To all whom it may concern:

Be it known that I, THOMAS H. GRAYDON, a citizen of the United States, and a resident of the city of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Blanks for Shoe-Soles and Methods of Cutting Same, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to outer soles for shoes and has as its object the providing of a means for cutting out a shoe sole so that it uses the minimum amount of leather.

A shoe sole may be divided up into three parts, the toe portion, the shank portion and the heel portion, and the object of my invention more specifically stated is to so cut the soles of shoes that the toe portion where the wear comes is left intact the full thickness of leather, thereby permitting a cross cut to be made in a single blank of leather so as to cut out the shank and heel portions of a sole from one thickness of leather.

The various forms of blanks and the method of cutting the same whereby said object is accomplished will be hereinafter more specifically pointed out and claimed.

In the drawing, Figure 1 is a plan view of a blank for a right and a left sole to be cut therefrom. Fig. 2 is a side elevation of the same with the cut made. Fig. 3 is a like view to Fig. 1, except that the blanks have two rights. Fig. 4 is a plan view of a blank cut in the rough so as to accommodate shoes of varying degrees of size and shape of last, the same being generally shaped for two right foot soles. Fig. 5 is a perspective view of one of the soles formed out of the blanks by my new method of cutting. Fig. 6 is a perspective view of a blank for forming two soles without any heel portion, the new cutting being made so as to form toe and shank portions only.

In cutting out soles from a hide in the manufacture of shoes, it has always been the object to get as many soles as possible from a single hide. The cutting dies are set over the hide by an operator and the cuts are fitted in as well as circumstances will permit. Some shoe manufacturers purchase blanks cut in the rough of various sizes 'out of which they cut their soles to fit the desired lasts. Accordingly in providing my new blank I provide a form for cutting out on the job in the shoe factory and also a form which will be suitable for leather houses to turn out in the rough.

The forms shown in Figs. 1 and 3 are adapted for use by cutters in the factory, and comprise toe portions 1, 1, formed at each end of the blank, and a common portion 2, which is cut so as to leave space for a shank and a heel portion. This portion 2 has the incurving portions 3, 3, at either end which take care of the shank and the central outcurving portion which takes care of the two heels.

The form shown in Fig. 4 has the same central portion 2 which may be more or less larger than it is figured that the manufacturer may desire to have his shank and heel, and the toe 1 is not rounded at the end, but left substantially square.

Among certain manufacturers of cheap shoes, it is the practice to form no heel at all on the outer sole, but on the contrary to form this portion of the sole, by dovetailing into the outer sole shank a heel lift of cheaper leather. Accordingly I provide a third form of blank (Fig. 6) wherein there are formed the same toe portions 1, 1, but wherein there is a central incurving cut 4 to provide for two shank members.

The method of forming the soles out of the blanks is a cheap and simple operation. Cutting machines are provided which slice across the middle of the blank beginning at the line 5 between the shank and toe portions and that there are two cuts or rights. The toe portions on the finished surface of one end of the blank, cutting down at 6 on a slant to the central portion of the leather, then turning and forming a slice 7 parallel with the sides of the leather and then lastly turning downwards and forming a cut 8 terminating at the line 9 between the shank and toe on the flesh side of the other end of the blank. This cutting forms an outer sole having the toe 1, the shank 10 and the heel 11, the latter portions being of half the thickness of the toe. The heel is then formed up by trimming on the dotted line 12 (Fig. 5), thereby shaping up the heel and cutting off the bevel at the terminus of the cut.

The blanks in Figs. 1 and 3 vary from each other by forming in the first case a right and left sole, and the other right soles as formerly noted. In the case of the rough cut blank the toe must also be trimmed and it seems clear without further illustration that a rectangular piece of leather could be cut in the manner described.
and the entire sole trimmed up by a suitable die or other means into the desired shape. This suggested rectangular blank would not be as practicable as the form shown in the drawings because there would be more waste of leather.

The exact method of cutting need not be followed, although it is much preferable to other means. As for example, a straight slanting cut could be made, but this would result in having a shank of non-uniform thickness. The knife could be caused to enter the leather perpendicularly instead of on a slant, but this would result in a sharp line of demarcation between the toe and the shank which would show up in the completed shoe. These cuts would thus approximate my invention, but only in spirit, as they would not be as useful owing to the disadvantages noted.

The two soles cut by my new method from my new blank would not be duplicates of each other. One of the cuts would have the finished side of the leather all along one surface, and this surface would be ready for use on the bottom of the shoe. The other cut would have the toe of finished surface, but the shank and heel would be unfinished.

The preferred method of use of these soles is to use two of the unfinished shank pieces together in one shoe and two of the other forms in one shoe, in the case of the unfinished shanks to smooth and finish these portions. In view of the fact that in shoe-making it is now the practice to cut away some of the shank in order to give a light appearance, it would not be a matter of expense or labor cost in connection with my new outer soles.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. A method of cutting outer soles from a hide of leather, which consists in cutting out of the leather a blank of sufficient size to provide for two toe portions and one heel and shank portion and slicing across said blank so as to leave attached to each toe portion sufficient leather for a shank and heel.

2. A method of cutting outer soles from a hide of leather, which consists in cutting out of the leather a blank having two toe portions with an intermediate portion between them, and slicing across said blank side of the two toe portions so as to form said intermediate portion into sole portions for each end of the blank, each of a half thickness of leather.

3. A method of cutting outer soles from a hide of leather, which consists in cutting out of the leather a blank having two toe portions with an intermediate portion between them, and slicing across said blank inside of the two toe portions, said slicing being made by an incision from one side to half the thickness of the leather, a cut parallel to the sides and a cut out of the gather on the other side.

4. A method of cutting outer soles from a hide of leather, which consists in cutting out of the leather a blank having two toe portions with an intermediate portion between them, and slicing across said blank inside of the two toe portions, said slicing being made by an incision from one side to half the thickness of the leather, a cut parallel to the sides and a cut out of the leather on the other side, with the incision and the latter cut being made at a slant, for the purpose described.

5. A method of cutting out outer soles for shoes which consists in cutting a piece of leather of a length less than two complete soles, and slicing the leather parallel to the sides thereof at the portion thereof intermediate the ends so as to leave unsliced portions of the length of the toe portions for a sole at each side of the cut and portions of half thickness where sliced.

6. A method of cutting out outer soles for shoes which consists in cutting two soles from a large portion of the material at the same time, by first cutting out a blank of leather and then slicing the blank by a cut substantially equal to the length of a shank portion and heel portion combined, said slicing being made by an incision from one side to half the thickness of the leather, a cut parallel to the sides and a downward cut out of the leather.

7. A blank from which outer soles for shoes are to be cut, said blank being of one thickness of leather and formed with an outline corresponding to that of two complete soles set so as to overlap each other, with the widest portion of the heels in line with each other.

8. A blank for shoe soles, having a length equal to two toe portions, a heel portion and two half shank portions and having its contour cut so that a horizontal longitudinal slice will form two soles of substantially perfect outline, with shanks and heels of partial thickness.

9. A blank from which outer soles for shoes are to be cut, comprising two toe portions, and an intermediate portion which when sliced longitudinally between the inner edges of the toe portions, will leave two reduced portions of the length of the desired sole having toes of full thickness and remaining portions of partial thickness with no waste material except at the tapering ends left by the insertion of the slicing tool.

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