

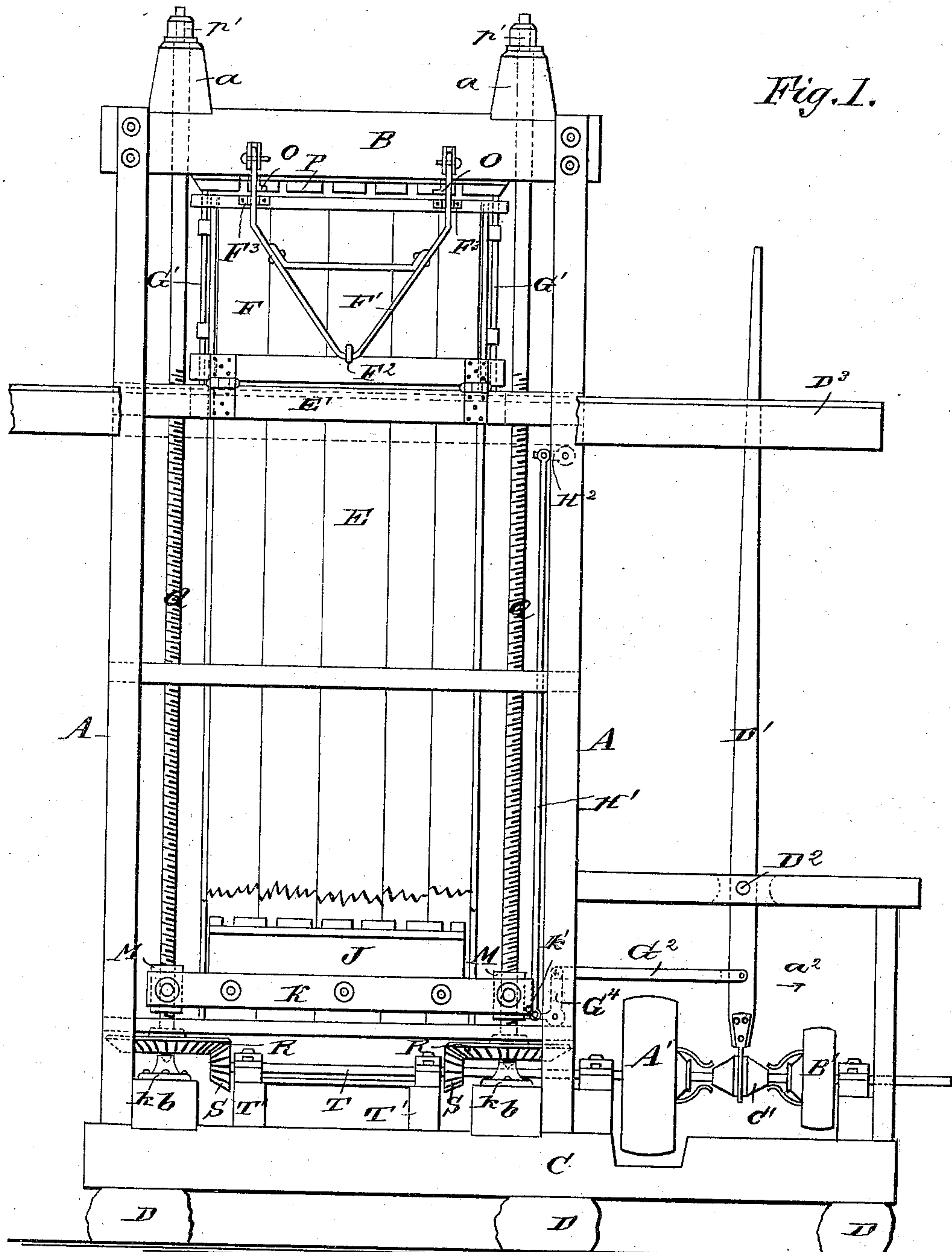
(No Model.)

F. S. CLARK & J. A. BACHMAN. ⁴ Sheets—Sheet 1.

BALING PRESS.

No. 331,035.

Patented Nov. 24, 1885.



WITNESSES:

Thos Beyer
C. Sedgwick

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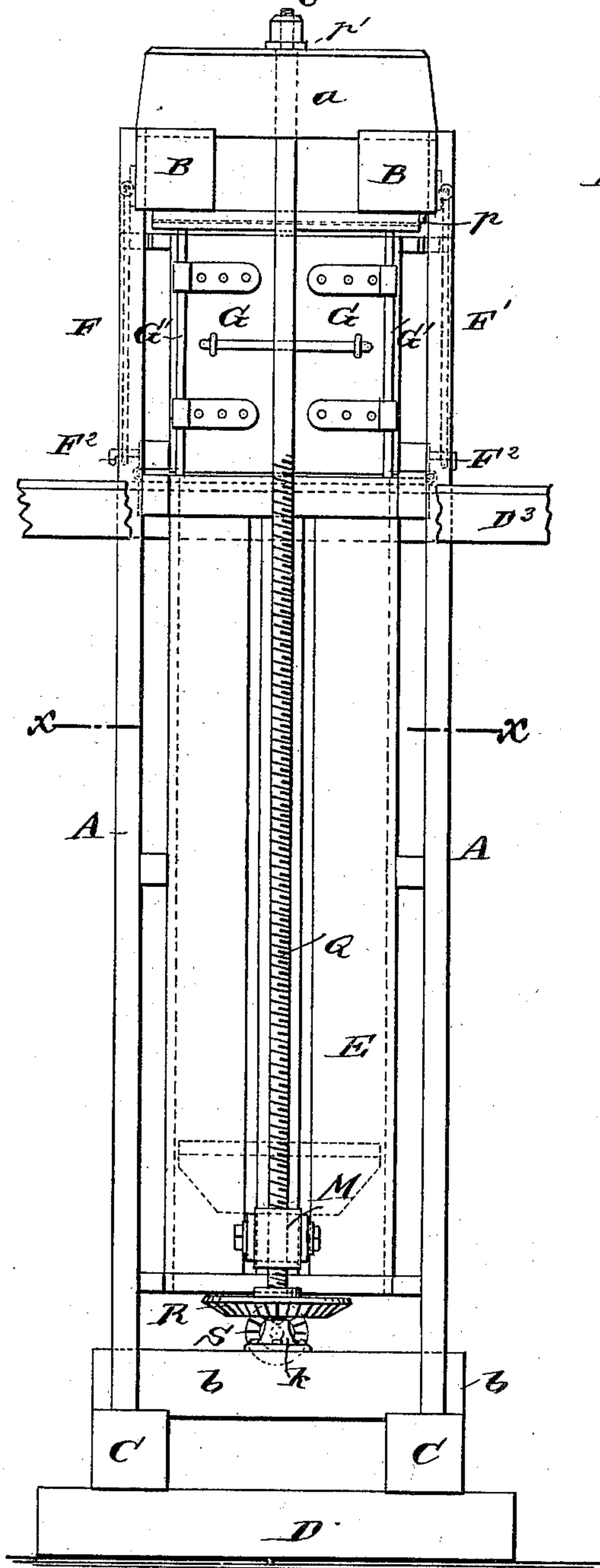
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4 Sheets—Sheet 2.

BALING PRESS.

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Fig. 2.



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Fig. 3.

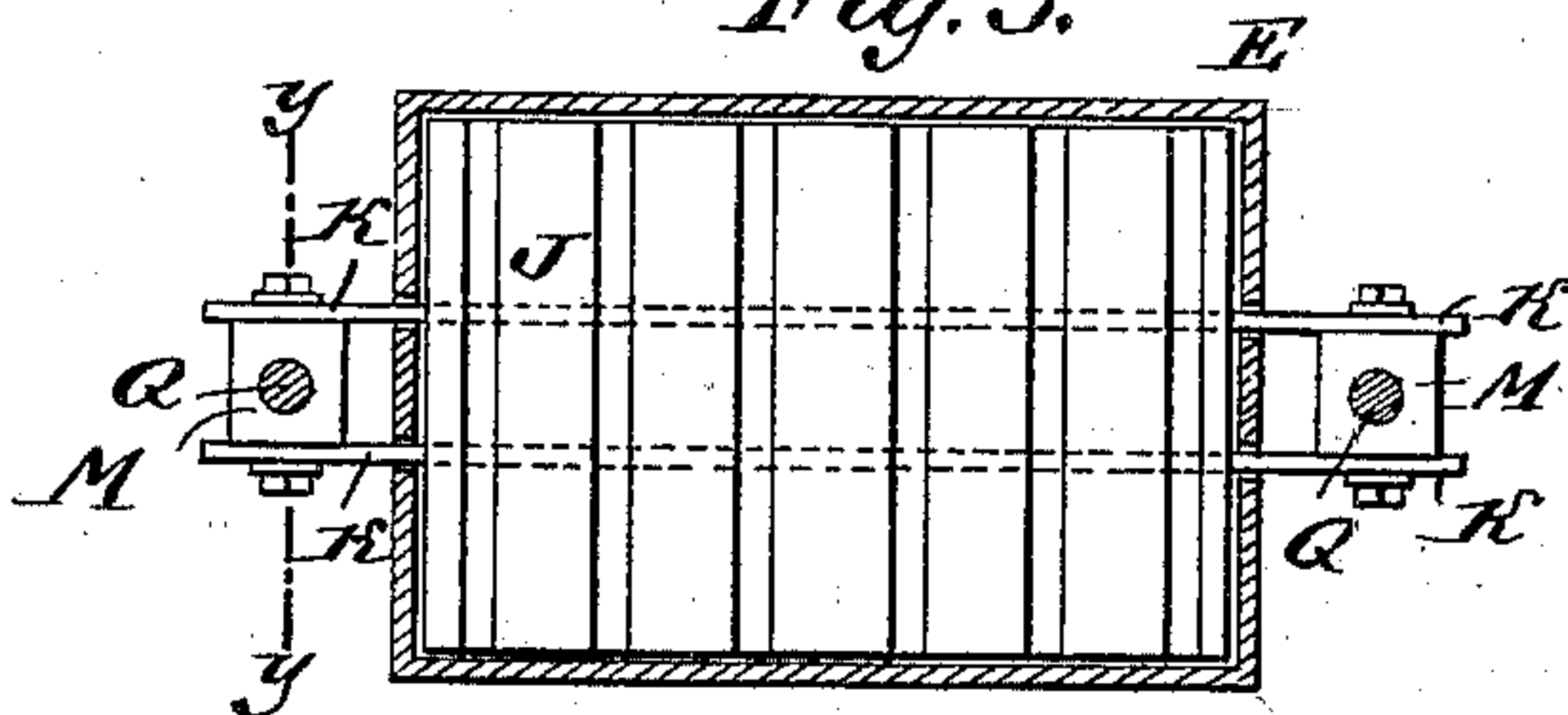


Fig. 4.

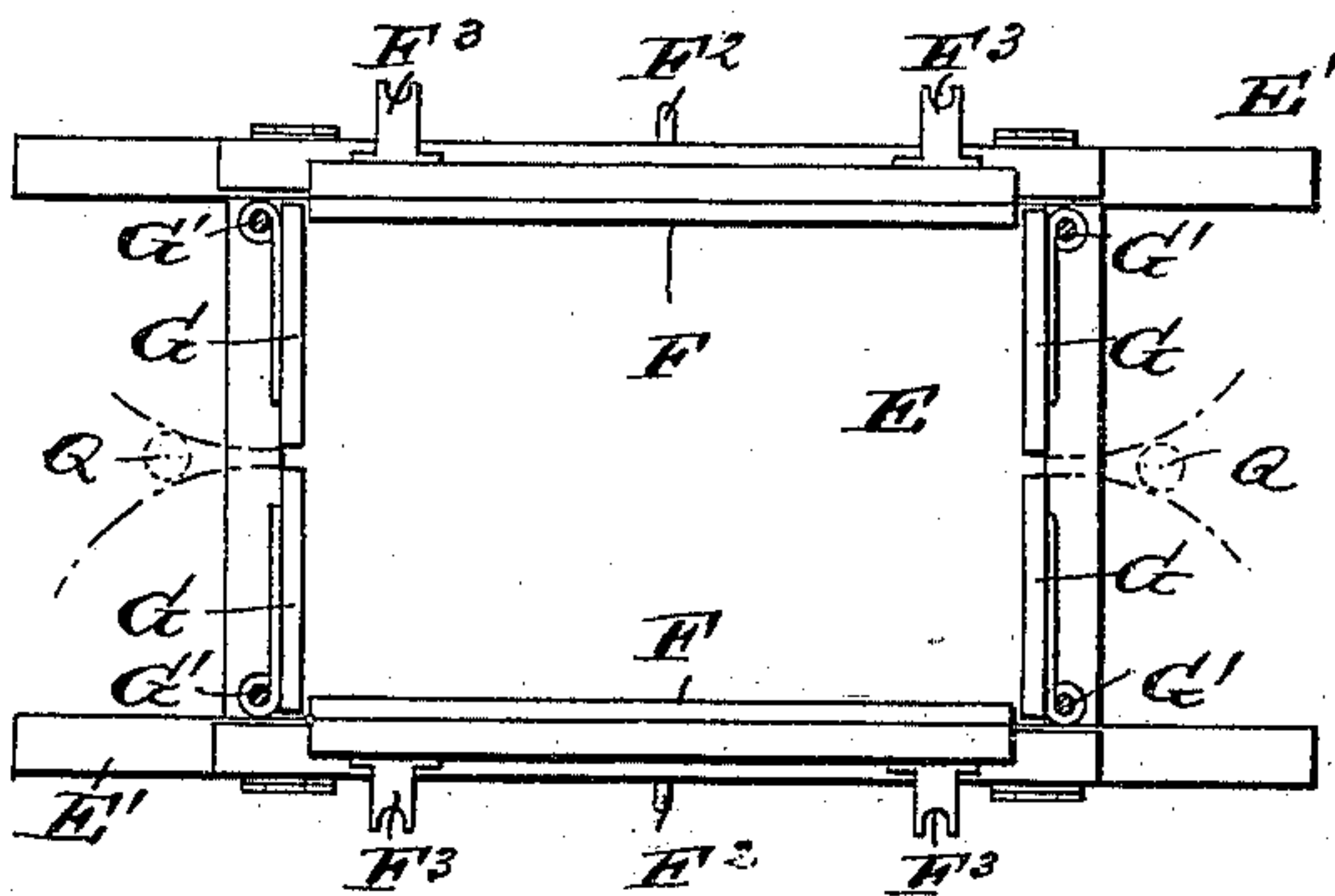


Fig. 5.

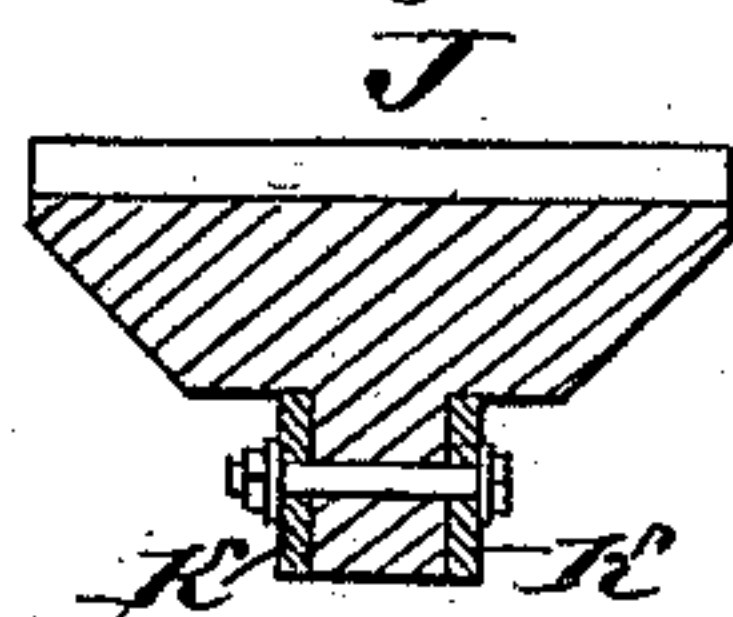
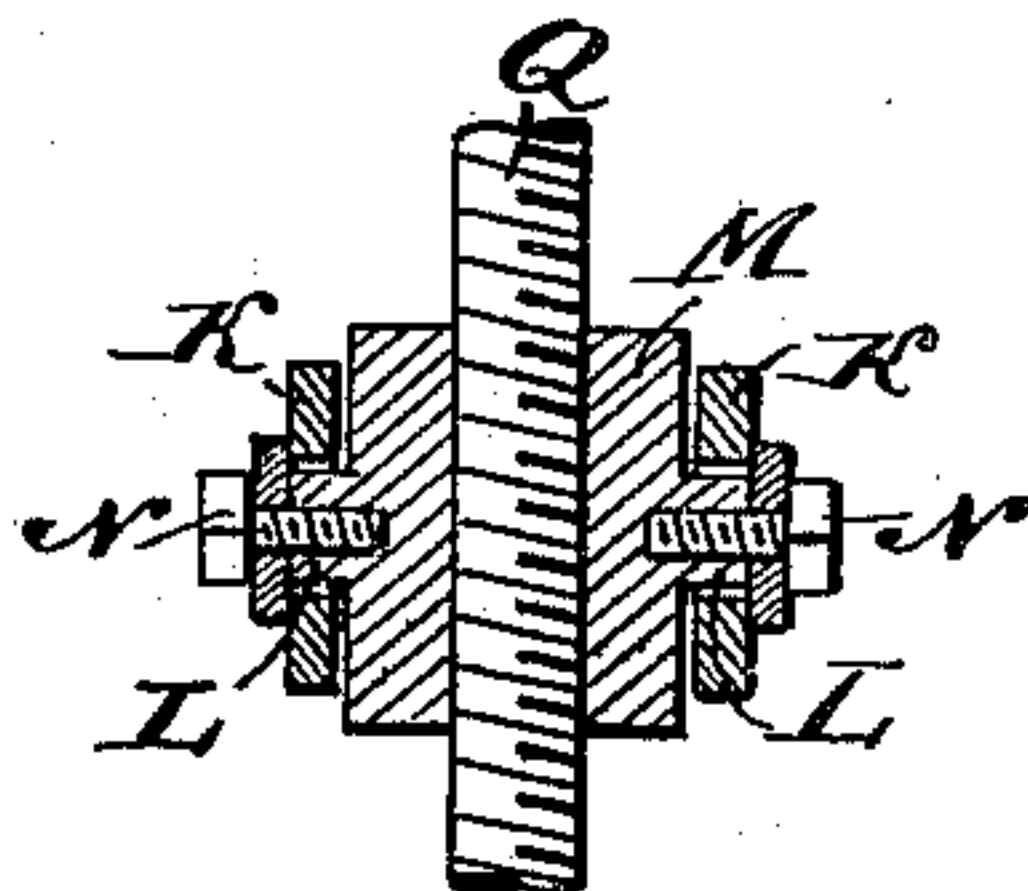


Fig. 6.



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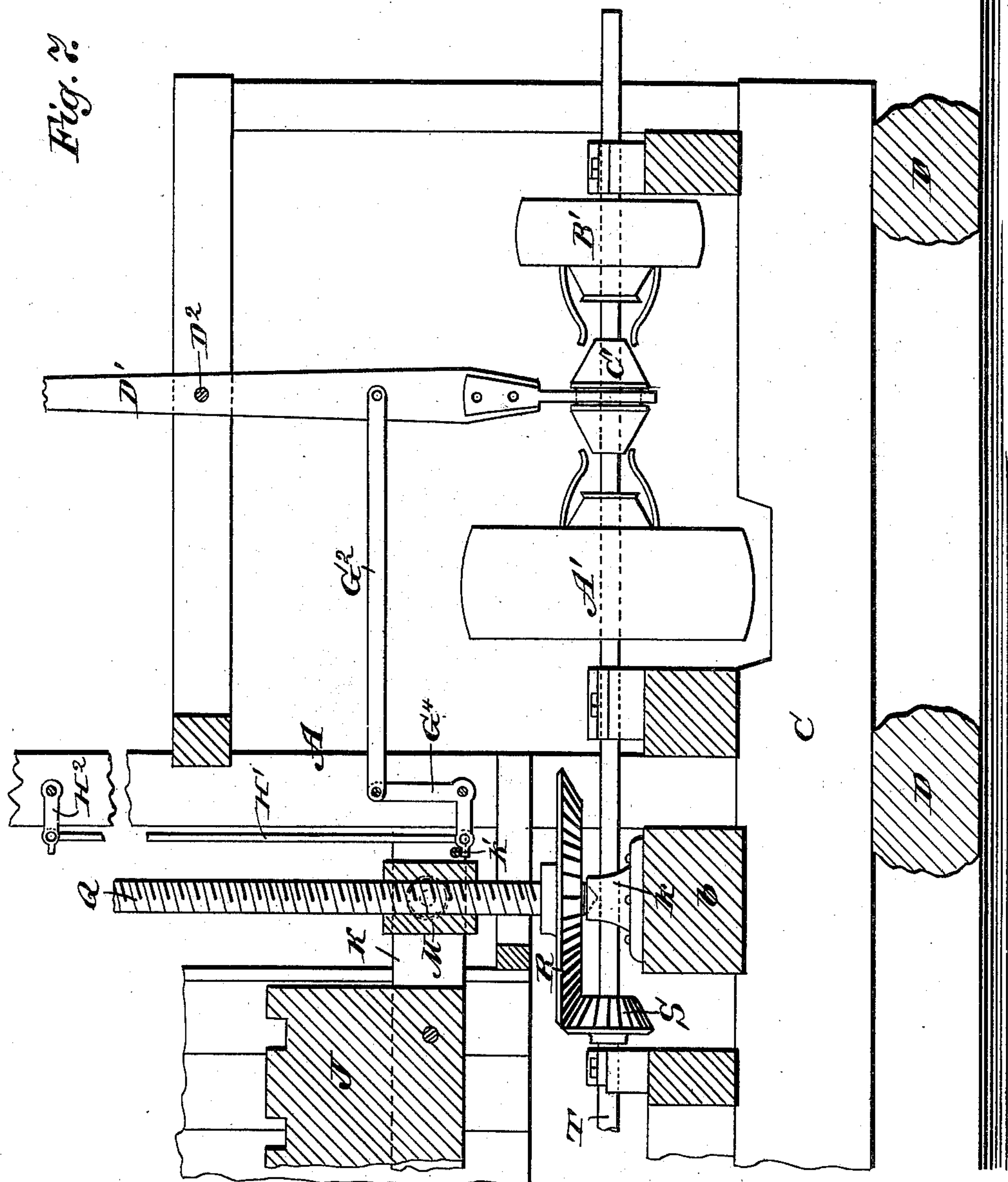
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BALING PRESS.

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(No Model.)

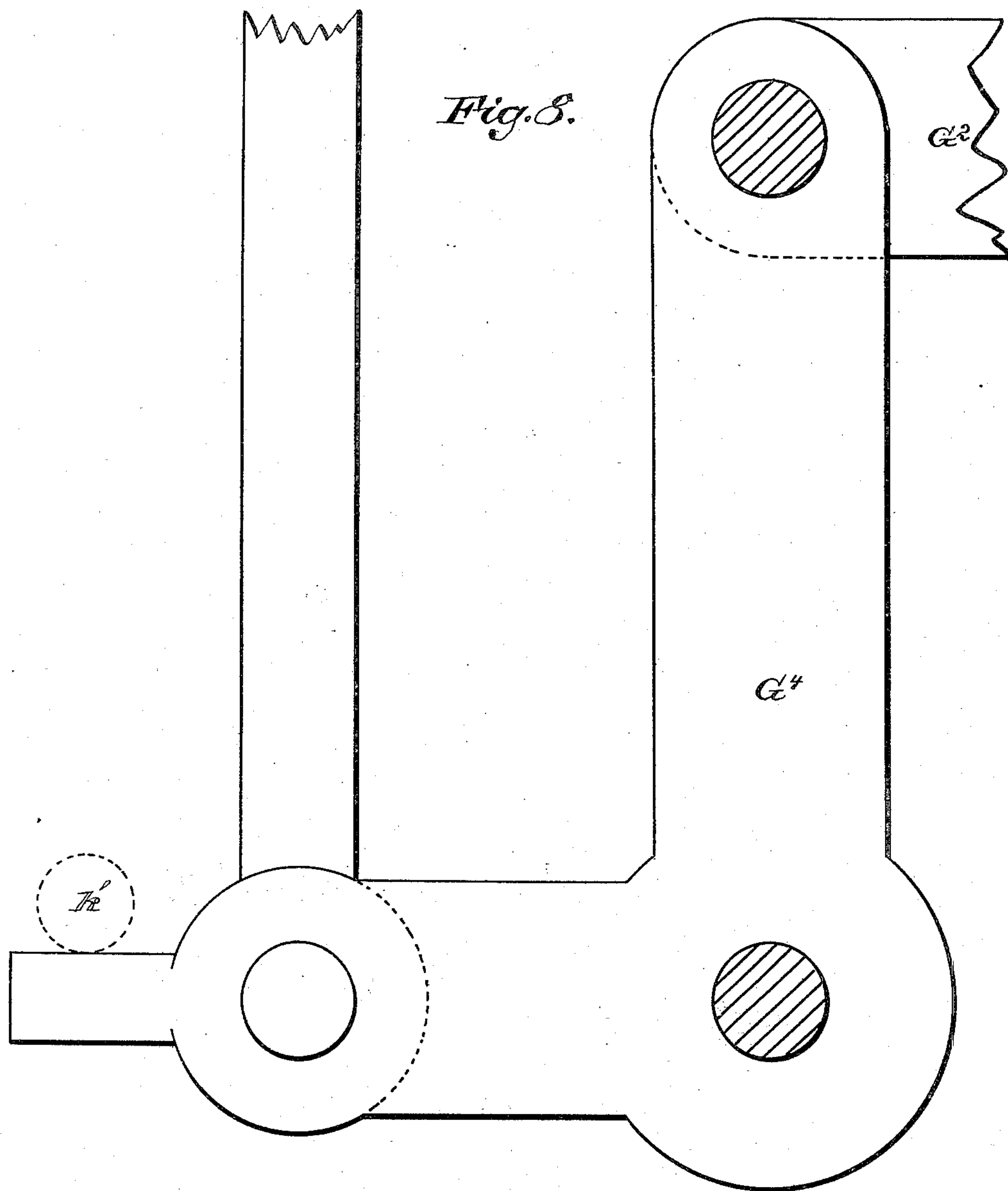
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BALING PRESS.

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UNITED STATES PATENT OFFICE.

FRANK S. CLARK AND JOSEPH A. BACHMAN, OF AUSTIN, TEXAS.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 331,035, dated November 24, 1885.

Application filed March 5, 1885. Serial No. 157,820. (No model.)

To all whom it may concern:

Be it known that we, FRANK S. CLARK and JOSEPH A. BACHMAN, both of Austin, in the county of Travis and State of Texas, have invented a new and Improved Baling-Press, of which the following is a full, clear, and exact description.

The object of our invention is to provide a new and improved baling-press especially adapted for baling cotton, which press is simple in construction, strong and durable, and operates rapidly.

The invention consists in parts and details and combination of the same, as will be fully set forth and described hereinafter.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation of our improved baling-press, parts being broken out. Fig. 2 is a side view of the press, parts being broken out. Fig. 3 is a sectional plan view of the baling-box on the line *xx*, Fig. 1. Fig. 4 is a plan view of the same, parts being in section. Fig. 5 is a cross-sectional elevation of the follower. Fig. 6 is an enlarged detail sectional view of one of the nuts. Figs. 7 and 8 are detail views, on an enlarged scale, showing the operation of the elbow-lever.

A strong frame is formed of upright timbers A, united at the top and bottom by the top and bottom beams, B and C, respectively, which bottom beams are secured on transverse sill-pieces D. The standards are united by suitable braces. The upright baling-box E is held between the standards, and is provided on each side, near the top, with a horizontal beam, E', to which the lower edge of a downwardly and outwardly swinging door, F, is hinged, which door is provided with a suitable locking-frame, F', which is pivoted to the top beam, B, the lower free end of which frame F' can be engaged with a catch, F², on the bottom of the door. Friction or rub plates F³ are secured on the outer edge of the top piece of the door, against which notched lugs the locking-frame F' can rest. The doors G are hung on vertical rods G', and have suitable latches. The follower J is secured on two iron or steel beams, K, projecting through

side slots in the baling-box E. Each beam K is provided at each end with an aperture, into which trunnions L of nuts M pass, screws N being screwed into the trunnions, and washers being placed between the end faces of the trunnions and the outer sides of the bars or beams K and the inner sides of the heads of the screws N, to prevent the trunnions from working out of the apertures in the beams. Screw-spindles Q, hereinafter mentioned, pass through the nuts. Above the end doors, F, rabbeted cleats or angle-pieces O are secured transversely to the top beams, and between the same a sliding platen or top plate, P, is held, which forms the top of the box, and against which the material is pressed by the follower J. Two vertical screw-spindles, Q, have their upper ends journaled in friction-boxes *p'* on the top cross-beams, *a*, and their lower ends journaled in step-boxes *k* in the bottom cross-beams, *b*, the said screw-spindles passing through the nuts M. A bevel cog-wheel, R, is rigidly mounted on the lower end of each screw-spindle Q, and the said cog-wheels engage with bevel-pinions S on a horizontal shaft, T, journaled on the blocks T' on the bottom beams, C. On the shaft T two friction-clutch pulleys, A' and B', are loosely mounted, the actuating sides facing each other, and also facing the end of a double cone, C', mounted loosely on the shaft T. A lever, D', is pivoted at D² in a suitable frame, and extends up through the press-room floor D³, the lower end of the said lever being connected with the sliding double cone C'. An elbow-lever, G⁴, is pivoted between the uprights A at the bottom, and is connected by a connecting-rod, G², with the lever D' a short distance above the double cone C'. The end of the horizontally-projecting arm of the elbow-lever G⁴ is connected, by a vertical rod, H', with a tripping-lever, H², pivoted between uprights A at the press-room floor. A pin, *k'*, (see Figs. 1, 7, and 8,) projects from one of the beams K in such a manner that it can strike the elbow-lever G⁴ or the tripping-lever H².

The operation is as follows: The follower is lowered as much as possible, and the cotton, &c., is tramped into the baling-box up to the bottoms of the doors, which are then closed. The platen P is passed in between the cleats

O, and the filling of the box is completed above and between the top beams, B. Then the lever D is thrown to engage the double cone C' with the pulley A', whereby the said pulley A' is locked on the shaft T, which is revolved with the said pulley, whereby the spindles Q are turned and the follower raised. When the follower-beams K reach the tripping-lever H², the material in the press is compressed sufficiently, and the pin k' strikes the said tripping-lever H² and forces it upward, whereby the rod H' is pulled upward and the lower end of the lever D' and the double cone C' are pushed in the direction of the arrow a², whereby the pulley A' is released from the shaft T, and the machine is stopped. The doors are then opened, the ties, &c., adjusted, and the bale is removed.

The pulley B' is revolved in the inverse direction of that in which the pulley A' is revolved by means of a crossed belt, and as the said pulley B' is smaller than the pulley A' it revolves much faster. The lever D' is shifted in such a manner as to move its lower end in the direction of the arrow a², and engage the double cone with the pulley B', whereby the said pulley is locked on the shaft T, and revolves the same in the inverse direction from that in which it was revolved by the pulley A', whereby the follower is moved downward. When the follower is lowered as much as possible, the pin k' strikes the angle-piece G⁴, and forces it down, thereby moving the lower end of the lever D' and the cone C' in the inverse direction of the arrow a², whereby the pulley B' is disengaged from the shaft T, and the machine is stopped.

The advantages of our improved baling-press are as follows: The vertical strain is all taken up by the two screw-spindles, and is entirely a tensile strain, and that part of the screw under strain decreases as the operation of pressing proceeds and as the pressure increases. In our press the screw-spindles are simple threaded and remain in position, turning only on their longitudinal axes. No vertical tie-rods or stirrups are required to take up the vertical strain, and the upright timbers or posts at the four corners serve to maintain the position and stability of the various parts of the press.

The depth of the baling-box may be in-

creased, as desired, without a corresponding increase in the diameter of the screw-spindles, &c., as is necessary with presses using one or more screws under compression-strain.

The screw-spindles form guides for the follower-block while pressing, and hold the bales securely in position while the doors are being opened and the ties adjusted. As the beams K are made of iron or steel, and are continuous, there are no weak points in the same, as is the case with other presses using two screws under tension, and as the said beams are pivoted on the nuts through which the spindles pass they are enabled to spring while under pressure without binding the nuts on the screw-spindles.

In our press an improved latch or fastening for the doors is provided, hinged so as to securely hold the doors and to release them easily.

The automatic stopping device prevents injury to the press.

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

1. In a baling-press, the combination, with the baling-box E, having the outwardly and downwardly swinging side doors, F, of the latch-frame or lever F', hinged to a top cross-beam, the catch F² on the lower part of the door, and the notched plates F³ on the upper part of the door, the side arms of the frame, when in a locked position, resting in the said notches, substantially as herein shown and described.

2. In a baling-press, the combination, with the vertical baling-box E, of two vertical screw-spindles, Q, the nuts M, having trunnions L, the beams K, apertured to receive the said trunnions, the pin k' on one of the said beams, the clutch-pulleys A' B', the double cone C', the lever D', the bell-crank G⁴, having one end projecting in the path of the said pin k', the bar G², the tripping-lever H², and the connecting-rod H', substantially as herein shown and described.

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Witnesses:

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