

(No Model.)

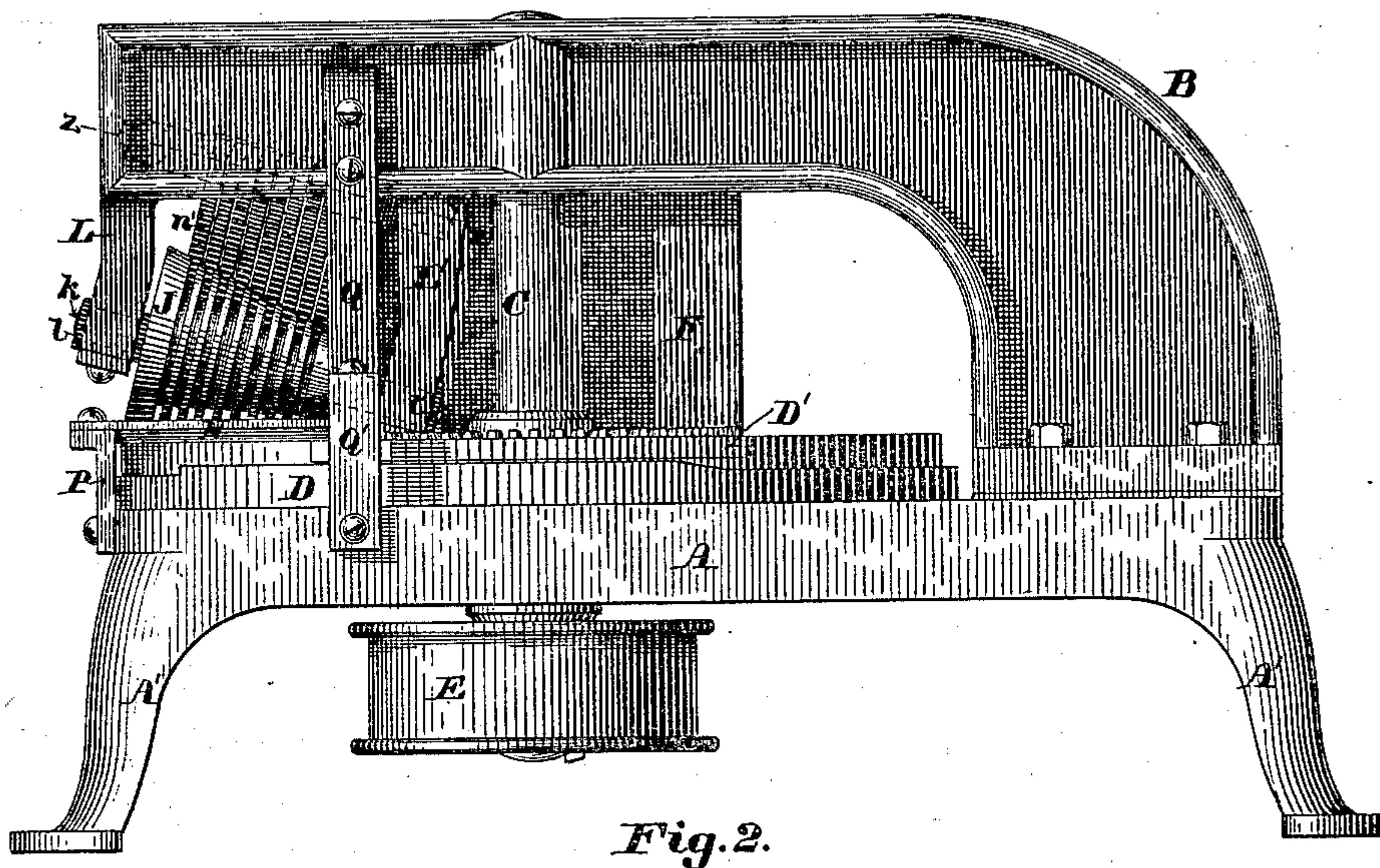
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A. KNOWLTON.

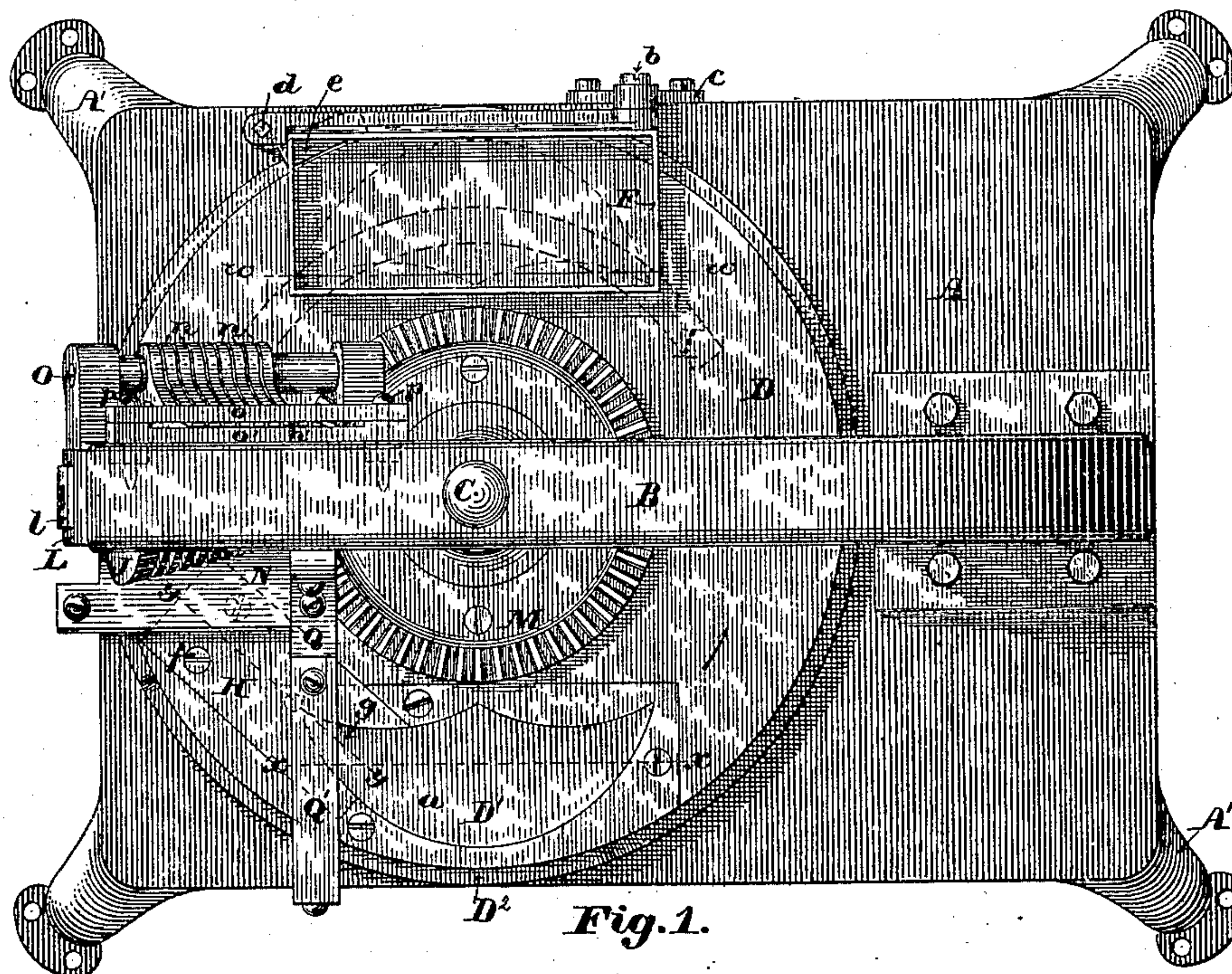
## LEATHER SKIVING MACHINE.

No. 272,888.

Patented Feb. 27, 1883.



*Fig. 2.*



***D<sup>2</sup> Fig. 1.***

***Witnesses:***

Walter E. Lombard.  
O. A. Hemmenway.

***Inventor:***

*Albion Knowlton,*  
*by N. C. Lombard*  
*Attorney.*



(No Model.)

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A. KNOWLTON.

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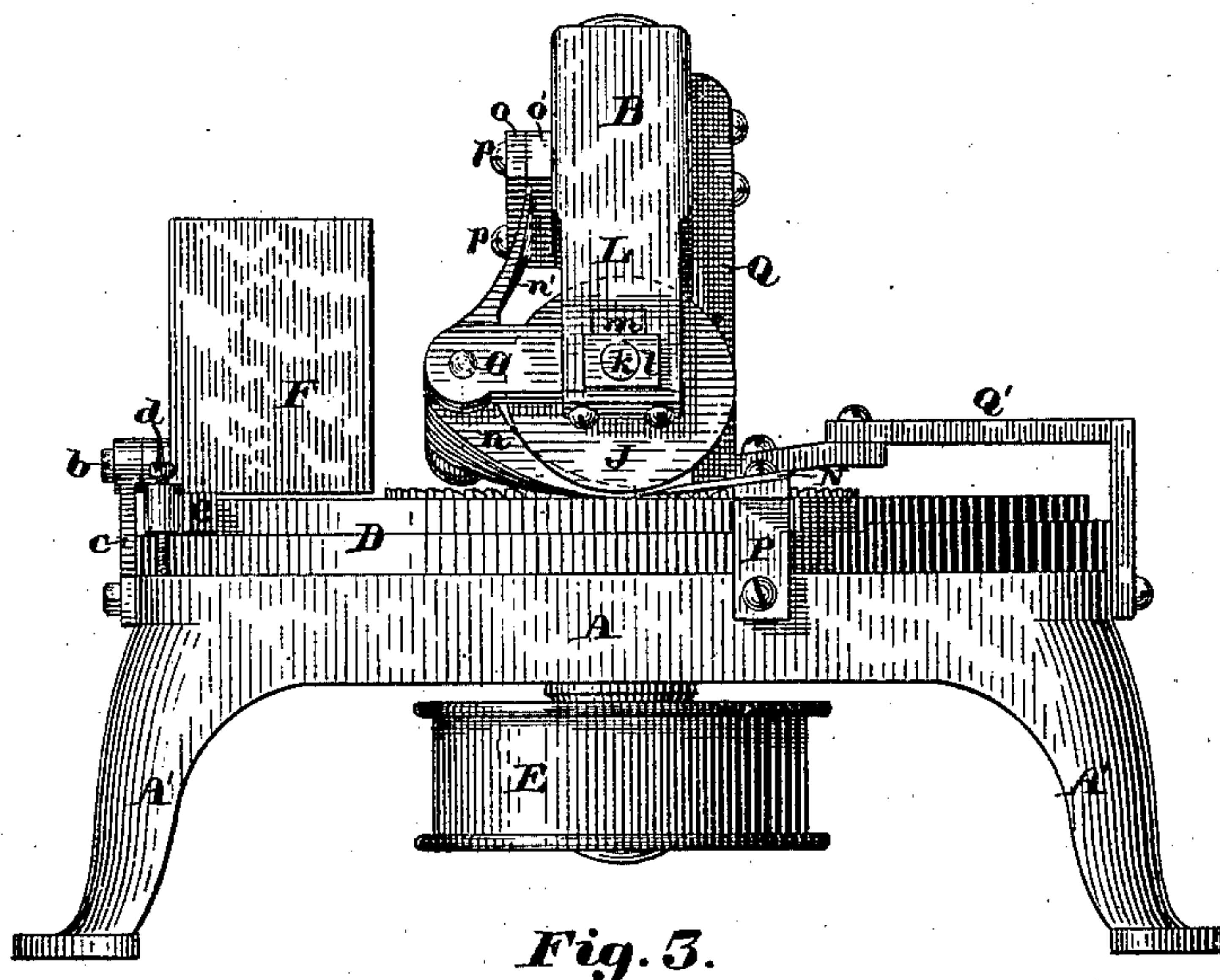


Fig. 3.

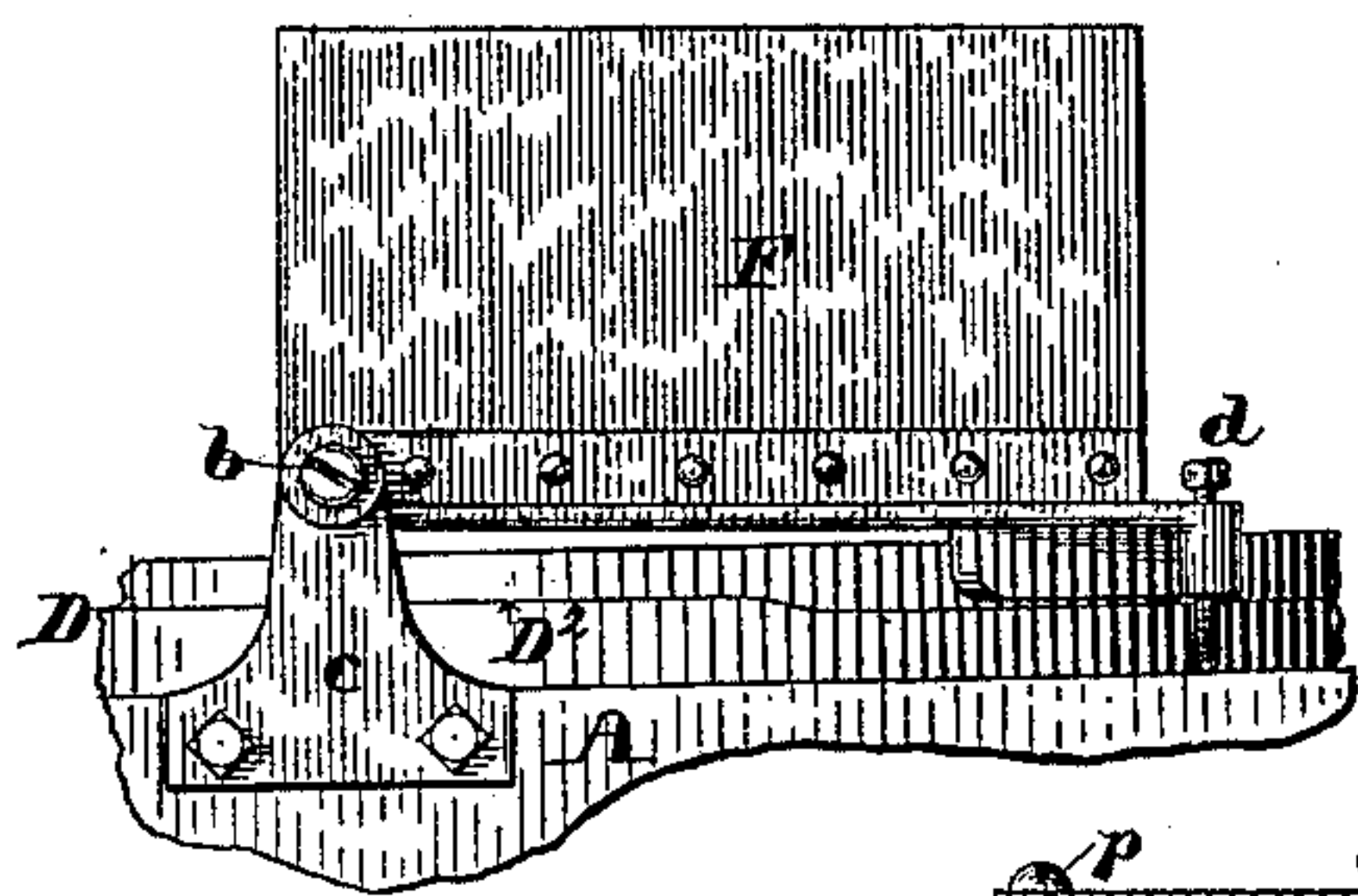


Fig. 4.



Fig. 5.

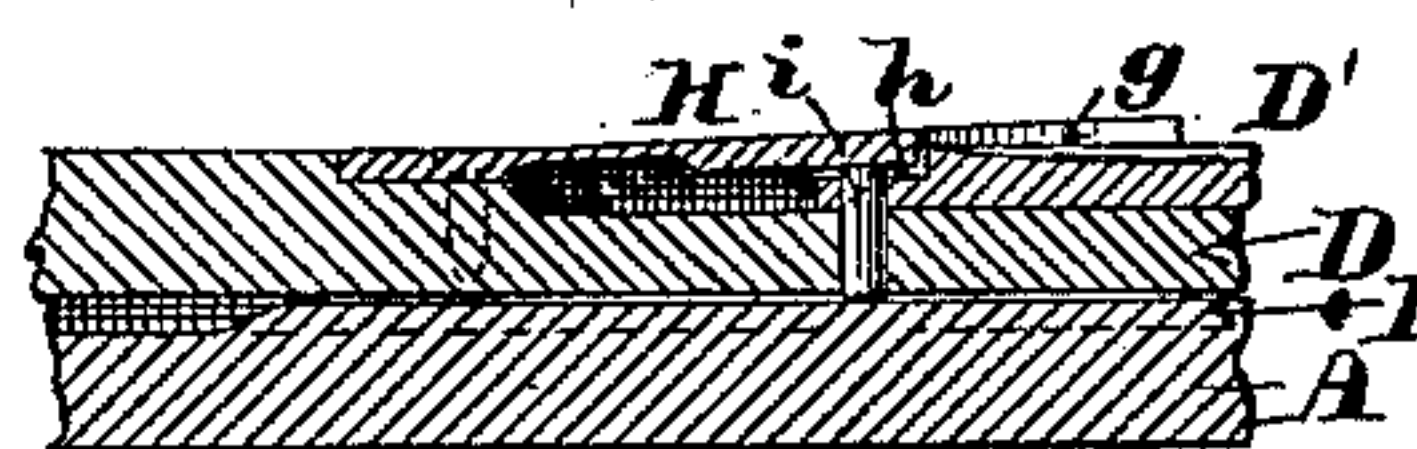


Fig. 6.

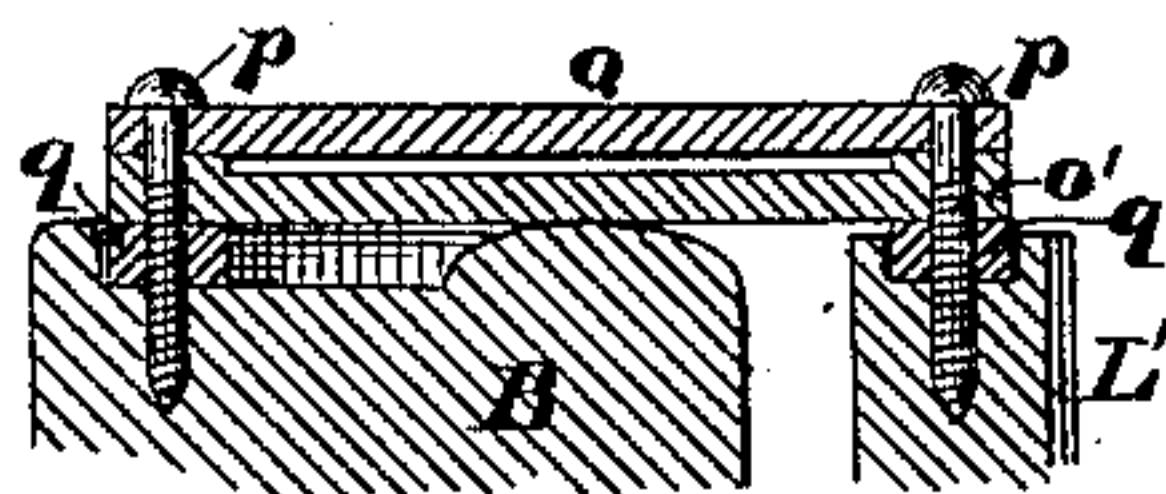


Fig. 7.

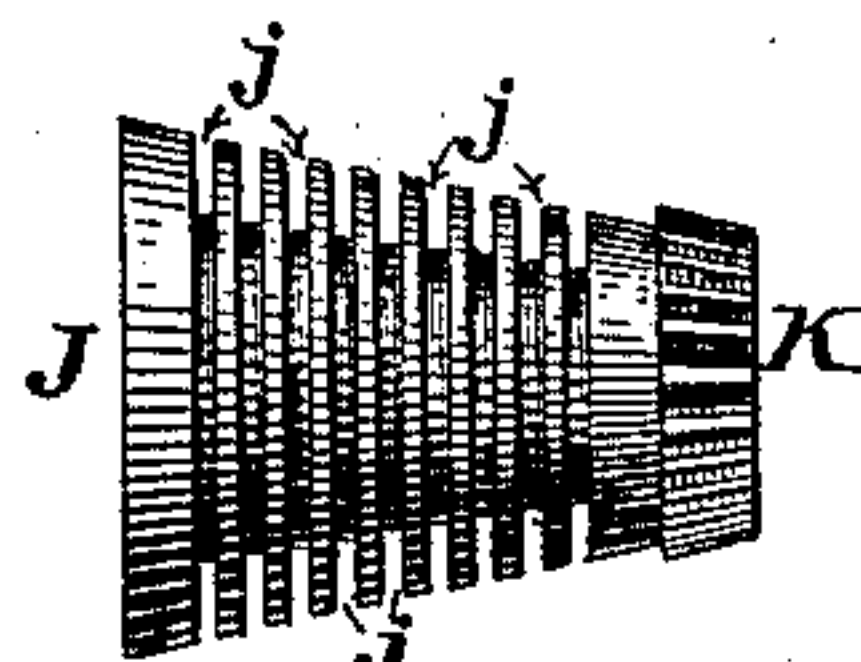


Fig. 8.

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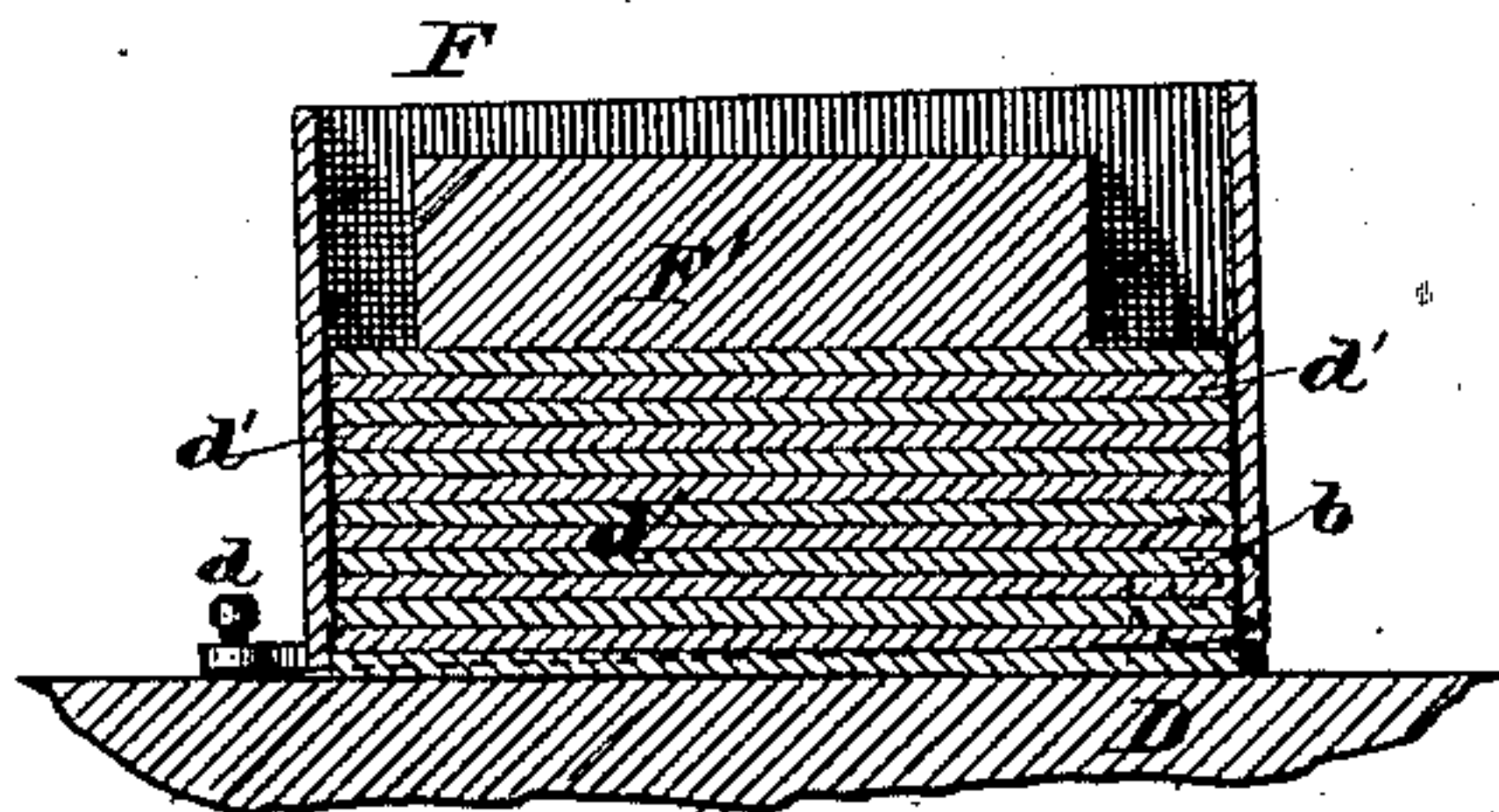
(No Model.)

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A. KNOWLTON.  
LEATHER SKIVING MACHINE.

No. 272,888.

Patented Feb. 27, 1883.



*Fig. 9.*

**Witnesses:**

*Walter E. Lombard*  
*W. H. Chapman*

**Inventor:**

*Albion Knowlton,*  
by *N. E. Lombard*  
**Attorney.**



# UNITED STATES PATENT OFFICE.

ALBION KNOWLTON, OF BOSTON, ASSIGNOR TO EDGAR F. BELDING, OF  
FITCHBURG, MASSACHUSETTS.

## LEATHER-SKIVING MACHINE.

SPECIFICATION forming part of Letters Patent No. 272,888, dated February 27, 1883.

Application filed December 1, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, ALBION KNOWLTON, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and  
5 useful Improvements in Leather-Skiving Machines, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to a machine for skiving boot and shoe tip blanks and other like  
10 articles; and it consists in certain novel constructions, arrangements, and combinations of devices, which will be best understood by reference to the description of the drawings and  
15 to the claims, to be hereinafter given.

Figure 1 of the drawings is a plan of a machine embodying my invention. Fig. 2 is a side elevation of the same. Fig. 3 is an end elevation of the same. Fig. 4 is a rear elevation of the hopper and portions of the bed and mold-carrying wheel. Fig. 5 is a longitudinal section of the die or mold-plate on line *x x*. Fig. 6 is a partial vertical section through the stationary table, mold-carrying  
20 wheel, and blank feeding-plate, the cutting-plane being on line *y y*, on Fig. 1, as relates to the wheel and feed-plate, the wheel, however, being supposed to have made an advance in the direction indicated by the arrow of something more than one-half of a revolution from  
30 its position, as shown in said Fig. 1. Fig. 7 is a partial section on line *z z* on Fig. 2, illustrating the devices for regulating the tension of the blank-pressing fingers. Fig. 8 is a side elevation of the grooved conical feed-roll and the bevel-pinion for operating the same. Fig. 9 is a vertical section through the hopper on line *w w* on Fig. 1, and showing a pile of blanks therein with the weight resting thereon.

40 A is the fixed bed or table of the machine provided with the legs A', which may be cast therewith, as shown, or bolted thereto, if desired.

B is a goose-neck-like stand, secured at one  
45 end to the bed A; and C is a vertical shaft, mounted in bearings in the bed A and stand B, and having firmly secured thereon, above the bed A, the circular disk or wheel D, and below the table A the driving-pulley E, by  
50 which and a suitable belt leading therefrom to

a suitable counter-shaft or source of power said shaft C and wheel D may be revolved. The wheel D has fitted to a recess formed in its upper surface the die or mold D', in the upper surface of which is formed a depression,  
55 *a*, having an outline in plan corresponding to the shape of the blank to be skived, and a varying depth corresponding to the desired varying thickness to be given to the blank by skiving. In the case of skiving shoe-tip blanks  
60 the die or mold D' has formed therein a depression, the bottom of which is curved both transversely and longitudinally, as indicated in Fig. 5, where the longitudinal curve is clearly  
65 shown.

F is a rectangular box or hopper, open at its top and bottom ends, and pivoted at *b* to the stand *c*, bolted to the back edge of the bed A, and supported at the end opposite to its pivot  
70 *b* by the set-screw *d*, the lower end of which rests upon the table A, said screw being so adjusted that when its end rests upon said table the bottom of that side of the box or hopper F, from which the tip-blanks placed there-  
75 in are to be fed, shall just clear the upper surface of the wheel D and mold D' as they are rotated beneath the same, while the bottom of the opposite side of said hopper is raised above the upper surface of the wheel D a distance  
80 equal to or a little greater than the thickness of a single blank. A pile of blanks, *d'*, is placed in the hopper F, upon the top of which is placed a weight, F', to press them downward in a well-known manner, the lower blank in the pile resting upon the upper surface of the wheel  
85 D, but being prevented from being moved by said wheel till the proper time by the wall of the hopper, which drops below the top of said lowermost blank at the side from which it is to be delivered, as before described. Upon  
90 the outer edge of the wheel D is formed the cam-surface D<sup>2</sup>, which at the proper time engages with the downwardly-projecting lug *e*, on the under side of the hopper F to raise its forward end sufficiently high to permit the  
95 passage of the lowermost blank in the pile beneath said forward end of the hopper.

H is a spring-plate fitted to a recess in the wheel D, and secured thereto at one end by  
100 one or more screws, *f*, and having formed in



its opposite end the notch *g*, corresponding in shape to the outline of a portion of the end of a blank or of the depression *a* in the die-plate *D'*, as shown in Fig. 1. The upper surface of the spring-plate *H*, when in its normal position, is flush with the upper surface of the wheel *D*, and its forward end rests upon the reduced surface *h* of the die-plate *D'*. A vertical pin, *i*, having rounded ends, is fitted to a bearing in the wheel *D*, directly beneath the plate *H*, with its lower end resting upon the upper surface of the bed *A*, said pin being so located relative to the axis of the wheel *D* as to be acted upon by the segmental cam *I*, cast upon the upper surface of the bed *A*, and projecting upward therefrom, as shown in Fig. 6 and indicated by dotted lines in Fig. 1, in such a manner as to raise said pin, and through it to raise the forward end of the spring feed-plate *H* above the upper surface of the wheel *D* a distance nearly equal to the thickness of a blank, and retain said plate in such elevated position till it has pushed the lower blank from beneath the pile of blanks and said blank has been seized upon by the feed-roll *J*, when the pin *i* drops from the cam *I* upon the bed *A* and the plate *H* drops to a level with the upper surface of the wheel *D*, where it remains until it has passed beneath the knife *N* and reached the point where it was before raised, when it is again raised preparatory to feeding another blank from the hopper by the action of the fixed cam *I* upon the moving pin *i*, as before described. The cam *D*<sup>2</sup> is of such a length and so timed relative to the movements of the feed-plate *H* that the forward end of the hopper *F* will be raised thereby just as the plate *H* is ready to engage with the lower blank in the hopper, and drop again just as said plate has passed from beneath the hopper. The feed-roll *J* is made conical in general outline, and has formed in its periphery a series of circumferential grooves, *j j*, and has secured upon its smaller or inner end the beveled pinion *K*, as shown in Fig. 8. The roll *J* is mounted upon a shaft, *k*, having its bearings in boxes *l* and *l'*, fitted to slots in the pendent arms *L* and *L'*, cast upon or secured to the goose-neck *B*, said roll being pressed downward by springs placed above the boxes *l* and *l'*, said springs being represented in the drawings by blocks of rubber *m*, only one of which is shown. (See Fig. 3.)

*M* is a bevel-gear wheel, secured to the upper side of the wheel *D*, and engaging with the pinion *K* to rotate the roll *J* in exact unison with the upper surface of the wheel *D*. A series of pressure-fingers, *n n*, are pivoted upon the shaft or journal *O*, and extend into the grooves *j j* of the roll *J*, so as to bear upon the blank when it is passing beneath said roll on a line directly beneath the axis of said roll and press it into the depression *a* of the mold *D'*. These fingers *n n* are each provided with an upwardly-projecting spring-arm, *n'*, the upper end of which extends into a slot formed between the bars *o* and *o'*, which bars are ad-

justably secured to the back side of the goose-neck *B* by means of the screw-bolts *p p*, and are pressed outward by springs *q q*, placed between the bar *o'* and the goose-neck *B*, as shown in Fig. 7, which springs may be blocks of rubber, as shown, or spiral metallic springs.

*N* is a knife-blade beveled upon both sides and adjustably secured in a slightly-inclined position in front of the roll *J* upon the stands *P* and *Q*, with its cutting-edge in close proximity to the bite between the roll *J* and the surface of the wheel *D*, as shown in Figs. 1 and 3.

*Q'* is a brace or stay for stiffening the stand *Q* and preventing the pressure upon the knife, causing it to yield. The skived blank is removed from the mold by the fingers of the operator after it has passed from beneath the knife and before it has reached the hopper again.

I am aware that a reciprocating mold having a depression corresponding in outline and curvature of its bottom to the outline of the blank to be skived and to the varying thickness to be given to the blank by skiving has been used, as shown and described in Letters Patent granted to Tyler Andrews, October 11, 1875, and numbered 168,596.

I am also aware that two cylinders, one having a mold or dye sunk in its periphery corresponding in outline and varying depth to the outline and sections of the finished blank and the other grooved circumferentially, mounted upon axes parallel to each other, have been used in combination with a series of spring-actuated fingers for pressing the blank into the mold, as shown and described in the Letters Patent granted to M. A. Holton, October 7, 1879, and numbered 220,286, and therefore I do not claim anything shown and described in said patents to Andrews and Holton; but

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination, in a leather-skiving machine, of the disk-like wheel *D*, arranged to be revolved about a vertical axis, the die or mold *D'*, secured upon the radial face of said wheel, the conical-grooved feed-roll *J*, arranged to be revolved in unison with the radial surface of the wheel *D*, and the series of double-armed and pivoted spring-fingers *n n'*, all arranged and adapted to operate substantially as and for the purposes described.

2. The combination of the disk-wheel *D*, the mold *D'*, the hopper *F*, adapted to contain a pile of blanks to be skived, and deliver one blank at a time therefrom, the conical grooved roll *J*, the series of double-armed fingers *n n'*, and a feed-plate, carried by the wheel *D* and adapted to push the bottom blank from the pile in the hopper at each revolution of the wheel *D*, substantially as described.

3. In a machine for skiving leather, the combination of the mold *D'*, adapted to be continuously revolved about its axis in one direction, a pressure-roll, *J*, co-operating therewith to feed and hold the blank, the series of press-



ure-fingers *n n'*, and the adjustable bars *o* and *o'*, all constructed, arranged, and adapted to operate substantially as and for the purposes described.

5 4. In a machine for skiving leather, the hopper *F*, pivoted as set forth, in combination with the wheel *D*, carrying the mold *D'*, and provided with the cam *D<sup>2</sup>*, all arranged and adapted to operate substantially as described.

10 5. The combination of the disk-wheel *D*, carrying thereon the mold *D'*, the spring feed-plate *H*, pin *i*, and the fixed cam *I*, all arranged and adapted to operate substantially as described.

15 6. The combination of the wheel *D*, carrying

the mold *D'*, the pivoted hopper *F*, means of vibrating said hopper, the grooved conical roll *J*, the series of spring-pressure fingers *n n'*, the knife *N*, the spring feed-plate *H*, and mechanism for intermittently raising and lowering 20 said feed-plate, substantially as and for the purposes described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 22d day of Novem- 25 ber, A. D. 1882.

ALBION KNOWLTON.

Witnesses:

E. A. HEMMENWAY,

WALTER E. LOMBARD.