

No. 607,602.

Patented July 19, 1898.

G. E. M. LEWIS.

MACHINE FOR CUTTING SHOE SHANK STIFFENERS.

(Application filed Oct. 30, 1897.)

(No Model.)

2 Sheets—Sheet 1.

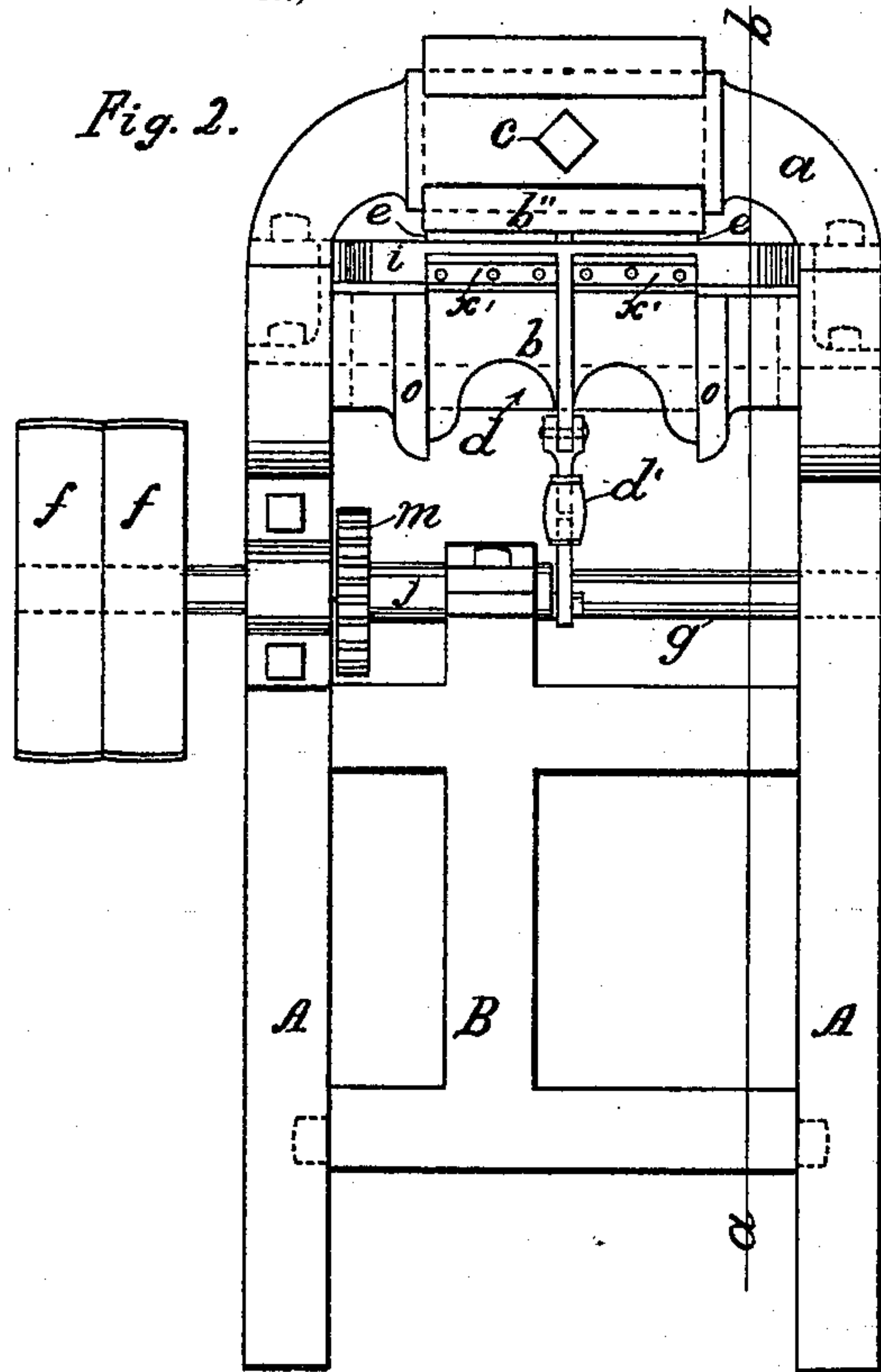


Fig. 2.

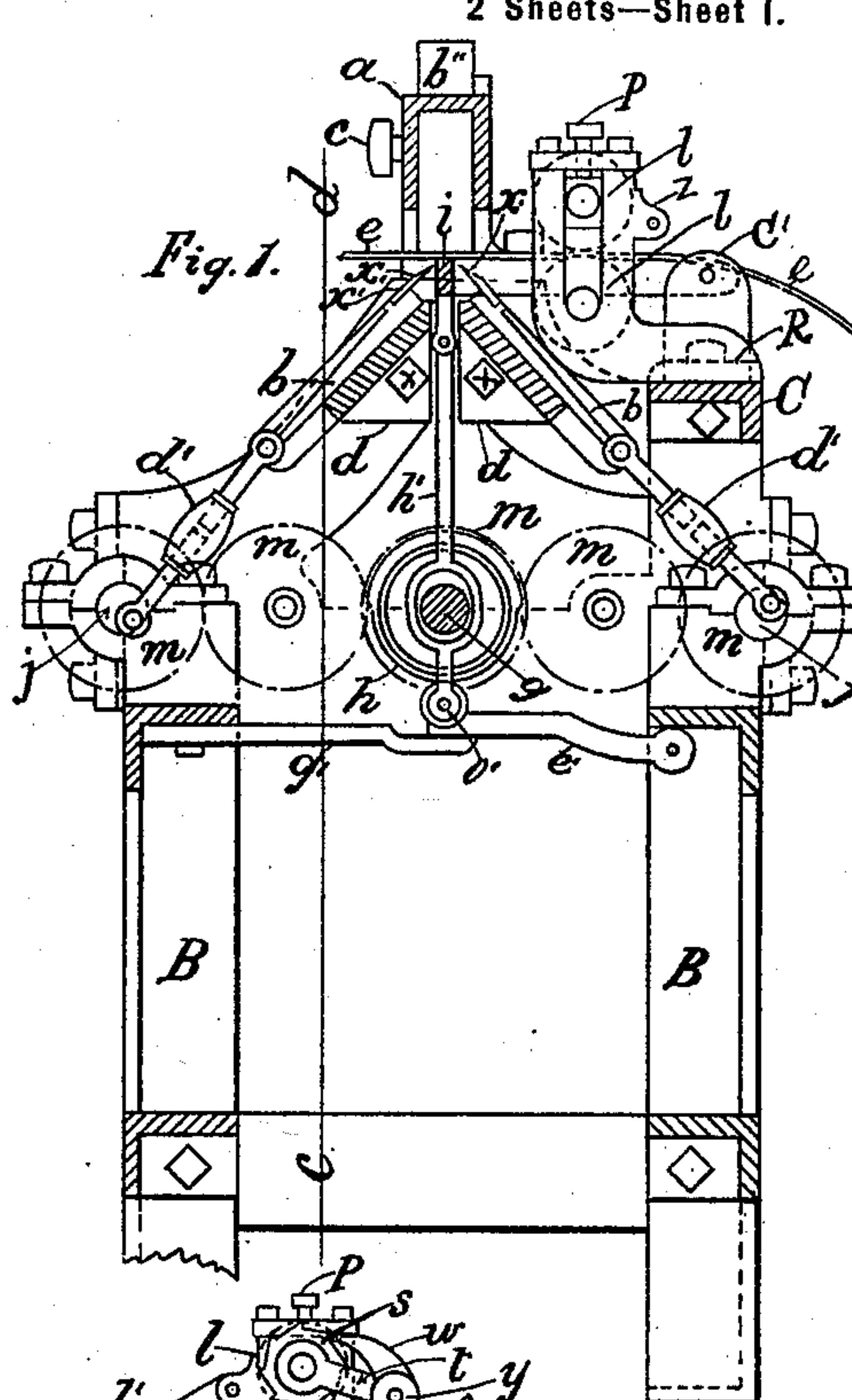


Fig. 1.

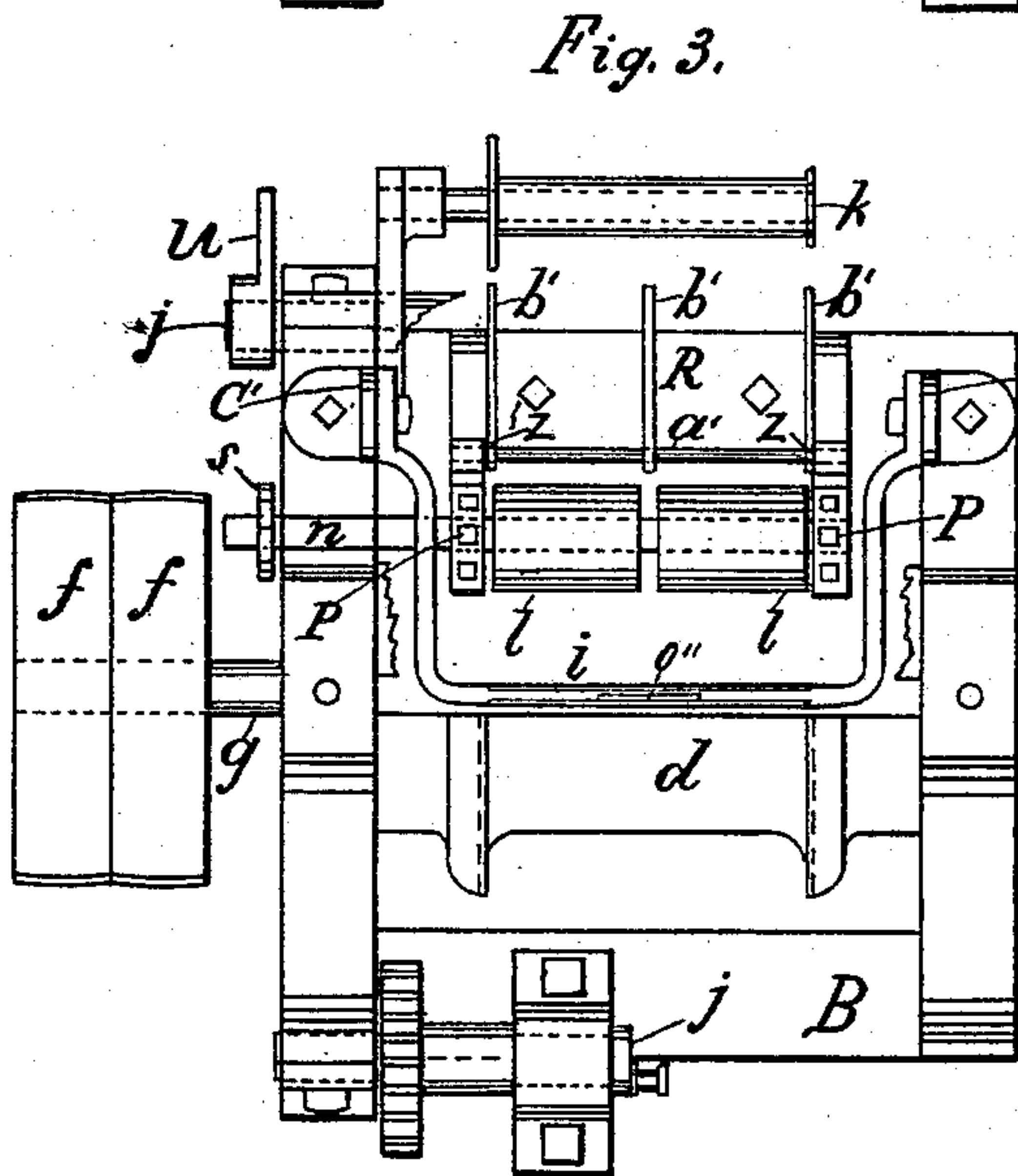


Fig. 3.

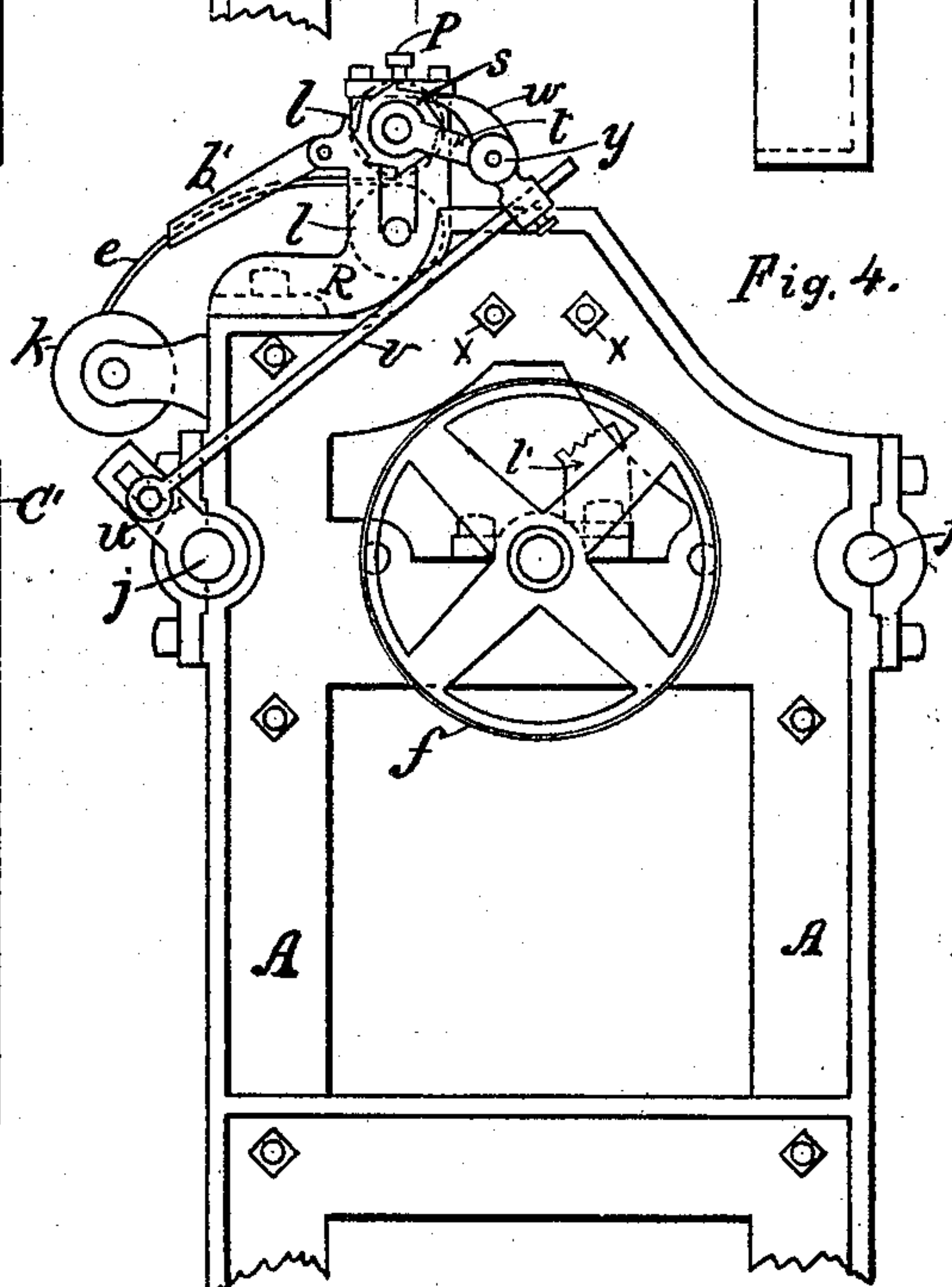


Fig. 4.

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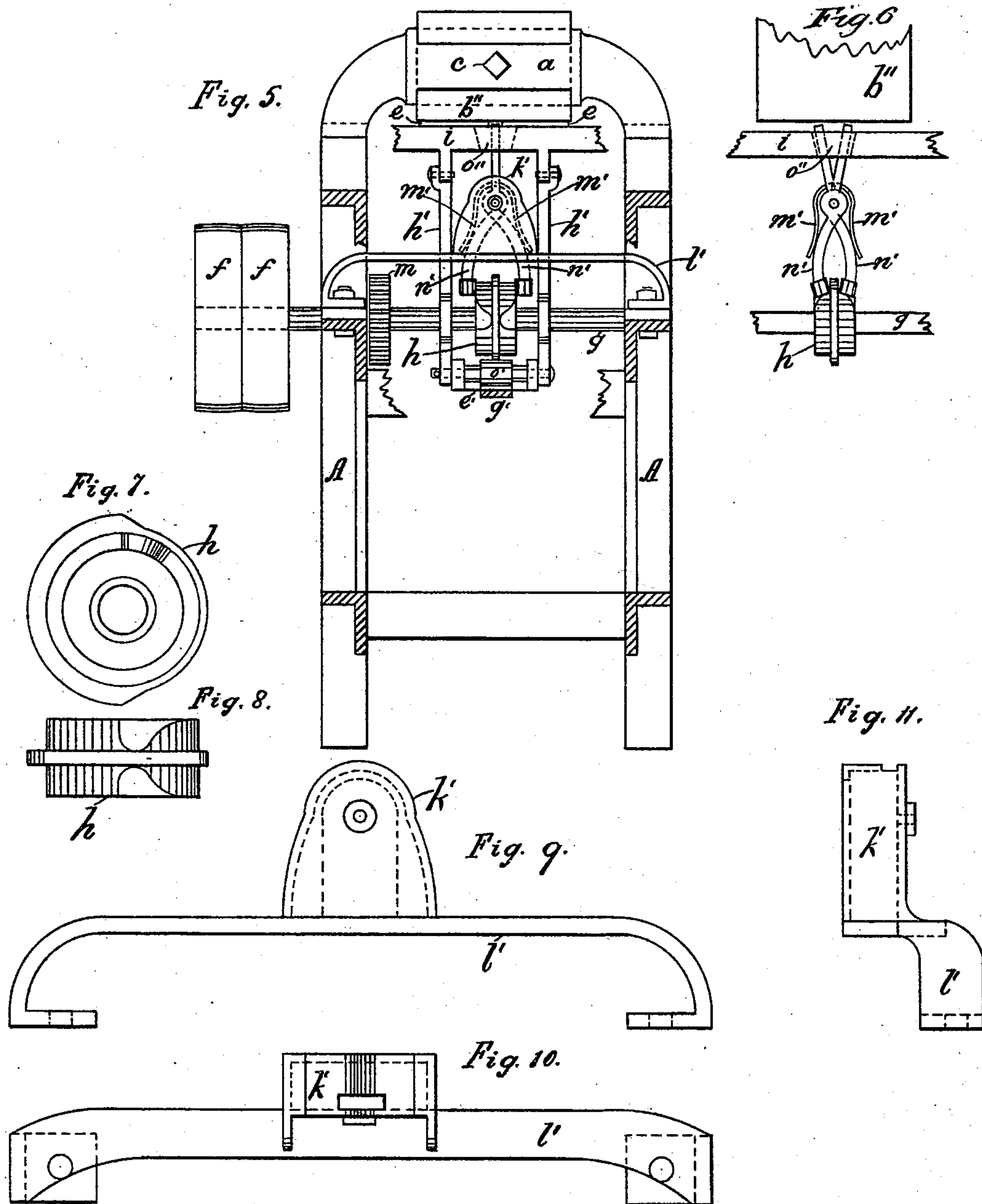
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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

GEORGE EZRA MORTON LEWIS, OF TRURO, CANADA.

MACHINE FOR CUTTING SHOE-SHANK STIFFENERS.

SPECIFICATION forming part of Letters Patent No. 607,602, dated July 19, 1898.

Application filed October 30, 1897. Serial No. 657,137. (No model.)

To all whom it may concern:

Be it known that I, GEORGE EZRA MORTON LEWIS, a British subject, residing at Truro, in the county of Colchester, in the Province of Nova Scotia and Dominion of Canada, have invented a new and useful Machine for Cutting Shoe-Shank Stiffeners from Veneers, of which the following is a specification.

My invention relates to shoe-shank stiffeners which are made from a coil or ribbon of veneer cut from a bolt of wood; and the object of my invention is the production of a machine which will rapidly and neatly cut these shank-stiffeners from the prepared ribbon or coil. I attain these objects by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section of the machine on line *a b* of Fig. 2, looking toward the left. Fig. 2 is a side elevation of the machine with the cam-wheel and its attachments removed. Fig. 3 is a plan of the machine as it appears after the removal of the block-holder, the knives and their connections. Fig. 4 is an elevation of the end of the machine on which the driving-pulleys are attached, having the block-holder removed and showing the feed-gear. Fig. 5 is a section of the machine on line *c d* of Fig. 1, looking to the right, with the block-holder, the knife-beams, and their attachments removed, showing the mechanism for pressing the veneer against the block and for throwing off the several pieces as they are cut and released. Fig. 6 is a view of the ejector as it appears immediately after it has thrown off the severed pieces. Fig. 7 is an enlarged elevation of the cam-wheel, and Fig. 8 is a plan of the same. Fig. 9 is an enlarged elevation of the ejector-stand. Fig. 10 is a plan of the same, and Fig. 11 is an end view of the same.

Similar letters refer to similar parts throughout the several views.

The four legs *A A A A* and the connecting-beams *B* and *C* constitute the frame of the machine, which is of cast-iron.

a is the block-holder which is of cast-iron and is bolted onto the top of the machine.

b'' is a chopping-block of wood or soft metal against which the veneers *e e* are pressed by the veneer-holder *i* and against which the cutting edges of the four knives *x' x' x' x'*

touch when the shanks are severed from the veneers. The knives *x' x' x' x'* are bolted onto the knife-plates *b b*, which are driven with a reciprocating motion between the guides *o o o o* of the knife-beams *d d*, which beams are held in place by the bolts *x x*, which may be adjusted in any suitable manner for different sizes of shanks and to cut shanks of different bevels.

f f are fast and loose driving-pulleys attached to the driving-shaft *g*, which carries one of the gear-wheels *m* and the cam *h*.

j j are the crank-shafts, which are connected with the driving-shaft *g* by the gear-wheels *m m m m m*.

k is a spool from which the veneers are unwound as they are used by the feed-rolls *l l l l*.

R is an adjustable stand secured to the beam *C*, carrying the feed-rolls *l l l l*, the two top ones of which are vertically adjustable by means of the screws *P P*.

n is the shaft or journal of the top feed-rolls *l l*, which projects beyond the frame of the machine and carries the ratchet-wheel *s* and the link *t*.

w is the ratchet-pawl.

u is a slotted crank attached to the outer end of one of the crank-shafts *j*.

v is a connecting-rod connecting the crank *u* with the arm *y* and through which, by means of the link *t*, the pawl *w*, and the ratchet-wheel *s*, an intermittent rotary motion is communicated to the feed-rolls *l l l l*.

z z are projections on the stand *R*, carrying the rod *a'*, which supports the veneer-guides *b' b' b'*.

c' c' are stands bolted to the frame *A* and to which the veneer-holder *i* is pivoted.

d' d' are the connecting-rods which connect the knife-plates *b b* with the crank-pins on the ends of the shafts *j j*.

e' is a forked arm pivoted to the frame of the machine at *f'* and carrying the roller *o'*, which is held against the face of the cam *h* by the action of the spring *g'*. The arm *e'* also has attached to it one end of the connecting-rods *h' h'*, the other end being connected to the veneer-holder *i*. The roller *o'* being held against and following the inequalities of the cam *h* an intermittent, reciprocal, and vertical motion is imparted to the veneer-holder *i*.

5 l' is the ejector-stand, having an arm k' ,
 projecting upward and carrying the ejector
 $n' n'$, which is composed of two light curved
 pieces of metal resting on and crossing each
 other where they are pivoted to the arm k' .
 The upper extremities of the ejector pass
 through the veneer-holder i in the slot o'' ,
 while to their lower extremities are attached
 light antifriction-rollers, which are held
 10 against the vertical faces of the cam h by
 means of the springs $m' m'$ or other resilient
 device. Thus by being forced to follow the
 inequalities on the horizontal faces of the
 cam an intermittent reciprocal horizontal mo-
 15 tion is imparted to both extremities of the
 ejector. In its normal position the free ex-
 tremities of $n' n'$ will be together and between
 the two strips that are to be cut. After the
 strips are severed and the holder withdrawn
 20 the rollers enter recesses in the cam h and
 the spring m' forces the free ends of n' rapidly
 apart, thus forcing the cut stiffeners in oppo-
 site directions from the machine.

The operation of the machine is as follows:
 25 The veneer-holder i , operated by the cam h
 and the spring g' , presses the veneers $e e$
 firmly against the chopping-block b'' , when
 by the upward movement of the knives $x' x' x'$
 x' the shank-stiffeners are cut. The veneer-
 30 holder then moves downward, releasing the
 severed pieces. The knives move on the down-
 ward stroke and the upper extremities of the
 ejector suddenly open, operated by the cam
 h and the springs $n' n'$ or other resilient de-
 35 vice, and expel the severed parts. The feed-
 rolls $l l l l$ then operate, carrying the veneers
 $e e$ from the spool k between the guides $b' b' b'$
 forward a certain distance under the chop-
 ping-block b'' , against which they are again
 40 pressed by the upward motion of the veneer-
 holder i , and the operation, which is auto-
 matic throughout, is repeated.

Having illustrated and described my inven-

tion, what I claim as new, and desire to secure by Letters Patent, is—

1. In a machine for cutting shoe-shank stiff-
 eners, the combination of the holder, the re-
 ciprocating knives for cutting on a bevel,
 ejecting mechanism, and automatic means for
 successively operating said holder, knives, 50
 and ejector, substantially as set forth.

2. In a machine for cutting shoe-shank stiff-
 eners, the combination with the cutting-block
 and holder, of the reciprocating knives, the
 driving-shaft, the cranks and connecting- 55
 rods for operating the knives and the interme-
 diate gear connecting said driving-shaft and
 cranks, substantially as set forth.

3. In a machine for cutting shoe-shank stiff-
 eners, the combination with the cutting-block, 60
 the knives and the cam h ; of the reciprocating
 holder i intermediate of the knives, the
 lever e' pivoted to the frame, the rods h' con-
 necting the holder i with the lever e' , the
 roller o' on the extremity of e' , and the spring 65
 g' for pressing the roller o' against the cam h ,
 substantially as set forth.

4. In a machine for cutting shoe-shank stiff-
 eners, the combination with the cutting-block,
 the holder, and the knives, of the pivoted 70
 fingers disposed between the strips to be cut,
 and automatic means for forcing the fingers
 rapidly apart to expel the strips when severed,
 substantially as set forth.

5. The combination in a machine for cut- 75
 ting shoe-shank stiffeners, with the cutting-
 block, holder, knives, and cam; of the piv-
 oted fingers $n' n'$, the spring m' , the double-
 grooved cam h and the rollers on extremities
 of the fingers $n' n'$ bearing on said cam h , 80
 substantially as set forth.

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Witnesses:

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