENT OFFICE.

MARTIN H. REYMOND, OF BINGHAMTON, NEW YORK.

QUALITY GAUGE FOR LEATHER.

Application filed October 24, 1921. Serial No. 510,184.

To all whom it may concern:

Be it known that I, MARTIN H. REYMOND, a citizen of the United States, residing at Binghamton, in the county of Broome and State of New York, have invented a certain new and useful Quality Gauge for Leather, of which the following is a specification.

The object of this invention is to provide a gauge whereby the cutting quality of a given supply of leather may be conveniently measured with sufficient accuracy for practical purposes.

This invention is for a particular apparatus whereby may be carried out the process of measuring the cutting quality of leather described in my application Serial Number 491,633 filed August 11, 1921. This apparatus consists of a table or equivalent substructure on which to spread the leather, a regularly apertured screen or gauge plate superimposed over the leather whereby a plurality of regular-sized regularly-spaced areas are indicated over the surface of the leather, said apparatus being so constructed that these areas are readily accessible for individual inspection, the purpose in view being to determine how good or how poor the leather is in cutting quality. It also consists of a convenient arrangement of such a screen hinged over the table or other substructure, between which screen and table the leather to be gauged is inserted. It further consists of the employment of specific areas as to size and spacing in the screen construction.

A particular construction of such an apparatus is shown and described in preferred form in view of experience to the time of this application.

In the accompanying drawing Figure 1 is a plan view of the gauge, Figure 2 a front elevation, and Figure 3 a side elevation. Like numerals in the several views refer to like parts.

The gauge consists of a table 1 with a gauge plate 2 hinged thereto. The leather to be gauged, shown as a side 3, is inserted and removed from between the top of the table and the gauge plate by raising the gauge plate, such as shown by the dotted lines in Figure 3.

Gauge plate 2 may be described as a perforated screen over leather 3. The perforations are regular-sized, regularly-spaced holes. These holes may be of any shape and of any regular spacing, but are preferably round and equally-spaced as shown; preferably of a size comparable with the parts to be cut; and are preferably spaced an even number per square foot of surface.

One of the widest fields for the use of such a quality gauge is in determining the cutting value of leather to be cut up into shoe parts. The holes must be the right size so as to give about the right weight to the effect of size of skin and of defects over the surface in breaking up runs. While they should be neither of a very much larger order of size than the size of shoe parts nor of a very much smaller order of size, good results are obtainable over quite a range of sizes. Good results have been obtained on all kinds and sizes of shoes from holes ¼ square foot in area spaced one hole to every half square foot of surface, and slightly better results from holes $\frac{1}{10}$ square foot in area spaced one hole to every quarter square foot of surface. How much further it might be possible to go and still obtain workable results is largely a matter of conjecture. There is a practical disadvantage to making holes too small in that the smaller they are the greater the labor required for inspecting a given amount of leather. For purposes of discussion in this specification the ¼ square foot holes spaced one hole to every half square foot of surface will be referred to.

The advantages of using round holes whereby only a portion of the surface of the leather is visible for inspection are: (1) the fact that defects are more readily visible in a figure containing no corners, (2) each small area is made a segregated unit just as will be the case after it is cut, (3) only a part of the surface being inspected the work of inspection is reduced in proportion, and (4) the design of a suitably thin and strong screen is facilitated.

A side or other piece of leather is gauged in the following manner: Assume that shoes is the product to be cut. The whole circular areas indicated over the surface of the leather by the holes in gauge plate 2 are inspected to determine which contain any imperfections that may not appear in the finished shoes, and the circular areas containing no such imperfections are counted. The proportion of half this number of circles (as there are two circles per square foot) to the area of the side in square feet is an index number of the cutting quality of the

side. This may be called the quality number.

Variations in detail are possible from this method of determining quality numbers. While the above described method gives fairly accurate results, it may be elaborated where practical considerations seem to warrant. For example, instead of not counting at all any of the whole areas that contain defects not allowable in the shoes, these may be given partial weight depending upon the extent of the defect or defects, thus ¼, ½, ¾ the weight of a perfect area.

For a given size and spacing of screen hole and a given method of testing, it has been found by experiment that for different quality numbers there is an approximately constant relation between these quality numbers and the amount of leather required to cut a given quantity of a given pattern. For example, assume that it takes 25 square feet of leather to cut one dozen pairs of shoes of a certain pattern from leather that gives a quality number of 50. The amount of leather required at various other quality numbers could be obtained thus:

Quality number.	Square feet required.
55, subtract 2%	24.50
50, basic quality number	25.00
45, add 2%	25.50
40, " 4%	26.00
35, " 6%	26.50
30, " 9%	27.25
25, " 12%	28.00
20, " 16%	29.00

These figures are for the purpose of illustration only. For very small shoes there will be less variation in the percentage corresponding to the various quality numbers than for very large shoes. Thus a room cutting children's shoes would require a different scale of percentages than a room cutting men's shoes.

The above procedure may of course be varied in details as already mentioned. Furthermore, substantially the same result might be obtained by counting the unsuitable areas instead of the areas suitable to the shoes. This would be merely a matter of equivalent arithmetical procedure working negatively instead of positively.

The area of the side may be determined separately on an area measuring machine; or it may be determined by totalling the full and partial circles, giving partial circles half weight, and dividing this total by two (as there is one circle to every half square foot of surface). Or, practically the same result may be obtained by counting all the circles which are full or more than half full and dividing by 2, neglecting entirely the circles less than half full. The advantage of having one circle to every even fraction of a square foot is that this provides a simple even number for dividing into the number of circles.

The quality number of any quantity of leather may be determined in a similar manner as for one side.

Heretofore there has been no positive way of predetermining the cutting quality of leather, and therefore no way to positively check the performance of cutters, nor to account for variations in footage consumed for the same purpose at different times. A gauge such as described makes this possible.

In the following claims the term round is used in the general sense of a figure containing no corners.

I claim as my invention:

1. An apparatus for determining the cutting quality of leather, comprising a table on which to spread the leather, and a regularly apertured screen superimposed over said table whereby regular-sized regularly-spaced areas of the same order of size as the parts to be cut from said leather are indicated over the surface of the leather for individual inspection relative to imperfections in the leather.

2. An apparatus for determining the cutting quality of leather, comprising a table on which to spread the leather, and a regularly apertured screen superimposed over said table whereby round regular-sized regularly-spaced areas of the same order of size as the parts to be cut from said leather are indicated over the surface of the leather for individual inspection relative to imperfections in the leather.

3. An apparatus for determining the cutting quality of leather, comprising a table on which to spread the leather, and a regularly apertured screen hinged thereto whereby equal-sized equally-spaced areas of the same order of size as the parts to be cut from said leather are indicated over the surface of the leather for individual inspection relative to imperfections in the leather.

4. An apparatus for determining the cutting quality of leather, comprising a table on which to spread the leather, and a regularly apertured screen hinged thereto whereby round equal-sized equally-spaced areas of the same order of size as the parts to be cut from said leather are indicated over the surface of the leather for individual inspection relative to imperfections in the leather.

5. An apparatus for determining the cutting quality of leather, comprising a table on which to spread the leather, and a regularly apertured screen superimposed over said table whereby round regular-sized regularly-spaced areas of the same order of size as the parts to be cut from said leather are indicated over the surface of the leather for individual inspection relative to imperfections in the leather, said areas being spaced

one hole to every even fraction of a square foot of surface.

6. An apparatus for determining the cutting quality of leather, comprising a table on which to spread the leather, and a regularly apertured screen hinged thereto whereby round equal-sized equally-spaced areas of the same order of size as the parts to be cut from said leather are indicated over the surface of the leather for individual inspection relative to imperfections in the leather, said areas being spaced one hole to every even fraction of a square foot of surface.

7. An apparatus for determining the cutting quality of leather, comprising a table on which to spread the leather, and a regularly apertured screen superimposed over said table whereby regular-sized regularly-spaced areas of the same order of size as the parts to be cut from said leather are indicated over the surface of the leather for individual inspection relative to imperfections in the leather, said screen covering a proportion of the area of the leather and leaving the remainder exposed for inspection.

8. An apparatus for determining the cutting quality of leather, comprising a table on which to spread the leather, and a regularly apertured screen hinged thereto whereby round regular-sized regularly-spaced areas of the same order of size as the parts to be cut from said leather are indicated over the surface of the leather for individual inspection relative to imperfections in the leather, said screen covering a proportion of the area of the leather and leaving the remainder exposed for inspection.

9. An apparatus for determining the cutting quality of leather, comprising a table on which to spread the leather, and a regularly apertured screen superimposed over said table whereby regular-sized regularly-spaced areas of the same order of size as the parts to be cut from said leather are indicated over the surface of the leather for individual inspection relative to imperfections in the leather, said screen being in the neighborhood of half holes and half screen.

10. An apparatus for determining the cutting quality of leather, comprising a table on which to spread the leather, and a regularly apertured screen hinged thereto whereby round regular-sized regularly-spaced areas of the same order of size as the parts to be cut from said leather are indicated over the surface of the leather for individual inspection relative to imperfections in the leather, said screen being in the neighborhood of half holes and half screen.

MARTIN H. REYMOND.