

E. ANDREWS.

Machine for Stripping Leather Board, &c.

No. 166,837.

Patented Aug. 17, 1875.

FIG. 1.

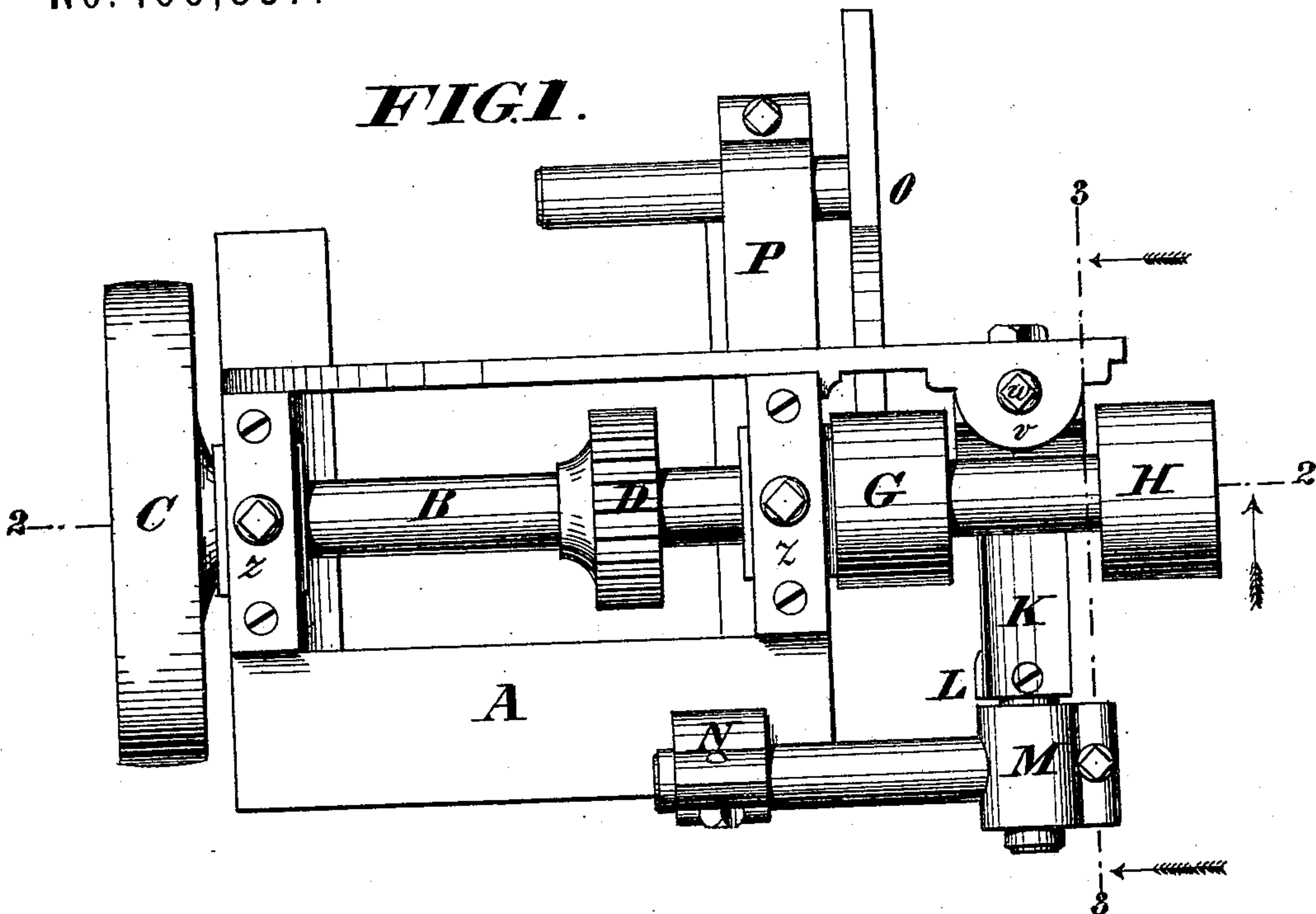
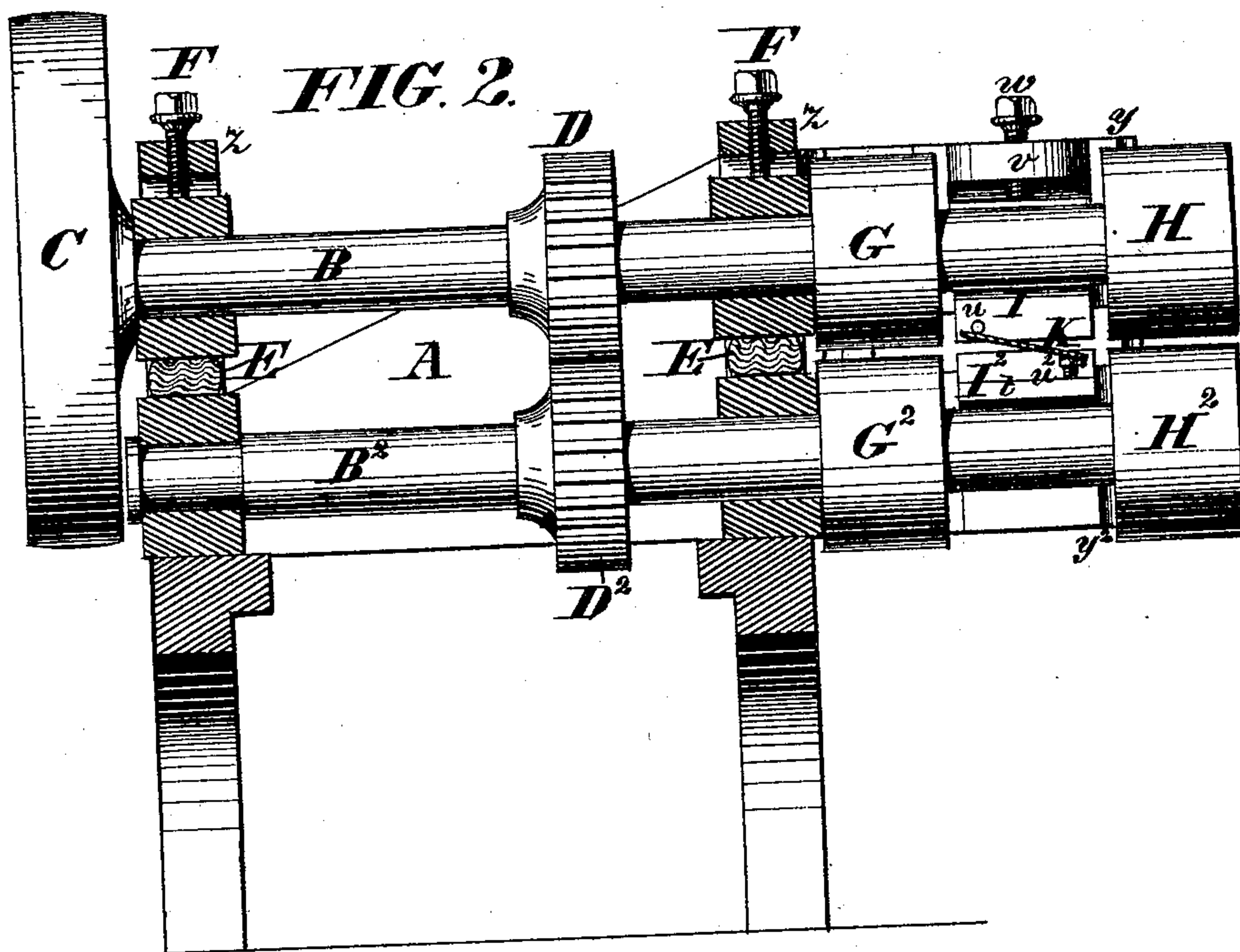


FIG. 2.



WITNESSES

Geo. L. Ewin
Henry Tanner.

INVENTOR

Emery Andrews.
By *Knight & Co.* Attorneys

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FIG. 3.

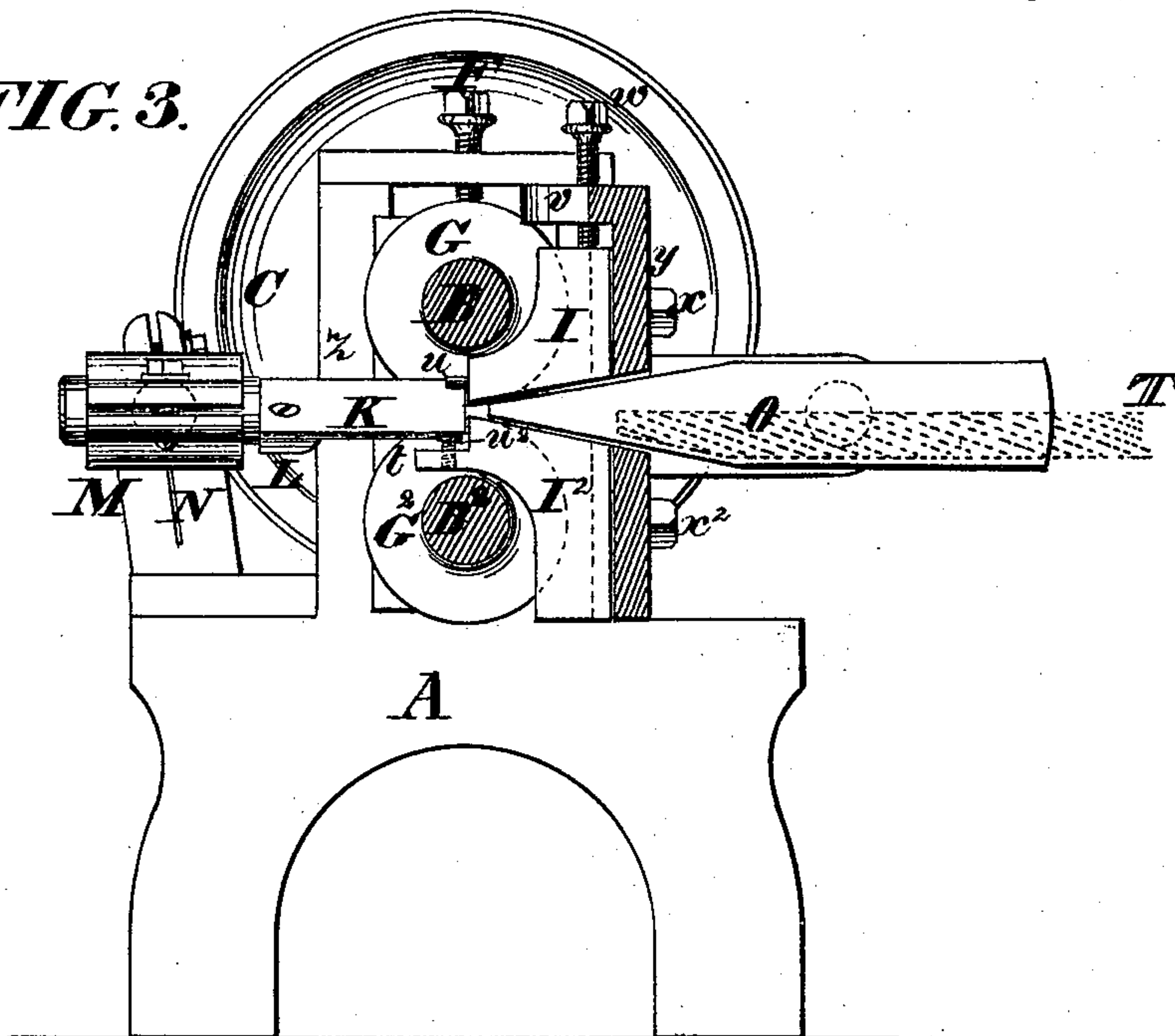
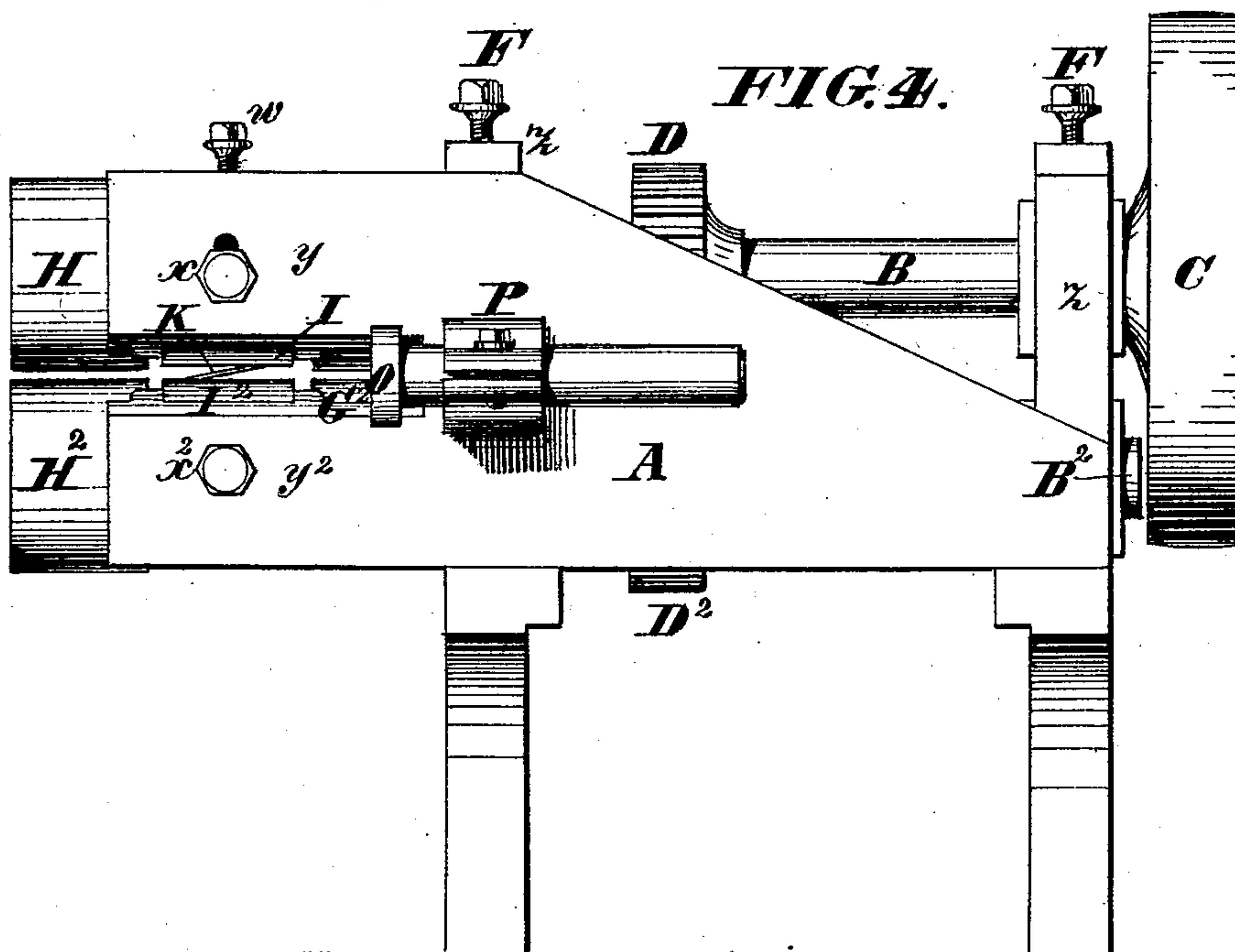


FIG. 4.



WITNESSES

Gas. L. Ewin
Henry Tanner.

INVENTOR

Emery Andrews.
By Knight & Sons Attorneys

UNITED STATES PATENT OFFICE.

EMERY ANDREWS, OF WELCHVILLE, MAINE.

IMPROVEMENT IN MACHINES FOR STRIPPING LEATHER-BOARD, &c.

Specification forming part of Letters Patent No. **166,837**, dated August 17, 1875; application filed January 20, 1875.

To all whom it may concern:

Be it known that I, EMERY ANDREWS, of Welchville, in the county of Oxford, Maine, have invented a new and useful Improvement in Machines for Stripping Leather-Board and other Materials, of which the following is a specification:

This invention relates to apparatus for cutting leather-board, leather, or other material into skived strips for manufacture into heel-stiffenings or counters for boots and shoes.

The improved machine is designed to cut only one strip at a time; but it is practicable to cut two at least at each operation in a modified form of the same. The board or sheet of material is forced against the knife by means of rolls, and is guided and supported by means independent of the rolls, and of the knife and knife-stock.

The present invention consists, first, in the employment or use, in combination with feeding-rolls, of a stationary knife, arranged, instead of between the peripheries of the rolls, as heretofore, outside thereof in the direction of their length, or out of their plane or planes of rotation, so as to admit of the employment of stationary guides extending to the knife from in front of the rolls, and so as to be supported and adjusted with superior facility. This location of the knife serves also to permit of the clamping of the material between the feeding-rolls without complicating the accommodation of the greater thickness of the material at the cutting-point, and without resisting the spreading or swelling of the material under the cutting action. It provides also for locating the knife at or even behind the point of contact between the rolls.

The invention consists, secondly, in the employment or use of two sets of rolls, with a knife and guides arranged between their inner ends. With this arrangement there is an equal feed on each side of the knife, and the sheet of material is carried forward on a straight line without cramping or turning, and entirely past the edge of the knife, so as to obviate any necessity for pulling the sheet to disengage it. In cutting leather-board into beveled strips, especially that which is thin enough for counters, it is necessary to have it

guided and supported firmly up to the edge of the knife.

The present invention consists, thirdly, in a pair of guides for this purpose, mounted on the frame independently of the rolls, and of the knife and knife-stock, the upper guide, or both, if preferred, being adjustable for regulating the distance between them, as required.

The invention consists, fourthly, in the combination of a pin or projection on one guide, and a vertical set-screw on the other guide, for supporting the cutting end of the knife at its respective edges, and determining its angle. By turning the screw, the inclination of the knife is increased or lessened, so as to cause it to cut a lengthened or shortened bevel on the material.

The invention consists, fifthly, in a peculiar double clamp-stock, for supporting the outer end of the knife at different angles.

In the accompanying drawings, Figure 1 is a plan view of a machine illustrating this invention in a preferred form. Fig. 2 is a vertical longitudinal section on the line 2 2, Fig. 1. Fig. 3 is an end view, partly in section, on the line 3 3, Fig. 1. Fig. 4 is a front elevation of the machine.

A metallic frame, A, of variable shape, supports, parallel to its face, in housings $z z$, a pair of horizontal shafts, B B², and to the outer end of one of these shafts, B, at the right-hand end of the machine, a driving-pulley, C, is applied. The shafts are united by spur-gearing D D², are held apart with elasticity by springs E, of rubber or other approved material, applied between the journal-boxes, and are pressed together and supported at the proper distance apart by vertical screws F engaging with the tops of the journal-boxes of the upper shaft. Outside of the frame the shafts B B² carry two sets of rolls, G G² and H H², and the adjustment of the upper shaft relates to the distance apart of the respective sets of rolls. The face-plate of the frame A is extended in front of the rolls in the form of a pair of horizontal bars, $y y^2$, which are grooved or flanged to form ways for the reception of a pair of guides, I I², between the sets of rolls. These guides are attached, respectively, by screws $x x^2$, and the bar y of the frame has a

vertical slot to receive the screw x , so as to provide for adjusting the upper guide. To facilitate the nice adjustment of this guide, which is desirable, a vertical screw, w , is tapped into a lip or projection, v , on the upper bar, extending down to the top of the guide, and acting against the same to fix its position.

The knife K , in the form of a rectangular blade with sharpened end, is supported in horizontal position behind the guides $I I^2$ and between the ends of the rolls, so as to cross the horizontal line between the rolls and guides diagonally.

To support the cutting end of the knife in this relation, and to provide for adjusting the same with facility, a pin or projection, u , is applied to the back of the guide I , so as to project over one edge of the knife; and a vertical set-screw, u^2 , tapped into a projection, t , on the back of the lower guide I^2 , constitutes an adjustable support for the other edge of the knife. By turning this screw the inclination of the knife and the length of bevel in the product may be increased or diminished at will.

For supporting the outer end of the knife, a double clamp-stock is provided. The knife is bolted to a holder, L , having a round shank in line with the knife, which is embraced by a clamp-sleeve, M , and this clamp has a round or cylindrical arm, which is held in like manner in a clamp, N , applied to the frame. The sockets of the clamps are contracted to fix the knife in a position by means of clamp-screws in ordinary manner. By this double clamp-stock a lateral, perpendicular, and angular adjustment of the knife may be accomplished at one and the same time.

An edge-guide, O , is supported at the front of the rolls and knife, and between the guides $I I^2$ and their supporting-bars $y y^2$, by a cylindrical stem on the guide, embraced by a clamp, P , projecting from the face of the frame. It is thus adapted to be adjusted laterally, and also to turn slightly, if required, on its stem as an axis.

For feeding the leather-board or other material to the machine a table, T , will be built so as to have a surface on a plane with the center of the space between the bars $y y^2$, which support the main guides, as indicated in dotted lines in Fig. 3.

The operation is as follows: In using this machine the operator takes a sheet of the material and lays it on the table, and, placing the right-hand edge up to the side guide O , he pushes the sheet forward between the rolls and guides until it is seized by the rolls and carried through. The sheet is then returned by the operator, and put in for a second cut, and so on until the entire sheet is reduced to strips. The width of strip is determined by adjusting the edge-guide relatively to the knife, and the length or obliquity of the bevel is varied by adjusting the supporting-screw u^2 , on which one edge of the knife rests.

It is not absolutely necessary to have two sets of rolls in the machine, as above described, and a single pair may in some cases be employed. With one or two sets of rolls the main guides and knife may be multiplied, if desired, so as to adapt the machine to cut two or more strips simultaneously.

In the illustration the upper rolls and guide alone are adjustable to regulate the rolls and guides as to distance apart for different thicknesses of material; but the lower set as well may be rendered adjustable by similar or other ordinary means, if preferred.

The multiplication of the feeding-rolls is disclaimed as old, except as associated with the arrangement of the knife outside of the rolls in the direction of their length, and between the inner ends of the two sets of rolls instead of between their peripheries.

The location of the knife of a sole-skiving machine at the end of one feeding-roller is also known to be old.

The following is claimed as new in this invention, namely:

1. In combination with independent supporting-guides $I I^2$, a stripping and skiving knife, K , arranged and supported outside of the feeding-rolls in the direction of their length, or out of their plane or planes of rotation, instead of between the peripheries of the rolls, as heretofore, substantially as herein described, for the purposes set forth.

2. The combination of two sets of feeding-rolls, $G G^2 H H^2$, and a stripping and skiving knife, K , arranged between the inner ends of the two pair of rolls, to secure an equal feed on each side of the knife, and independent support and guidance at the cutting-point, substantially as herein set forth.

3. In combination with feed-rolls, a pair of supporting-guides, $I I^2$, sustained independently of the rolls, and of the knife and knife-stock, and adjustable correspondingly with the rolls, substantially as herein shown and described, for delivering the sheet metal to the knife, in the manner set forth.

4. The guides $I I^2$, provided with the pin u and set-screw u^2 , for supporting the respective edges of the knife K , and for adjusting the knife as to inclination, substantially as described.

5. The double clamp-stock, composed of the holder L and clamps $M N$, constructed and combined substantially as shown and described, for supporting the outer end of the knife, and for adjusting the same, in the manner set forth.

6. The combination of the edge-guide O , the main guides $I I^2$, the rolls $G G^2 H H^2$, and the knife K , arranged and operating substantially as herein shown and described, for the purpose specified.

EMERY ANDREWS.

Witnesses:

H. H. HALL,
W. L. MONK.