

(No Model.)

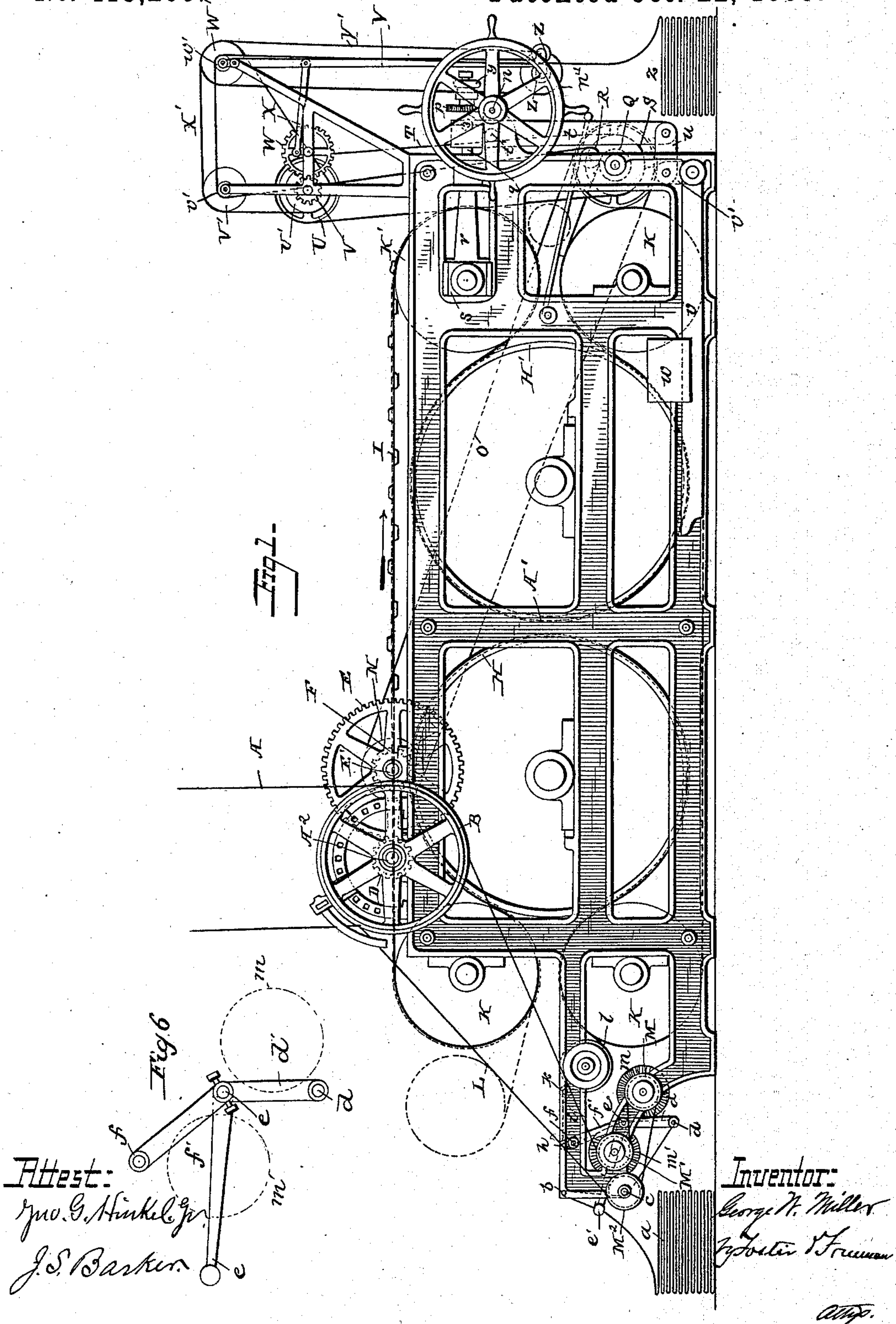
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G. W. MILLER.

MACHINE FOR PRESSING CLOTH.

No. 413,260.

Patented Oct. 22, 1889.



(No Model.)

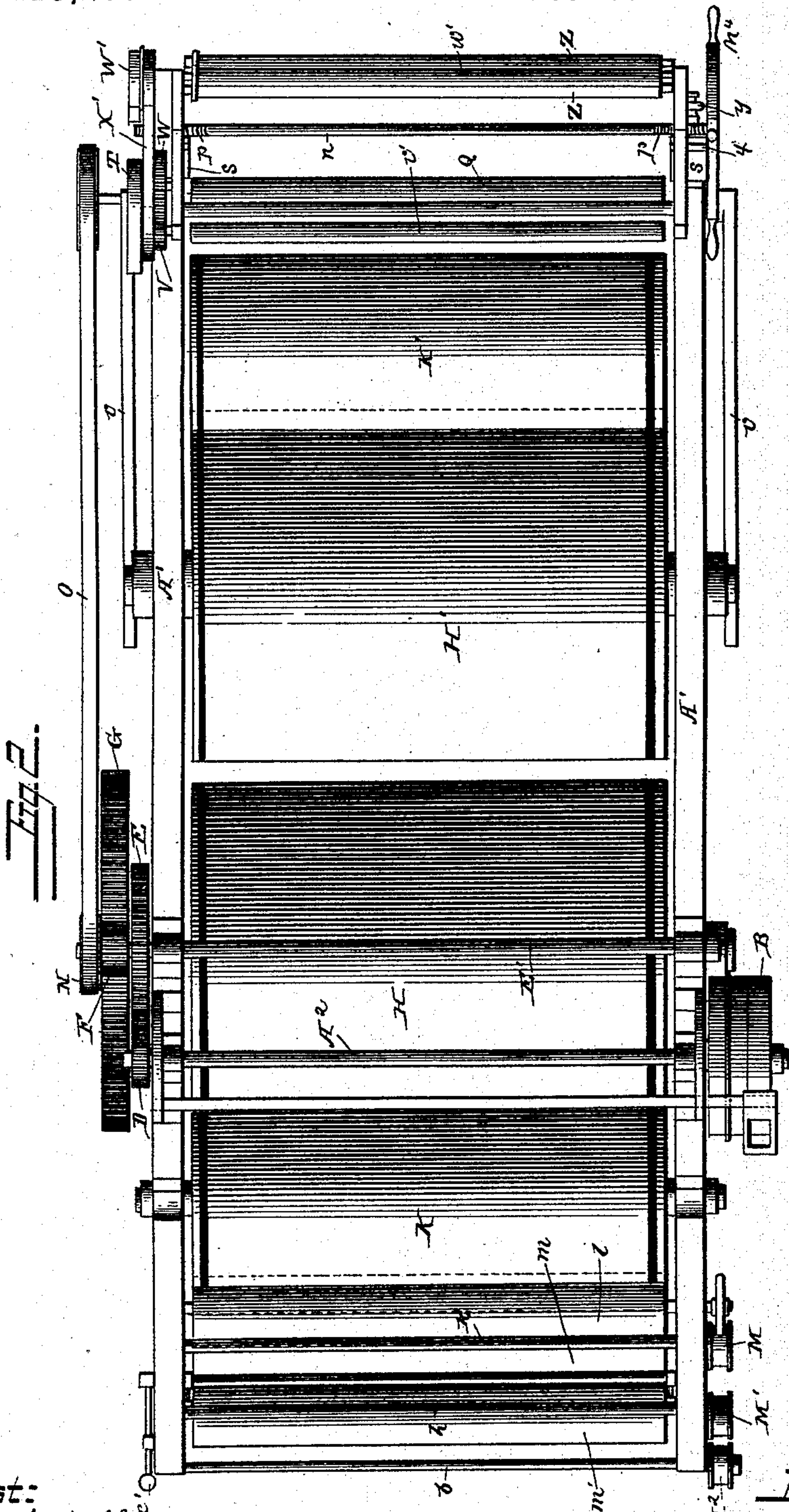
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Patented Oct. 22, 1889.



Attest:
Geo. E. Stinkel Jr.
J. S. Barker.

Inventor:
George W. Miller.
By Foster & Freeman
Attor.

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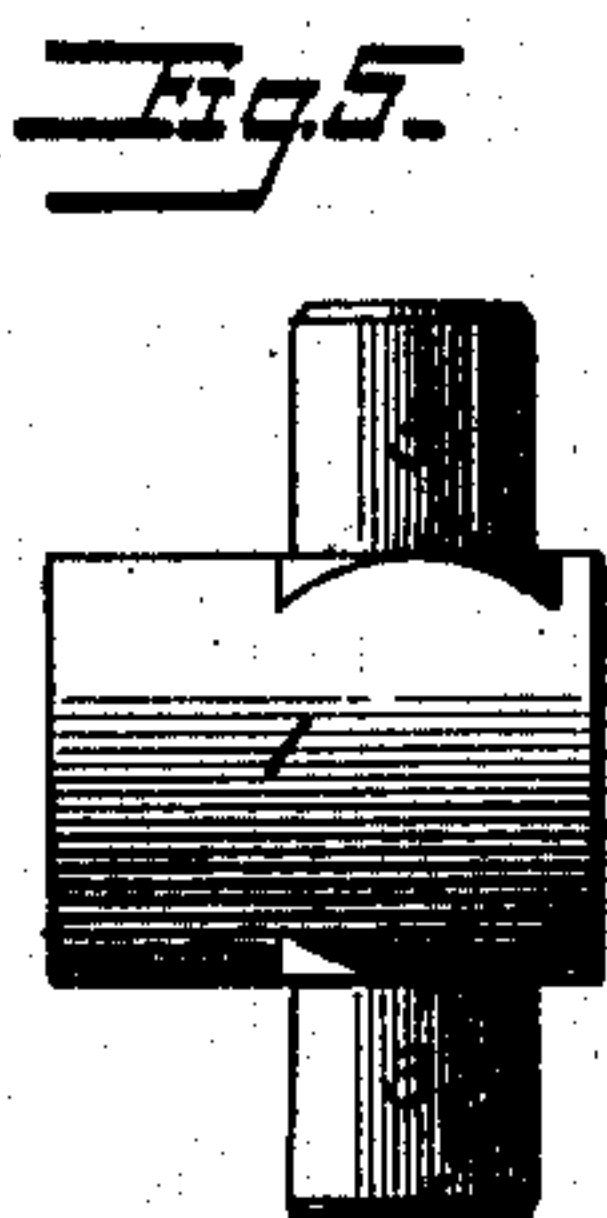
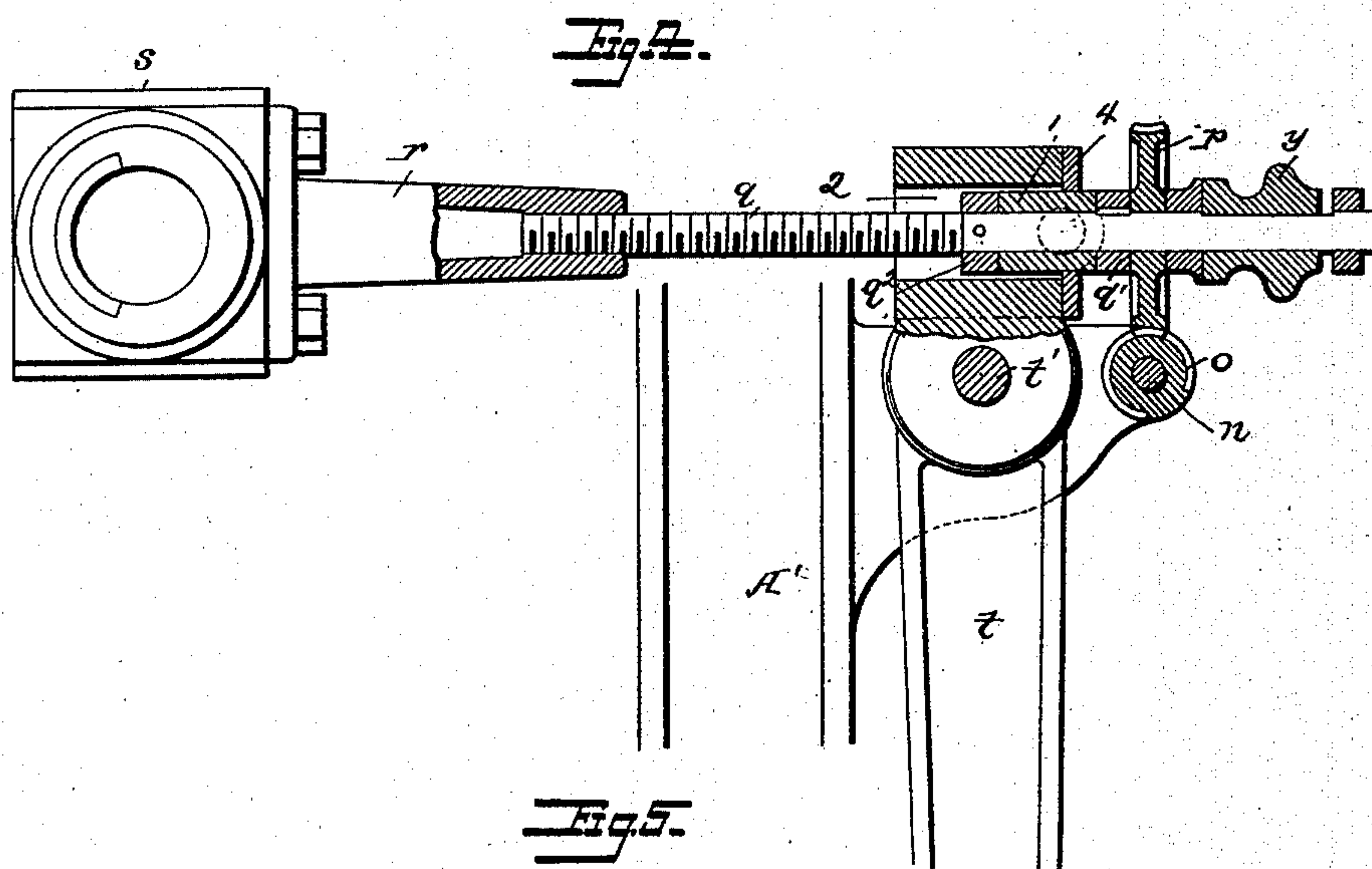
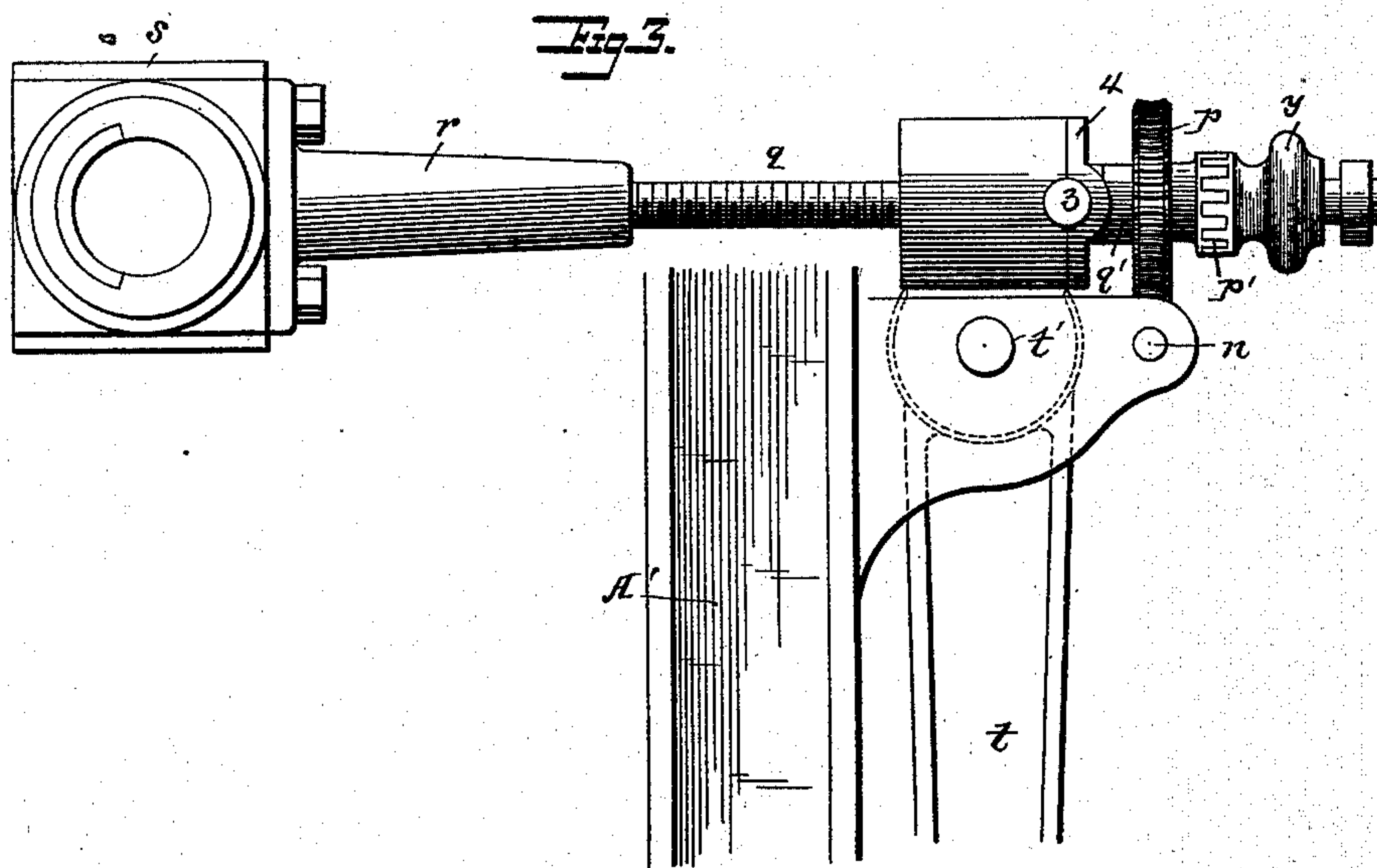
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By Foster Freeman

UNITED STATES PATENT OFFICE.

GEORGE W. MILLER, OF WOONSOCKET, RHODE ISLAND.

MACHINE FOR PRESSING CLOTH.

SPECIFICATION forming part of Letters Patent No. 413,260, dated October 22, 1889.

Application filed August 5, 1887. Serial No. 246,186. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. MILLER, a citizen of the United States, residing at Woonsocket, Providence county, Rhode Island, have
5 invented certain new and useful Improvements in Machines for Pressing Cloth, of which the following is a specification.

My invention relates to that class of cloth-presses in which the fabric is pressed between
10 a traveling metallic band and a cylinder; and it consists in the combination, with the pressing cylinder or cylinders and band, of rollers arranged to support the band so as to secure a more extended pressing-surface than heretofore, and in certain novel arrangements and combinations of parts, as will be hereinafter
15 fully described.

In the drawings, Figure 1 is a side elevation of a cloth-pressing machine embodying
20 my invention. Fig. 2 is a top view of the same, the pressing-band being removed. Fig. 3 is a side view, enlarged, of the devices for adjusting the movable guide-roller and for maintaining a tension upon the pressing-
25 band. Fig. 4 is a longitudinal sectional view of a portion of the same. Fig. 5 is a detached view of the bearing for the outer end of one of the adjusting screw-rods. Fig. 6 is a detached view showing the adjustable roll-
30 carrying frames of the cloth-feeding devices.

The side frame-pieces A' of the machine are suitably connected and constructed to support the operating parts, hereinafter described.

35 A² represents the main driving-shaft, supported in suitable bearings on the top of or in the upper part of the frame-pieces, and carrying at one end the fast and loose pulleys B, with which engages the main driving-
40 belt A. Near the end of shaft A², opposite the pulleys B, is secured a pinion D, meshing with a gear-wheel E of considerably larger size, supported on a shaft E', which also carries a smaller pinion F, which in turn drives
45 the large pressing-cylinder H through gear-wheel G.

H' is another pressing-cylinder, preferably of the same size as and mounted in line with and close to cylinder H. These cylinders
50 may be both heated or cold, or one heated and the other cold, as the character of the work may require. Round both these cyl-

inders passes a wide smooth metallic pressing-band I, supported and directed in its course by cylinders or rollers K K K', suitably mounted in the frame outside of the
55 pressing-cylinders—that is, toward the ends of the machine—the roller K' being adjustable. Each cylinder and roller is provided at or near each end with a groove to receive a row of lugs fastened at or near each edge and
60 upon each side of the pressing-band I, which, engaging one side with the grooves in the cylinders and the other with the grooves in the rollers, guide the band in its course and prevent its running off. The course of the
65 belt and the direction of its movement are indicated in Fig. 1 by arrows. It passes from the upper left-hand roller K above the frame to the roller K', around which it passes, going thence upward over the cylinder H', en-
70 circling it in direct contact for nearly seven-eighths of its entire circumference, then passing to and around lower rollers K to the cylinder H, around which it passes in a direction opposite to that followed in passing around
75 cylinder H', and thence again to upper roller K. It will be seen that the band I entirely encircles each cylinder except a small portion of the face or side of each opposite to the
80 other cylinder, which portions are left exposed to permit the passage of the cloth to or from the cylinders, whereby a much more extended pressing-surface with a given size of cylinder is obtained than has heretofore been
85 attainable.

Great economy of space is secured by the construction shown, as the two large pressing-cylinders may be mounted with their peripheries almost in contact, while the band-
90 rollers are also mounted close to the pressing-cylinders. The band I is maintained under tension by means of the adjustable roller K', which is supported in sliding boxes s, movable in ways provided therefor in the frame. Each box is provided with a taper
95 sleeve r, extending rearward and threaded near its end to receive the forward screw-threaded ends of rods q. These rods are supported at their outer or rear ends in swivel or pivoted bearings l, carried by the
100 upper ends of vertical levers t, pivoted at t' to the frame of the machine. These levers are connected by links u with bell-crank le-

vers v , upon which are adjustably supported the weights w . Rods q extend through openings 2, of somewhat greater diameter than the rods, formed in the upper ends of the levers t , the main portions or bearings 1 being arranged therein.

3 3 are trunnions carried by bearings 1 and upon which they rock, the bearings for these trunnions being one-half in the upper ends of levers t and half in cap-pieces 4 secured thereto. Fast upon each rod q is a collar q' , against which the end of bearing 1 abuts, and q^2 is a collar fastened and held in position by a steel pin upon the rod and bearing against the opposite end of the bearing 1, and serving to prevent the screw-rod from being withdrawn from lever t .

n is a shaft extending across the machine and provided at one end with a hand-wheel n^4 , by which it may be easily operated. $o o$ are worms secured to this shaft and engaging with worm-wheels p to turn rods q . One of these wheels is keyed fast to its rod q , while the other is loose thereon and is provided with a clutch portion p' , whereby it may be united to its shaft by sliding clutch member y into engagement therewith. It will now be seen that the weights operate through bell-crank levers v , links u , levers t , bearings 1, collars q' , shafts q , sliding boxes s , and roller K' to keep the band I under tension, the amount of which may be varied by sliding the weights on their supporting-levers.

Should the band I be loose, as when first applied, the shaft n , by means of the hand-wheel n^4 , is turned, drawing the roller K' backward until the levers v begin to rise, when further backward movement of the roller will cease, and, further rotation of the shafts continuing, the levers t will swing top forward and bottom backward, this being permitted by the pivoted bearings 1.

By reason of one of the worm-wheels p being loose on shaft n and connected thereto by a clutch I am enabled to move one box s independently of the other, and can thus maintain proper tension on the belt throughout all its parts.

A spring and operative intermediate devices might be substituted for the weighted lever, as will be readily understood.

It will be seen that by this last-described mechanism a very delicate degree of adjustment may be secured, and that the tension upon the band may be varied at any time without necessitating the stopping of the machine.

Any desired mechanism for feeding the cloth to the pressing-cylinders and for brushing and dampening or steaming the same may be employed, and I do not wish to be limited to the exact construction of apparatus shown.

In the mechanism which I have shown and which I employ the cloth is fed to the machine from a roll or pile a , passing in its course about rollers b and c to the lower regu-

lating-roller d , thence past brush m , regulator-shaft e , brush m' , to the upper regulator-roller f , whence it passes over roller h , past or over the steam-box i , where it may be dampened, around roller k to the stretcher l , which I have shown to be of roller form, and thence onto belt I , between which and the pressing-roller H it passes. The two regulating-rollers d and f , by which the direction of the cloth and its more or less extended contact with the brushes are regulated, are supported, respectively, in arms d' and f' , carried by the shaft e , to which is secured the operating-handle e' . By moving the handle the opposite faces of the cloth are simultaneously brought into contact with or removed from the brushes $m m'$. The arms d' and f' are, however, separately adjustable upon shaft e by set-screws or equivalent means, as seen in Fig. 6, so that one face of the fabric may be brushed more or less than the other face, as the nature of the work may require. These parts just described are driven from the main driving-shaft by a belt L , passing around a pulley thereon, and thence around an idler-pulley M^2 at the front end of the machine, whence it passes over brush-pulleys $M M'$ back to its driving-pulley. The cloth, after passing between the band and cylinder H , is pressed throughout nearly the whole circumference thereof, and should that amount of pressing be found sufficient it may be wound upon a beam at the head end of the machine, as indicated in dotted lines; but should a further pressing be found desirable the cloth follows the band I around rollers K and K' to the pressing-cylinder H' , between which and the band it passes in a direction the reverse of that followed in passing around cylinder H . After being pressed by the second cylinder it is wound or folded by any desired form of mechanism. In that which I have shown the cloth may pass from cylinder H' over the lower roller K , past the roller Q to the winding-roller R , between which and the roller Q the cloth passes; or when it is desired to fold the cloth it passes between the rollers Q and R , thence upward to the shaft or roller v' , across to the shaft or roller w' , and down between the rollers Z , carried in the lower end of the folder-arms Y , by which the cloth is perfectly laid in a pile z . These delivery devices are driven by a belt O from a pulley N on shaft E' , which belt passes around a pulley on the shaft of roller Q . This shaft carries another pulley S , connected by belt T with a pulley U , on the shaft of which is secured a pinion V , meshing with a crank-wheel W , which in turn is connected with and operates the folder-arms Y through the pitman X . X' is another belt passing around pulley U' and pulleys V' and W' on the shafts of rollers v' and w' , which are driven thereby. Y' is still another belt, receiving power from double pulley W' and driving the rollers Z at the lower ends of the folding-arms.

From the fact that the two cylinders H and

H' revolve in opposite directions two pieces of cloth may be pressed at the same time, one piece passing around each cylinder by slight changes, which will readily suggest themselves to any one skilled in the art. For instance, a holder for a rod or roll of cloth to be pressed (indicated in dotted lines) may be arranged in proximity to the roller H' and in such relation to the uncovered face thereof that the cloth may pass between the band and the cylinder around nearly the entire circumference thereof and out over the pulley K to the folding mechanism.

It will be seen from the foregoing description and an examination of the drawings that the machine which I have invented is exceedingly compact in arrangement and is so arranged that the pressing action is continued around nearly the entire circumference of the pressing cylinder or cylinders.

As hereinbefore intimated, certain of the parts shown may be varied or others substituted therefor without departing from the spirit of my invention.

Therefore, without limiting myself to the exact construction shown, I claim—

1. In a cloth-pressing machine, the combination of the supporting-frame A' A', two pressing-cylinders arranged side by side, guide-rollers arranged at the ends of the machine outside of the said cylinders, continuous pressing-band supported by said rollers to encircle the cylinders except opposite the ends of the machine, a cloth-feed at one end of the machine opposite the uncovered part of one of the cylinders, and a cloth-receiver opposite the uncovered space of the other cylinder, substantially as described.

2. In a cloth-pressing machine, the combination of two pressing-cylinders arranged side by side, two guide-rollers arranged one above the other at the side of each cylinder and at the ends of the machine, one roller being adjustable, a continuous pressing-band supported by said rollers to encircle the cylinders except opposite the space between the adjacent guide-rollers, and means for adjusting the adjustable roller to change the tension upon the belt, substantially as described.

3. In a cloth-pressing machine, the combination of the frame A' A', the pressing-cylinders H H', mounted side by side therein, the rollers K K' K K, also mounted in said frame near its opposite ends, and the endless pressing-band passing around said rollers and partially encircling the cylinders, it passing both over and below both cylinders, though not in contact therewith, in its passage between the rollers at the opposite ends of the machine, substantially as described.

4. In a cloth-pressing machine, the combination of a cylinder, an endless pressing-band, the guide-rollers supporting the band in a position partially encircling the cylinder, the adjustable bearings in which one of the rollers is mounted, the yielding pressure device to maintain the band under tension, and devices, substantially as described, whereby said pressure device is adjustably connected with said bearings, substantially as described.

5. In a cloth-pressing machine, the combination of a cylinder, an endless pressing-band, guide-rollers K K' K K, supporting the band, sliding bearings in which roller K' is mounted, screws *q*, connected with the sliding bearings, a transverse shaft *n*, and gear-connections whereby said screws *q* may be simultaneously rotated, and yielding pressure-levers bearing against said screws to maintain tension on the band, substantially as described.

6. In a cloth-pressing machine, the combination of a cylinder, an endless pressing-band, guide-rollers supporting the band in a position partially encircling the cylinder, sliding bearings in which one of said rollers is mounted, screw-rods connected with the sliding bearings, a transverse shaft *n*, and gears between said screw-rods and shaft, one such gear being fast to one screw-rod and the other loose on the other screw-rod, and a clutch member *y*, substantially as described.

7. In a cloth-pressing machine, the combination of a cylinder, an endless pressing-band, guide-rollers supporting the band in a position partially encircling the cylinder, sliding bearings in which one of the rollers is mounted, rods *q*, connected with said bearings and extending rearward therefrom, levers through which pressure is applied to said rods, and pivoted adjusting-bearings for said rods carried by the levers, substantially as described.

8. The combination of the regulator-shaft *e*, a handle for moving the same, two regulator-roll frames separately adjustable on said shaft and extending in different directions therefrom, and means for retaining said frames in their adjusted positions, substantially as described.

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

GEORGE W. MILLER.

Witnesses:

A. J. PORTNER,
E. CHAS. FRANCIS.