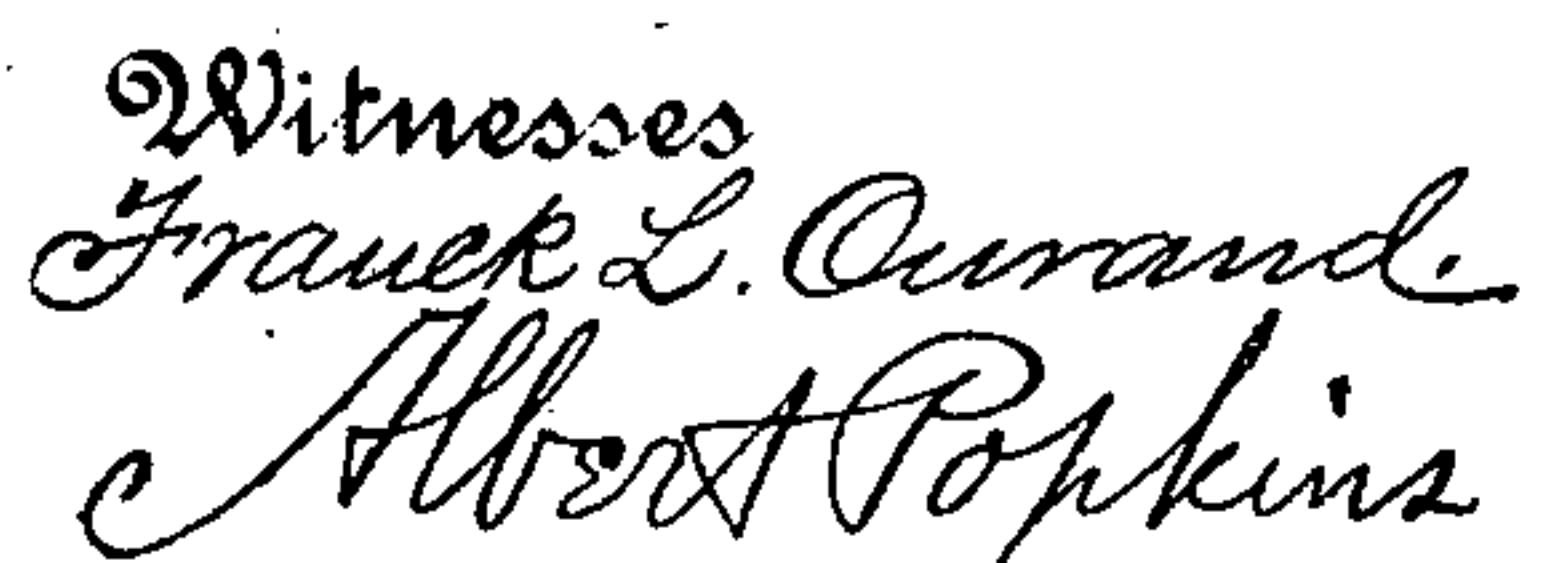


**Patented Aug. 27, 1901.**

**COTTON PRESS.**

**4 Sheets—Sheet. 1.**

(No Model.)



Inventors  
John E. Morrison  
Henry S. Cameron  
by Stewart & Keeley  
Attorney

No. 681,564.

Patented Aug. 27, 1901.

J. E. MORRISON & H. S. CAMERON.

COTTON PRESS.

(Application filed Apr. 1, 1901.)

(No Model.)

4 Sheets—Sheet 2.

Fig. 2.

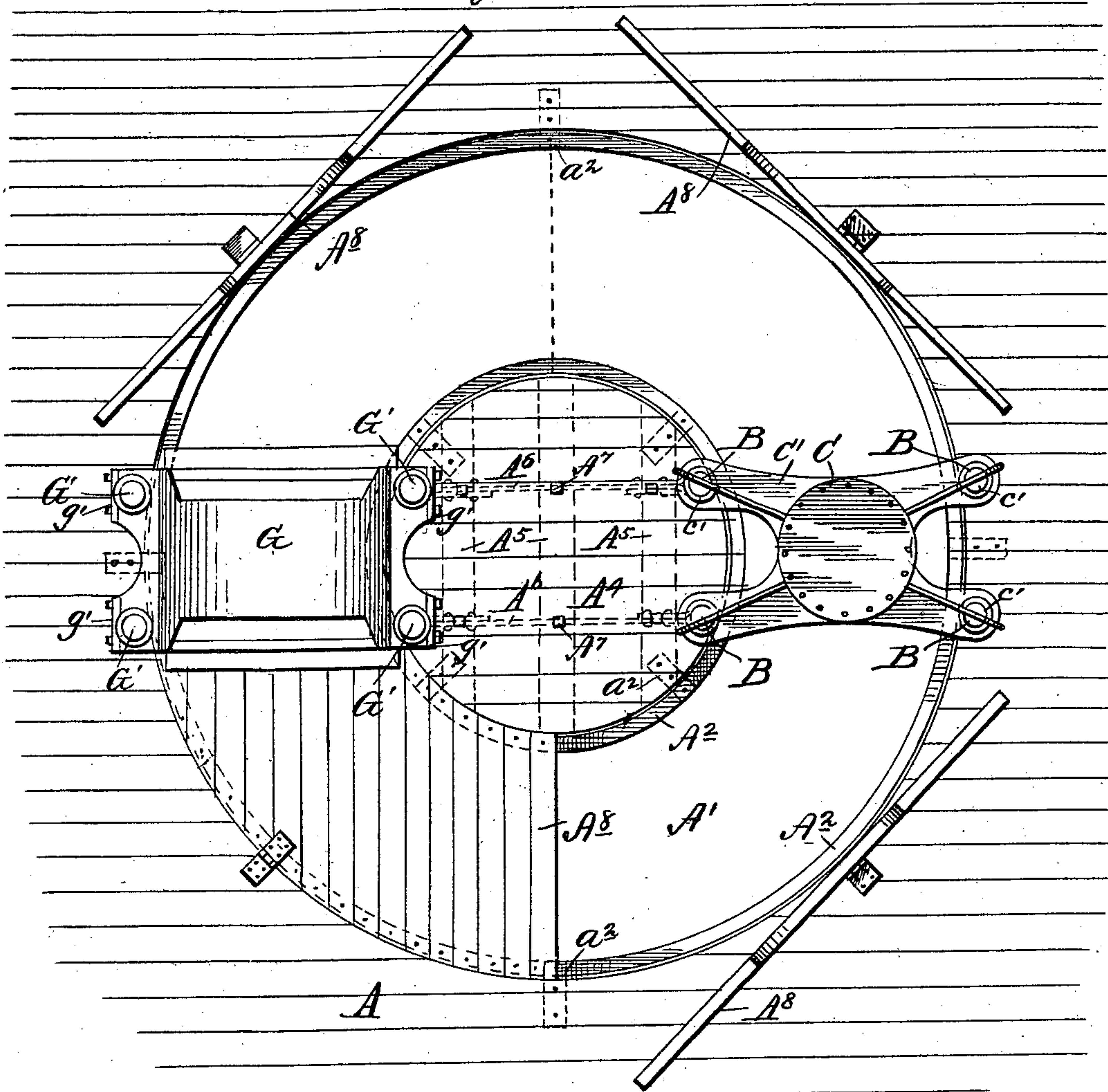


Fig. 10.

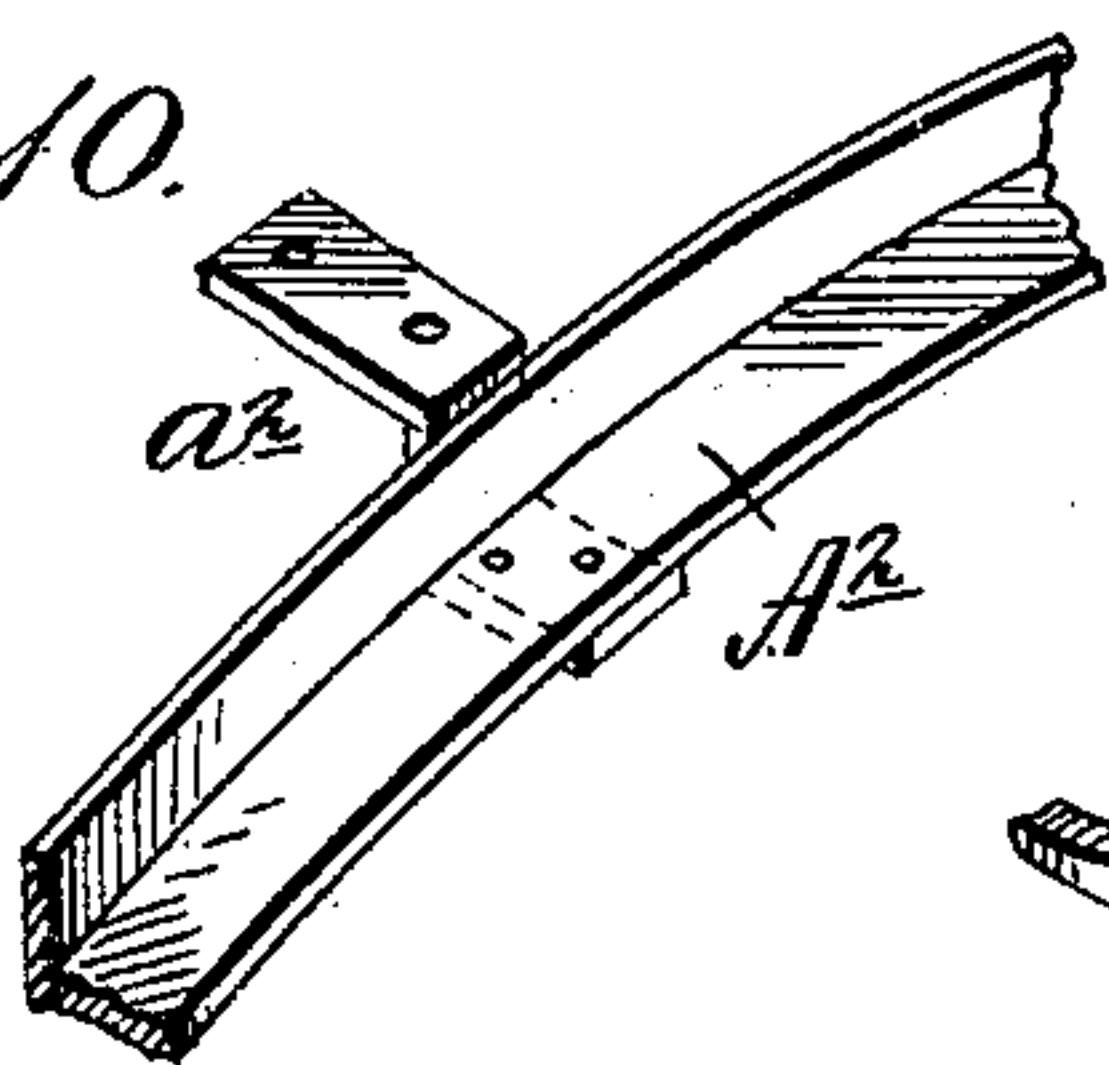


Fig. 11.

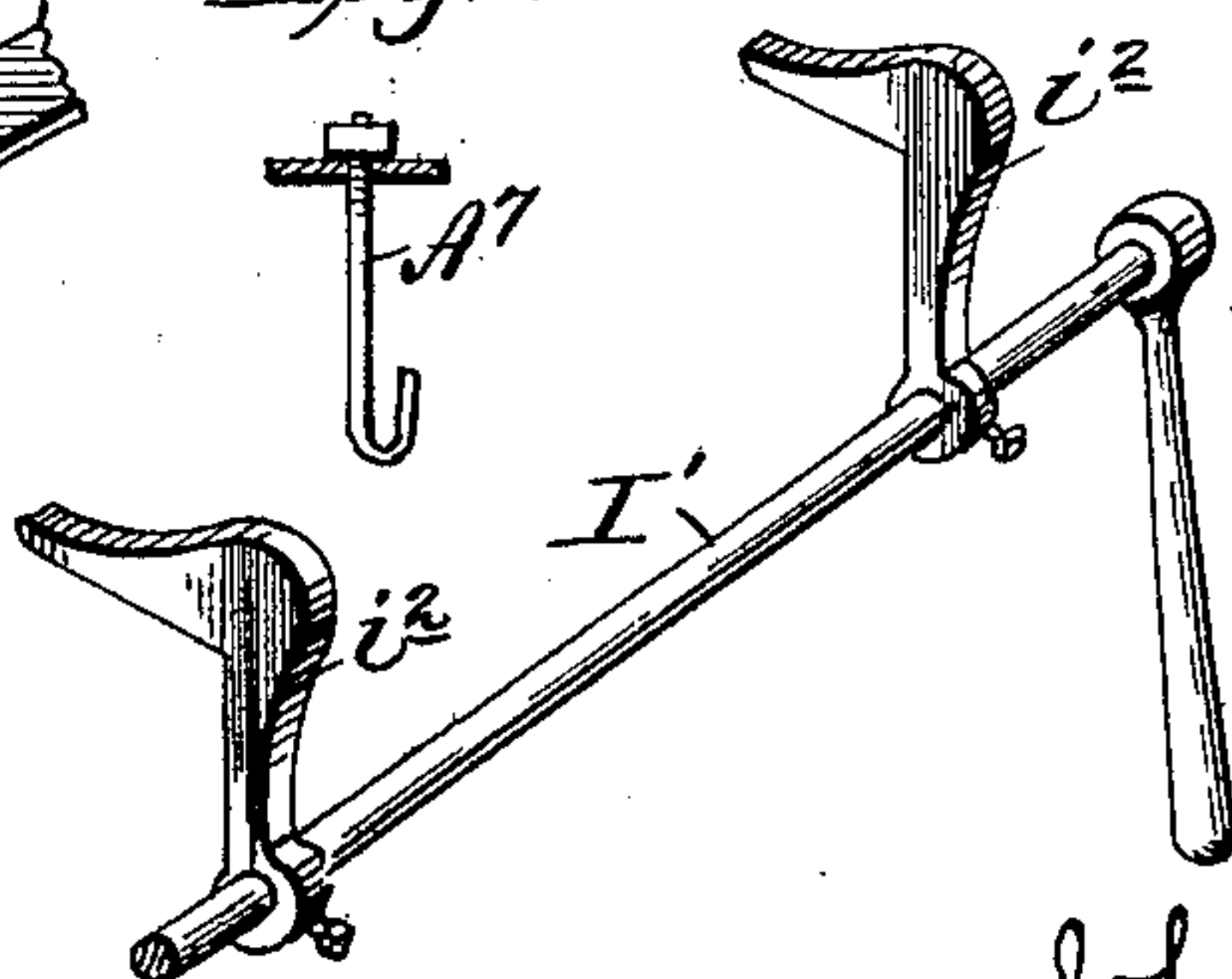


Fig. 12.

Inventors,  
John E. Morrison  
Henry S. Cameron  
by Sturtevant & Bailey  
Attorneys

Witnesses  
Frank L. Ourand  
Albert P. Phipps



No. 681,564.

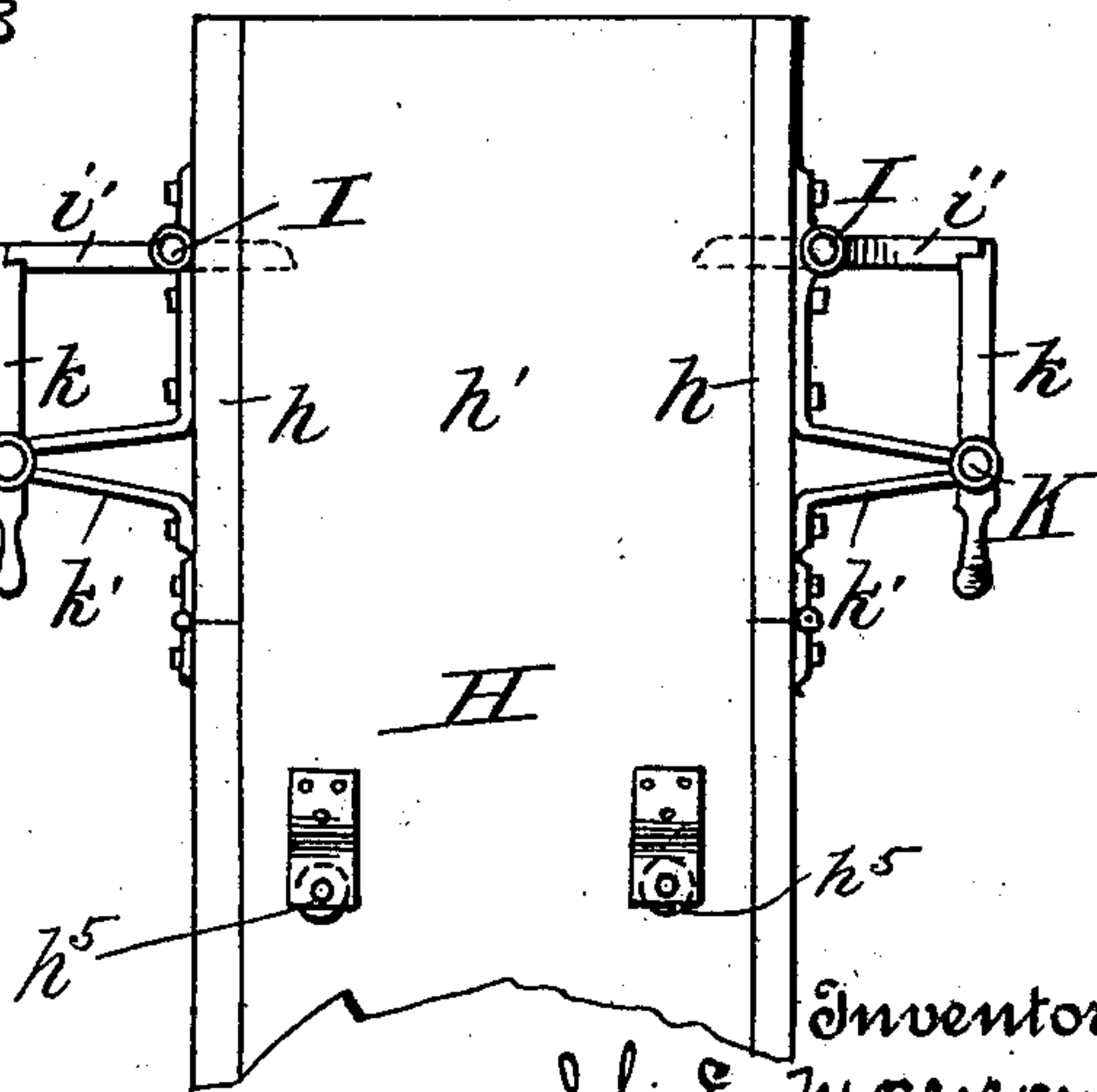
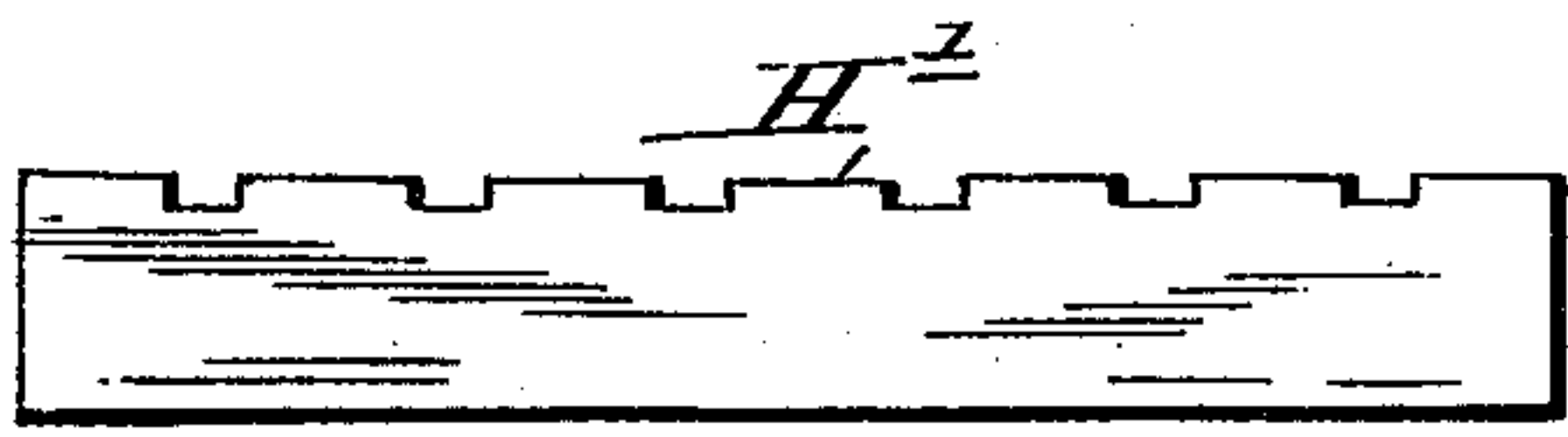
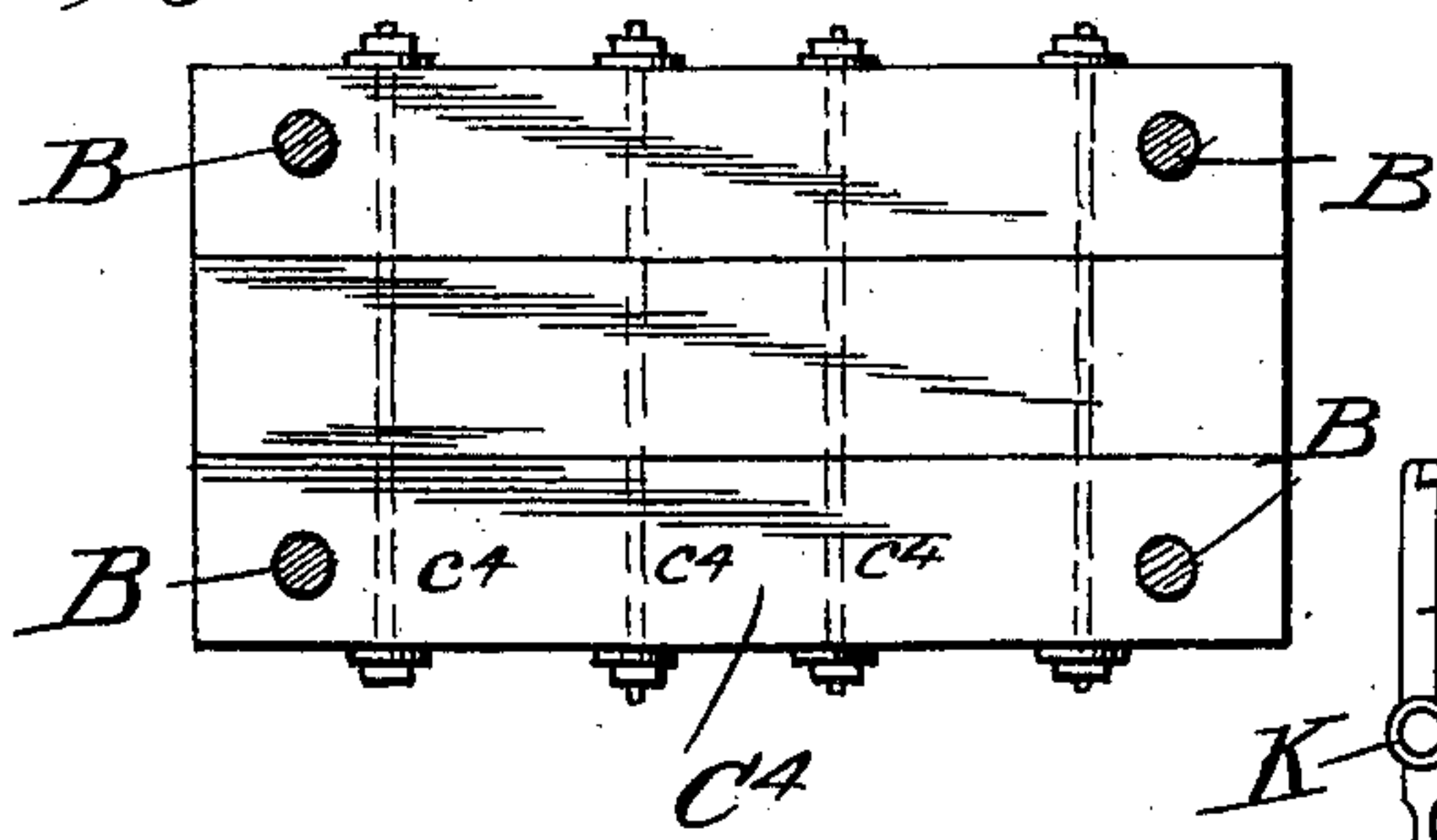
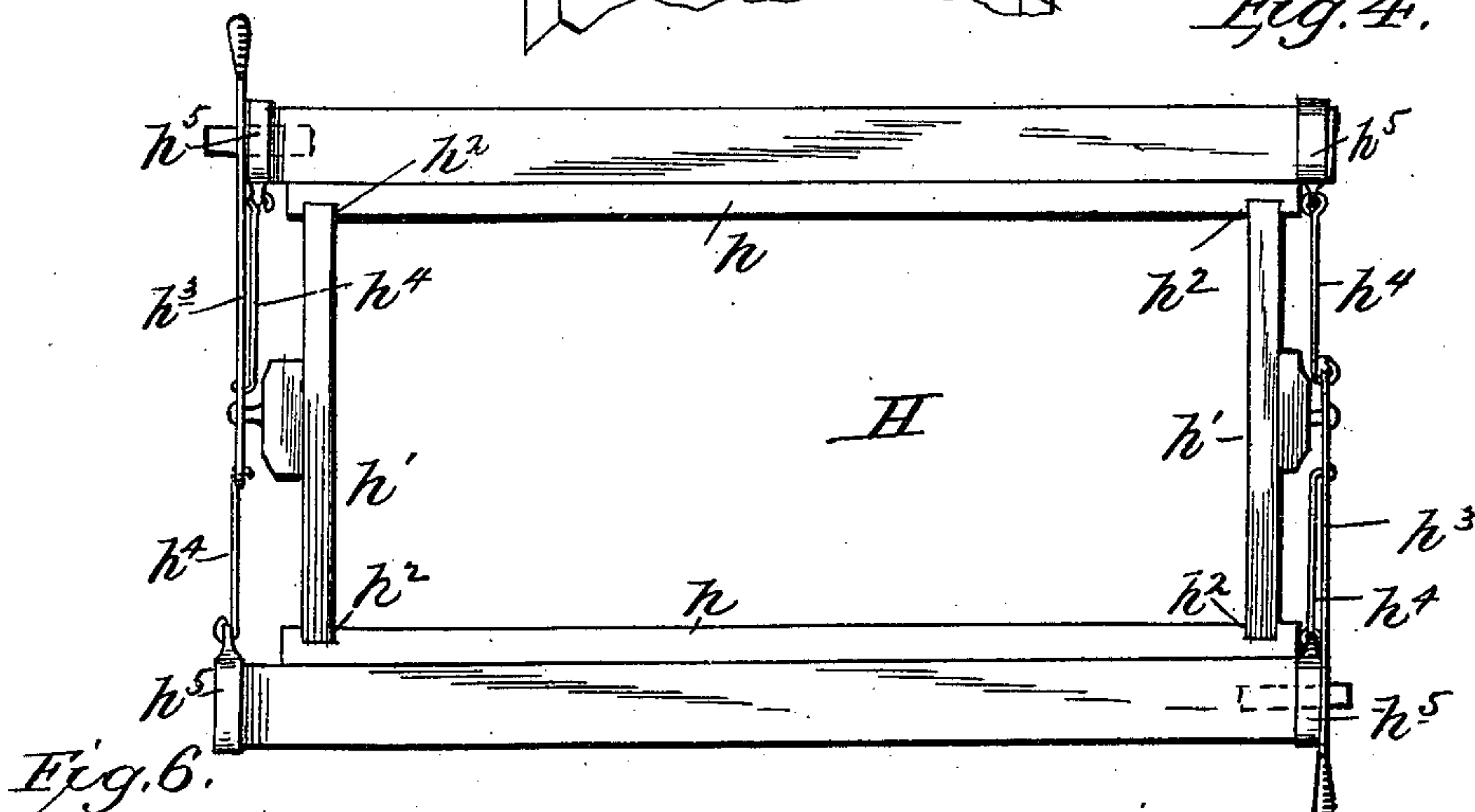
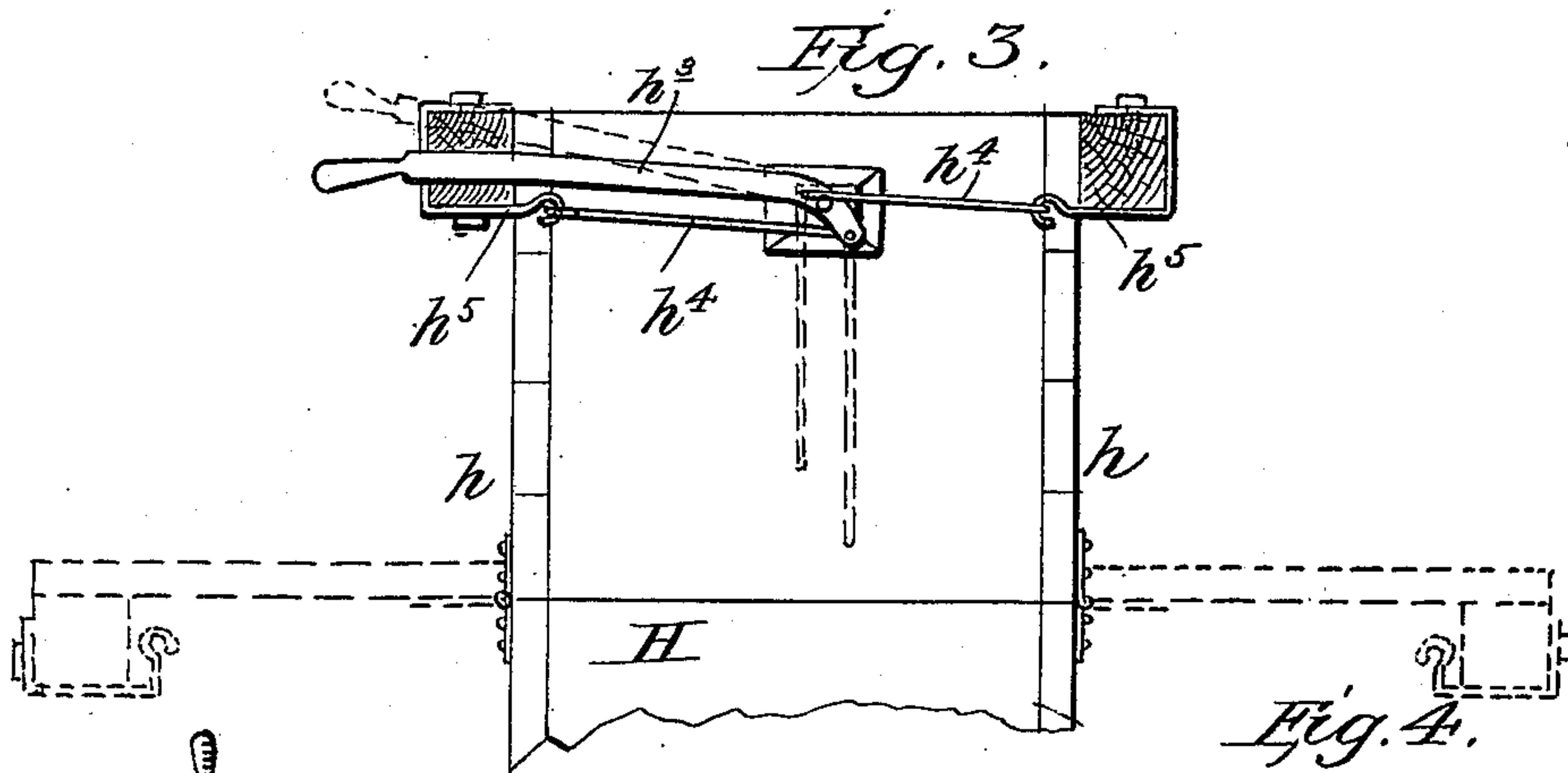
Patented Aug. 27, 1901.

J. E. MORRISON & H. S. CAMERON.  
COTTON PRESS.

(Application filed Apr. 1, 1901.)

(No Model.)

4 Sheets—Sheet 3.



Witnesses  
Frank L. Curand  
Albert Popkins

Inventors  
John E. Morrison  
Henry S. Cameron  
by Sturtevant & Greiley  
Attorneys

No. 681,564.

Patented Aug. 27, 1901.

J. E. MORRISON & H. S. CAMERON.

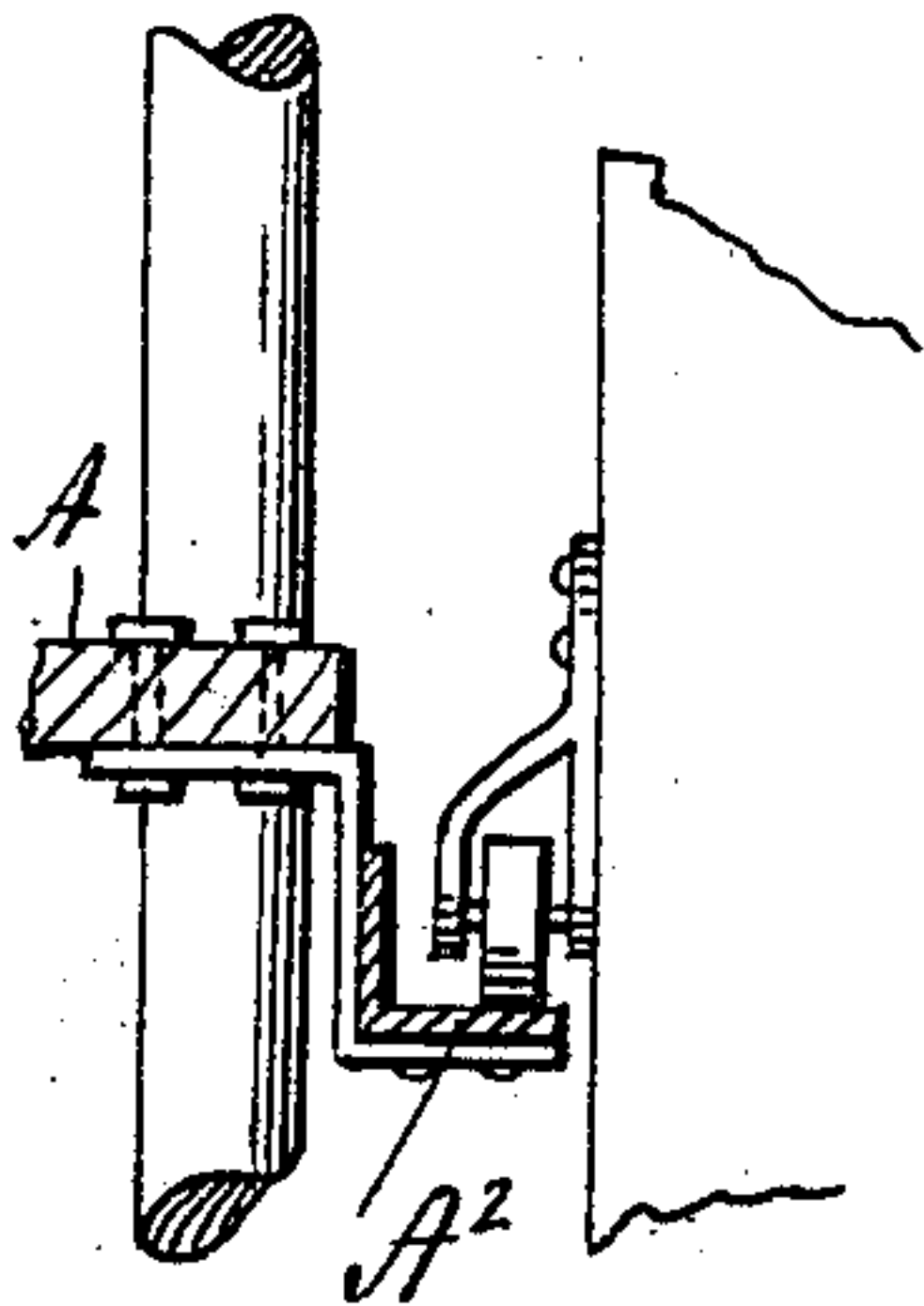
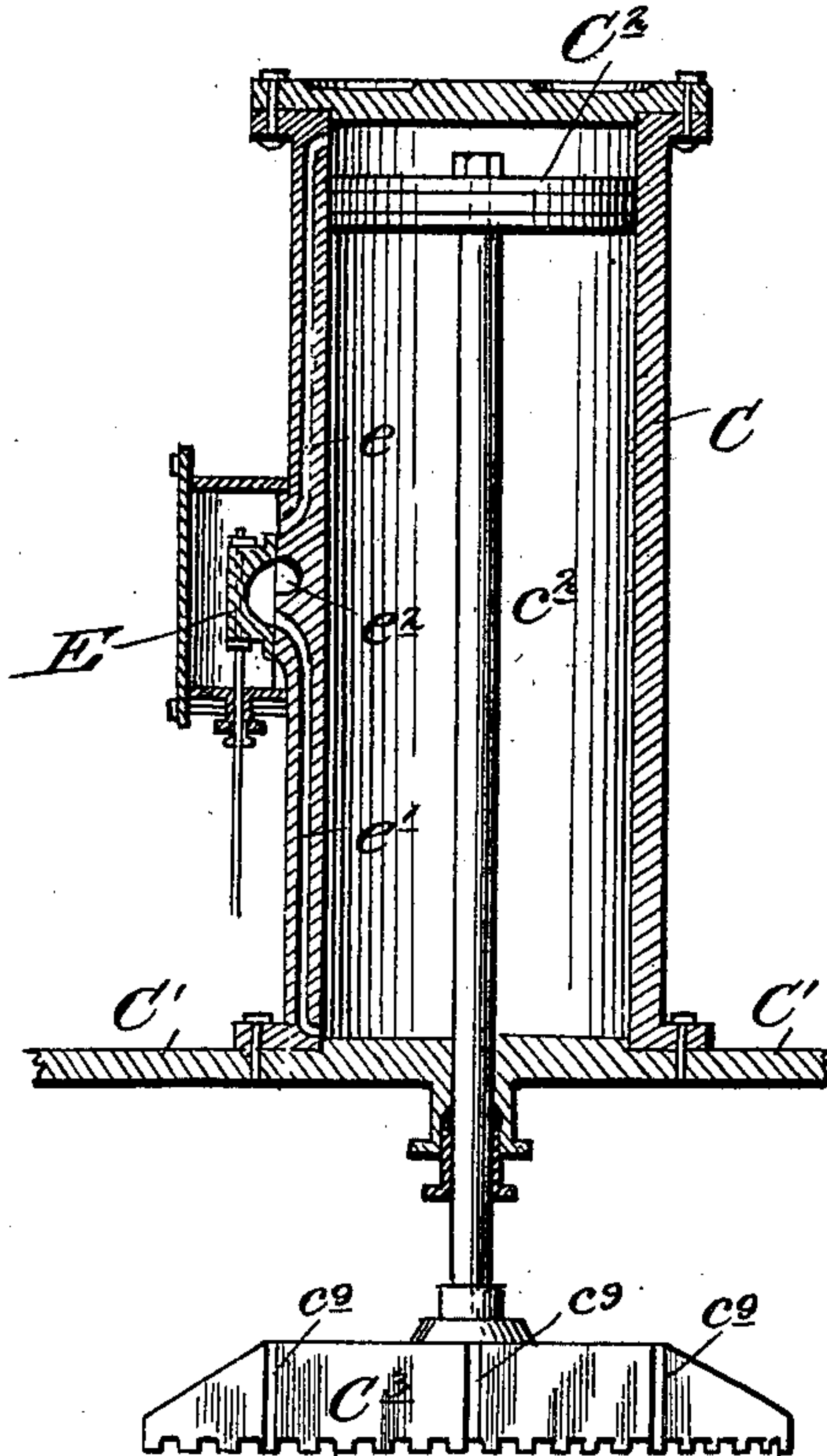
COTTON PRESS.

(Application filed Apr. 1, 1901.)

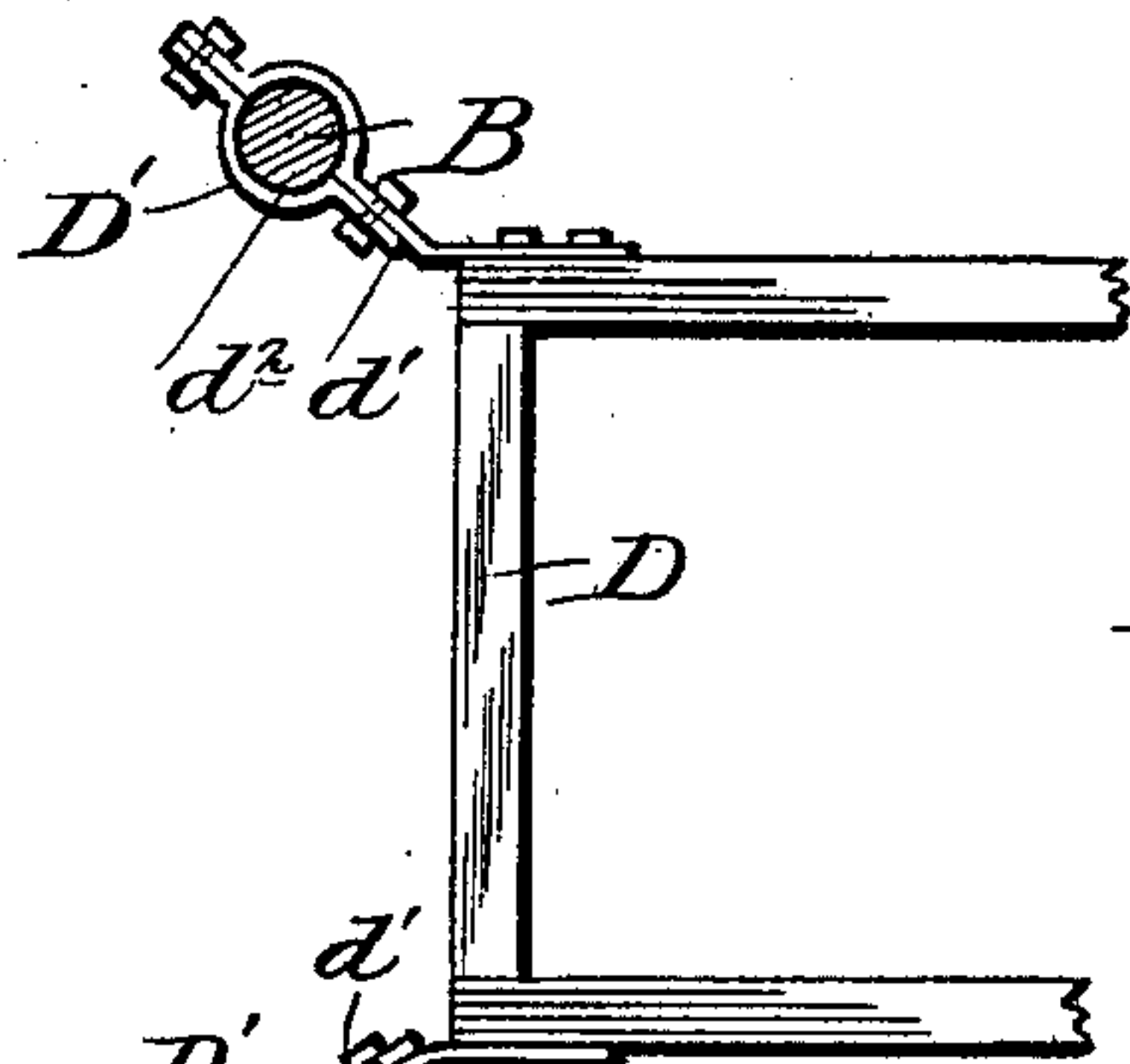
(No Model.)

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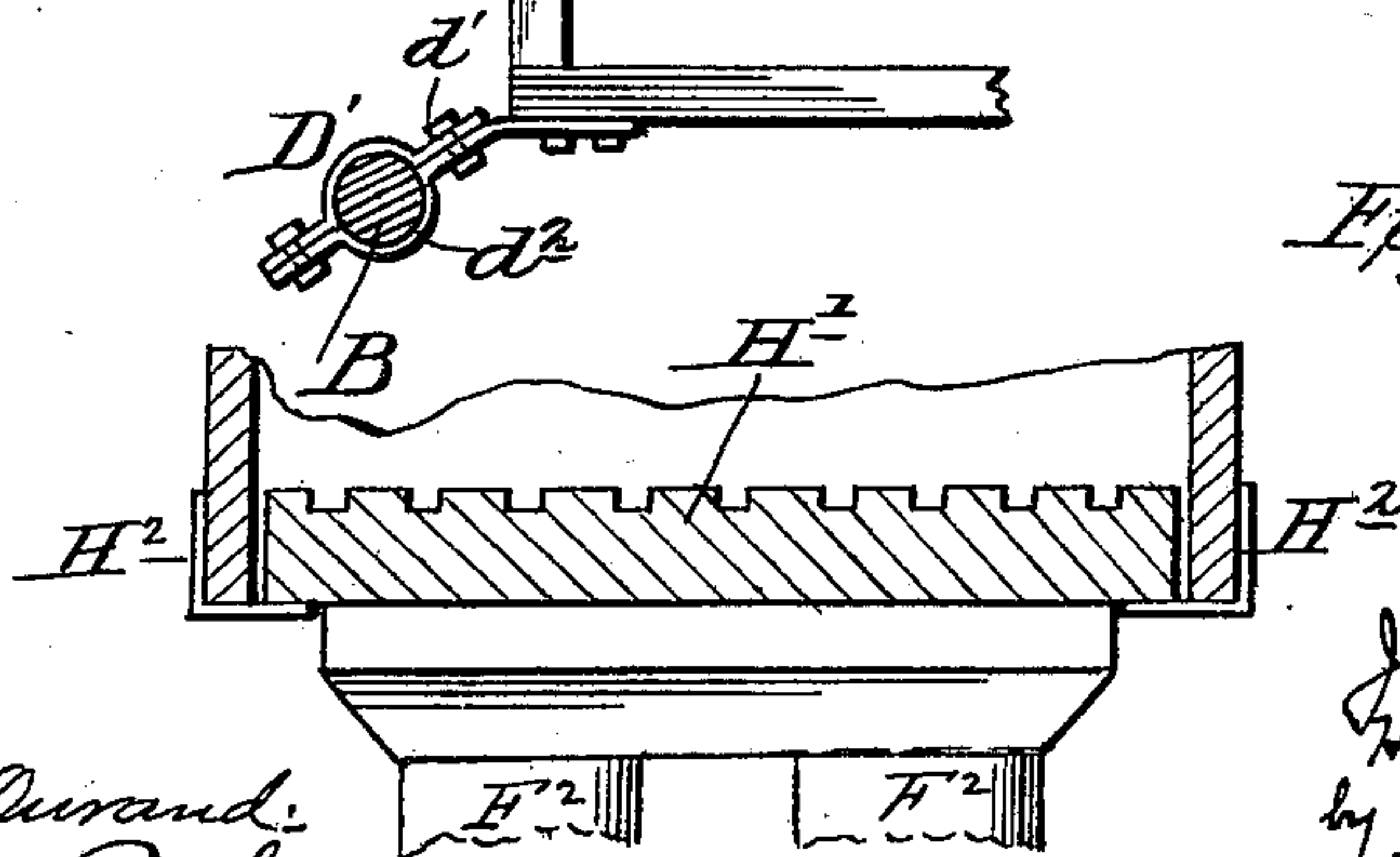
*Fig. 8.*



*Fig. 14.*



*Fig. 9.*



*Fig. 13.*

Witnesses  
Frank L. Curand.  
Albert Hopkins

Inventors  
John E. Morrison  
Henry S. Cameron  
by Stewart & Greely  
Attorneys



# UNITED STATES PATENT OFFICE.

JOHN E. MORRISON AND HENRY S. CAMERON, OF CLARKSDALE,  
MISSISSIPPI.

## COTTON-PRESS.

**SPECIFICATION** forming part of Letters Patent No. 681,564, dated August 27, 1901.

Application filed April 1, 1901. Serial No. 53,841. (No model.)

*To all whom it may concern:*

Be it known that we, JOHN E. MORRISON and HENRY S. CAMERON, citizens of the United States, residing at Clarksdale, in the county of Coahoma, State of Mississippi, have invented certain new and useful Improvements in Cotton-Presses, of which the following is a description, reference being had to the accompanying drawings and to the letters of reference marked thereon.

Our invention relates to that class of presses in which the material receives an initial compression in one press and is then transferred to another and more powerful press, where it is densely compressed.

The objects of our invention are to provide a compressing apparatus of the class referred to which shall be simple and durable in construction and very powerful in its action; to provide the apparatus at the primary press or stamper with an open-ended stationary accumulating-box, below which is a fixed bottom platen or bed adapted to withstand the force of the first movable platen or stamper, and from which box and stationary platen or bed circular tracks extend to the second or hydraulic press, so that the movable box and its contents may be readily moved from the stamper to the hydraulic press and then around to the stamper again; and a further object is to provide improved fastenings for the side doors and ends of the movable box. These objects we accomplish by the mechanism shown in the accompanying drawings, in which—

Figure 1 is a side elevation of a stamper and compress located in a building, the floor being in section. Fig. 2 is a plan view of the same, one of the doors for closing the circular space being lowered. Fig. 3 is an end view of a portion of the movable baling-box. Fig. 4 is a plan of the same. Fig. 5 is a view showing the cotton-retaining mechanism. Fig. 6 is a plan view of the stationary platen. Fig. 7 is a side view of the loose bottom. Fig. 8 is a detail section of the steam-cylinder. Fig. 9 is a detail plan view of a portion of the accumulating-box, showing the mode of fastening to the corner-posts. Fig. 10 is a detail perspective of a portion of the circular track and also one of the supporting-brackets.

Fig. 11 is a view of one of the clamping-bolts. Fig. 12 is a detail perspective of a modified form of cotton-retaining means. Fig. 13 is a detail section of loose bottom and portion of the ram. Fig. 14 is an enlarged detail section of track-hanger and means for rotating the movable baling-box.

A designates the floor of the press-room, in which there is an annular opening A', along the sides of which extend the circular tracks A<sup>2</sup> A<sup>3</sup>, formed of angle-bars secured to the angle-brackets A<sup>2</sup>, bolted to the flooring. Through the floor A at the sides of opening A' extend the four posts B B B B, mounted at their lower ends in sockets b, secured to a solid base. The upper ends of these posts are connected to base-plate C' of the steam-cylinder C, collars c' being secured to the posts at opposite sides of the plate to hold it firmly in place. The cylinder C is braced by the inclined rods l. Within the cylinder C is a piston C<sup>2</sup>, provided with a single or double piston-rod c<sup>2</sup>, which extends down through the cylinder-head and plate C', and to the lower end of this piston-rod is secured the plate C<sup>3</sup>. This cylinder, piston, and connected platen constitute what is technically called a "stamper," and will be so termed hereinafter. The stationary member or platen c<sup>4</sup> of this stamper is secured at its four corners to the four posts B by means of collars c, and this platen or base-plate C<sup>4</sup> is formed of heavy bars bolted together by bolts c<sup>4</sup>. This lower platen C<sup>4</sup> is thus made strong enough to withstand the blows of the stamper. Between the movable stamper-platen C<sup>3</sup> and the fixed platen or base C<sup>4</sup> and at a point above the floor-line is fixedly secured the open-ended accumulating-box D. This box is of a size to allow the platen C<sup>3</sup> to pass through it and is provided at its four corners with clamps D', by means of which it is secured to the posts B. Each of these clamps comprises two straps, the longer of which is bolted to the box and the shorter member d' is bolted to the longer member d at opposite sides of the circular opening d<sup>2</sup>, formed partly in both members. The steam-stamper is controlled by a slide-valve E, which controls ports e e', leading to the ends of the cylinder and an exhaust-port e<sup>2</sup> in such manner that when steam is admitted through the



upper port  $e$  to force the piston down the valve will connect the lower port  $e'$  with the exhaust-port  $e^2$ , and when the valve is shifted to admit steam below the piston to raise it the upper port  $e$  will be connected with the exhaust. The valve  $E$  is operated by an angle-lever  $E'$ , the long arm of which extends down within reach of the operator, while the short arm is pivoted on the plate  $C'$  and to the lower end of the slide-valve. At the diametrically opposite side of the floor-opening  $A'$  is located the hydraulic compress, comprising the twin cylinders  $F$ , bolted at their lower ends to the bed-plate  $F'$ , secured to a suitable firm base, and the upper ends of these cylinders are provided at their outer sides with arms  $f$ , provided with boxes  $f'$ , which receive the lower shouldered ends of four posts  $G'$ , on the upper shouldered ends of which is secured by similar boxes  $g'$  the upper fixed platen  $G$ .  $F^2$  are the rams in the cylinders  $F$ , and  $F^3$  is the platen on the upper ends of these rams. The hydraulic cylinders are provided with ports  $f^4$  for the admission and egress of the operating fluid, the controlling means not being shown. The central space within the inner track  $A^3$  is floored over, as at  $A^4$ , upon joists  $A^5$ , which rest on cross-bars  $A^6$ , firmly bolted at their ends to the adjacent pairs of posts  $G'$   $B$ , the floor  $A^4$  being secured in turn to the joists and also to the bars  $A^6$  by the hooked clamping-bolts  $A^7$ . (See Fig. 1.) The annular space  $A'$  is provided with four removable flooring-sections  $A^8$ , hinged at their outer edges to the floor  $A$ , so as to swing vertically out of the way of the traveling baling-boxes  $H$ , to be presently described, and to these floor-sections or trap-doors  $A^8$  are connected ropes  $A^9$ , provided with counterbalancing-weights  $A^{10}$  and passing over the guide-pulleys  $A^{11}$ . The doors are swung up when the box is traveling from the stamper to the compress  $F$  and from the latter to the stamper.

$H$  designates the movable baling-box, provided at opposite ends with rollers  $h^5$ , which run on the circular tracks  $A^6$ , extending from the stamper to the compress, so that the box may be readily moved from one to the other, these tracks being concentric with a circle drawn through the centers of the stamper and compress. The upper portion of the sides of baling-box  $H$  is provided with doors  $h$ , hinged at their lower edges, so as to swing outwardly, and the corresponding portions  $h'$  of the ends are removable, the portion of the box inclosed by these hinged and removable sections  $h h'$  being of a size to contain finished bales. The inner faces of the doors  $h$  at their ends are provided with vertical grooves  $h^2$ , which receive the end edges of the ends  $h'$ , and to these ends  $h'$  are pivoted the locking-levers  $h^3$ , to which, at opposite sides of their pivots, are connected the adjacent ends of the oppositely-extending locking-rods  $h^4$ , provided at their outer ends with eyes which engage the hooks  $h^5$ , secured to the upper

corners of the doors  $h$  or to strengthening-cleats thereon. It will be seen that when the free ends of the levers  $h^3$  are swung up, as shown in dotted lines, Fig. 3, the rods  $h^4$  will uncouple from the hooks  $h^5$ , and that when swung down, as in full lines, the rods will be under strain and firmly hold the sides and ends together. To these hinged doors  $h$  are secured the cotton-retaining mechanism, which comprises the rock-shafts  $I$   $I$ , mounted in bearings  $i$   $i$ , and each having transverse retaining dogs or fingers  $i'$   $i'$ , the inner ends of which are adapted to project through the slots  $h^6$  in the upper edges of the doors and bear down on and retain the stamped cotton against expansion, and the retaining-dogs are locked in this position by the locking-arms  $k$ , projecting from shafts  $K$ , mounted in outwardly-projecting brackets  $k'$ , which extend out as far as the outer ends of the dogs  $i'$   $i'$ , so that when the arms  $k$  are in a vertical position they will come directly under the outer ends of the dogs and lock them. In order that these locking-dogs  $i'$  may not be struck by the stamper-platen  $C^3$ , it is formed with vertical slots  $c^9$  in its opposite edges, which register with the dogs, and so the platen will pass them.

In Fig. 12 we have shown a modified form of cotton-retaining means, and it comprises simply a rock-shaft  $I'$ , provided with a series of hooked dogs  $i'^2$ , so that when the shaft is rocked in one direction the dogs will be swung into the box and swung out when the shaft is turned in an opposite direction. The retaining-dogs are held to their shafts by set-screws, and so as many as may be desired may be thrown out of action by loosening their set-screws.

The baling-box  $H$  is provided with a loose bottom  $H'$ , held from dropping out by means of angle-irons  $H^2$  on the lower edge of the box. The upper side of this false bottom is grooved and the lower face of the top platen  $G$  of the compress is correspondingly grooved to receive the bale-bands.

The operation is as follows: A movable box  $H$  is placed under the accumulating-box  $D$ , with burlap on its bottom  $H'$  and cotton or other material thrown in through the upper end of box  $D$  until both boxes are full, whereupon the operator admits steam above the raised piston, and the stamper-platen  $C^3$ , which is raised above box  $D$ , as in Fig. 1, is forced down through box  $D$  into box  $H$  until the contents are pressed to the desired extent and the steam is admitted to the lower side of piston and the platen raised to admit more cotton being thrown in. This is repeated until the desired amount of cotton is contained in the movable box, where it will be retained against expansion by the retaining-dogs. The fixed platen  $D^4$  takes all strain off of the false bottom  $H'$  and sustains the shock of the movable platen. The filled box  $H$  will now be moved along the track  $h^5$  till it comes into position in the hydraulic com-



press, whereupon burlap will be placed on the under side of the fixed platen G, the retaining-dogs *i* released, and the fluid admitted to the cylinders F to raise the rams and the platen F<sup>3</sup>. The platen F<sup>3</sup> will enter the lower end of box H, move its bottom and the cotton thereon upward until the cotton is finally compressed in the space bounded by the hinged doors *h* and removable ends *h'*, and the movable bottom H' will be above the line of the hinges. The doors will now be lowered and the bands placed around the bale through the grooves in the platen G and bottom H'. The end pieces *h'* will now be removed, so that the heads of the burlap covering may be securely sewed or secured. After the bands have been tied and the covering-heads so fastened or sewed the pressure in the hydraulic cylinders will be released to lower the platen F<sup>3</sup> and with it the bottom H', and so the bale will be released and may be rolled out of the baling-box upon the floor in a finished state. Burlap or other baling will now be placed over and around the movable bottom H' and the same lowered into the baling-box by further releasing pressure in the cylinders F<sup>2</sup> and allowing the rams to descend to the bottom of their cylinders. The ends and doors of the baling-box will now be placed in their operative positions, when the said box will be again ready for use in the stamper. The idea is to work two, four, or any number of boxes—one in each press—at the same time—that is to say, two boxes will always be in the presses, while other filled and empty boxes may be on the tracks in front of and behind the two presses. This is rendered possible owing to the fact that the boxes H are entirely disconnected from each other and travel independently on the tracks instead of being mounted upon and carried around by some form of carrier.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. A baling apparatus, comprising a stamper or primary press, a compress, tracks leading from one to the other, and a baling-box mounted on said tracks and adapted to carry the partially-compressed bale from the stamper to the compress; substantially as described.

2. A baling apparatus, comprising a stamper or primary press, a compress, circular tracks leading from one to the other, and a traveling baling-box mounted on said tracks and adapted to carry the partially-compressed bale from the stamper to the compress; substantially as described.

3. A baling apparatus, comprising a stamper or primary press, a compress, tracks leading from one to the other, and a baling-box mounted on said tracks to carry the partially-compressed bale from the stamper to the compress, and provided at its upper portion with a bale-chamber formed of outwardly-movable sides and ends to expose the bale when compressed; substantially as described.

4. A baling apparatus, comprising a stamper or primary press, a compress, tracks leading from one to the other, a baling-box mounted on said tracks to carry the partially-compressed bale from the stamper to the compress, and provided with outwardly-movable doors and ends at its upper end, and rock-shafts mounted on said doors and provided with retaining dogs or fingers to project through slots in the upper edges of the doors and engage the cotton, the stamper having slots registering with said dogs or fingers; substantially as described.

5. In a baling apparatus, a baling-box provided with slotted upper edges, parallel rock-shafts on its opposite sides provided with transverse cotton-retaining fingers or dogs adapted at their inner ends to project through said slots and engage the cotton or material being compressed, and lower rock-shafts provided with locking arms adapted to engage the outer ends of said retaining fingers or dogs; substantially as described.

6. The combination with the four vertical posts or standards, a stationary lower platen connected to said posts, a plate connecting the upper ends of said posts, a platen or tramper-head and mechanism mounted on said plate for reciprocating the tramper-head or platen, of an open-ended charging or accumulating box, closed at its sides, secured at its four corners to said posts below the tramper-head and adapted to be fed at its upper open end when the tramper-head is raised, and a movable baling or press box registering at its upper open end with the lower open end of the charging or accumulating box.

7. The combination with the stamper or primary press provided with a stationary open-ended accumulating-box, of a compress, tracks leading from the stamper to the compress, and a traveling baling-box mounted on said tracks to register at its upper end with the said stationary box and provided with a loose bottom; substantially as described.

8. A baling apparatus comprising a stamper composed of four posts, a lower stationary platen mounted on said posts, a steam-cylinder the lower head or base-plate of which connects the upper ends of said posts, a piston on said cylinder and a movable platen connected with said piston, and a hydraulic compress beyond the stamper, tracks leading from the stamper to the compress, said compress being formed of one or more hydraulic cylinders, provided with a ram or rams carrying the lower platen, four posts connected at their lower ends to the cylinder head or heads, and a fixed top platen connecting the upper ends of said posts, and a baling-box mounted to travel on said tracks and provided with a loose bottom to register with the stationary platen of the stamper and the movable platen of the compress; substantially as described.

9. A baling apparatus comprising concentric circular tracks, a steam-stamper and a



hydraulic compress located at diametrically opposite points of the tracks, a traveling baling box or boxes mounted on the tracks, a circular flooring within the space inclosed by the inner track and supported from the framing of said stamper and compress, and trapdoors for the annular space between the two tracks; substantially as described.

10. The baling-box provided with hinged doors at its upper ends having vertical grooves at the ends of its inner sides, removable end pieces fitting at their ends in said grooves, levers pivoted on the end pieces, oppositely-

projecting rods pivoted to each lever at opposite sides of its pivot, and having eyes at their ends, and hooks on the ends of the hinged sides engaged by the eyes on said rods; substantially as described. 15

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN E. MORRISON.  
HENRY S. CAMERON.

Witnesses:

CHAS. SCOTT, Jr.,  
H. L. TALBERT.