

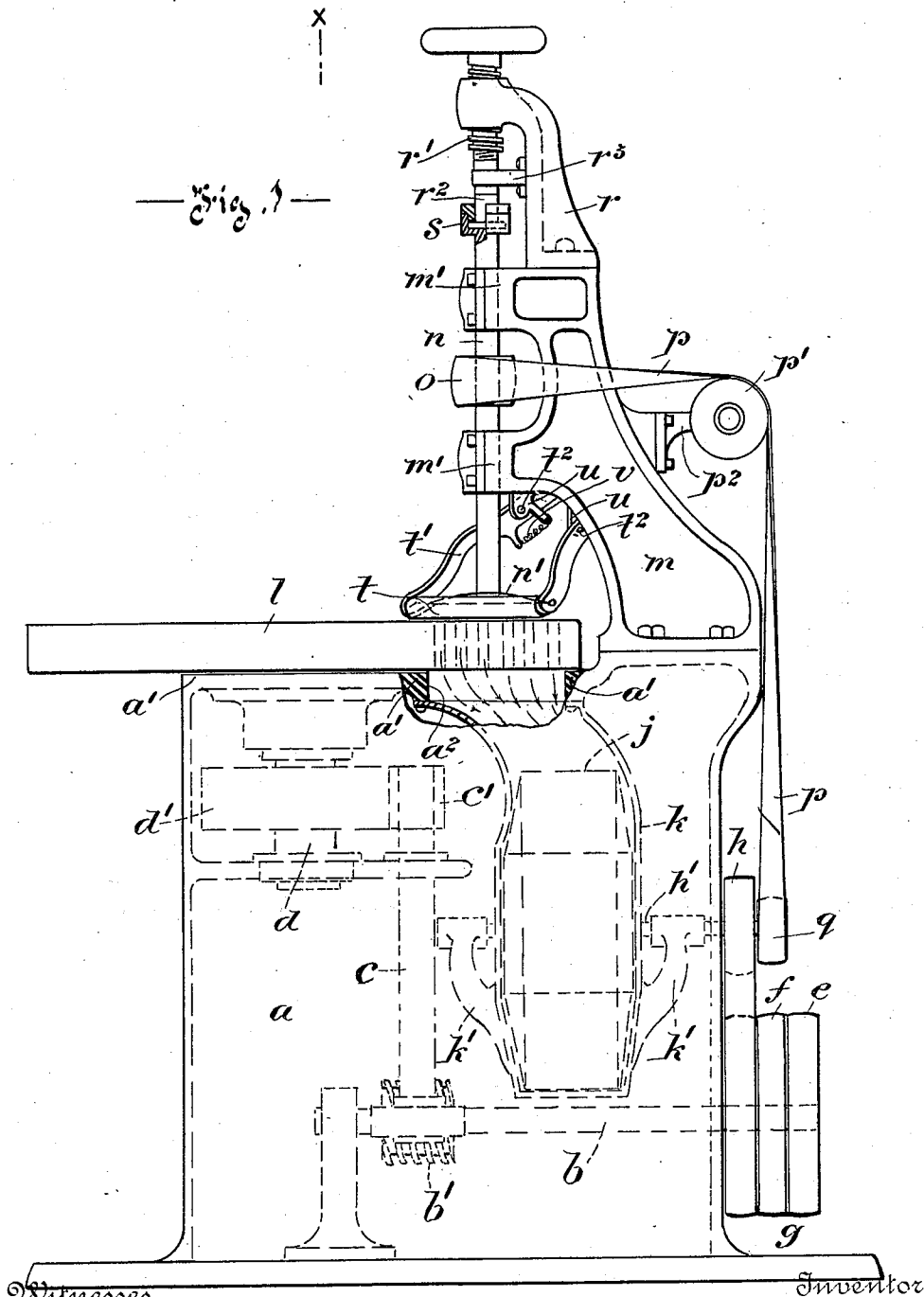
(No Model.)

3 Sheets—Sheet 1.

F. J. FREESE.
SOLE SPLITTING MACHINE.

No. 570,164.

Patented Oct. 27, 1896.



Witnesses

Inventor

Wm. H. Smith
R. A. Spitzer

Francis J. Freese
By *his Attorney*
Russell Reynolds

(No Model.)

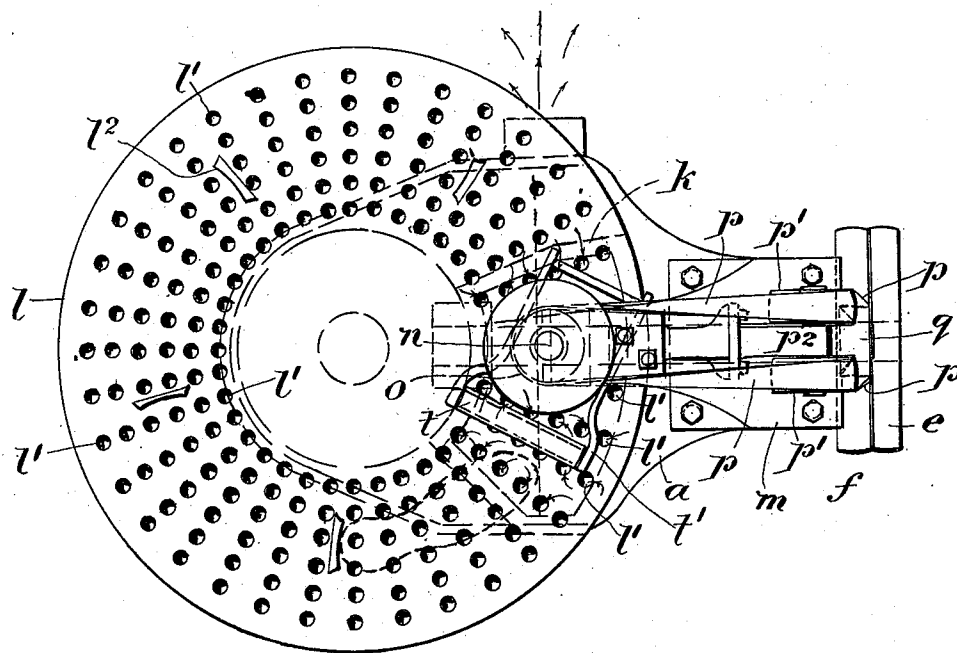
3 Sheets—Sheet 2.

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Witnesses

Wm. P. M. Frost

R. Alb. Nimmer.

Inventor

Francis J. Bruce

By his Attorney

Naughty Leguons

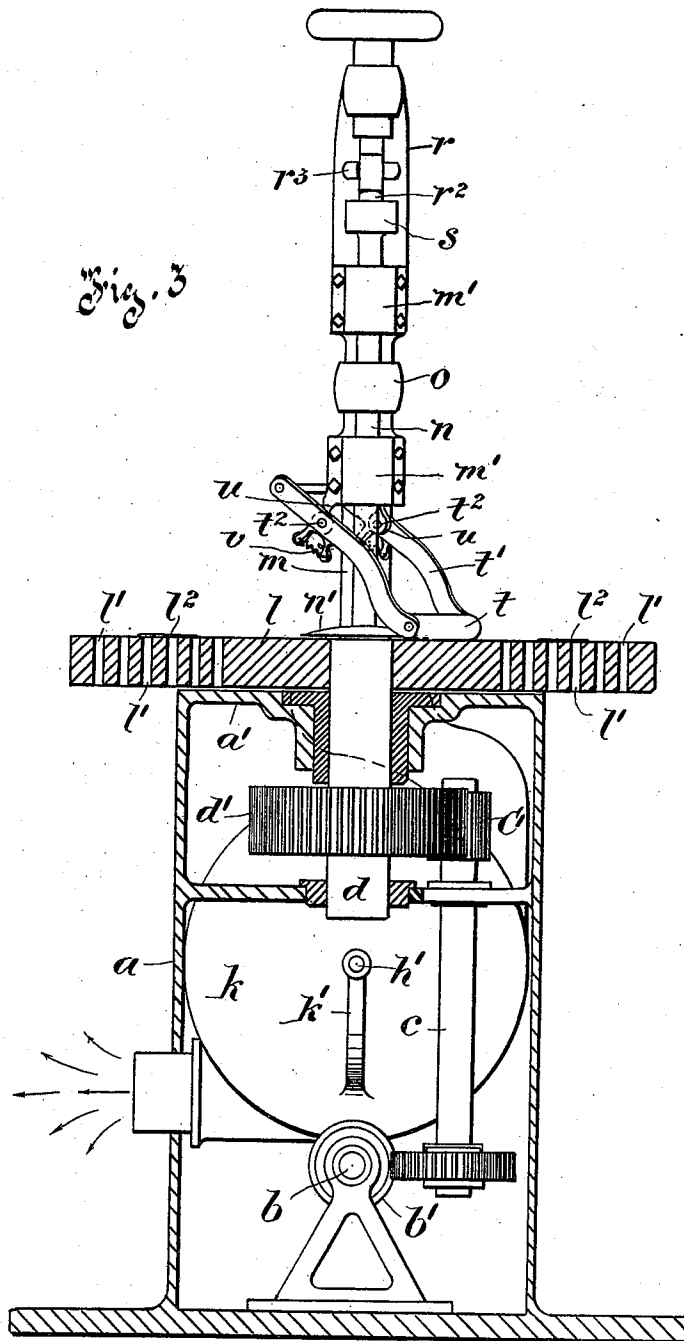
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H. Alb. Spiller

Inventor

Francis J. Freese

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UNITED STATES PATENT OFFICE.

FRANCIS JOSEPH FREESE, OF MONTREAL, CANADA.

SOLE-SPLITTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 570,164, dated October 27, 1896.

Application filed May 1, 1894. Serial No. 509,733. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS JOSEPH FREESE, of the city of Montreal, in the district of Montreal and Province of Quebec, Canada, have invented certain new and useful Improvements in Sole-Splitting Machines; and I do hereby declare that the following is a full, clear, and exact description of the same.

This invention relates to machines for dividing thick sole-blanks into a number of thinner soles, and has for its object to overcome certain objections in the present machines, among which may be mentioned the tendency through the use of a pair of feeding-rolls to shear off portions or diminish the thickness of the soles at some points owing to the blanks failing to keep in true horizontal position on issuing from the feed-rolls, and, further, to secure an accurate feed.

The invention consists of the several devices and combinations of parts hereinafter described and claimed.

For full comprehension, however, of the invention reference must be had to the annexed drawings, forming a part of this specification, in which like symbols indicate corresponding parts, and wherein—

Figure 1 is a side elevation of the machine with framing partly broken away; Fig. 2, a plan view of same; and Fig. 3, a vertical sectional elevation on line *xx*, Fig. 1.

a is a suitable supporting-frame or hollow structure with a closed top *a'*, and furnishing suitable bearings for a horizontal driving-shaft *b*, a vertical counter-shaft *c*, and a short vertical stub-axle *d*.

The driving-shaft *b* in addition to carrying at its outer end the usual fast and loose pulleys *e f* also carries a pulley *g*, from which a belt is taken to a smaller pulley *h* on the shaft *h'* of a fan *j*, inclosed in an open-ended curved casing or conduit *k*, thus constituting a suction device for a purpose to be presently mentioned. The casing *k* has the necessary bearings *k'* *k'* for the shaft *h'*, formed in one with it, and is suspended from the under side of the top *a'* of the frame, so that its upper open end will communicate with an opening *a²* in such top *a'*, its lower open end communicating with or projecting through an opening in the side of the frame, as shown in Fig. 3.

The inner end of the driving-shaft *b* carries a worm *b'* to intermesh with a pinion on the lower end of the vertical counter-shaft *c*, and this latter shaft in turn carries at its upper end another pinion or spur-gear *c'* to intermesh with a gear-wheel *d'* near the lower end of the stub-axle *d*. The upper end of this stub-axle *d* carries the traveling table or carrier, preferably in the form of a circular disk *l*, perforated, as at *l'*, throughout an annular section thereof, on which the sole-blanks are placed. Suitable butting-stops *l'* are also placed on the surface of the table in the position shown in Fig. 2 to hold the blank against slipping when brought into contact with the cutter.

A standard *m* is bolted to the top of the frame *a* and furnishes bearings *m'* for the vertical shaft *n* of the cutter or knife *n'* on its lower end. This shaft *n* carries a pulley *o* and is driven by a belt extending from it down over guide-pulleys *p' p'*, carried by a suitable bracket *p²* to a pulley *q* on the shaft *h'* of the suction-fan.

A second standard *r*, superimposed upon the standard *m*, furnishes a bearing for an internally-screw-threaded sleeve *r'*, the upper end of which is provided with a suitable hand-wheel and the lower end receiving the screw-threaded upper end of a sliding shaft *r²* freely coupled at its lower end, as at *s*, with the top of the shaft *n* and fitted in a squared bearing *r³*, so that the shaft *n* can be rotated without rotating this shaft *r²* or the sleeve *r'*, while the shaft *n* can be raised or lowered by the rotation of the sleeve to adjust the knife nearer to or farther from the table according to the thickness of sole to be cut.

The yielding resistance to act upon the upper side of the blank as it nears the knife is preferably in the form of a roller *t*, carried in the lower ends of an inclined rocking frame *t'*, pivoted at *t²* to brackets *u*, depending from the standard *m* and impelled toward the table by means of retractile springs *v* with their ends secured, respectively, to the brackets *u* and the side arms of the frame *t'*.

In the operation of the machine the blanks are placed on the table over the perforations and in front of the stops, as shown in Fig. 2, the knife being adjusted to the required position relatively to the table by rotating the

adjusting hand-wheel, and as the table revolves the blanks are carried beneath the yielding pressure-roller *t* into contact with the knife, the edge of the blank being prevented from turning upward, as is the natural tendency, by means of the suction through the apertures beneath it.

What I claim is as follows:

1. In a sole-splitting machine, the combination with the cutter or knife, of a feed device in the form of a horizontally-rotating perforated table or carrier, a yielding resistance device in the form of a plain roller with spring-controlled support therefor adapted to bear upon said blanks as they approach the cutter and a suction device acting upon a limited number of the perforations in the table with means for operating the cutter and feed, for the purpose set forth.
2. In a sole-splitting machine, the combination with the cutter and means for adjusting same, of a feed device in the form of a horizontally-rotating perforated table or carrier, a yielding resistance device in the form of a plain roller with spring-controlled support therefor adapted to bear upon said blanks as they approach the cutter, and a suction device acting upon a limited number of the perforations in the table, with means for operating the knife and feed for the purpose set forth.
3. In a sole-splitting machine, the combination of the cutter, a perforated traveling table or carrier for the blanks, a suction device having a single tube, the mouth of which acts directly beneath the perforations in said table, and means for operating same, for the purpose set forth.
4. In a sole-splitting machine, the combination of the cutter, a perforated table or carrier revolving in a horizontal plane capable of carrying a number of blanks, a suction device having a single tube, the mouth of which acts directly beneath the perforations in said table and means for operating same, for the purpose set forth.

5. In a sole-splitting machine, the combination of the cutter, means for adjusting same, a perforated traveling table or carrier for the blanks, a suction device having a single tube, the mouth of which acts directly beneath the perforations in said table communicating only with a limited number of the perforations at a point in advance of the cutter and means for operating same, for the purpose set forth.

6. In a sole-splitting machine, the combination of the cutter, a perforated traveling table or carrier for the blanks, a suction device having a single tube the mouth of which acts directly beneath the perforations in said table, communicating only with a limited number of the perforations at a point in advance of the cutter, a yielding pressure device and means for operating the cutter, table and suction device for the purpose set forth.

7. In a sole-splitting machine, a feed device in the form of a perforated traveling table and a suction device having a single tube the mouth of which acts directly beneath the perforations in said table and only upon a limited number of the perforations therein.

8. In a sole-splitting machine, the combination with the inclosing casing having an opening in its upper side, of the cutter, the means for adjusting same, the revolving perforated feed-table above said casing and traveling across the opening in the upper side of the casing, the suction-conduit communicating at its upper end with said opening and at its lower end with the outer air, the suction-fan within said conduit; the yielding pressure device adapted to bear upon the blanks carried by the table as they approach the cutter and means for operating the whole as and for the purposes as set forth.

FRANCIS JOSEPH FREESE.

Witnesses:

WILL. P. McFEAT,
FRED. J. SEARS.