

No. 703,160.

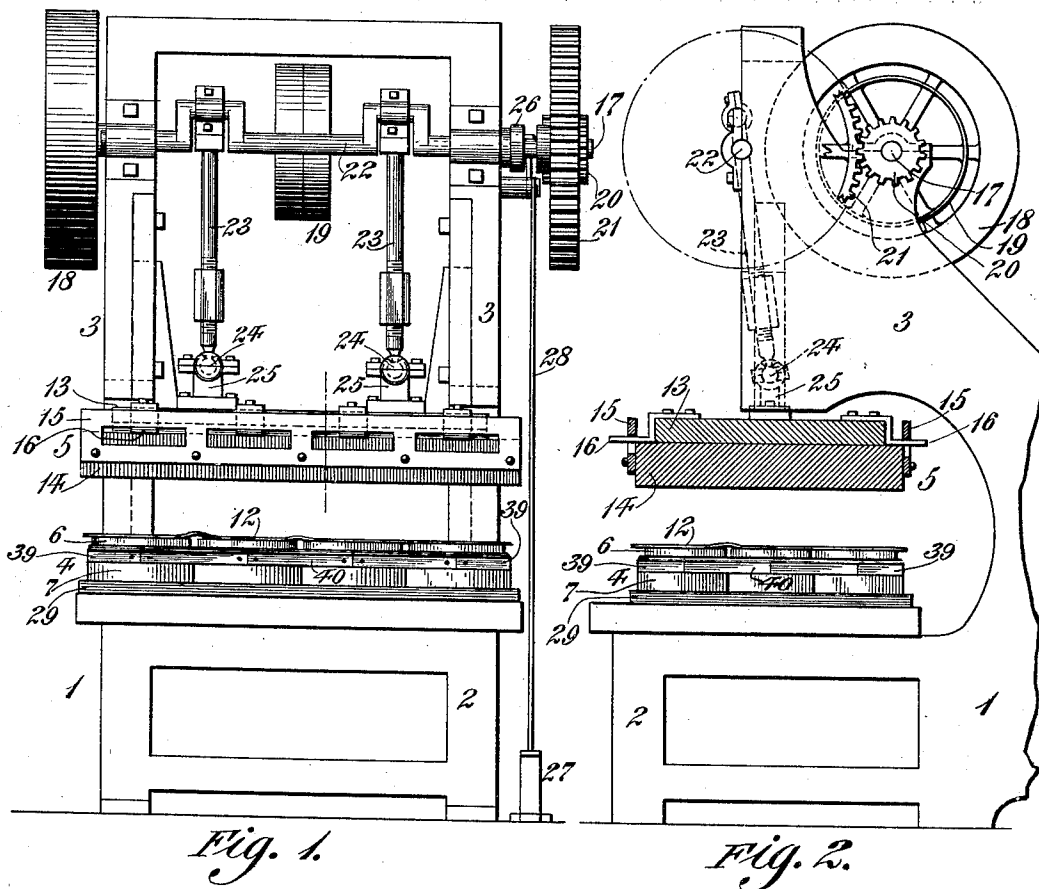
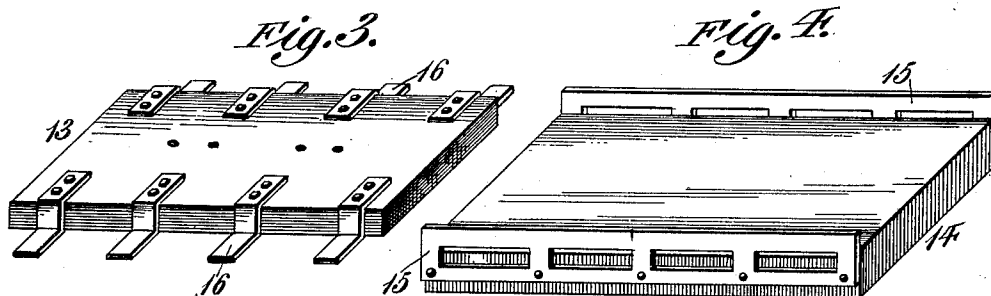
Patented June 24, 1902.

H. STOCKMAN.
LEATHER CUTTING MACHINE.

(Application filed Dec. 5, 1901.)

(No Model.)

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Witnesses

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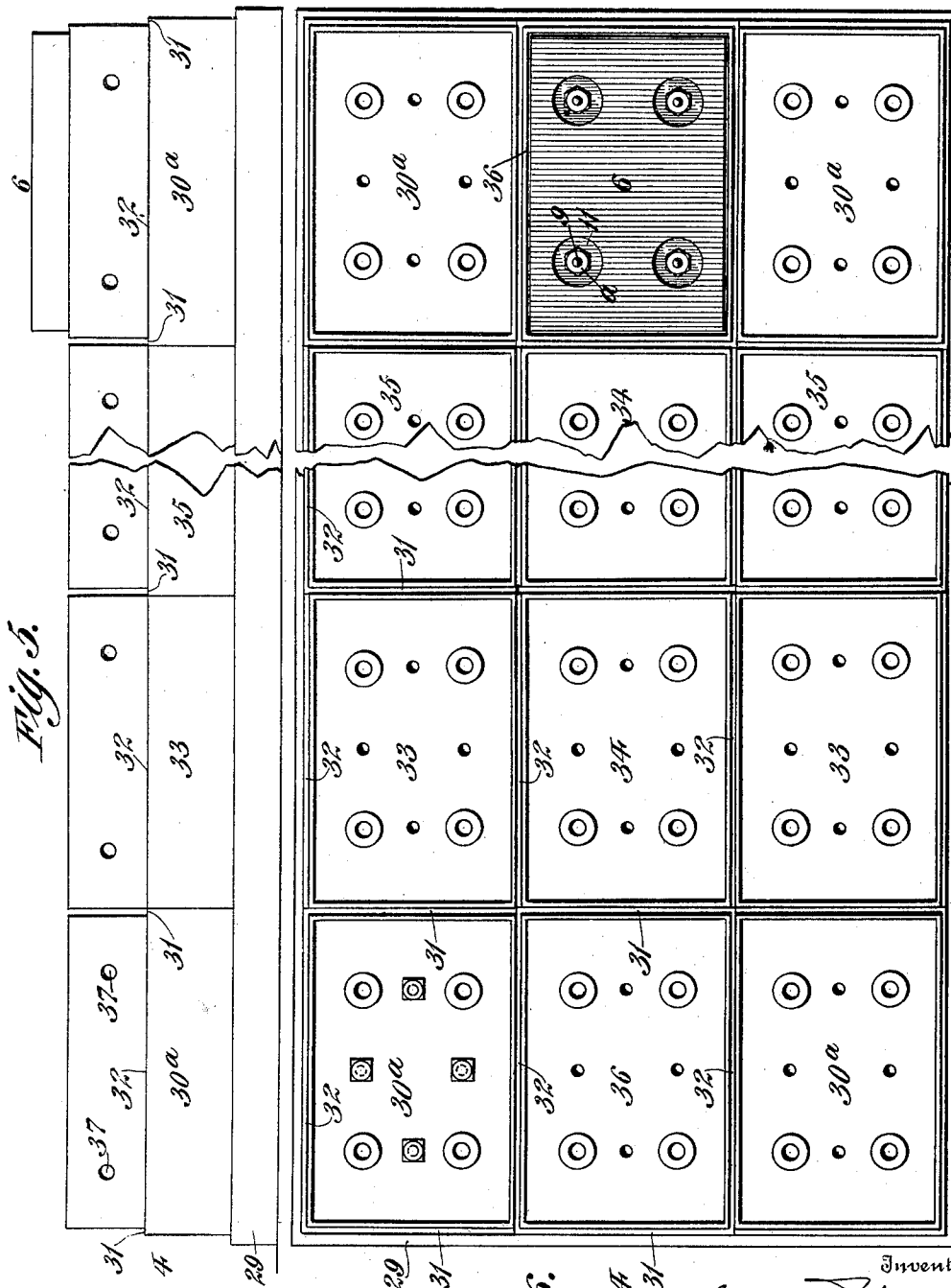
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Fig. 6.

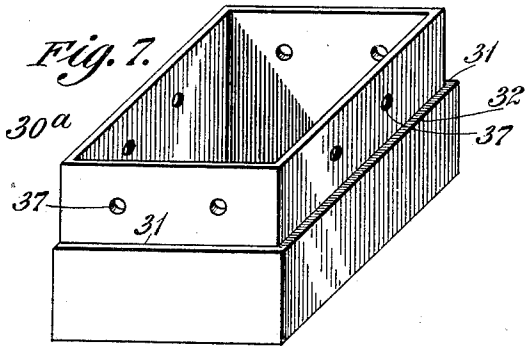
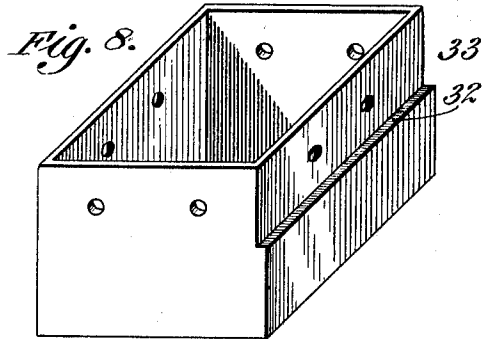
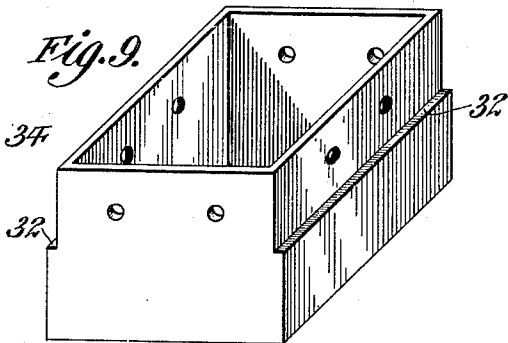
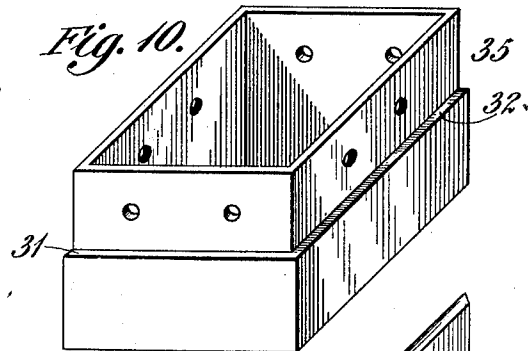
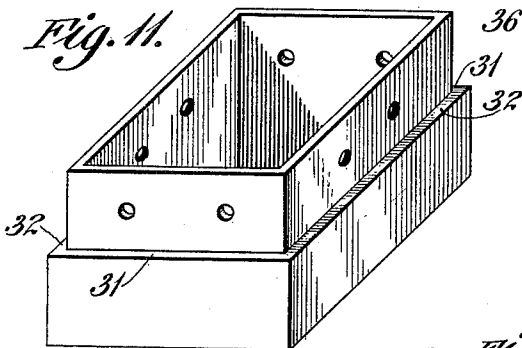
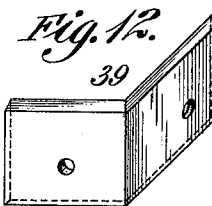
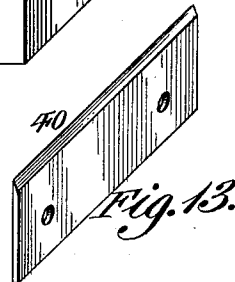
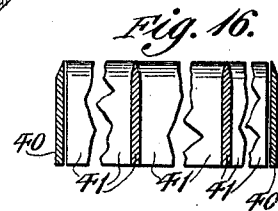
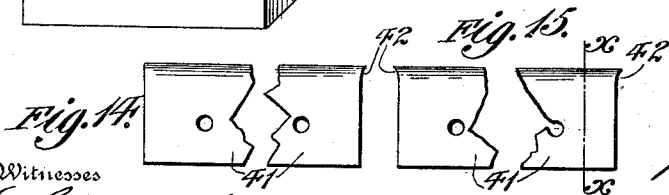
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(Application filed Dec. 5, 1901.)

(No Model.)

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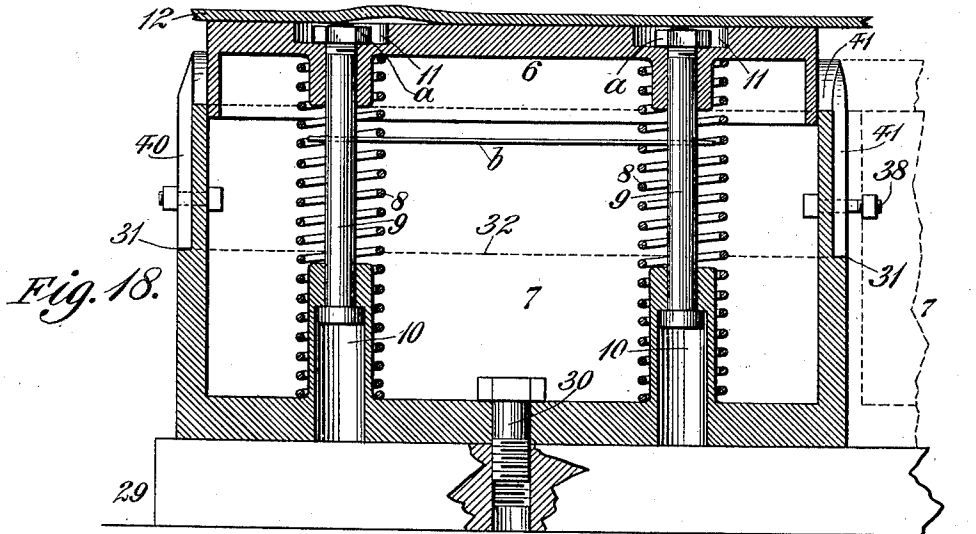
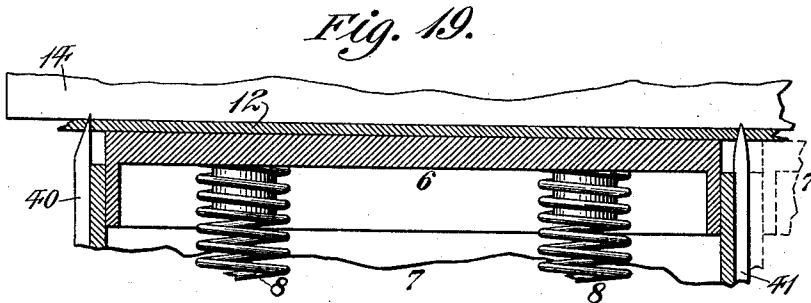
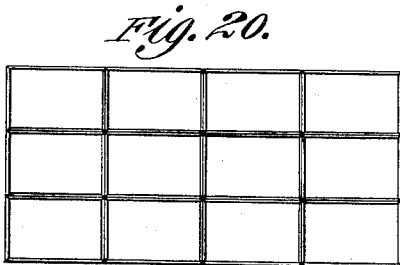
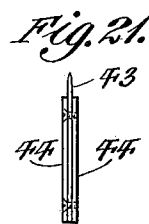
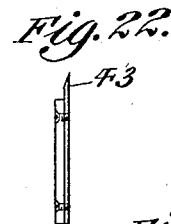
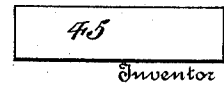
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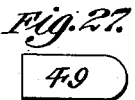
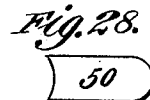
(Application filed Dec. 5, 1901.)

(No Model.)

4 Sheets—Sheet 4.



Witnesses
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UNITED STATES PATENT OFFICE.

HENRY STOCKMAN, OF PHILADELPHIA, PENNSYLVANIA.

LEATHER-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 703,160, dated June 24, 1902.

Application filed December 5, 1901. Serial No. 84,745. (No model.)

To all whom it may concern:

Be it known that I, HENRY STOCKMAN, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Leather-Cutting Machines, of which the following is a specification.

My invention consists of an improvement in leather-cutting machines, as will be hereinafter fully described and claimed.

Figure 1 represents a front view of a leather-cutting machine constructed in accordance with my invention. Fig. 2 represents a side elevation thereof partially in vertical section. Fig. 3 represents a perspective view of the upper member of the cutting-block. Fig. 4 represents a perspective view of the lower member of the cutting-block. Fig. 5 represents a side elevation of the die-block. Fig. 6 represents a top plan thereof. Figs. 7 to 11, inclusive, represent perspective views of different forms of die-holders that are employed in connection with each other. Figs. 12 and 13 represent perspective views of certain forms of dies. Figs. 14 and 15 represent side elevations of other forms of dies. Fig. 16 represents a sectional view showing the manner in which the different dies are assembled. Fig. 17 represents a section on line *x* of Fig. 15. Fig. 18 represents a sectional view of the dies and die-block, taken on an enlarged scale. Fig. 19 represents a similar section of the upper portion thereof and the lower portion of the block, showing the position the parts assume immediately after the cut is made. Fig. 20 represents a top plan view of the dies assembled. Figs. 21 and 22 represent end elevations of modified cutters that may be employed. Figs. 23 to 28, inclusive, represent diagrams showing the different forms of blanks that may be cut.

Similar characters of reference indicate corresponding parts in the figures.

Referring to the drawings, 1 designates the frame of the press, having the base 2 and overhanging arms 3. In the present instance the dies 4 are stationary and are supported by the base 2; and the cutting-block 5 is movable and depends from the arm 3, although it is understood that the arrangement may be reversed. The said stationary dies 4 present upwardly-extending cutting edges of any of

the shapes shown in Figs. 23 to 28, and each separate die forming the cluster is provided with a stripper, (shown in detail in Fig. 18,) the same consisting of the table 6, that fits within the die-holder 7 and is supported therein and normally above the upper edges of the die by springs 8, being held in position by pins 9, having headed lower ends secured within the sockets 10 and headed upper ends passing through suitable bosses in the table 6 and secured within sockets 11 in said table. The headed upper ends of the pins are formed by nuts *a*, screw-threaded thereon and by means of which the tension of the springs 8 may be regulated, and a convenient manner of preventing the turning of the pins when the nuts *a* are turned consists of a rod *b*, the ends of which extend through openings in two of said pins 9. The said pins 9 therefore limit the upward movement of the table 6, and the spring holds the table above the knives under tension. The stock 12 normally rests upon the tables 6, and in the operation of the machine the cutting-block 5 is depressed by mechanism hereinafter to be described and depresses the stock 12 and table 6 until the knives pass through the stock, as shown in Fig. 19, and afterward when the block rises said table is raised by the spring and strips the cut blank, as well as the stock, from the knives.

In Figs. 1, 2, and 18 I have shown the stock 12 as a little warped or uneven. This is to illustrate the stock in its natural condition—that is to say, it is practically impossible in a large piece of sole-leather, for instance, to have the same lie perfectly flat upon the tables. If it is not perfectly flat, of course the blanks that are cut may not partake of the same shape; but with my invention it will be noted that when the cutting-block comes in contact with the stock 12 the springs 8 offer sufficient resistance to straighten the stock out perfectly flat upon the table before the cutting-block depresses the same to the upper edges of the knives, and thus when the knives make the cut the stock lies perfectly flat.

The cutting-block, which is suitably suspended by actuating mechanism to be described, consists of two members. (Shown in detail in Figs. 3 and 4.) The upper member

13 is secured to the actuating mechanism, and the lower member 14, that contacts with the knives, is secured to the lower side of the member 13.

5 It will be noted from Fig. 19 that when the cut is made the knives enter the member 14, and in time it is obvious the cut made by the knives will not be clean, owing to the depressions made by the knives in the member 14
10 by repeated cuttings, and to obviate this objection the member 14 can be moved longitudinally, as well as laterally, upon the member 13. One convenient manner of accomplishing this is illustrated in Figs. 2, 3, and 4, the
15 same consisting of slotted plates 15, secured to the sides of the lower member 14, and the laterally-extending fingers 16 upon the upper member 13. When the parts are assembled, the fingers 16 extend through the slots or
20 plates 15, and when the bolts of fingers 16 are tightened up the said members are rigidly secured together. However, when the face of the lower member 14 is worn said bolts can be loosened and the lower member shifted
25 either longitudinally or laterally and then re-tightened.

The devices for actuating the cutting-block consist of a power-shaft 17, having a balance-wheel 18 and pulleys 19. At one end the shaft
30 is provided with a pinion 20, which intermeshes with the gear-wheel 21 of the crank-shaft 22, said shafts having suitable bearings in the arms 3.

Depending from the crank-shaft 22 are the
35 pitmen 23, the lower ends of which are connected by the universal joints 24 with the bearing-blocks 25, secured to the upper face of the member 13 of the cutting-block.

A suitable clutch 26 controls the rotation
40 of the shaft 22 and is operated by means of a footpiece 27, connected therewith by the rod 28, said clutch serving to connect or disconnect the shaft 22 with the gear-wheel 21.

The dies are constructed in the following
45 manner: In forming the cluster of dies I use the base-plate 29, upon which all of the die-holders are secured, each by means of screw-bolts 30, as shown in Fig. 18, four of these bolts being conveniently employed, as shown
50 in Fig. 6.

The weight of the plate 29 and the assembled dies is found sufficient to hold the dies in place, although the same may be secured upon the bed 2, if desired.

55 For the purpose of illustrating my invention I will show oblong dies, and in Figs. 7 to 11 have shown the die-holders, the same consisting of a rectangular box-like structure, the sides and ends of which at their bases
60 abut when assembled, as shown in Figs. 5 and 6. The said die-holders, however, are provided with ledges about half-way between the upper and lower ends upon which the knives rest, and these ledges are arranged
65 upon certain sides and ends of the die-holders, according to their location, and in the instance illustrated I have shown the manner

in which the same are arranged when a cluster of twelve die-holders are employed in the manner shown in Fig. 6. In this arrangement I employ five different species of die-
70 holders—for instance, the holder 30^a, Fig. 7, having a ledge 31 at each end and a ledge 32 along one side, the die-holder 33, Fig. 8, and the ledge 32 on one side only, the die-holder
75 34, Fig. 9, having a ledge 32 along each side thereof, the holder 35, Fig. 10, having a ledge 31 at one end thereof and a ledge 32 at one side thereof, and a holder 36, Fig. 11, having
80 a ledge 31 at each end thereof and a ledge 32 at each side thereof.

The outside dimensions of the holders above the ledges 31 and 32 are the same in all the holders; but the dimensions below the same vary, as will be noticed, the holders 30^a
85 and 36 being of the same length at their base, while the holder 35 is less the width of the one ledge, while the holders 33 and 34 are less the width of two ledges, as will be obvious. From Fig. 6 will be seen the manner in which
90 these holders are assembled so as to provide between each a channel the width of a ledge. In the bottom of each is a ledge, while between the holders 34 it will be noted that no ledge will be present. All of these holders are not
95 only fastened to the base-plate 27 by the bolts 30, but they are bolted to each other through the bolt-holes 37, it being noted, as shown in Fig. 18 in dotted lines, that the bolt 38 passes through the walls of two of the holders and
100 through the knives situated between the same.

In Figs. 12 and 13 I have shown outside knives, Fig. 12, showing the knives 39, that are used at the outside corners of the entire cluster of dies, the dimensions being such that each
105 extends one-half the distance along the end and sides of the holders 30^a from the corners thereof. The knives 40 (shown in Fig. 13) extend from the ends of the angular knives 39 and in length are equal to the end or side of
110 the holder, so that it overlaps the joint between two holders and extends half-way along the sides of the adjacent one. These outside knives 39 and 40 are beveled on one side only, as will be seen from Figs. 12, 13, 16, 18, and
115 19. The knives that are situated between the channels formed between the holders are beveled on both sides—for instance, as shown in Figs. 16 and 17. These inside knives are designated by 41 in said Fig. 16, and the ends
120 thereof adjacent the outside knives 40 abut against the same, as illustrated in Fig. 16, while the inside knives at the angles formed by the different channels are curved at their upper ends, as shown at 42 in Fig. 15, so as
125 to form practically a continuous knife, or, in other words, a knife without a joint, for the purpose of making a clean and even cut. These knives are all bolted to the sides of the holders above the ledge, with their lower ends
130 resting upon the ledge, while the knives between the holders 34 may be supported only by the bolt or may be deeper and rest upon the base-plate 29.

In Fig. 20 I have shown a modification in which all the knives, both outside and inside, are made in one piece or section.

5 Figs. 21 and 22 show other modifications of the knives, which consist in making the knife proper, 43, thinner than shown in the other figures, but reinforced by the side plates 44, suitably secured thereto, as will be understood.

10 Although I have shown the knives arranged to make rectangular cuts, yet in Figs. 23 to 28, inclusive, I have shown several forms of blanks that may be cut out—for instance, the strip 45 in Fig. 23, the out soles 46 and 47 in Figs. 24 and 25, the top piece 48 in Fig. 26, and the tops 49 and 50 in Figs. 27 and 28.

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

20 1. In a leather-cutting machine, dies, and a cutting-block movable toward and away from each other, die-holders for said dies provided with sockets, headed pins having one end situated within said socket and extending through an opening in the ends thereof, a rod 25 engaging said pins to prevent their rotation, tables secured to the other end of said pins, and a spring situated between said tables and holders.

30 2. In a leather-cutting machine, a cutting-block consisting of two members, one of which is secured to the actuating device of the machine and the other of which is secured to said first-mentioned member by means inter- 35 engaging that permit the shifting thereof both laterally and longitudinally.

3. In a leather-cutting machine, a cutting-block consisting of a member that is secured to the actuating mechanism and is provided 40 with outwardly-extending fingers, a second member provided with slotted plates to receive said fingers, and means for securing said fingers to said member to hold the members rigidly together and by means of which 45 the same may be loosened to allow them to be shifted.

4. In a leather-cutting machine, in combination with a cutting-block, a plurality of 50 die-holders suitably supported and provided with ledges along the sides thereof forming channels between the adjacent die-holders,

and knives situated within said channels and secured to said die-holders.

5. In a leather-cutting machine, in combination with a cutting-block, a plurality of 55 die-holders having meeting bases provided with upwardly-facing ledges forming channels between the adjacent die-holders, knives situated within said channels and resting upon said ledges, and suitable fastening de- 60 vices passing through adjacent die-holders and intermediate knives and securing the same together.

6. In a leather-cutting machine, in combination with a cutting-block, a plurality of 65 die-holders, assembled together side by side and end to end, certain of said die-holders being provided with ledges along opposite sides only thereof, certain of said die-holders being provided with ledges along two ends 70 and one side thereof, certain of said die-holders being provided with ledges along a side and an end thereof, and certain of said die-holders being provided with a ledge along one side only thereof, whereby channels are 75 formed between adjacent die-holders and knives situated within said channels.

7. In a leather-cutting machine, in combination with a cutting-block, a plurality of 80 die-holders situated side by side and end to end and provided with ledges on the outside thereof and channels between the same, angular knife-sections secured at the outside corners of the assembled die-holders and extending partially along the sides and ends of 85 the corner die-holders, knife-sections extending between the angular knife-sections on the outside of the die-holder, and knife-sections situated within said channels.

8. In a leather-cutting machine, in combination with a cutting-block, a plurality of 90 die-holders provided with channels between the same, knife-sections secured to the outside of said assembled die-holders, and knife-sections situated within said channels and 95 having overhanging end portions to interfit with adjacent knife-sections.

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Witnesses:

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