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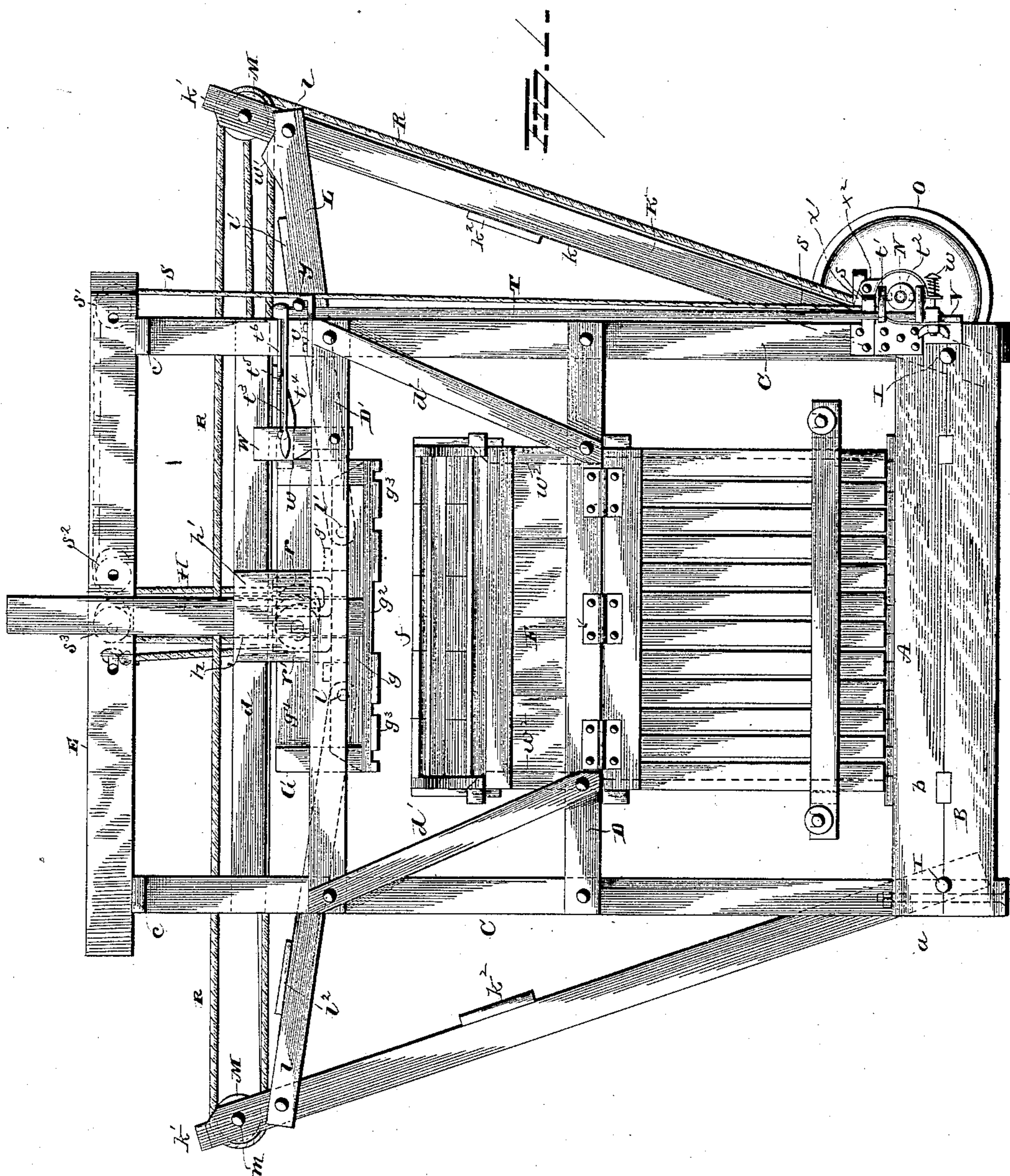
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G. W. SOULÉ.

COTTON PRESS.

No. 341,070.

Patented May 4, 1886.



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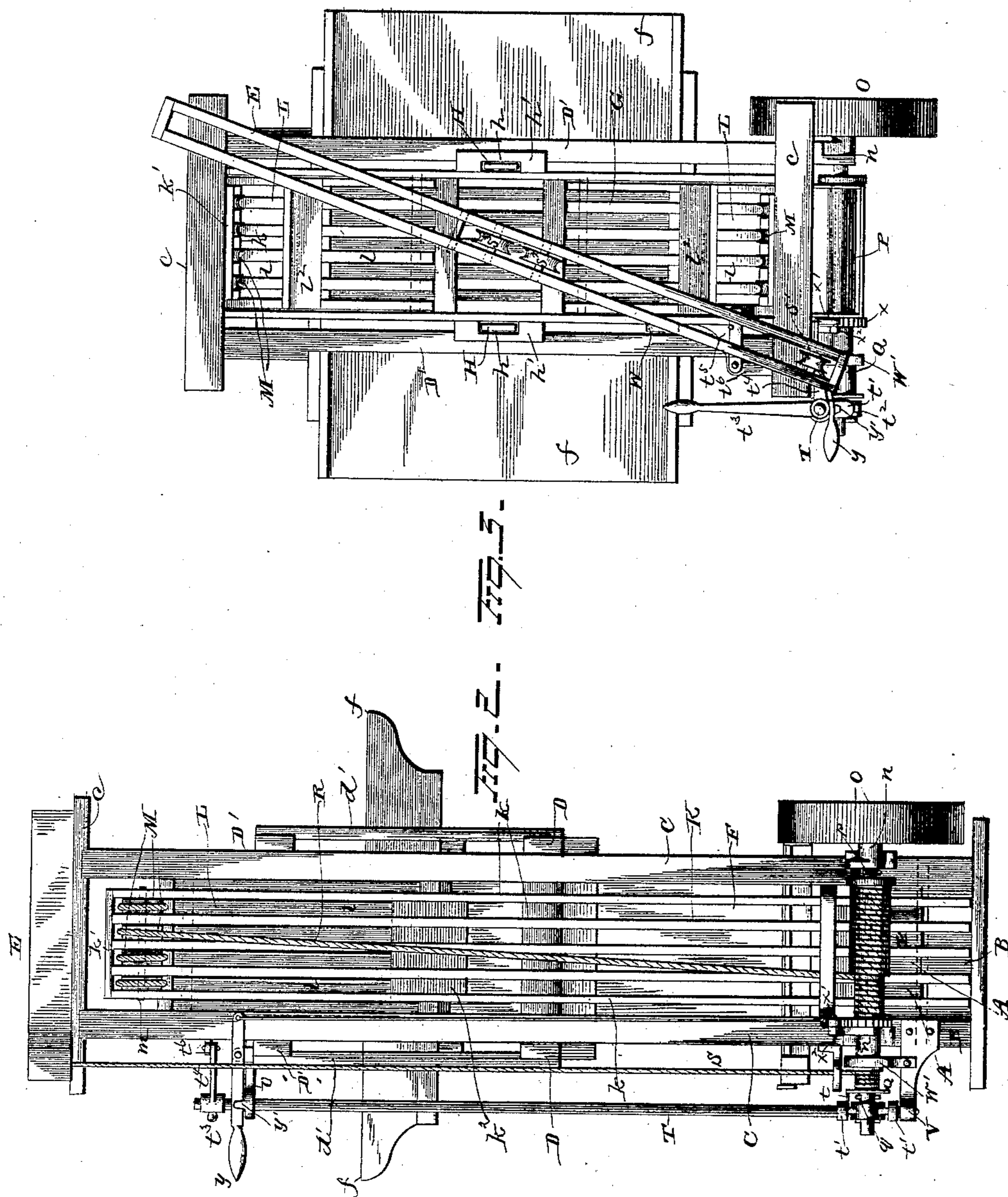
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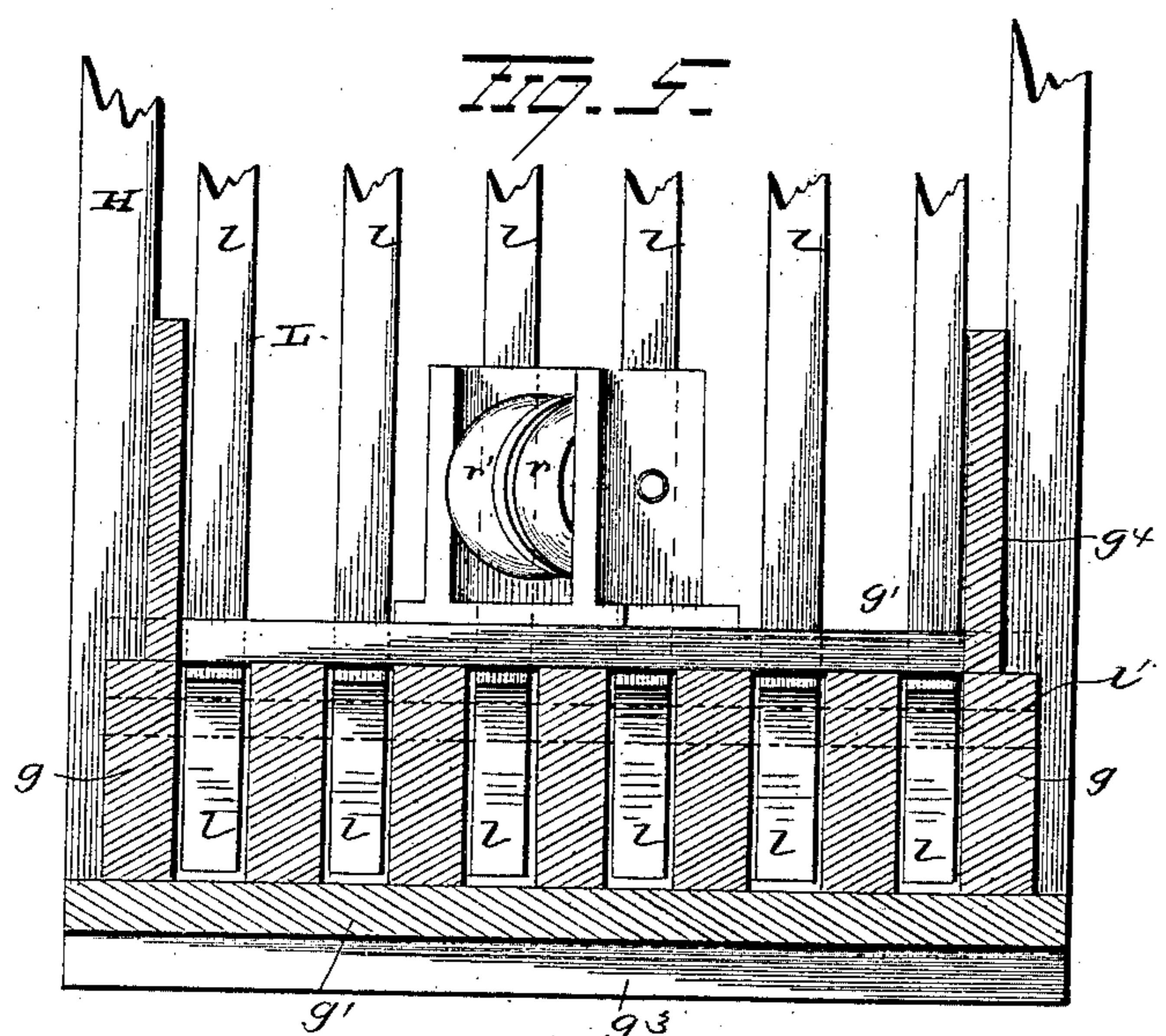
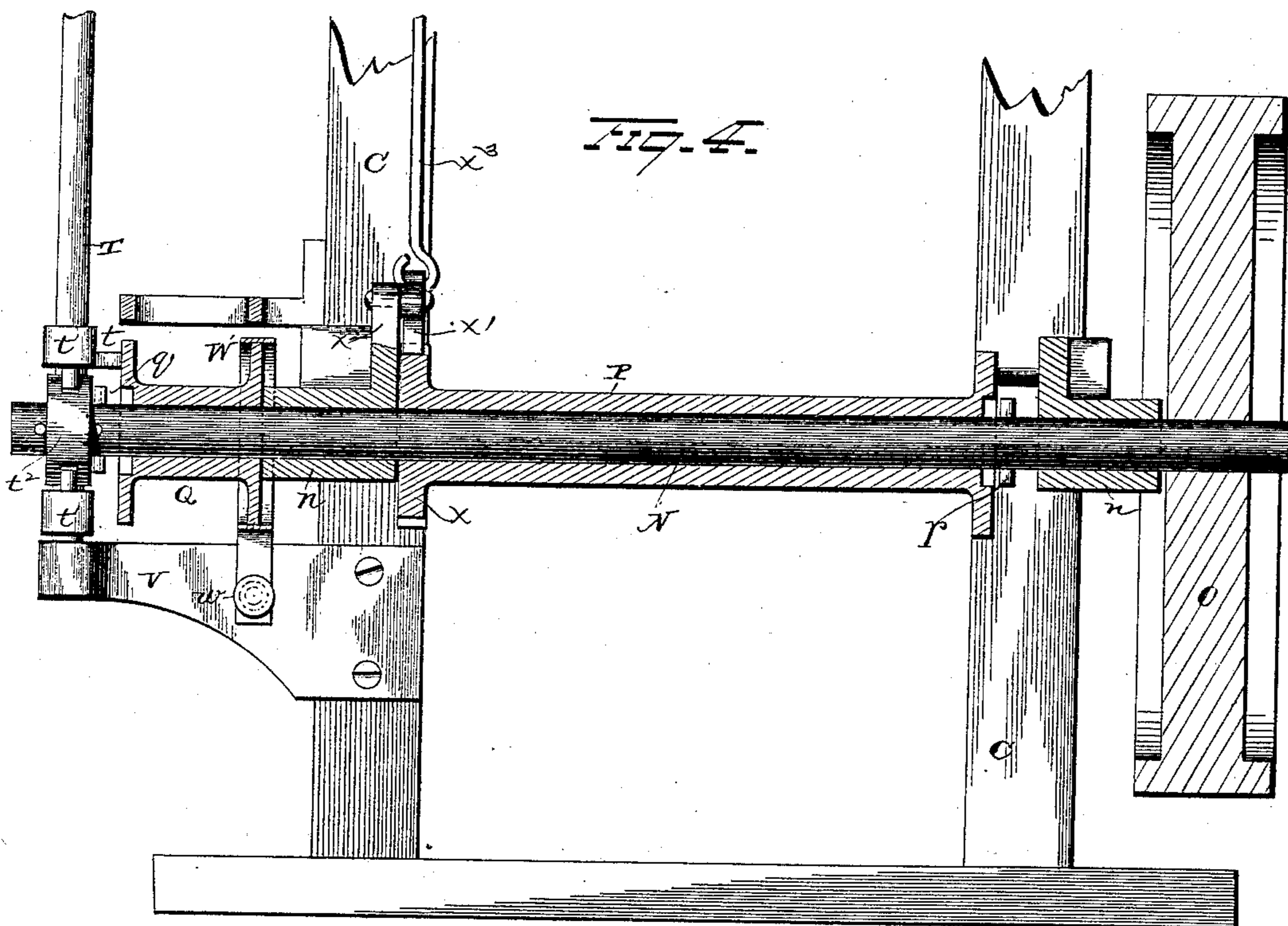
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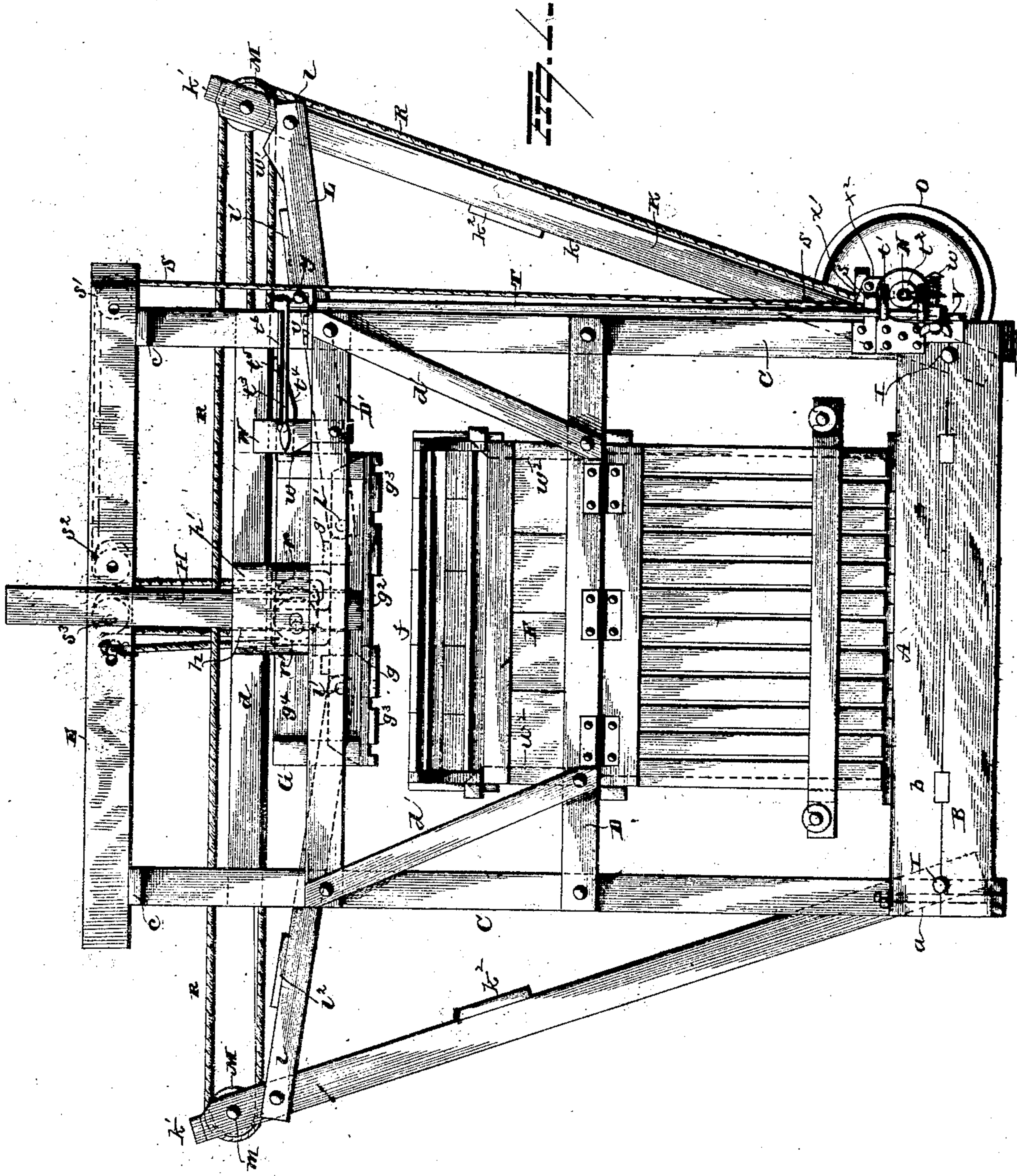
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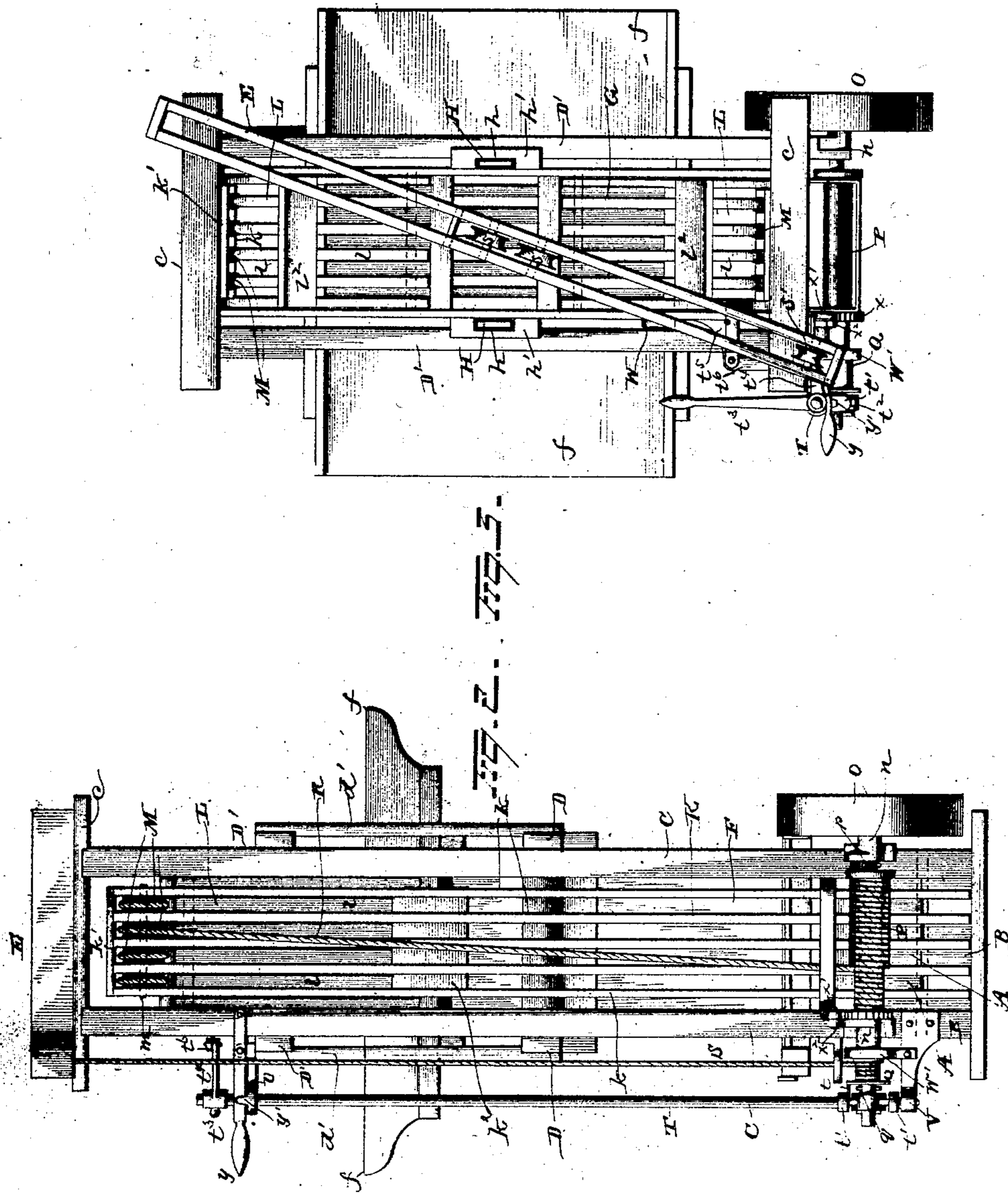
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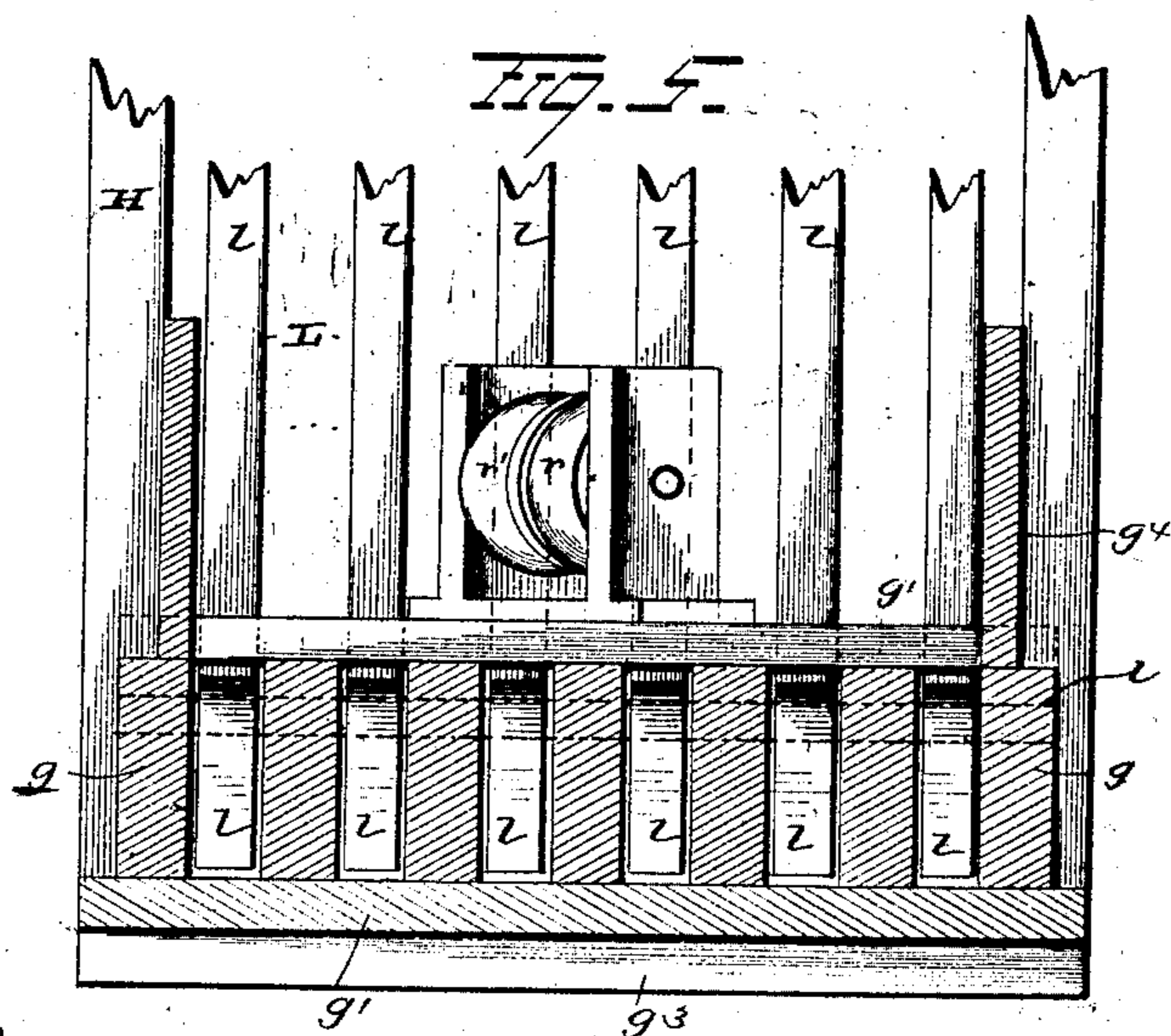
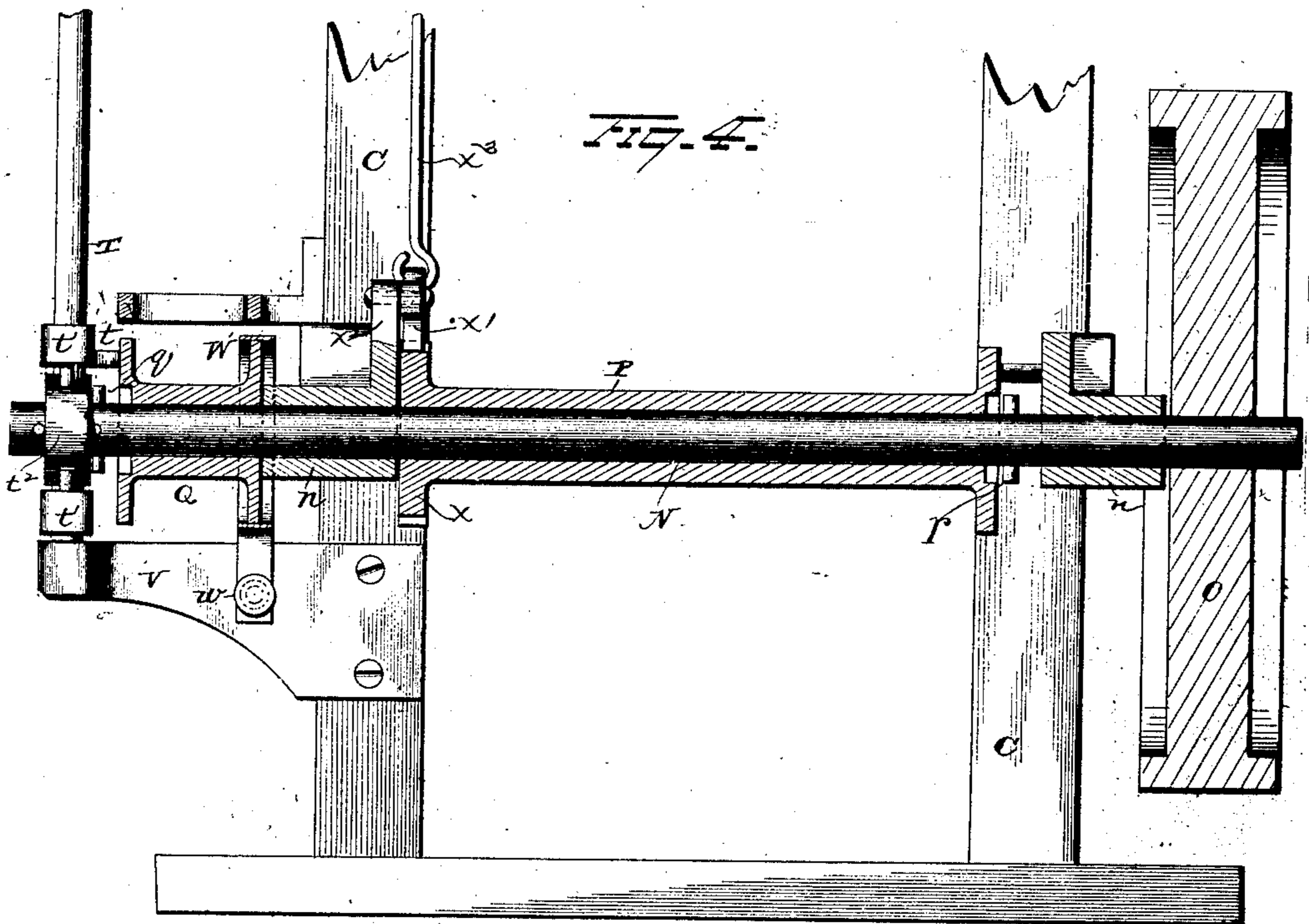
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UNITED STATES PATENT OFFICE.

GEORGE W. SOULÉ, OF MERIDIAN, MISSISSIPPI.

COTTON-PRESS.

SPECIFICATION forming part of Letters Patent No. 341,070, dated May 4, 1886.

Application filed August 5, 1885. Serial No. 173,622. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. SOULÉ, of Meridian, in the county of Lauderdale and State of Mississippi, have invented certain new and useful Improvements in Cotton-Presses; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in cotton-presses.

The object is to provide a self-packing press and means for operating the same in a simple and effective manner.

A further object is to provide an economical construction of the main frame and movable parts without diminishing their strength and durability.

A further object is to provide an extended receiving-hopper, by means of which the cotton or other fibrous material may be introduced rapidly and in large bunches beneath the follower.

With these ends in view my invention consists in certain features of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view of the press in side elevation. Fig. 2 is a view of the same in end elevation. Fig. 3 is a plan view, and Figs. 4 and 5 represent detached views of parts.

The bed or base of the main frame consists of a series of sills, A, lying parallel with one another and a short distance apart. The number of sills A may be eight or more or less, as found most expedient. They are constructed thin and deep. Beneath the outer and middle sills A are placed similar sills, B, their upper edges resting in snug contact with the lower edges of the sills A, and connected therewith by bolts a. One or more cross-girders, b, are mortised half into the sills A and half into the sills B, thereby forming a solid support for such of the sills A as are not supported or strengthened by sills B. Four uprights, C, are secured at the four corners—one at each—being shouldered and firmly bolted between the two outside sills. The two pairs of end uprights, C, are connected at the top by cross-heads c, and the two pairs of

side girders are connected by the pairs of beams D D' and d, located at the top of the press-box, above the feed and near the top of the uprights, respectively. Short diagonal braces d, are secured to the beams D D', to give the frame-work additional firmness, and two of the diagonally-opposite uprights C are connected at their tops by the double beam E. 6c

F represents the press-box, provided with the swinging sides and removable ends, as is usual. The upper end of the press-box is provided with laterally-extending oblique flanges f, which serve to form an enlarged hopper for feeding the cotton or other fibrous material to the box. 65

G is the follower or movable platen. It is constructed of a series of thin deep sills, g, lying lengthwise of the platen, connected on their upper edges by cross-ties g', and on their lower edges by cross-planks g". Cleats G³ are also secured at suitable intervals on the lower sides of the planks g". The side sills, g, are further strengthened by upper sill-sections, g', secured thereto by bolts extending through the two or by means of corner-cleats or by both. The opposite sides of the follower are provided with upwardly-extending guides H, which extend through slots h, formed in blocks h', secured to the beams D' and d, and serve to steady the follower in its upward and downward movement, and cause it to enter the top of the press-box without catching on the sides or ends thereof. 75 80 85

Two sets of levers, K, or two levers composed of several sections, are pivoted at their lower ends to the base-sills by means of bolts or rods l, which extend transversely through the sills and levers near their ends. 90

The several sections k of the levers K—five (more or less) in number—are each pivoted between two of the sills A. The sections k are further secured together by cross-heads k' and cross-ties k". 95

Two sets of live-levers, l, or two levers composed of several sections, l—six (more or less) in number—are pivotally secured to the levers K, near their upper ends, and to the ends of the sills on the movable platen by bolts or rods l', which extend through the sections l and k and the sections l and sills g, respectively. The sections l alternate with the sections k and sills g, respectively. The sections l are fur- 100

ther secured together by cross-ties t^2 . A set of loose pulleys or sheaves, M, is secured in the upper end of each of the levers K. The pulleys M are preferably mounted on a common rod, m , one pulley being located between each two successive lever sections k . The lever-sections and cross-heads thus form housings for the pulleys, and prevent the ropes from displacement, thereby saving the expense of blocks or independent housings. There is a simple operating-shaft, N, located transversely of the press near its base at one end. The shaft N is journaled in suitable bearings, n , secured to the uprights, and is provided with a band pulley, O, rigidly secured on one of its ends. The shaft N is also provided with two spools, P and Q, adapted to receive the two ropes, which depress and elevate the follower, respectively. The rope R, which serves to depress the follower, is secured to the spool P, and leads from thence over one of the middle pulleys in the end of the lever K, and from thence back and forth over and under the corresponding pulleys in the ends of the levers K, and is finally secured at its end to one of the lever-sections k . The rope S, which serves to elevate the follower, leads from the spool Q upwardly through a guide, s , secured to one of the uprights C over a loose pulley, s' , mounted in the end of the double beam E, thence over a loose pulley, s'' , mounted near the middle of the beam E, thence downwardly to and around a pulley, r , secured to the follower, thence over a pulley, s'' , mounted near the middle of the beam E, thence down to and around a pulley, r' , secured to the follower, and thence up to the beam E, to which it is secured. It will be observed that a strain on the rope R will tend to draw the upper ends of the levers K toward each other, and thereby depress the follower, and also that a strain on the rope S will tend to elevate the follower. The two spools P and Q are loosely mounted on the shaft N, and adapted to be thrown into and out of engagement with clutches p and q on the shaft N, as follows: When the shaft is slid toward the left, the end of the spool P bears against one of the shaft-bearings, and the clutch p is thrown into engagement therewith, and the follower thereby lowered. The clutch q is in the meantime held out of engagement with the spool Q by a lug, t , on the shifter-rod T, and therefore pays out rope S as the rope R is wound up. When, however, the shaft N is slid to the right, the clutch q engages the spool Q, and the spool P is disengaged, and thereby allowed to unwind the rope R as fast as the rope S is wound. When the shifter-lever rod T is half-way between the two extremes, the spools are both disengaged from their clutches, and the shaft N is allowed to run freely. The shifter-rod T has a bearing at its lower end in a bracket-arm, V, secured to the upright C, and near its upper end in a bracket-arm, V. The rod T is provided with a pair of jaws or arms, t' , at its lower end, which engage a loose collar, t^2 ,

secured on the shaft N between two pins or other stops, by means of which the shaft is shifted longitudinally in its bearings by turning the rod T. The said rod T is further provided with an operating-lever, t^3 , secured to its upper end. The shifter-operating lever t^3 is provided with an arm, t^4 , at an angle thereto, which arm in turn is connected with an angle-arm, t^5 , by a rod or bar, t^6 . The angle-arm t^5 is attached to an oscillating cam standard or lever, W, pivotally secured to the beam D' and adapted to engage a cam projection, w , on the end of the follower as the latter reaches its elevated position. The effect of the engagement of the cam w with the oscillating lever W is to throw the latter back, and thereby twist the rod T toward the right, and hence shift the shaft N toward the left, thereby releasing the clutch q from the spool Q, and thus automatically stopping the upward movement of the follower. The angle-arm t^5 is also brought into engagement with a cam, w' , on a section l of the live-lever L at the moment when the follower reaches its depressed position, which engagement throws the lever W in the opposite direction, and hence turns the rod T toward the left and the shaft N toward the right, thereby releasing the clutch p from the spool P, and allowing the follower to stop and the shaft N to run free. Around one flange of the outer spool (or the spool for elevating the follower) passes a yielding metallic strap, W', which latter is adapted to act as a brake. This strap is rigidly secured at one end to the frame of the machine, and is provided at its opposite end with a hole for the passage of a bolt, w'' , also secured to the machine-frame. This bolt is preferably screw-threaded, and can, if desired, be provided with a head for screwing and unscrewing the bolt, or it can be provided with a nut. In either event a spring is placed between the free end of the metallic strap and the head of the bolt or nut, and yieldingly holds the strap in contact with the flange of the wheel. The strap is so applied to the parts that when the spool is turning in the direction to elevate the follower the flange moves toward the spring, and there is little or no friction applied, but when turning in the opposite direction the strap offers considerable resistance, and prevents the follower from falling rapidly. A ratchet, x , is secured on the end of the spool P, and a gravity-pawl, x' , adapted to engage the ratchet is pivoted to a lug, x'' , on the shaft-bearing. The pawl x' is raised by a rod, x^3 , attached to a lever having an elongated slot in its end, extending upwardly to the end of a lever, y , pivoted to the bracket-arm v . The outer end of the latter is also provided with an upwardly-extending lug, y' , over which the handle of the lever y may be placed when it is desired to lock the pawl in engagement with the ratchet, and thereby prevent the spool P from turning to unwind. The cam w' may be located in different positions on the section l , or given greater or less prominence, and thereby

engage the angle-arm at an earlier or later moment, and stop the downward motion of the follower in different positions; or the angle-arm t might be extended and accomplish the same purpose. The upper portion of the press-box is contracted more or less by means of inwardly-projecting shoulders w^2 , formed either by the ends of the planking forming the sides and ends of the upper portion of the box, or by means of separate oblique-faced cleats secured on the inside of the planking. As the material is forced downwardly through the contracted portion, it is compressed, and when it reaches the enlarged lower portion of the box it naturally expands, and thereby locks itself against a return upward movement.

The operation of the whole is as follows: Suppose the follower to be elevated, and the shaft N to be running at the desired rate, when the press-box is filled with material to be pressed the operator presses the lever on the rod T inwardly, and thereby sets the spool P to rotating, and the levers K beginning to approach and force the follower downwardly, if there has not enough material been received to form a bale the operator, after the follower has traveled downwardly far enough to slightly compress the amount received, reverses the movement of the follower by drawing the operating-lever outwardly, thereby releasing the spool P and clutching the spool Q. The follower now rises, while a new mass of cotton is being collected, and as soon as it reaches its upward limit the new charge is received, and the follower again caused to pack it down. When enough has been received to form a bale, the follower is allowed to travel downwardly to its limit, and is held there while the bands are being secured and sacking sewed. The broad funnel or hopper mouth enables the feeder or feeders to charge the press with much greater facility than the narrow mouth will admit of, and the ease and rapidity with which the operator can advance and return the follower in packing by a single lever only renders the press highly advantageous, since, aside from the effective manner in which it accomplishes its work, it does away with the help of one or more men. Cotton may also be fed into its hopper directly from a ginning-machine, it being capable of baling it as fast as a first-class gin can furnish it.

It is evident that many slight changes in the construction and arrangements of the several parts might be resorted to without departing from the spirit and scope of my invention; hence I do not wish to limit myself strictly to the construction herein set forth; but

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A bed or base for a baling-press, consisting, essentially, of the upper and lower sills and the cross-girders secured in mortises formed in the adjacent faces of the upper and lower sills, substantially as set forth.

2. In a baling-press, the combination, with

a press-box, of a follow-block or vertically-movable platen provided on opposite sides with upwardly-projecting guide-standards and slotted guide-blocks secured to the press-frame above the press-box and adapted to receive the guide-standards and guide the follow-block in its movements, substantially as set forth.

3. The combination, with the press-box, open at its upper end, of a flaring hopper, substantially as described, secured to and forming a continuation of said upper end, for receiving the cotton in large masses, substantially as set forth.

4. The combination, with a box, a follower, and levers for moving the follower, of a shaft, a spool loosely mounted thereon, a rope secured to said spool for elevating the follower, a second spool loosely mounted on said shaft, a rope secured thereto and connected directly with the follower, for depressing the follower, and devices whereby either spool can be locked to the shaft or both spools be permitted to remain stationary while the shaft is moving.

5. The combination, with a press-box, a follower, and levers connected with the follower, of a driving-shaft, two spools loosely mounted thereon, ropes connecting the spools to the levers and follower, substantially as described, clutch mechanism for locking either spool to the shaft, and devices for automatically operating the clutch when the follower reaches either limit of movement.

6. The combination, with a press-box, follower, and levers connected with the follower, of a longitudinally-movable drive-shaft, two spools loosely mounted thereon, and ropes connecting one spool with the follower and the other spool with the levers, clutch mechanism for locking the shaft to either spool, and devices for moving the shaft longitudinally.

7. The combination, with the press-box, follower, and the levers, substantially as described, pivotally secured to the follower and to the base of the press, of the driving-shaft, the spools loosely mounted thereon, the ropes connecting one spool to the follower and the others to the levers, and clutch mechanism for locking either spool to the shaft.

8. The combination, with a press-box, a follower, and levers for operating the follower, of a shaft, two spools mounted thereon, a rope connecting one spool with the follower, a rope connecting the other spool with the levers, and a friction-brake in contact with the spool connected with the follower, for preventing said spool from rotating rapidly in one direction.

9. The combination, with a press-box, a follower, and levers connected with the follower, of a shaft, two spools loosely mounted thereon, ropes connecting the spools and follower and levers, as described, a yielding friction-brake in contact with one of said spools, and a screw for regulating the tension of said brake, substantially as set forth.

10. The combination, with a press-box, a follower, and levers for depressing the follower, of a shaft, spools loosely mounted thereon, devices for locking either spool to the shaft, a shifting-lever for operating said devices, and devices operated by the levers for turning said shifting-lever, substantially as set forth.
11. The combination, with a follower and levers for operating the follower, of a shaft, two spools connected, respectively, with the follower and lever, clutch devices for locking the spools to the shaft, and a shifting-lever, and two stops, one permanent and the other removable, and both connected with the shifting-lever, whereby the movement of the follower can be automatically checked by the removable stop before it completes its descent, or automatically checked after it reaches the limit of its downstroke, substantially as set forth.
12. The combination, with a press-box and follower, of a drive-shaft, spools and ropes for elevating and lowering the follower, a shifting-lever, and a stop or trip device for automatically disconnecting the spool which elevates the follower from the drive-shaft when the follower reaches the limit of its upstroke.
13. The combination, with a press-box, follower, and the levers arranged substantially as shown, of the pulleys arranged between the levers, which form housings therefor, a shaft, a drum mounted on said shaft, and a rope connected with the drum and passing around the pulleys, substantially as set forth.
14. In a baling-press, two windlasses mount-

ed upon a longitudinally-movable shaft, for securing both an upward and a downward movement of follow-block, with the windlass-shaft running continuously in one direction, substantially as set forth.

15. In a baling-press, two windlasses mounted upon one shaft, arranged in such manner that either may be driven by said shaft at will of operator, or both left still while windlass is running, substantially as set forth.

16. In a baling-press, the combination, with a vertically-movable platen or follower, of two windlasses mounted on a single shaft and devices connecting both windlasses with the platen, for securing both an upward and downward movement of the platen, with the windlass-shaft running continuously in one direction.

17. In a baling-press, the combination, with two windlasses mounted on a single shaft, of a vertically-movable follower or platen connected to both windlasses and devices for locking either windlass to the shaft, whereby the movement of the platen can be reversed at any desired point without changing the direction of the actuating-power, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

GEORGE W. SOULE.

Witnesses:

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G. HENDERSON.