

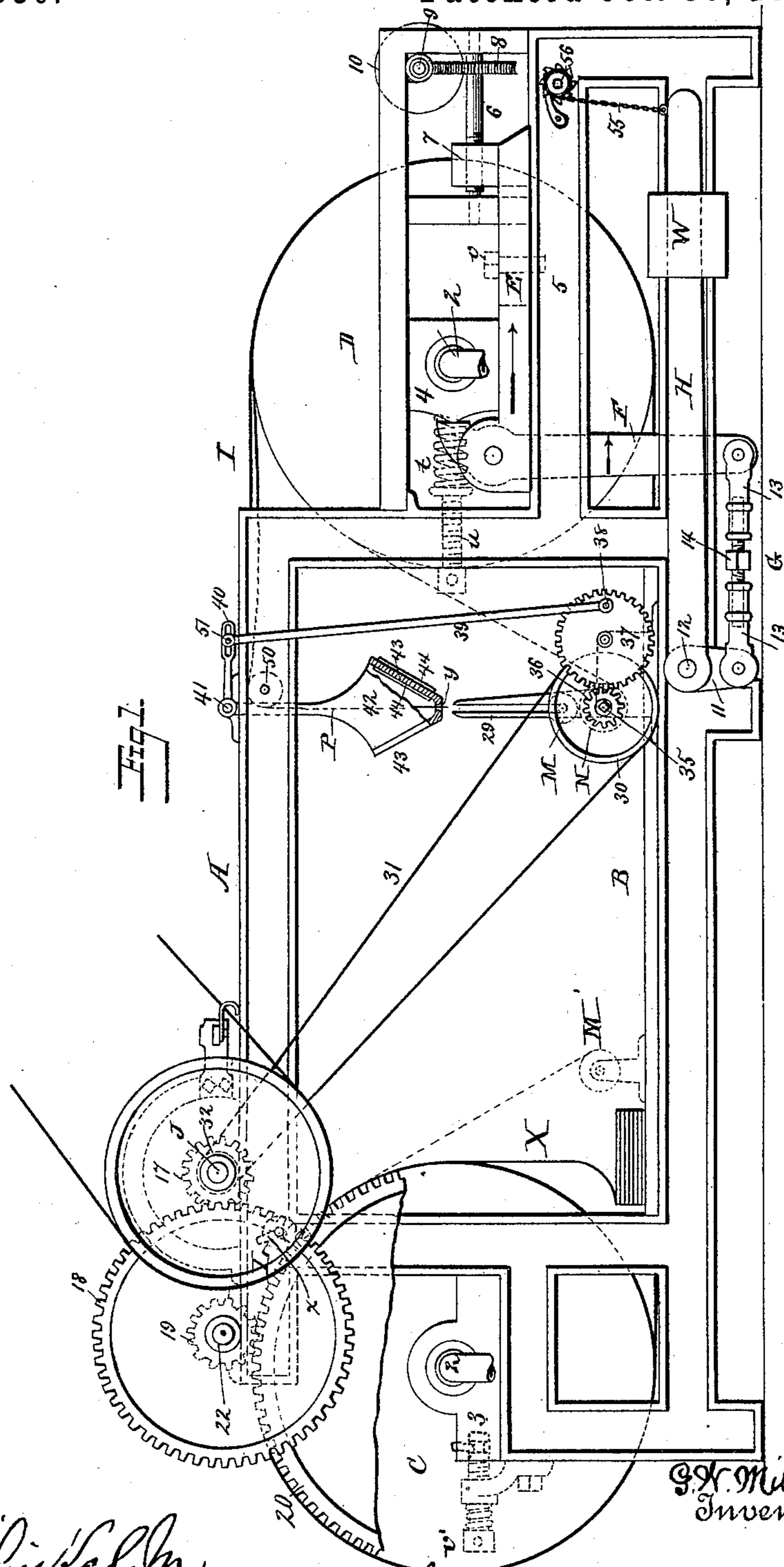
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3 Sheets—Sheet 1.

G. W. MILLER.  
MACHINE FOR PRESSING FABRICS.

No. 392,050.

Patented Oct. 30, 1888.



Witnesses

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Geo. G. Hinkel Jr.  
Wm. A. Harris.

G. H. Miller.  
Inventor.

By His Attorneys

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 Foster Freeman

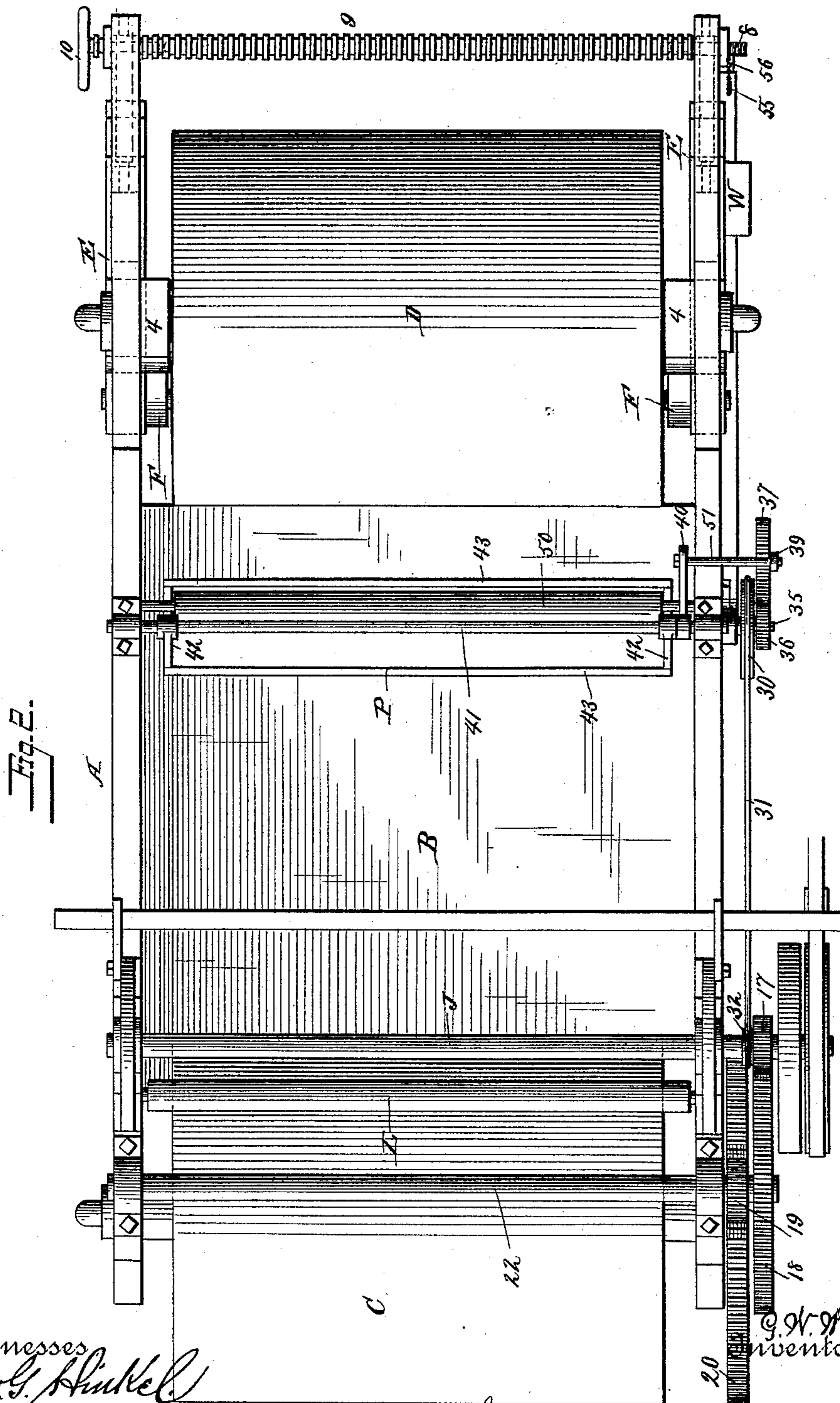
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*Geo. G. Hinkel*  
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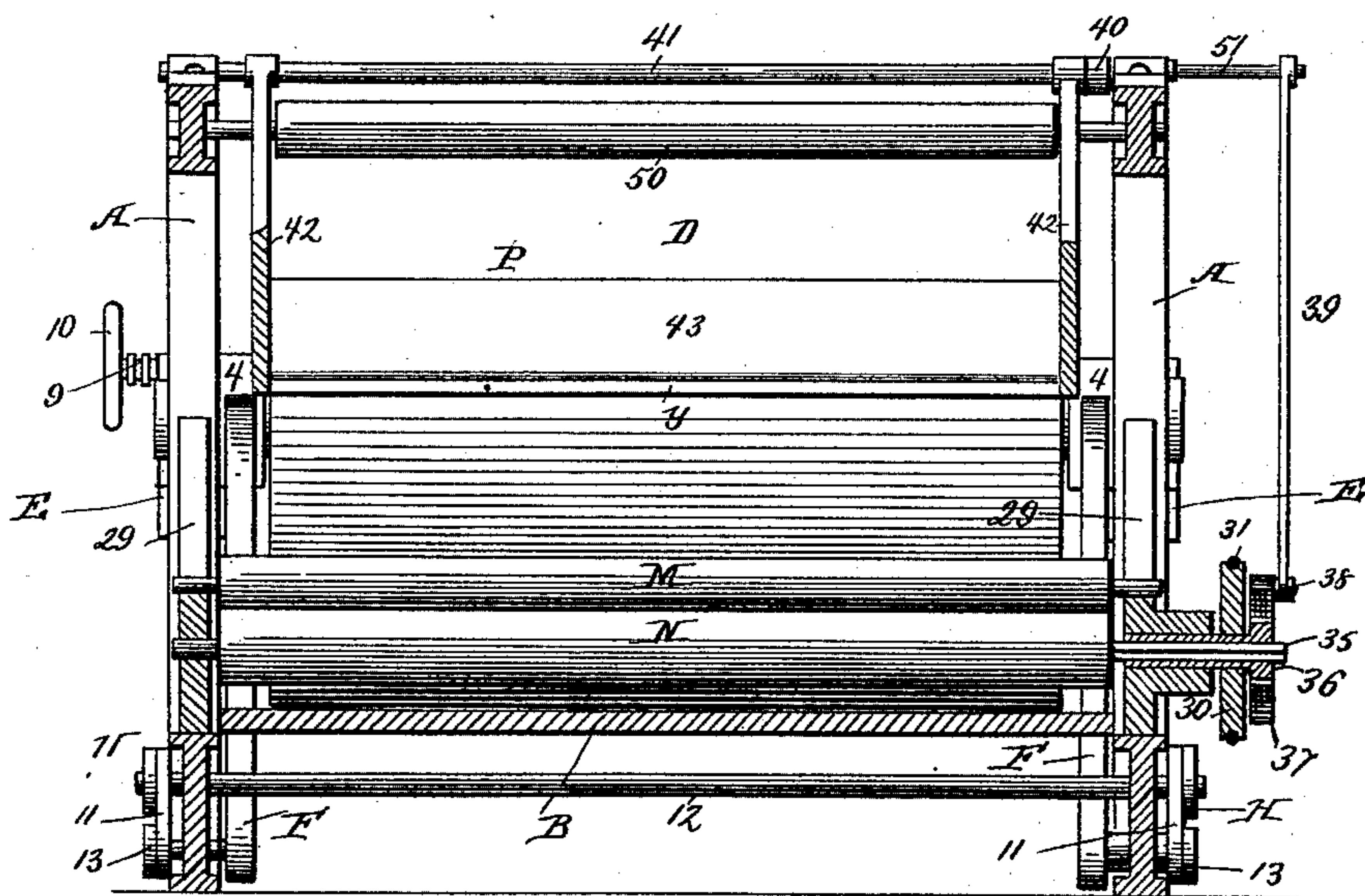
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Fig 3.



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# UNITED STATES PATENT OFFICE.

GEORGE WILLIAM MILLER, OF WOONSOCKET, RHODE ISLAND.

## MACHINE FOR PRESSING FABRICS.

SPECIFICATION forming part of Letters Patent No. 392,050, dated October 30, 1888.

Application filed January 17, 1887. Serial No. 224,604. (No model.)

*To all whom it may concern:*

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

My invention relates to that class of machines in which a fabric is pressed between opposing surfaces without any polishing or displacing effect; and my improved machine consists of two rotating cylinders and an encircling band traveling with the cylinders, between which band and the cylinders the fabric is carried, and of means for keeping the band taut upon the cylinders, but so as to yield as required, and for rolling and folding the fabric, all as fully set forth hereinafter.

In the drawings, Figure 1 is a side view of a cloth-pressing machine embodying my improvements, parts being broken away. Fig. 2 is a transverse section, and Fig. 3 is a plan view, of the same.

The side frames, A A, of the machine are of any suitable construction adapted to support a platform, B, and the bearings of two polished hollow metallic cylinders or pressing-rolls, C D, to which steam or water cold or hot may be admitted through hollow journals 2 2, as usual in cloth-pressing machines. The journals of both cylinders may turn in adjustable bearings; but, as shown in full lines, the bearings 3 of the cylinder C are fixed, while the bearings of the cylinder D are in boxes 4, each resting on a movable carriage, E, sliding on a bar, 5, of the side frame. In each side frame turns the journal of a shaft, 6, having a threaded inner end extending into a threaded stud, 7, of the carriage E, and on the shaft 6 is a worm-wheel, 8, that engages with a worm-shaft, 9, arranged transversely of the frame and turning in bearings, and provided with a hand-wheel, 10, by means of which it can be turned to simultaneously turn both shafts 6, and thereby move equally and simultaneously both carriages E. To the inner end of each carriage E is pivoted a vertical lever, F, the upper end of which bears against a projection at the side of the adjacent box 4, while the lower end is connected by a link, G, to one of

two short arms, 11, projecting from a transverse rock-shaft, 12, supported in bearings of the frame, and carrying at one end a horizontal lever, H, upon which is a weight, W. Each link G consists of two threaded parts, 13 13, and an intermediate reversely-threaded screw, 14, by turning which the length of the link may be increased or diminished. Around both cylinders passes a continuous metallic or other band, I, which is thin, flexible, and polished, and which accompanies the cylinders in their rotation, so that there is no difference in the speed of their movements.

One of the cylinders is positively driven in any suitable manner. Thus the cylinder C is driven from a driving-shaft, J, turning in bearings in the frame through the medium of a pinion, 17, on the shaft J, a toothed wheel, 18, on a counter-shaft, 22, and a pinion, 19, on the latter shaft gearing with a toothed wheel, 20, on the shaft of the cylinder C. The cylinder D is driven by friction from the traveling band I, which accompanies the movement of the cylinder C. A guard-roller, L, rests upon the face of the cylinder C, its journals extending into slots *x* in the side frames, so that the roller can rise and fall to accommodate itself to the thickness of the fabric, X, to be pressed. Such fabric is laid upon the platform B or placed upon a beam, M', (shown in dotted lines, Fig. 1,) and passed between the roller L and the cylinder, said roller L serving as a guide in placing the fabric in position on the roller by presenting the end edge of the fabric parallel to the roller, and the roller also serving as a guard to prevent the operator from passing his hand too far between the roller and band, between which it might be caught and injured. The fabric extends between the contiguous faces of the band I and the cylinder C, and leaves the latter at a tangent on a horizontal line, resting on the band until it is carried between the cylinder D and the band. The fabric is carried around and to the top of the cylinder D and leaves the latter at a tangent at any suitable point, and is then received upon the platform or wound upon a beam or roller. As shown, there is a transverse guide-roller, 50, over which the fabric passes to a beam, M. The journals of this beam turn in grooves

in uprights 29, and the beam rests on a driving-roller, N, and one journal of the driving-roller shaft carries a band-wheel, 30, round which a driving-band, 31, passes to a driving-pulley, 32, on the shaft J, so that the beam M is constantly driven at such a rate as to wind up the fabric as it passes from the cylinder D. It is sometimes desired to lay or fold the fabric flat instead of rolling it. To permit of the use of either a roller or a folder, I make the end of the driving-roller shaft 35 square and fitted to a square socket in the hub of a pinion, 36, which hub turns in a bearing of the upright 29, so that the pinion will be supported by the upright after the shaft is withdrawn. The pinion 36 gears with a crank-tooth wheel, 37, the crank-pin 38 of which is connected with a rod, 39, pivoted at the upper end to an arm, 40, on a rock-shaft, 41, carrying a vibrating folder, P. Said folder consists of side pieces or arms, 42, pendent from the shaft 41, and carrying between them converging plates 43 43, each sliding between guides 44 44, so as to be detachable, the lower ends separated to form a passage, *y*.

When the fabric is to be folded, the rollers M N are removed, the plates 43 43 are set in place, as shown in the drawings, and the fabric is passed from the cylinder D over the roller 50 and down through the passage *y* onto the platform. As the machine is operated, the folder P vibrates and lays the fabric in folds upon the platform below. The proper length of the folds corresponding with the delivery from the cylinders is obtained by making the pin connecting the rod 39 and the arm 40 adjustable. Thus the arm 40 is slotted to receive an adjustable pin, 51, to which the upper end of the rod 39 is connected.

When the machine is to be operated, the cylinder D is adjusted by turning the shaft 9 so as to apply the proper tension to the band I. By the arrangement of parts shown the band may be drawn or strained to any desired tension and with great uniformity. Thus as the carriages E are moved by the propelling-screws in the direction of the arrow, the upper ends of the levers F are also carried in the directions of their arrows, and each lever is thus not only swung upon its lower pivot, which is practically stationary, but also on its upper traveling pivot, and, as the arm of the lever above the upper pivot is much shorter than the arm below said pivot, the leverage is very great and a proportionately great power is applied to move the movable boxes 4 upon their moving carriages E.

By turning the adjusting-screws 14 of the links G, either box 4 may be moved independently of the other to bring the cylinder D exactly parallel to the cylinder C or to compensate for any variation in the band should one edge be slack when the cylinders are parallel. The amount of tension under which the band is normally maintained is determined by adjusting the weight W on the lever H, and, as the length of the latter greatly exceeds that of

the arms 11, the leverage and power are proportionately great. In order to readily relieve the boxes from the effect of the weight W, for adjustment of the parts or any other purpose, I connect the end of the lever H to a chain, 55, wound upon a shaft, 56, in bearings of the side frames, the turning of said shaft winding up the chain and lifting the lever. The shaft 56 has a square end, to which a suitable key can be applied, and a ratchet-wheel on the shaft, engaged by a pawl, prevents the shaft from turning back.

It will be seen that as the band travels with the cylinders there is not the slightest danger of tearing, abrading, or wrinkling the finest and most fragile fabrics; that as the cylinders can be separated to draw the band taut great pressure may be applied to the fabrics, and that as there is always a yielding, although heavy, pressure tending to separate the cylinders, the parts can accommodate themselves to any irregularities in the fabric, so that at no time will undue pressure be applied, and that all the parts are capable of ready, nice, and instant adjustment, as circumstances require.

I do not limit myself to the precise means shown of adjusting the carriages E, as they may be set by hand and secured by set-screws *v*, (shown by dotted lines, Fig. 1,) and, if desired, the bearings of the cylinder C may also be adjusted in any suitable manner—as, for instance, by screws *v'*, likewise shown by dotted lines in said Fig. 1. Other means of applying a constant yielding pressure to separate the cylinders may be employed—as, for instance, spiral springs *t*, bearing on the boxes 4, and compressed, as desired, by screws *u*, as shown by dotted lines, Fig. 1.

Without limiting myself to the precise construction and arrangement of parts shown, I claim—

1. The combination of two pressing-cylinders, a pressing-band passing around both cylinders, movable boxes supporting the journals of one or both of the cylinders, and yielding supports against which the boxes of one of the cylinders bear, substantially as shown and described.

2. The combination, in a pressing-machine, of two cylinders and an encircling pressing-band, boxes supporting the journals of one of the cylinders, levers bearing against said boxes, and a weight and intermediate connection, substantially as described, whereby said levers are held in contact with said boxes, substantially as and for the purposes set forth.

3. The combination of the pressing-cylinders, encircling pressing-band, supporting-frame, carriages E, movable upon the frame, and carriage-adjusting devices, boxes supporting the journals of one or both of the cylinders supported by said carriages, and yielding bearings for the boxes of one of the cylinders, substantially as and for the purpose set forth.

4. The combination, with the cylinders, band, frame, movable carriages, and movable

boxes and adjusting devices therefor, of levers pivoted to the carriages, bearing on the boxes, and a weight and connections for maintaining the levers in forcible contact with the boxes, 5 substantially as shown and described.

5. The combination of the frame, carriages, boxes, cylinders, and encircling band, of levers pivoted to the carriages and bearing on the boxes, a shaft turning in the frame and 10 provided with arms connected with the said levers, and a weighted lever extending from said shaft, substantially as shown and described.

6. The combination, in a pressing-machine, 15 with the cylinder and the movable bearings for the latter, and with levers bearing against the same, of a rock-shaft having arms connected with said levers by extensible links and a weighted lever attached to said arms, substantially as shown and described. 20

7. The combination, with the frame, cylinders, band, levers F, carriages E, to which said levers are pivoted, weight, and connections, substantially as described, between the 25 weight and the lower ends of the levers, and boxes 4, against which said levers bear, of an adjusting device for moving the carriages upon

their supports to vibrate said levers, substantially as shown and set forth.

8. The combination, with the frame, cylinders, band, carriages, and boxes, of two shafts 30 having threaded ends extending into threaded sockets of the carriages, worm-wheels upon the shafts, and a worm-shaft having worms engaging with said wheels to turn them simultaneously, substantially as shown and described. 35

9. The combination, with the frame, cylinders, band, movable bearings, weighted lever, and connections between the latter and said bearings, of a shaft, 56, and chain 55, connecting the shaft with the lever, substantially as 40 shown and described.

10. The combination, with the cylinders and encircling band, of a guide-roller, L, arranged between the face of one cylinder and the adjacent face of the band, substantially as and for 45 the purpose set forth.

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

GEORGE WILLIAM MILLER.

Witnesses:

HENRY L. BALLOU,  
S. G. SMITH.