

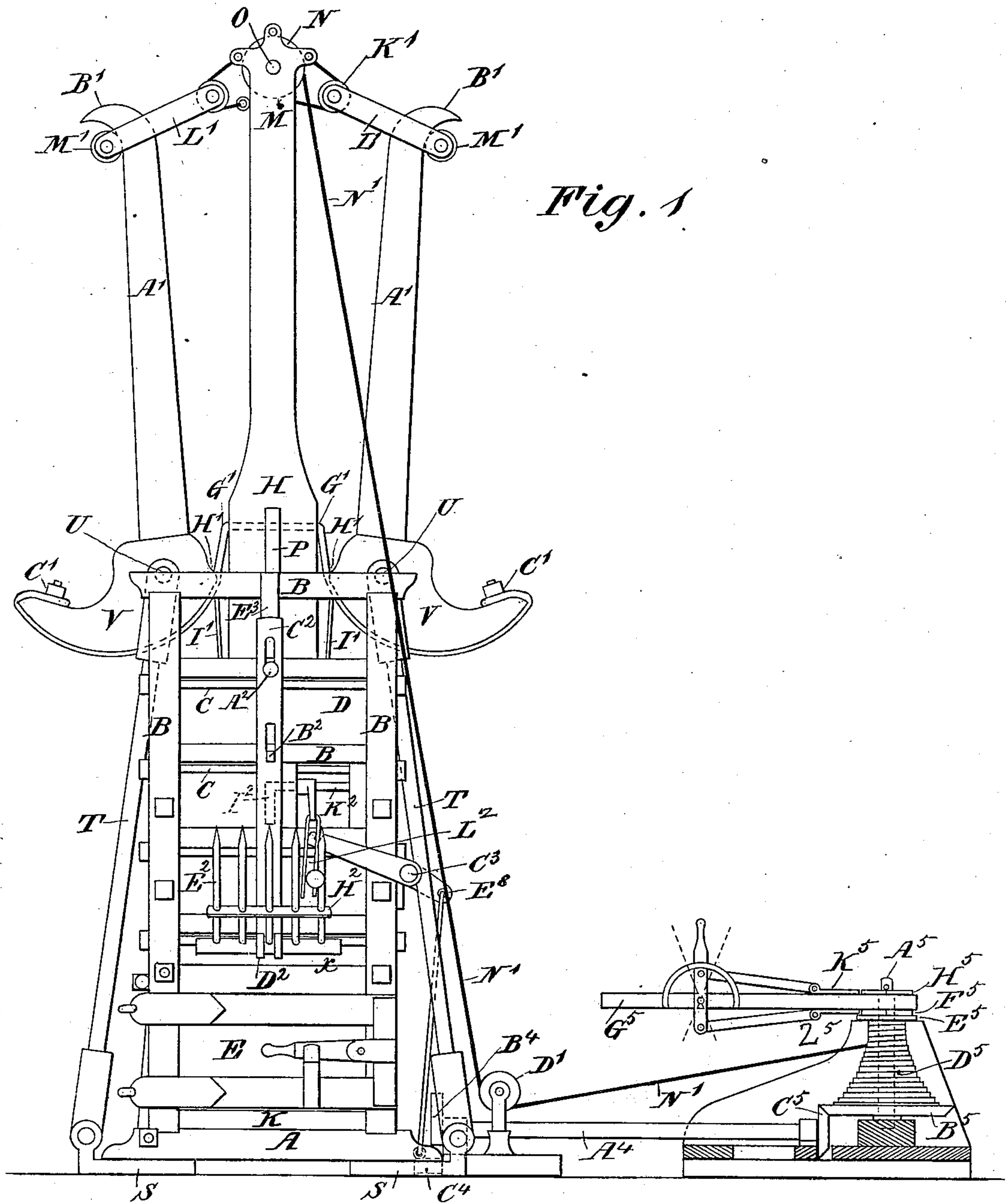
(No Model.)

4 Sheets—Sheet 1.

P. LORD.  
HAY PRESS.

No. 253,536.

Patented Feb. 14, 1882.



Witnesses

E. Mignault  
J. B. Vilnet

Inventor

Peter Lord  
By his Attorney  
Charles L. Simpson

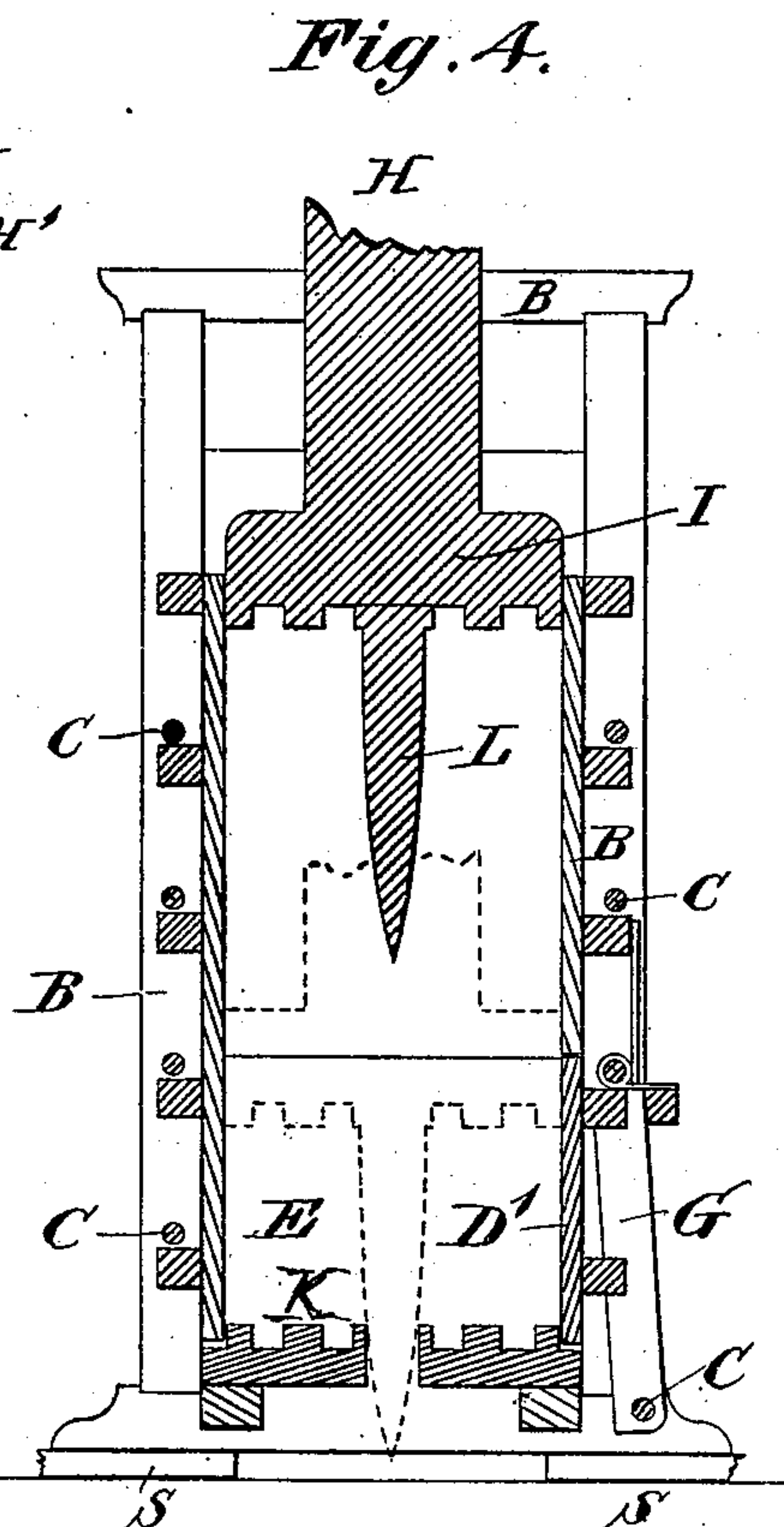
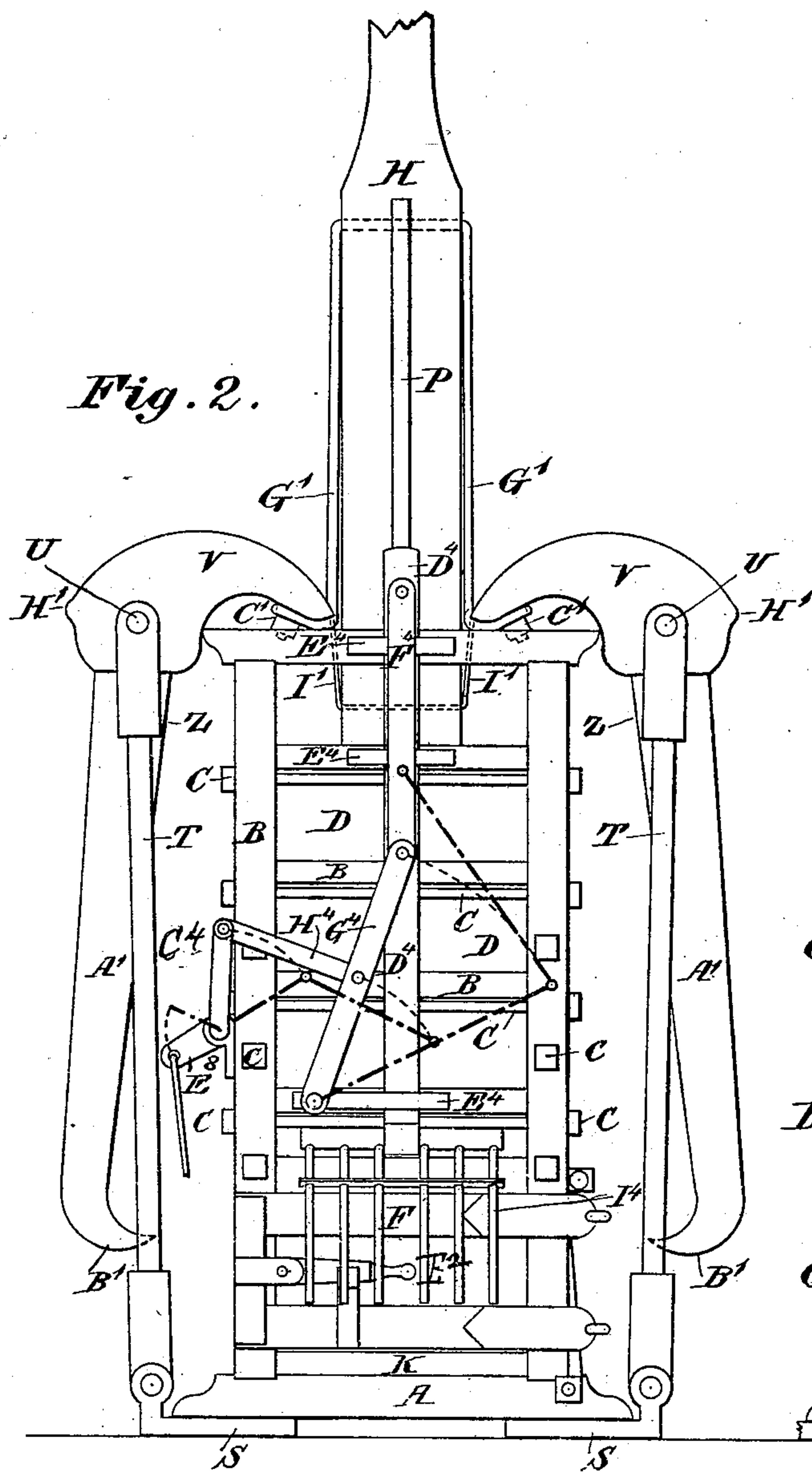
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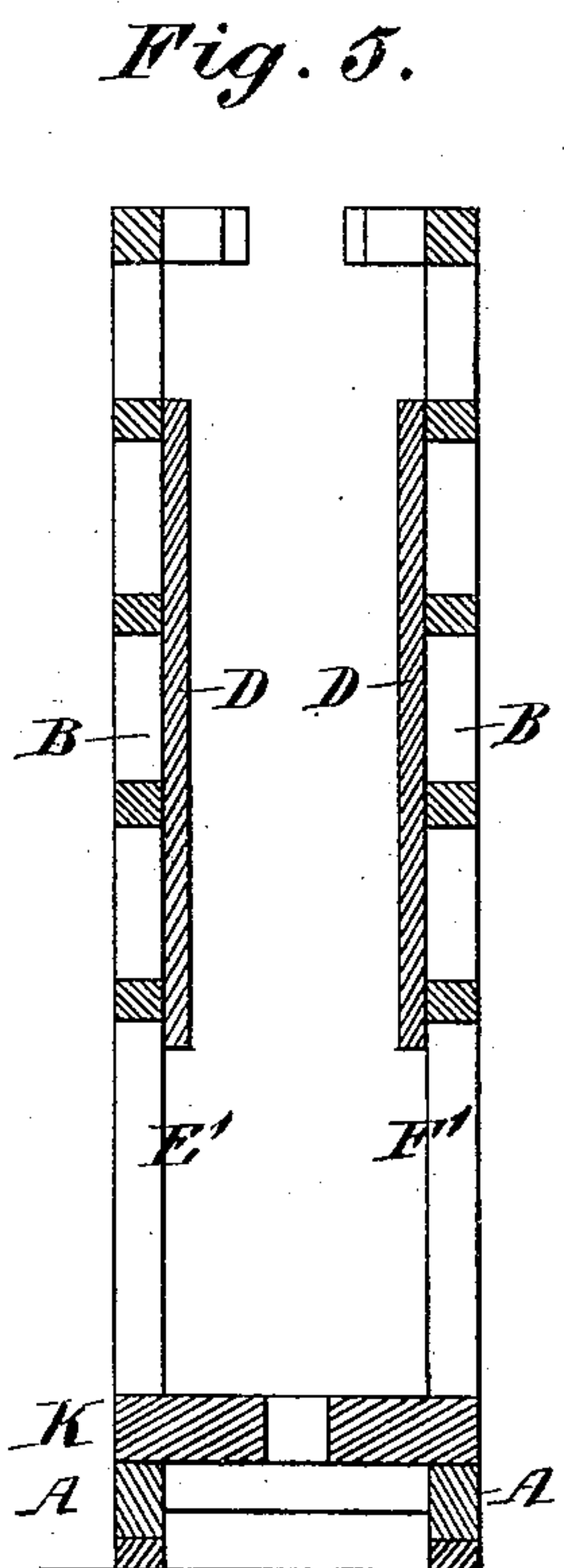
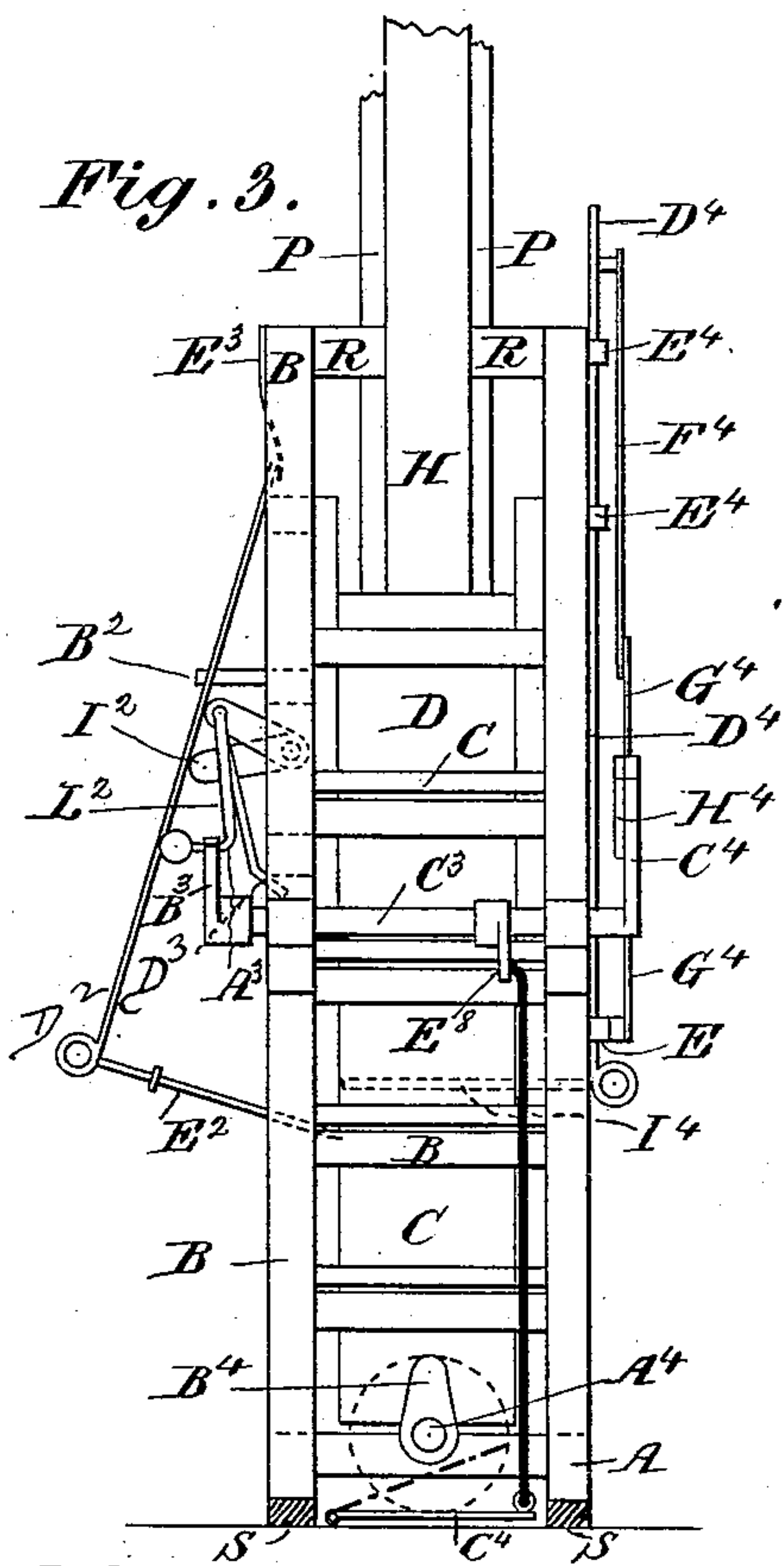
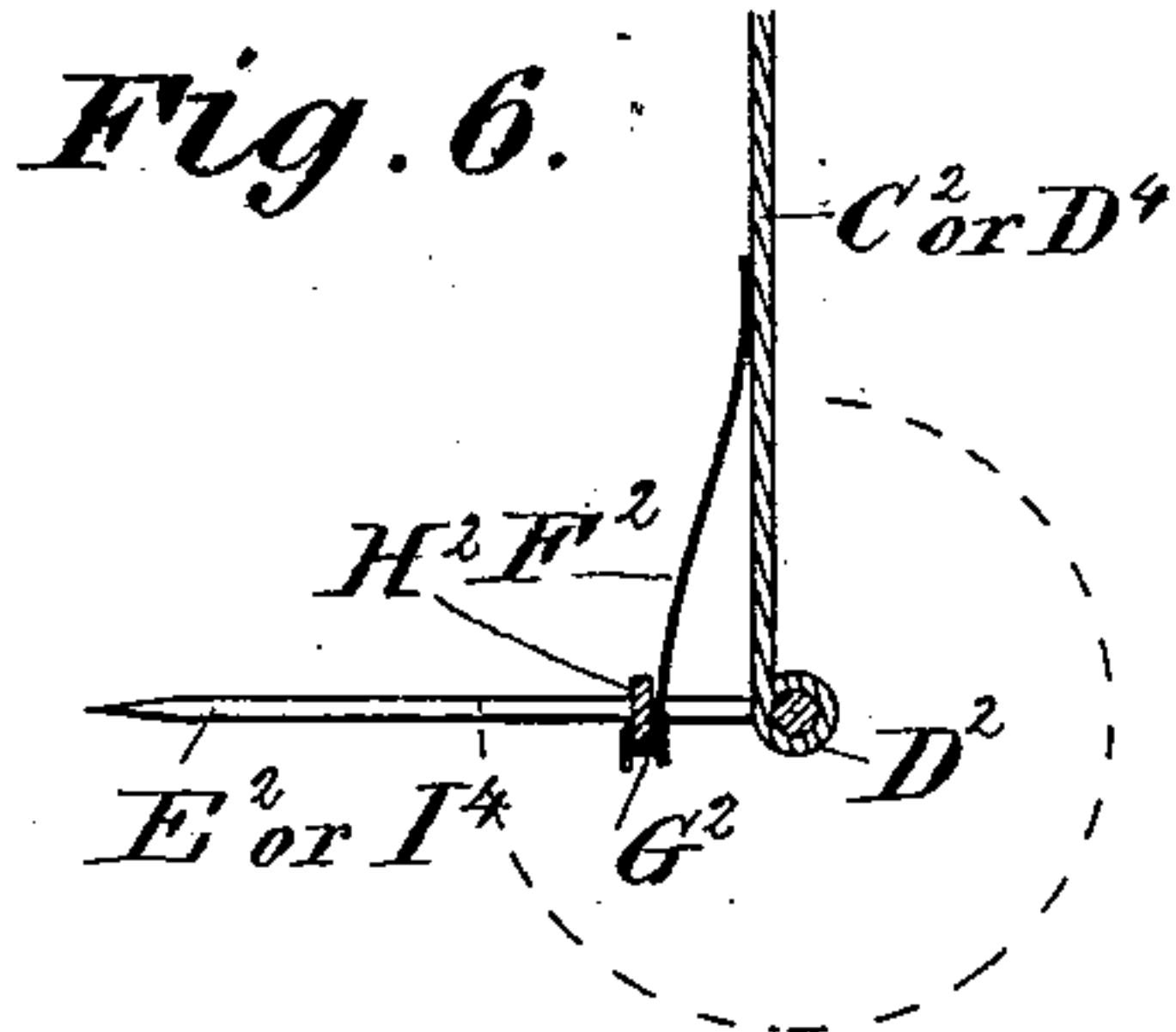
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*Charles G. Simpson*



(No Model.)

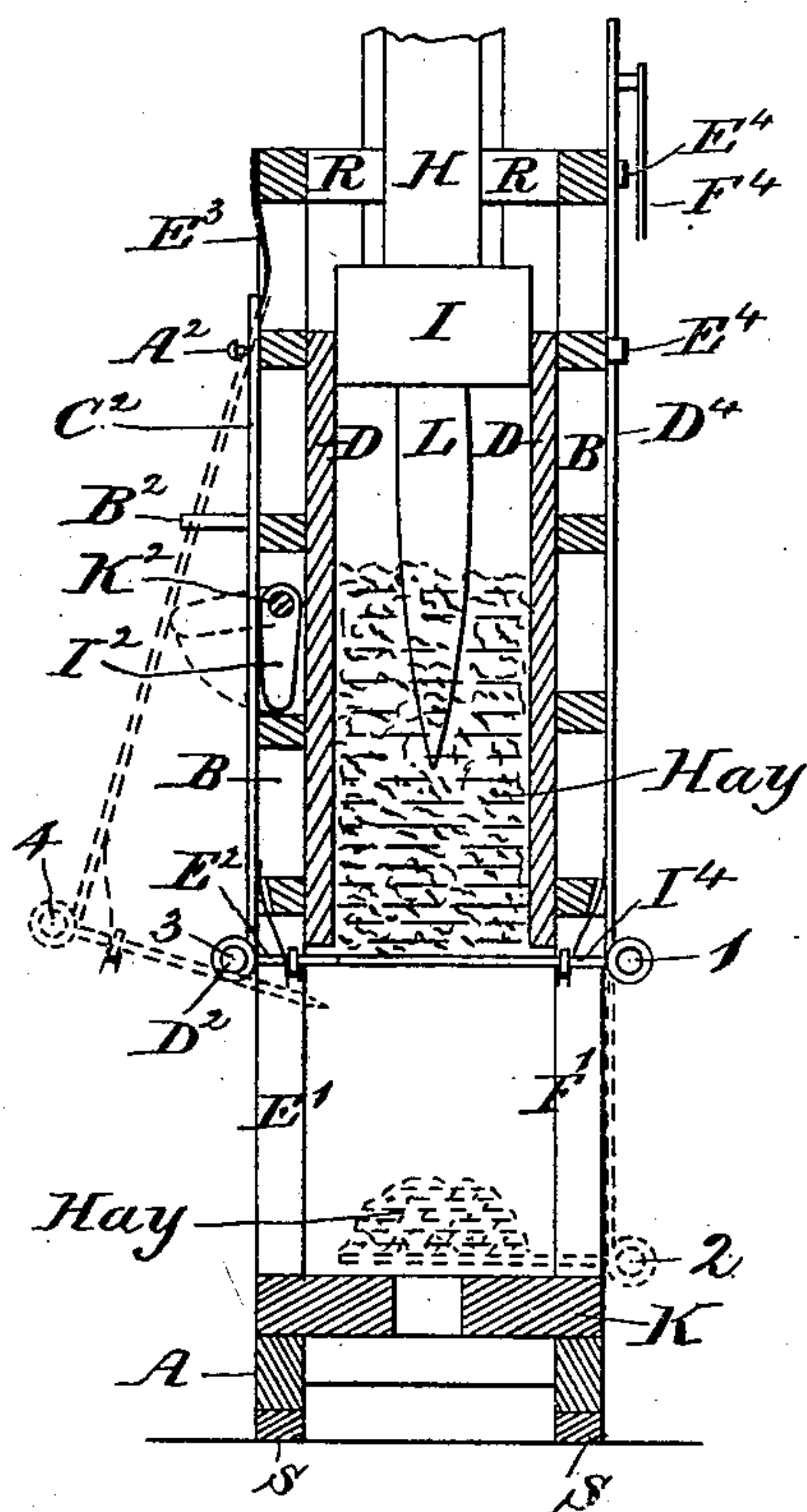
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*Fig. 7.*



*Witnesses*

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# UNITED STATES PATENT OFFICE.

PETER LORD, OF MONTREAL, QUEBEC, CANADA, ASSIGNOR OF TWO-THIRDS TO EUSEBE MIGNAULT AND JEAN BAPTISTE VINET, BOTH OF SAME PLACE.

## HAY-PRESS.

SPECIFICATION forming part of Letters Patent No. 253,536, dated February 14, 1882.

Application filed October 26, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, PETER LORD, of the city and district of Montreal, Province of Quebec, Canada, have invented certain new and useful Improvements in Hay-Presses; and I do hereby declare that the following is a full, clear, and exact description of the same.

This invention relates to the construction of a press capable of gathering the hay or other substance to be pressed into a compact mass before the press is operated, the said press being arranged to have an increasing leverage according as the ram and follower-block descend.

In the drawings hereunto annexed similar letters of reference indicate like parts, and Figure 1 is a front view of the press in the position closed up and having pressed the charge, the ram being down, also showing capstan for operating the press. Fig. 2 is the reverse side to that shown in Fig. 1, and with the ram raised, the top of ram and capstan being omitted. Fig. 3 is an end elevation of Fig. 2, with levers, &c., omitted. Fig. 4 is a vertical section of the casing, &c., and lower part of the ram shown in Fig. 2. Fig. 5 is a vertical section of the casing, &c., shown in Fig. 3. Fig. 6 is a detail. Fig. 7 is a sectional elevation, showing the operation of the rakes.

Letter A is the base of the press, upon which is constructed a frame-work, B, securely held together by bolts C. Within the said frame-work is placed and secured the sheeting or casing D of the press, the lower part of which, to the front and back, is formed by the doors E and F, which in Fig. 5 are removed, leaving the doorways E' and F'.

In Fig. 4 it will be seen that the casing D on the right side is made in two parts. The lower part, D', is attached to battens G, through which one of the bolts C passes and forms a pivot or hinge, so that the part D' may swing outward a small amount, when required, to free the bundle on its ends after it has been pressed.

With regard to the doors E and F and part of the casing D' and the manner delineated by which they are attached to the frame and secured by catches, in this I do not claim any invention, as they may be arranged in any or-

dinary manner, and therefore I shall not further describe them.

H is the ram of the press, having the follower-block I on its lower end. This is made a free sliding fit within the casing D, and is provided on its lower surface with grooves in the ordinary manner, as also the bed-block K. To the under side of the block I is attached a pointed pin, L, and though but one pin L is shown there may be two or more, as desired.

The base-block K is provided with an opening, as shown, for the pin L to pass through, (see Figs. 4, 5, and 7,) and if more than one pin L is used similar openings agreeing with the said pins will be formed.

In the head M of H are placed a pair of single pulleys or sheaves, N, pivoted at O, and upon the body of the ram are formed guiding-strips P, working in guide-blocks R, attached to the frame B.

Under the base A are secured double-eyed brackets S, (shown only in full in Figs. 1 and 2,) there being four in all, to each of which is attached by a pivot a connecting-rod, T, from which it will be understood that there is a pair of these rods situated at each end of the press. Each pair of these rods T has a pivot-pin, U, passing through the pair, and on each pin U is pivoted a segment of an eccentric, V, to which is attached a lever, A', having a hooked end, B'. The peripheries of the segments of eccentrics V are preferably grooved, and to them is attached, at C', a wire cable or other cord or chain, G'. This, being attached first on either segment V, is passed through an opening formed in H, in which opening it is free to slide, and then the other end of the cable is made fast upon the other segment V at C', so that if the levers A' are moved from the position shown in Fig. 2 to that shown in Fig. 1 the cable is wound upon the periphery of the segments of eccentrics V, causing the ram H and block I to descend, and should, by chance, one lever be operated a little more than the other the sliding of the cable through the opening it passes through in the ram will compensate for the same.

The levers A' will be made of such weight that they will fall by gravity from the position



shown in Fig. 1 to that in Fig. 2 and counter-balance and raise the ram also.

To the segments of eccentrics V is also attached, at H', a second cable, &c., I', also passing through the ram and arranged in every respect similar to the cable G'. This is for raising the ram H by the rotation of the two parts V.

The levers A' are operated by snatch-blocks K', to each of which is attached by a pair of straps, L', a traveling block, M', which rolls or travels upon the edge of the levers. Through the snatch-blocks and pulleys N is rove a single line, N', which passes through both snatch-blocks and has its end made fast upon an eye on the head of the ram, as shown in Fig. 1, so that by drawing upon the fall of the line or slacking it both snatch-blocks are equally operated. The fall of the line is passed through a snatch-block, D', and passed to a capstan, which will be hereinafter described.

Having now described the parts of the pressing mechanism, I will now proceed to describe those by which the substance to be pressed is gathered into the press, which are shown in Figs. 1, 2, 3, and 6.

On the front of the press is attached by a pin, A<sup>2</sup>, and guide B<sup>2</sup> a perpendicular bar, C<sup>2</sup>, having slotted openings for the pin and guide to pass through, and by means of which the bar C<sup>2</sup> may be raised or lowered the extent of the slots. This is for the purpose that when raised, as shown in Figs. 3 and 7, its end which terminates in a double eye, D<sup>2</sup>, may be raised above the top of the door E, which is indicated by the line x, so that the said door may be freely opened, and when the said door has been opened the bar may be lowered, so that the rake E<sup>2</sup>, which is held in the eye D<sup>2</sup>, may be turned from the position shown in Fig. 1 to that shown in Fig. 3.

The manner of securing the rake E<sup>2</sup> is shown in Fig. 6. A spring, F<sup>2</sup>, is attached on the bar C<sup>2</sup>, and having a projection, G<sup>2</sup>, engaging with the rail H<sup>2</sup> of the rake. This rake is caused to swing out frontward by the arm I<sup>2</sup> of a rock-shaft, K<sup>2</sup>. This is operated by a fork, L<sup>2</sup>, one prong of which is bent to form a knee, A<sup>3</sup>, and has a round ball on its extremity, which serves to hold up the rake when in the position shown in Fig. 1. The other end, D<sup>3</sup>, of the fork L<sup>2</sup> is bent, as shown in Fig. 3, to engage with a bar of the framing B, so that when the arm B<sup>3</sup> of the rock-shaft C<sup>3</sup> raises the fork L<sup>2</sup> to the proper height the end of D<sup>3</sup> pushes forward the fork L<sup>2</sup> and disengages A<sup>3</sup> from contact with the arm B<sup>3</sup>, upon which the bar C<sup>2</sup> returns to a vertical position and brings the rake E<sup>2</sup> under the press. This is done by gravity, assisted by a spring, E<sup>3</sup>.

A<sup>4</sup> is a shaft, (driven by the capstan, as will be hereinafter explained,) on the end of which is a crank, B<sup>4</sup>, operating a treadle, C<sup>4</sup>, attached by a rod to an arm, E<sup>3</sup>, of the rock-shaft C<sup>3</sup>, by which the said rock-shaft is operated. Therefore it will be seen that for each revolution of the crank B<sup>4</sup> the rake E<sup>2</sup> makes a motion or

stroke out and return. On the other end of the rock-shaft C<sup>3</sup> is formed an arm, C<sup>4</sup>, for operating a motion, as shown in Fig. 2, where D<sup>4</sup> is a slide-bar kept in position by guides E<sup>4</sup>, in which it slides freely up and down. Near the top of D<sup>4</sup> is pivoted a motion-bar, F<sup>4</sup>, and to the lower guide, E<sup>4</sup>, is pivoted a motion-bar, G<sup>4</sup>. The ends of these two motion-bars are pivoted together, as shown. To G<sup>4</sup> is pivoted a link, H<sup>4</sup>, the other end of which is attached to the arm C<sup>4</sup>, so that by each revolution of the crank B<sup>4</sup> the bar D<sup>4</sup> is caused to move up and down vertically, the parts of the motion moving from the position shown in Fig. 2 to that indicated by chain and dotted lines. The lower end of D<sup>4</sup> is constructed and arranged with a rake, I<sup>4</sup>, in every respect similar to that shown in Fig. 6, except pointed ends are not required on the prongs, the rake being changed and secured in position under the press in a similar manner. Now, when the rake is placed under the press and the bar D<sup>4</sup> is at the lower extremity of its stroke the rake I<sup>4</sup> will be just above or upon the bed-block K, as shown in dotted lines at 2 in Fig. 7. When raised it will be at the top of the doorway F', as shown in full lines at 1 in Fig. 7, so that by throwing the substance to be pressed upon the rake I<sup>4</sup> it is raised by it and carried up into the press. Just before the rake I<sup>4</sup> comes to the top of its stroke the rake E<sup>2</sup> swings out from the position shown in solid lines at 3 in Fig. 7 to the position shown at 4 in dotted lines. This motion is caused by the action of the arm I<sup>2</sup> of the rock-shaft K<sup>2</sup>, as above described, and returns to its place again just as the rake I<sup>4</sup> has reached the top of its stroke, so that whatever the rake I<sup>4</sup> has carried up is retained in place by E<sup>2</sup>.

The capstan consists of an upright shaft, A<sup>5</sup>, carried in the ordinary manner delineated, and having a gear-wheel, B<sup>5</sup>, secured upon it, which intermeshes with a pinion, C<sup>5</sup>, on the shaft A<sup>4</sup>.

D<sup>5</sup> is a drum revolving freely upon the shaft A<sup>5</sup>. The top of the drum comes through the bar E<sup>5</sup> far enough to have secured upon it a ratchet-wheel, F<sup>5</sup>.

G<sup>5</sup> is the capstan-bar, through the eye of which the shaft A<sup>5</sup> passes, and upon the said shaft is secured a ratchet-wheel, H<sup>5</sup>.

K<sup>5</sup> and L<sup>5</sup> are two catches or pawls operated, as shown, by a lever, so that by placing them in the position shown the bar G<sup>5</sup> can be revolved free from any engagement. By throwing the pawl K<sup>5</sup> in contact with the wheel H<sup>5</sup> the shaft A<sup>5</sup> and gear-wheel B<sup>5</sup> are rotated, causing the rakes E<sup>2</sup> and I<sup>4</sup> to operate, and by placing hay, &c., on the rake the press is charged. When this has been done the rakes are stopped and the doors E and F closed and secured. The pawl L<sup>5</sup> is now engaged with the wheel E<sup>5</sup> and the drum D<sup>5</sup> revolved, winding upon it the fall of the line N', causing the pulleys M', which are now at the part of the levers A' marked Z, (see Fig. 2, this being the position of the levers at this time,) to be raised,

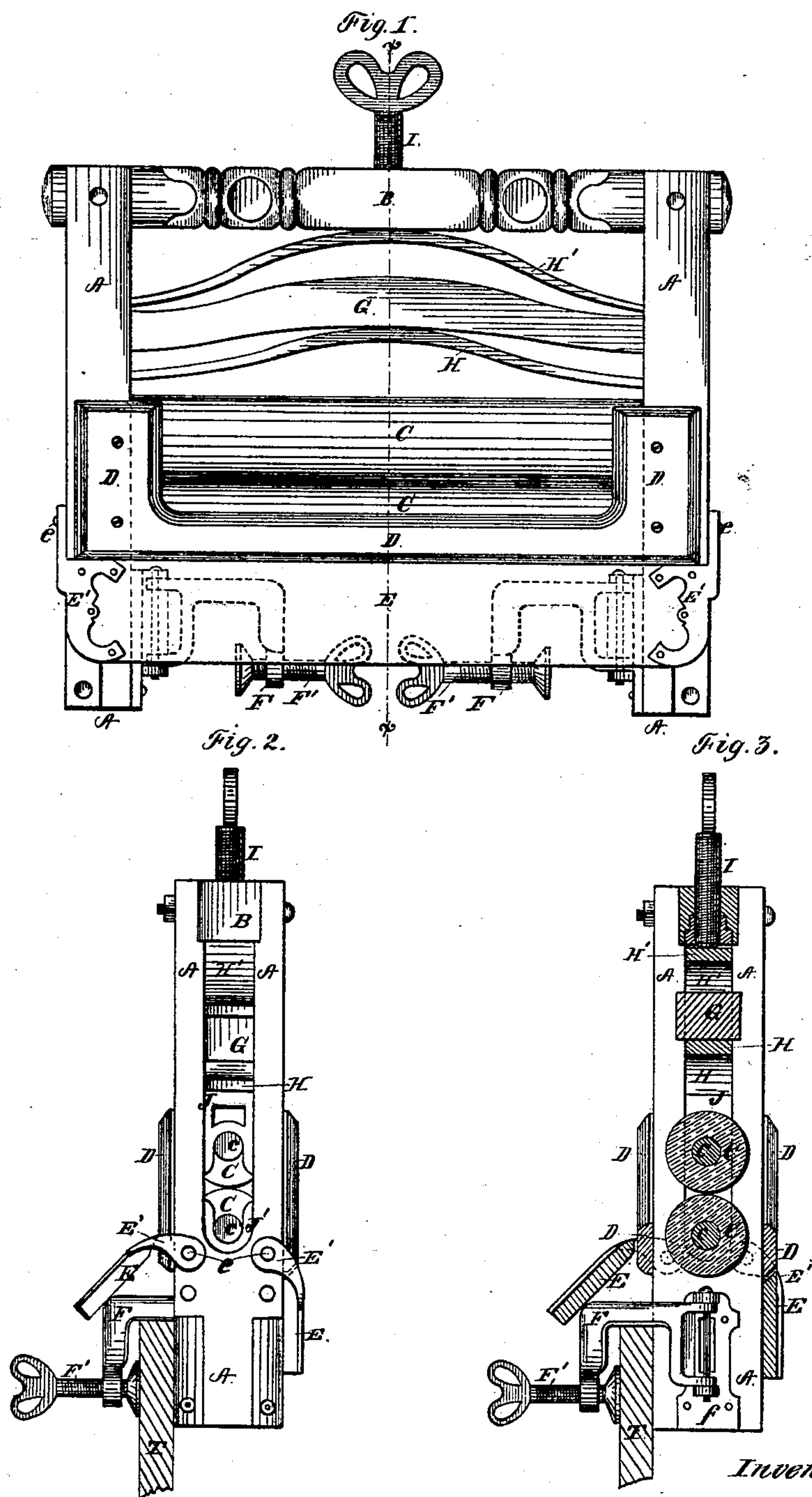


(No Model.)

M. N. LOVELL.  
CLOTHES WRINGER.

No. 253,537.

Patented Feb. 14, 1882.



Witnesses.

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