(No Model.)

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C. F. STACKPOLE.

LEATHER CUTTING PRESS.

No. 316,073. Patented Apr. 21, 1885.

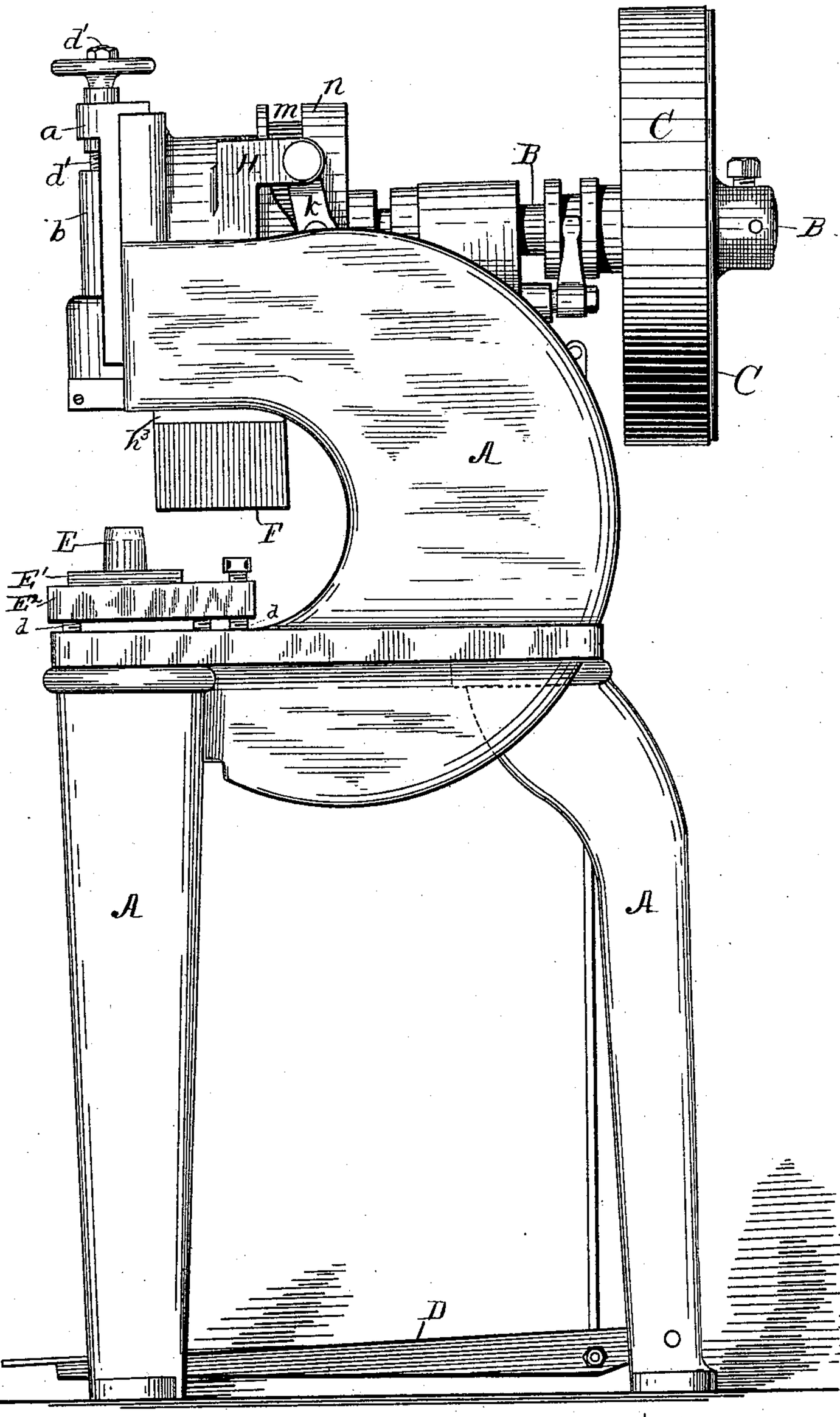

Fig. 1.

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(No Model.) 4 Sheets—Sheet 2.

C. F. STACKPOLE.

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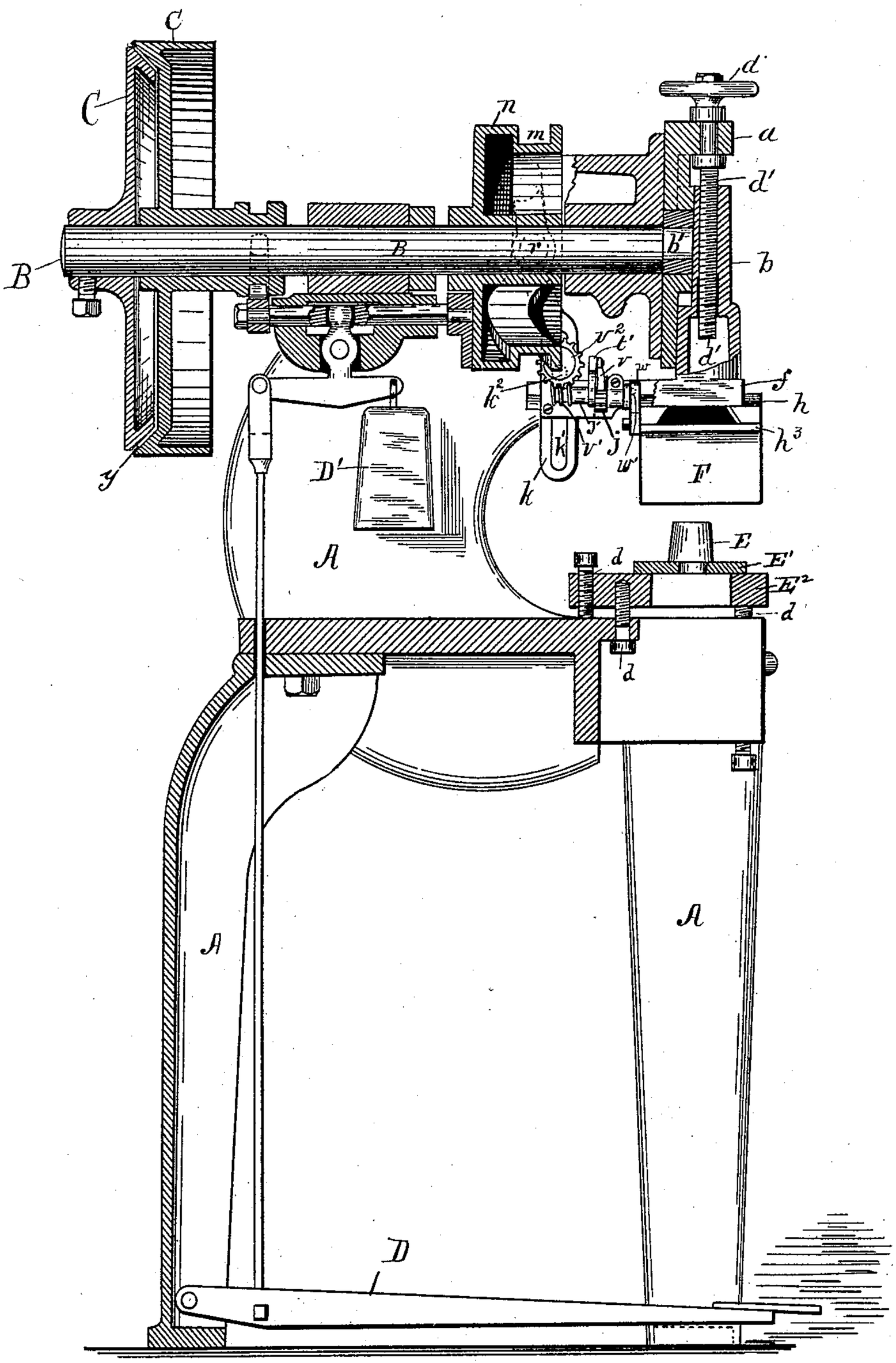

Fig. 2.

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LEATHER CUTTING PRESS.

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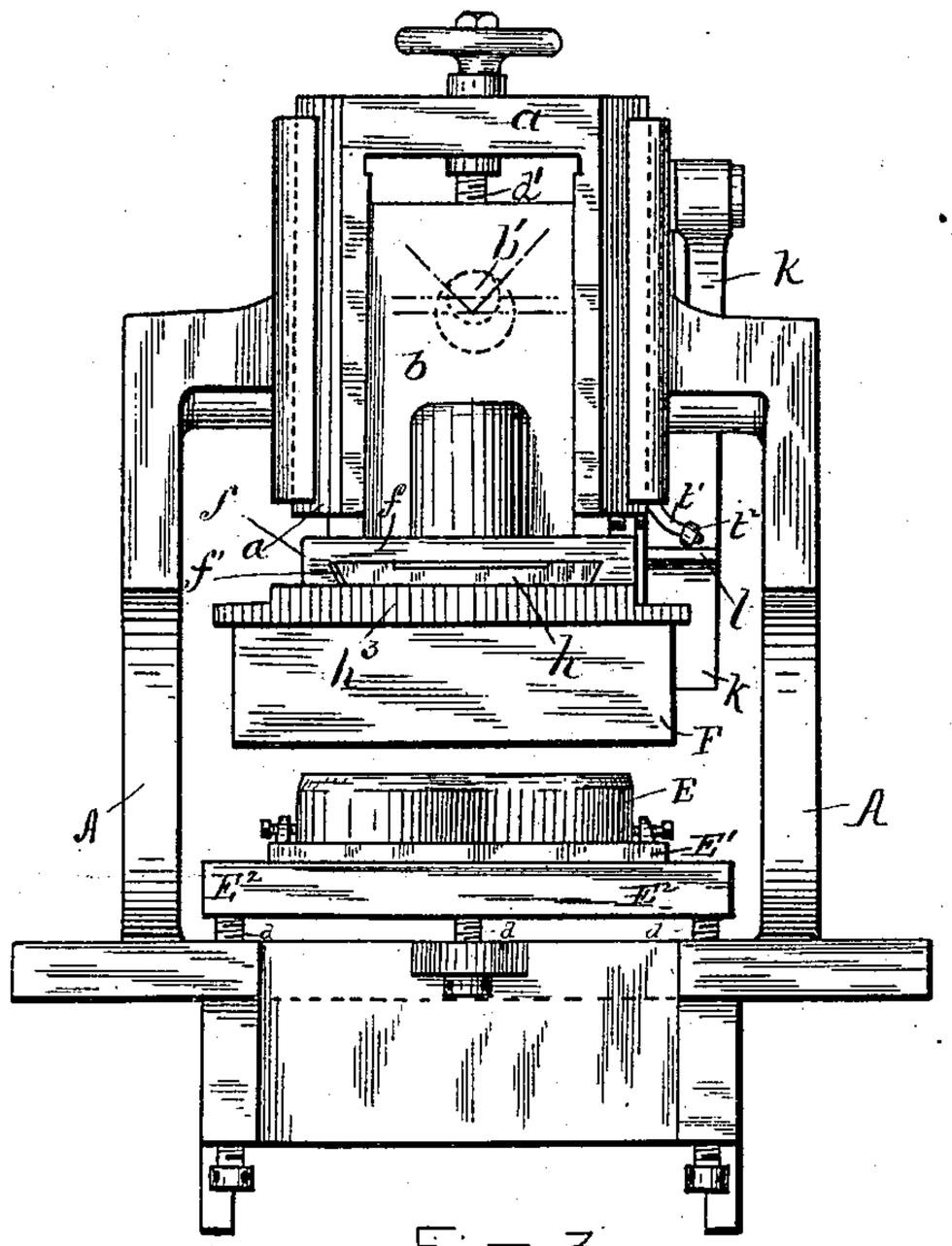

Fig. 3.

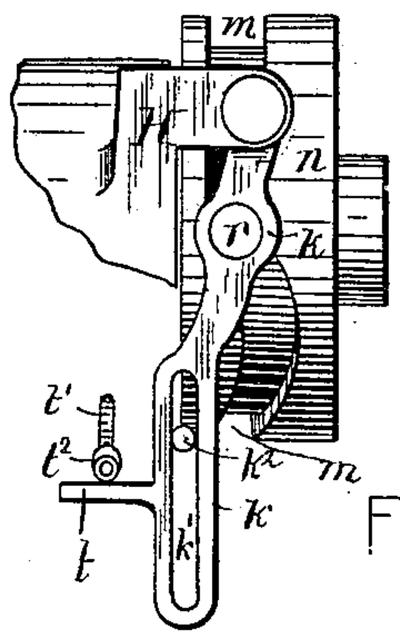

Fig. 4.

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(No Model.) 4 Sheets—Sheet 4.

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LEATHER CUTTING PRESS.

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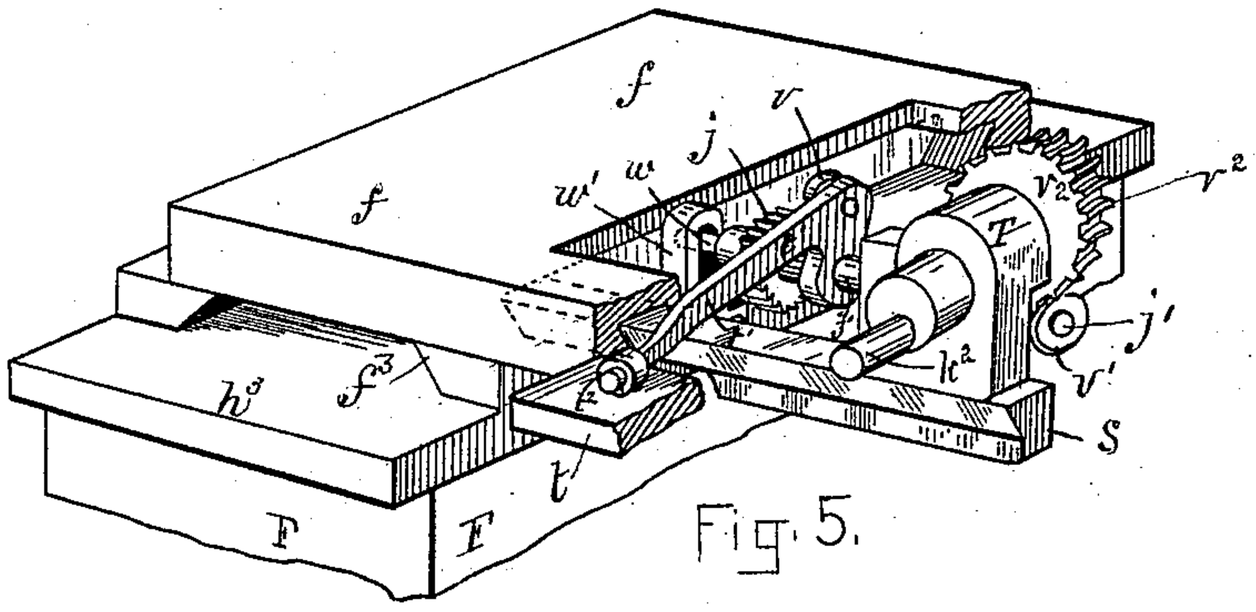

Fig. 5.

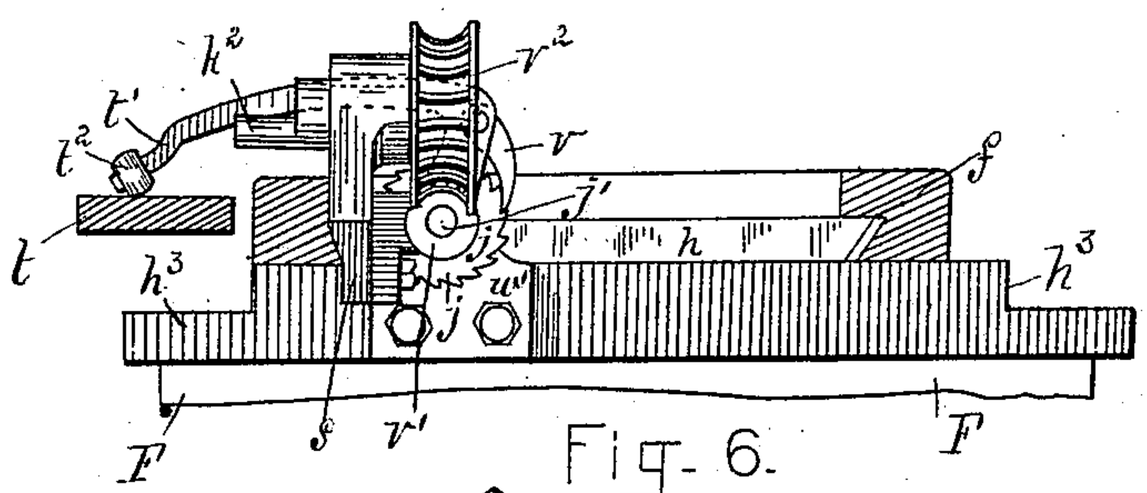

Fig. 6.

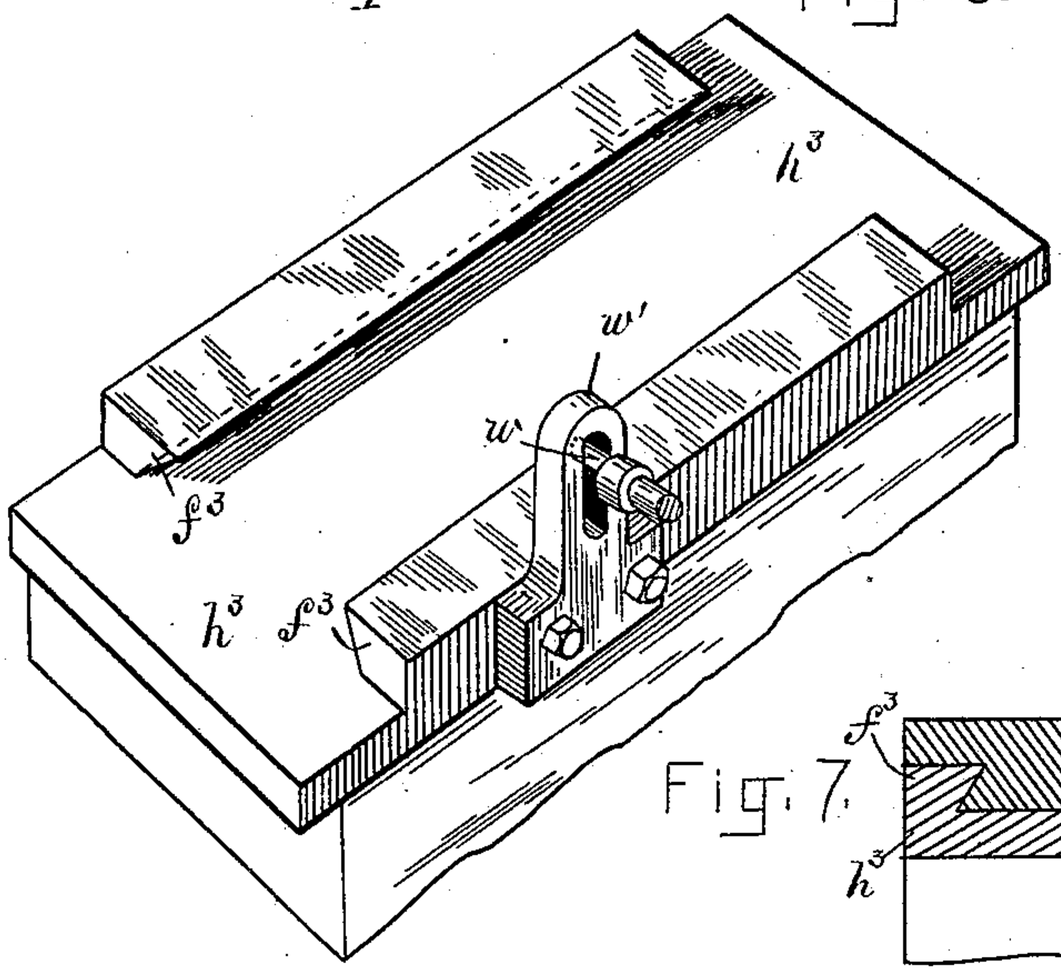

Fig. 7.

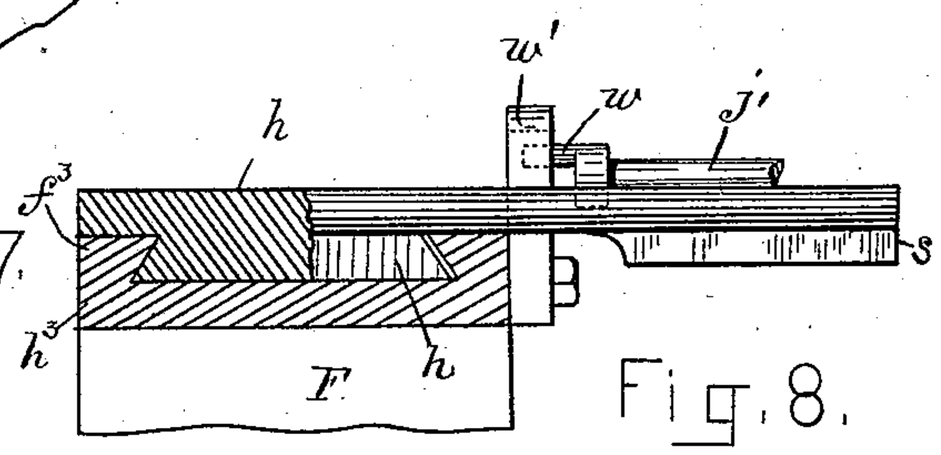

Fig. 8.

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UNITED STATES PATENT OFFICE.

CHARLES F. STACKPOLE, OF LYNN, ASSIGNOR TO NATHAN J. SIMONDS, OF WOBURN, MASSACHUSETTS.

LEATHER-CUTTING PRESS.

SPECIFICATION forming part of Letters Patent No. 316,073, dated April 21, 1885.

Application filed August 25, 1884. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. STACKPOLE, of Lynn, in the county of Essex, State of Massachusetts, have invented a new and useful Improvement in Leather-Cutting Presses, of which the following is a full, clear, concise, and exact description, reference being had to the drawings accompanying and forming a part hereof, in which—

Figure 1 is a side elevation of the press complete. Fig. 2 is a central vertical section of the same. Fig. 3 is a front view of the upper part of the machine, showing the cutting die and block. Fig. 4 is a detail of the lever and cam which operate to carry the block backward away from the die after a cut has been made, and to carry it forward again for the succeeding cut. Fig. 5 is a perspective of the block-shifting mechanism. Fig. 6 is an elevation of the same. Figs. 7 and 8 are details showing the method of securing the block in position.

My invention consists of an improved form of leather-cutting press of that class in which the leather is cut by the joint action of a metallic cutting-die and a wooden block.

In machines of this kind, which are well known to all skilled in leather-working, it is important that at each cut the block and die should move with relation to each other, in order that during successive cuts the edge of the die should not come in contact with the face of the block at precisely the same point, and thus injure the block for fine work after a few cuts had been made, and necessitate refacing it.

The object of my invention is the construction of a machine in which the block shall be automatically moved relative to the cutting-die at each cut and in a manner different from anything hitherto known to me.

The construction of a machine embodying my invention will be understood from the following description, in which the various parts referred to are specified by letters of reference to the accompanying drawings.

A is the frame of the machine, which may be of any convenient form, and which has journaled into its upper part the driving-shaft B, to which is secured the friction driving-pulley C. The loose or belted portion of the pulley C is connected with a pedal, D, by a well-known form of lever mechanism, so that as the pedal is depressed by the foot of the operator the loose portion of the pulley is forced closely against the portion which is fast on the main shaft, the beveled friction-surfaces at *y*, Fig. 2, coming in contact, and the shaft is made to revolve. When the foot of the operator is removed from the foot of the pedal, the weights D′ acts to reverse the lever mechanism, the parts of the driving-pulley are separated, and the machine stops.

In the front part of the frame of the machine is arranged in ways in the frame the mechanism which supports the cutting-block. This consists of the piece *a*, arranged to slide up and down in the frame, and actuated by an eccentric pin, *b′*, on the forward end of the main shaft B. As the main shaft revolves this eccentric gives the piece *a* a vertical reciprocating movement, and at every downward motion forces the block against the stock, which lies on the die, and a cut is made. In the piece *a* is set the piece *b*, which works in grooves therein, and which is provided with the adjustable supporting-screw *d′*, the upper end of which passes through a hole cut in the upper part of piece *a*. (See Fig. 2.) By means of this adjustment, as will be obvious, the piece *b* may be raised or lowered relatively to the piece *a*, and as the vertical reciprocation of the piece *a* is constant this allows of the relative adjustment of the cutting-block F and die E. On the lower end of the piece *b* is secured a plate, *f*, fitted on its under side with a groove, *f′*, which receives the dovetail on the upper side of the under plate, *h*. This dovetail and groove permit of the motion of the block backward and forward, so as to uncover the die at each cut, and thus allow the operator to adjust the stock thereon. In Fig. 2 the block is shown forward and in position to be forced down upon the die to make a cut, and in Fig. 1 is shown thrown back, so as to uncover the die. The under side of plate *h* is also provided with a dovetail which fits between ribs f^3 on the upper surface of plate h^3, (see Fig. 7,) to which the cutting-block F is secured.

This last-mentioned construction permits of the lateral movement of the block. The forward and backward movement of the block between each cut is imparted to it by means of the cam-and-lever mechanism. (Shown in Fig. 4.) To a projection, H, on the upper part of the frame (see Fig. 1) is pivoted the upper end of the lever *k*, which is provided near its center with a spur bearing a cam-truck, *r*, which moves in the cam-path *m* in the periphery of the cam-wheel *n*, fast on the main shaft. The lower end of lever *k* is provided with a vertical slot, *k'*, (see Fig. 4,) which receives an eccentric pin, k^2, on the shaft of gear v^2, journaled in a projection set on connecting-piece *s*, which piece is firmly secured to the block-supporting plate or dovetail *h*. It will be obvious that as the main shaft revolves the cam-wheel will at each revolution carry the slotted lower end of the lever toward and away from the front of the machine, thus sliding the block backward and forward in the head, which, as the block slides, makes a complete vertical movement actuated by the eccentric pin *b'*. These movements being simultaneous, render the slot *k'* in the end of the lever *k* necessary.

It will be apparent that if no other mechanism were used than what is above described, and the eccentric pin k^2 did not move relatively to the connecting-piece *s*, the block would meet the die at exactly the same place at each cut. This would injure the block, and to provide against this, and to insure the use of substantially the entire face of the block during continued operation of the machine, the following mechanism is provided, which is shown more particularly in Figs. 5 and 6 of the drawings. A bracket or projection, *t*, (see Fig. 4,) is secured to the slotted end of lever *k*, and is so set as to come in contact with the free end of lever *t'* (which is provided with the small truck t^2) as the lever and its mechanism fall with the block. The contact of piece *t* and the end of lever *t'* raises this end of the lever relatively to the other end, and the pawl *v* (see Fig. 6) acts to turn the ratchet *j* and the shaft *j'*, to which the ratchet is fast. The shaft *j'*, which is journaled in the projection T on piece *s*, (see Fig. 5,) is provided at one end with the eccentric pin *w*, (see Figs. 5, 7, and 8,) which acts in a slot in the lug *w'*, fast to plate h^3, which supports the block. It will be obvious, therefore, that one revolution of the shaft *j'* will shift the plate *h* (which is hung on a dovetail to permit of its sliding) a distance equal to the throw of the eccentric pin *w*. The other end of shaft *j'* is provided with a worm, *v'*, which acts with the gear v^2, the shaft of which is also set in projection T, secured on the connecting-piece *s*. (See Fig. 5.) The other end of this gear-shaft carries the eccentric pin k^2, which, as already described, acts in the slot *k'* in the lower end of lever *k*. The movement of shaft *j'*, by means of the pawl *v* and ratchet *j*, changes the position of the eccentric k^2 at each revolution of the main shaft, or at each cut made by the block and die, and this change of position of the pin changes the length of the backward and forward throw of the block, and thus the position of the block is constantly changed relatively to the die. The block has therefore two simultaneous shifting movements in addition to its vertical or cutting movement, and the resultant of the shifting movements causes the block to cross and recross the die in diagonal lines. These may of course be varied very much by changing the size, &c., of the ratchet and worm and gear mechanism. (Shown in Figs. 5 and 6.)

The cutting-die E rests on a plate, E', which in turn rests on the block E^2, which is mounted on the frame of the machine by means of set-screws *d*, by which it may be properly adjusted in a manner well known.

What I claim is—

1. In a cutting-machine, the combination, with a cutting-die and a cutting-block, of two sliding plates adapted to move in different directions and to connect said block with its support, and mechanism for automatically moving said plates between each cut, whereby said block will be caused to cross the face of the die in diagonal lines, and to meet said die at a different point at each cut, substantially as set forth.

2. In a cutting-machine, the combination, with a stationary cutting-die and a horizontally-movable cutting-block, of a lever connected with the latter, and mechanism for operating said lever, whereby said block will be moved backward after each cut to uncover the said die, substantially as set forth.

3. In a cutting-machine, the combination of the dovetail block-supporting plate *h*, and suitable connecting-piece, with the slotted lever *k* and its actuating-cam arranged to slide the block backward and forward, for the purposes and substantially as described.

4. In a cutting-machine, the combination, with the vertically-sliding head *a*, of the piece *b* and adjusting-screw *d'*, substantially as described.

5. In a cutting-machine, the bracket *t*, in combination with lever *t'*, pawl and ratchet *v j*, and shaft *j'*, provided with eccentric pin *w*, substantially as described.

6. In a cutting-machine, the combination of grooved plate h^3, provided with slotted lug *w'*, with the eccentric pin *w*, adapted to act in the slot in said lug, and shaft *j'*, provided with its operating-lever and ratchet mechanism arranged to shift the plate laterally, substantially as set forth.

7. In a cutting-machine, the combination of shaft *j'* and its worm *v'* with gear v^2, and its shaft, and eccentric pin k^2, substantially as described.

8. In a cutting-machine, the lever *k* and its actuating-cam, in combination with the eccentric k^2, the worm and gear mechanism, and the shaft *j'* and its lever-actuating mechanism,

whereby the forward and backward throw of the block is varied, substantially as described.

9. In a cutting-machine, the combination, with a cutting die, a cutting-block, and two sliding plates adapted to move in different directions and to connect said block with its support, of a lever for shifting the said block forward and backward to cover and uncover the die, and two simultaneously-operated eccentrics, one connected with one of the said sliding block-supporting plates, and serving to move the same laterally, and the other engaging said lever and serving to vary the length of the connection between the latter and the said block-supporting plate, substantially as set forth.

CHARLES F. STACKPOLE.

Witnesses:
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H. E. BARRY.