

July 31, 1934.

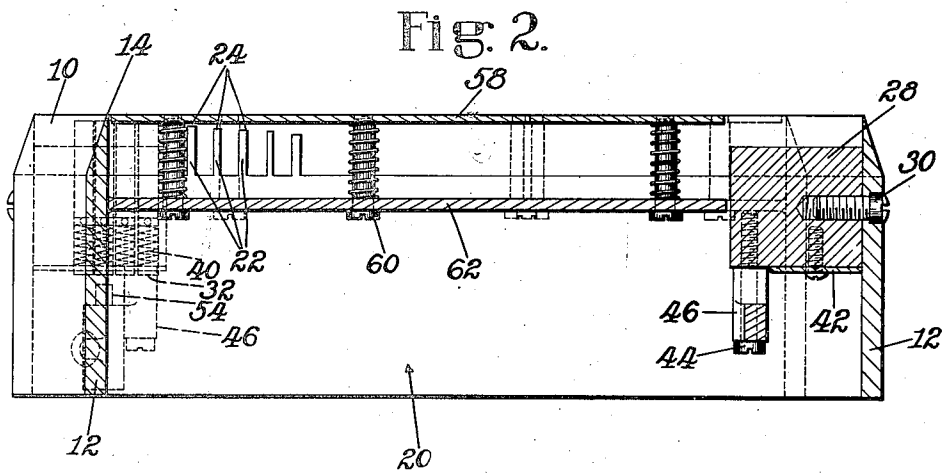
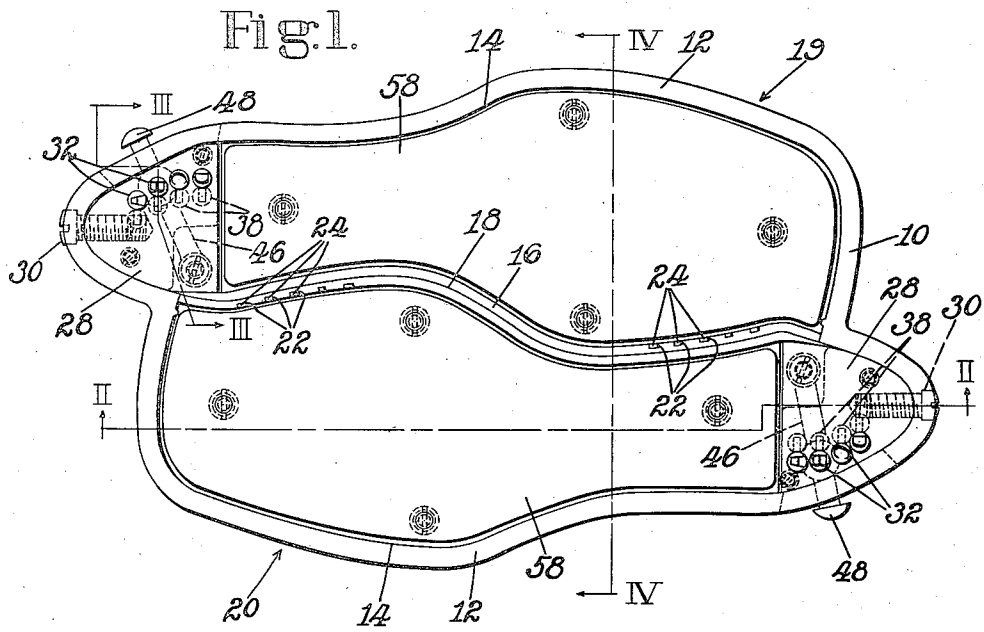
K. ENGEL

1,968,133

MARKING DEVICE

Filed Jan. 8, 1932

2 Sheets-Sheet 1



INVENTOR-
Karl Engel
By his Attorney,
Harlow M. Davis

July 31, 1934.

K. ENGEL

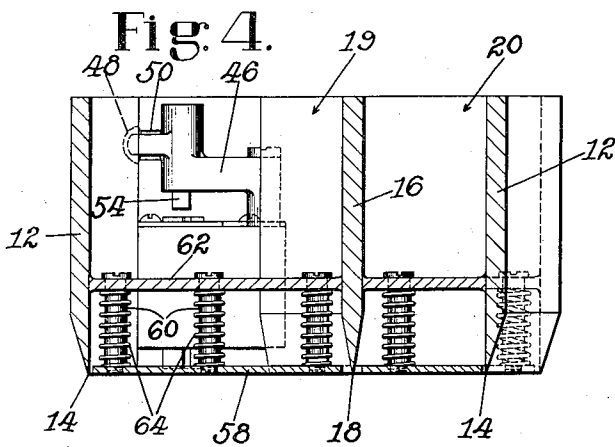
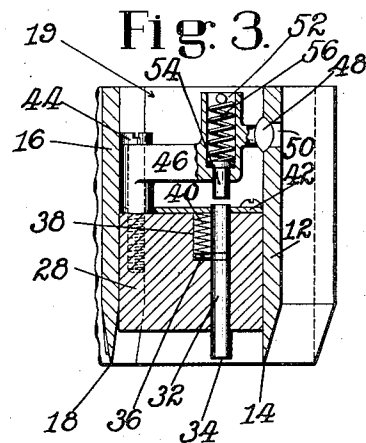
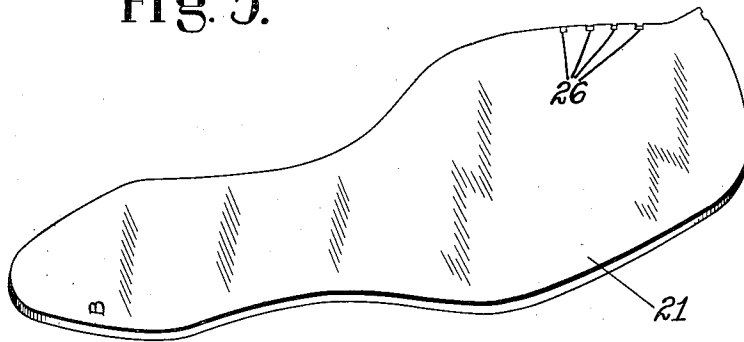
1,968,133

MARKING DEVICE

Filed Jan. 8, 1932

2 Sheets-Sheet 2

Fig. 5.



INVENTOR.

Karl Engel
By his Attorney,
Harlow M. Davis

UNITED STATES PATENT OFFICE

1,968,133

MARKING DEVICE

Karl Engel, Beverly, Mass., assignor to United Shoe Machinery Corporation, Paterson, N. J., a corporation of New Jersey

Application January 8, 1932, Serial No. 585,537

7 Claims. (Cl. 101—28)

This invention relates to marking devices and is herein illustrated as embodied in a die for producing and marking shoe-part blanks.

In the manufacture of shoes, prior to the assembling of the parts which make up the shoes, the various shoe parts, such as vamps, quarters and soles which are commonly formed from leather by hand-cutting operations or by dies, are sorted and inspected in order to insure proper selection of shoe parts of the requisite characteristics for the shoes in which they are to be incorporated. During such sorting and inspection, for example, it is common practice to apply stamps or other markings to indicate the thickness or other characteristics such as the grade of the material of which the parts are composed.

In view of the foregoing, it is an object of the present invention to provide improved marking devices which, without sacrificing the advantages of such devices as heretofore constructed, will be particularly adapted to facilitate the marking of shoe parts with respect to thickness and grade. To this end, and as illustrated, the invention provides a marking device comprising a supporting member and a plurality of marking tools carried by the supporting member and having operative portions differently spaced heightwise of the member whereby upon bringing one or more of the tools in engagement with a blank positioned upon a support one or more impressions are produced in the blank, such impressions being adapted to indicate a characteristic or characteristics of the material forming the blank. Preferably, and as illustrated, the supporting member comprises a die having an upstanding wall terminating in cutting edges, and the marking tools comprise ribs extending heightwise of the wall and terminating adjacent to the cutting edges at different distances therefrom. Thus, when the illustrated die is forced through sheet material to produce a blank, one or more of the ribs will engage the material, depending upon the thickness thereof, and mark it in such a way that the thickness of the blank can readily be determined by observing the number of impressions along its edge.

In another aspect, and as illustrated, the invention consists in the provision of a hollow die having upstanding walls terminating in cutting edges and a plurality of marking members movably mounted within the die and adapted to engage material forced into the die, together with means operable to limit movement of one of the marking members to cause such member to make

an impression upon the material. A die constructed as above indicated is advantageous in that it provides for the marking of a blank at the time it is died out thereby saving one operation. For example, such a die can be utilized for producing soles and for marking them with indicia effective to designate the portion of the skin from which the blank is died out, which later facilitates the grading or sorting of the soles.

Other objects and features of the invention will be apparent from the following detailed specification when taken in connection with the accompanying drawings and will be pointed out in the claims.

In the drawings,

Fig. 1 represents a plan view of a die constructed in accordance with one embodiment of the invention;

Fig. 2 is a longitudinal cross-sectional view of the die taken along lines II—II of Fig. 1;

Fig. 3 is a transverse cross-sectional view taken along lines III—III of Fig. 1;

Fig. 4 is a transverse cross-sectional view taken along lines IV—IV of Fig. 1; and

Fig. 5 is a perspective view of a sole produced by a die.

As shown in Fig. 1, the illustrated die consists of a double die 10, for producing sole blanks from sheet material such as leather, and comprising upstanding side walls 12 terminating in cutting edges 14 suitable to die out or to form the outer side- and rear-edge portions of two sole blanks and an intermediate upstanding wall 16 terminating in a cutting edge 18 for producing a cut common to the two soles to be produced and effective to form the inner side portions of such soles. It will be observed that the wall 16 separates the die 10 into two sections 19 and 20, each of which is operable to produce a sole blank, such as the sole blank 21 illustrated in Fig. 5. The cutting edges 14 and 18 are so disposed relatively to each other that the sole heel-end-forming portion of one of the die sections is located adjacent to the forepart forming edge portions of the other section and projects beyond it to some extent. This is for the purpose of effecting economy in the material from which the soles are died out, there being no waste material between adjacent soles cut.

Means are provided for marking blanks, as they are died out, in such a way that the thickness of the blanks can readily be ascertained upon inspection. To this end, each of the die sections 19 and 20 is provided with marking mem-

bers 22 in the form of ribs which are spaced laterally along the wall 16 and which terminate in flat operative end portions 24 located at different distances from the cutting edge 18 heightwise of the wall 16. Preferably, the distances from the cutting edge 18 increase regularly by fixed amounts in passing from one end of the series of ribs 22 to the other. For example, it has been found expedient to space the surface 24 of the left-hand rib 22 of the die section 20, shown in Figs. 1 and 2, from the cutting edge 18 by a distance corresponding to a thickness of leather of six irons (about 6/48 of an inch), equivalent to the thinnest sole ordinarily used, and to increase the spacing of the surfaces 24 of successive ribs by a distance corresponding to two irons. Thus the right-hand rib will be spaced from the cutting edge by a distance corresponding to fourteen irons which is equivalent to the thickness of the thickest sole commonly used. This construction is such that when the die 10 is forced through sheet material positioned upon a work-support, one or more of the surfaces 24 of the ribs 22 will engage the upper surface of the material forced into the die, making impressions therein which will vary in number depending upon the thickness of the material. Accordingly, the number of impressions made in the material will be an indication of its approximate thickness within the limits required in sorting soles. Thus, a sole of a thickness of less than six irons would not be marked; a sole of a thickness between eight and ten irons would have two impressions along its edge; and a sole of a thickness of twelve irons would have four impressions along its edge, as illustrated in Fig. 5 which shows four impressions 26 along the edge of the sole 21. It will be observed that since the rib 22 which is closest to the edge 18 is so spaced therefrom that there will be no tendency of any of the ribs to penetrate entirely through the material in such a way as to mutilate the sole.

The illustrated mechanism is provided with means for applying symbols, for example, letters, to the surface of blanks at the time they are died out, such symbols being for the purpose of indicating the grade of material or other characteristics of the blanks. To this end, the heel portion of each of the die sections 19 and 20 is provided with a frame member 28 constituting a block rigidly secured to the walls 12 by a set-screw 30. The frame member 28 carries a plurality of marking tools 32 slidably mounted therein and each so arranged that the stamping surface 34 thereof is normally spaced from the cutting edge 14 by a stop 36 positioned in a slot 38 in the member 28 and normally held in engagement with the bottom of the slot by a spring 40, the upper end of which is retained in position by a cover plate 42. The tools 32 are arranged along an arc having at its center a stud 44 upon which is mounted an arm 46 arranged for movement about the stud 44 by means of a handle 48 which projects through a slot 50 in the wall 12. The arm 46 is provided with a recess 52 in which is slidably mounted a plunger 54 which can be brought into alinement with any one of the marking tools 32. The plunger 54 is normally forced in a direction toward the tools 32 by a spring 56 located within the recess 52. When the die 10 is operated to produce blanks from sheet material, the material upon entering the die engages the tools 32 forcing them upwardly against the compression of the springs 38 but the compression

of such springs is not sufficient to hold the plungers against the material with force enough to produce an impression therein. However, the tool 32 with which the plunger 54 is alined will engage the plunger and its upward movement will be so limited by the spring 56 that that particular tool will produce an impression such as the letter "B" upon the sole 21 illustrated in Fig. 5. Since the stamping pressure is yieldingly applied there will be no tendency to break any of the parts or to distort the material unduly in applying the tool. Thus, it will be seen that the device above described provides means for readily applying during the cutting operation symbols suitable for indicating the grade of material from which a blank is cut.

To provide for the stripping of blanks from the die, each of the sections thereof is provided with a stripper plate 58 carried by studs 60 slidably mounted in a frame member 62 and normally forced outwardly of the cutting edges by springs 64.

In the use of the construction above described, the die 10 is placed upon sheet material supported upon a cutting block in the usual manner and pressure is applied to the upper portion of the die to force the cutting edges thereof into the material to form two sole blanks. As the material is forced into the die sections 19 and 20, its upper surface will be engaged by one or more of the surfaces 24 of the ribs 22 of each section to produce one or more impressions 26 in each blank, the number of such depressions depending upon the thickness of the material. At the same time, the upper surface of each blank will engage a selected tool 32 which will be operative to mark the blank with a symbol indicating the grade or other desired information.

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

1. A die comprising a wall terminating in a cutting edge, and a plurality of marking tools having operative portions differently spaced heightwise of the cutting edge.
2. A die comprising an upstanding wall having a cutting edge, and a plurality of ribs extending heightwise of the wall and terminating adjacent to the cutting edge at different distances therefrom.
3. A die comprising an upstanding wall having a cutting edge, and a plurality of marking devices located adjacent to the cutting edge and spaced therefrom at different distances heightwise of the wall.
4. A die for producing blanks from sheet material comprising an upstanding wall having a cutting edge, marking devices comprising ribs positioned along the cutting edge and having blank engaging portions located at different distances from the cutting edge heightwise of the side wall.
5. A hollow die comprising upstanding walls terminating in cutting edges, a frame member within the die, a plurality of marking members slidably mounted in the frame member in position to engage material forced into the die, and means operable selectively to limit movement of one of the marking members.
6. A hollow die comprising upstanding side walls terminating in cutting edges, a frame member within the die, a plurality of marking members mounted in the frame member for movement heightwise of the side walls, an arm pivotal-

ly mounted upon the frame member, and a spring-pressed plunger carried by the arm and movable therewith selectively into alinement with one of the marking members to limit movement there-
5 of relatively to the side walls.

ing members movably mounted within the die and constructed and arranged to engage material forced into the die, and selectively operable means for limiting movement of one of the marking members to cause the member to produce an im-
80 pression in the material.

7. A hollow die comprising upstanding walls terminating in cutting edges, a plurality of mark-

KARL ENGEL.

10	85
15	90
20	95
25	100
30	105
35	110
40	115
45	120
50	125
55	130
60	135
65	140
70	145
75	150