

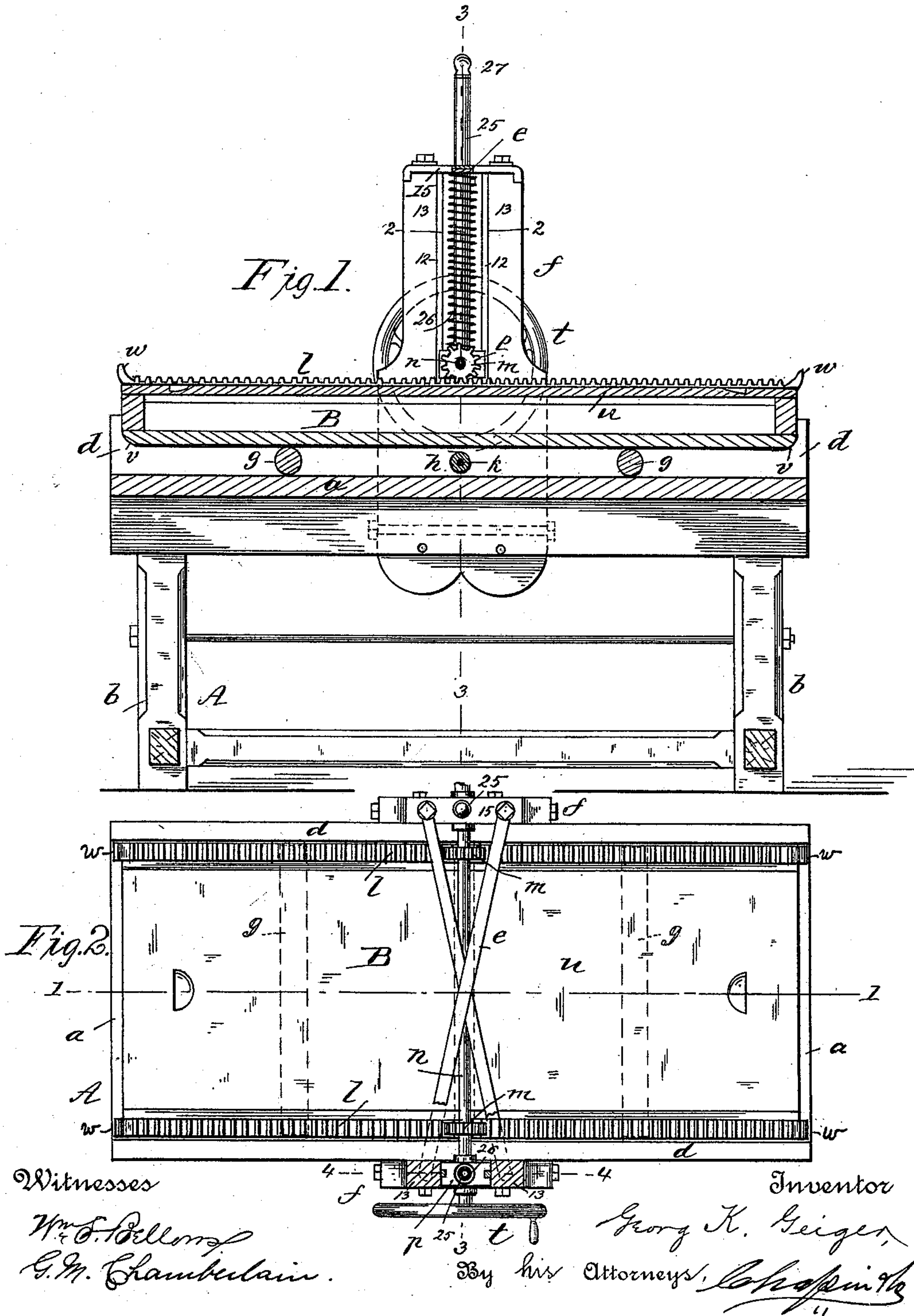
(No Model.)

2 Sheets—Sheet 1.

G. K. GEIGER.
MANGLE.

No. 408,477.

Patented Aug. 6, 1889.



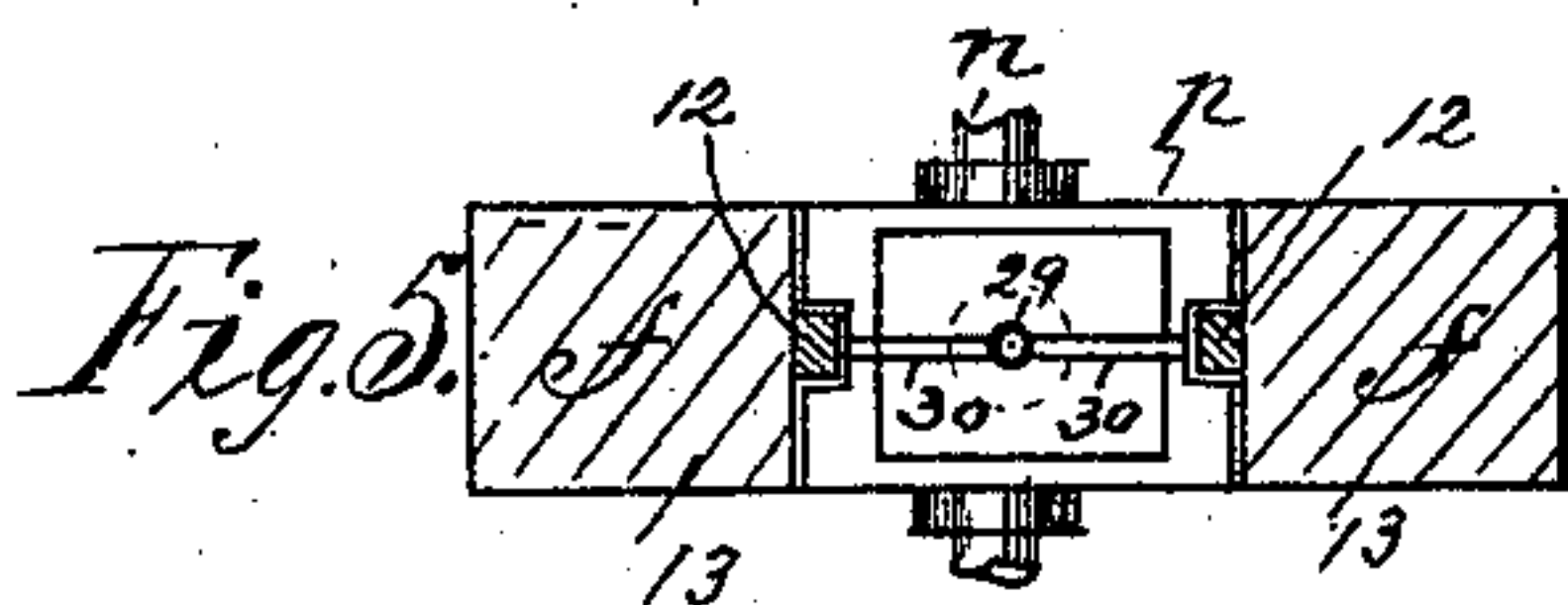
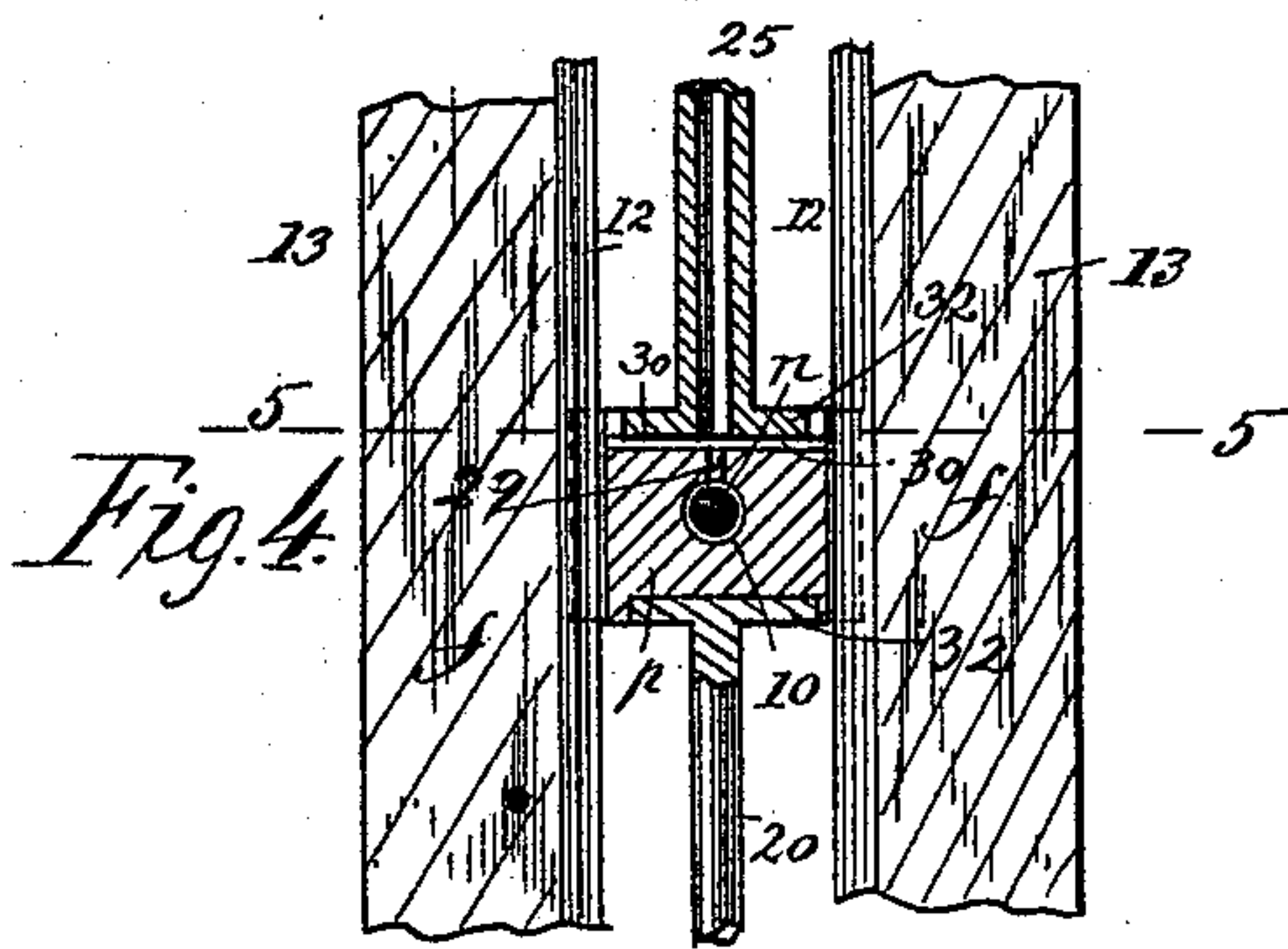
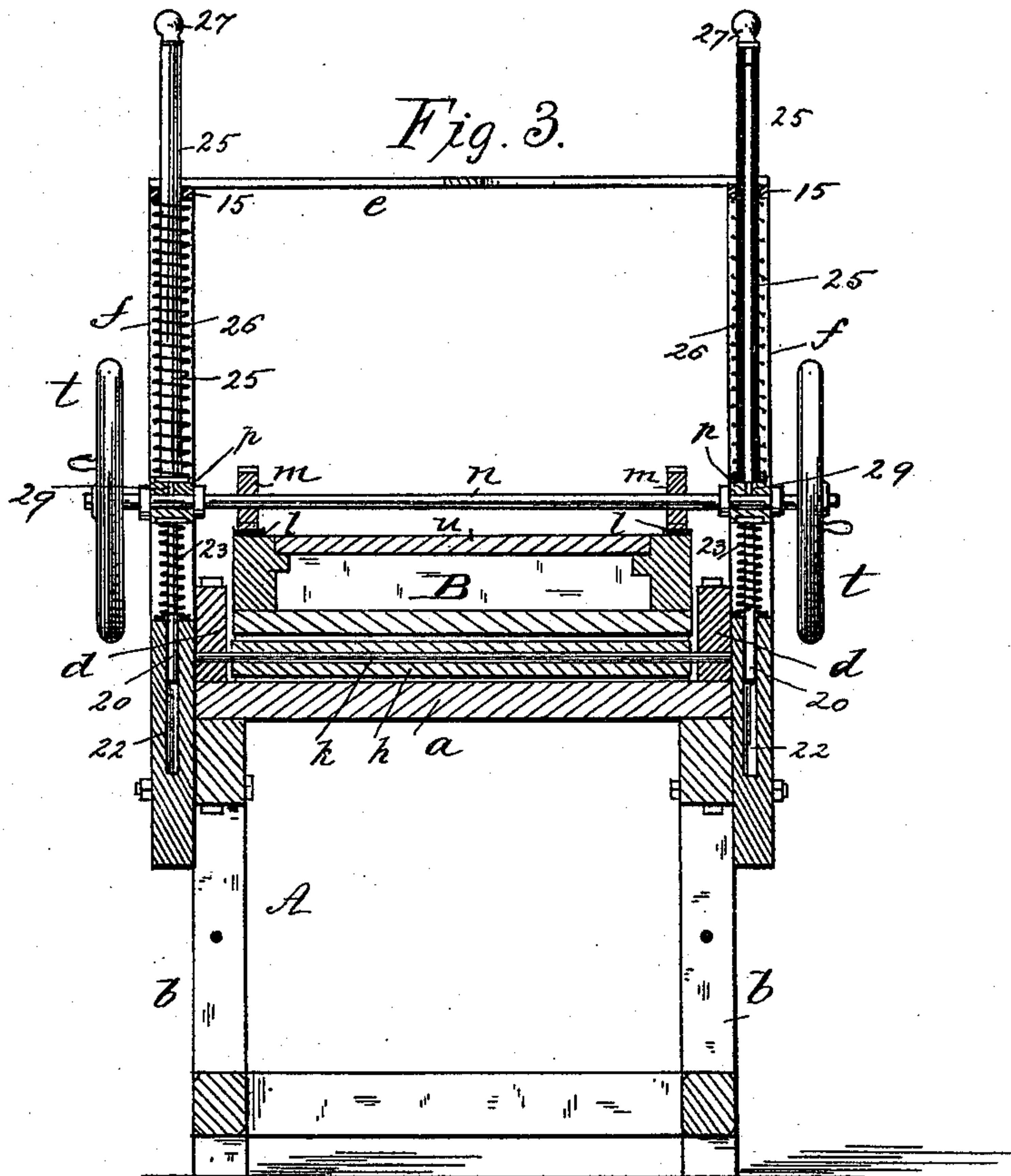
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2 Sheets—Sheet 2.

G. K. GEIGER.
MANGLE.

No. 408,477.

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Witnesses

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GEORG K. GEIGER, OF SPRINGFIELD, MASSACHUSETTS.

MANGLE.

SPECIFICATION forming part of Letters Patent No. 408,477, dated August 6, 1889.

Application filed October 6, 1888. Serial No. 287,417. (No model.)

To all whom it may concern:

Be it known that I, GEORG K. GEIGER, a citizen of the United States, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Mangles, of which the following is a specification.

This invention relates to the class of mangles in which the pressing and smoothing of the fabric are performed by rollers upon a smoothing-table and under a reciprocating pressure-box, the object thereof being to provide a machine which is easy of operation, capable of rapidly performing a large amount of work in a most satisfactory manner, and one which will not require attention to be maintained in working condition; and the invention consists in the construction and combination of parts, all substantially as will hereinafter more fully appear, and be set forth in the claims.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar characters of reference indicate corresponding parts in all the views, Figure 1 being a central longitudinal vertical section of the machine, and Fig. 2 a plan view thereof with a portion at one side in horizontal section taken on line 2 2, Fig. 1. Fig. 3 is a vertical cross-section on line 3 3, Figs. 1 and 2. Fig. 4 is an enlarged vertical section in detail on the line 4 4, Fig. 2, of guiding-uprights and a shaft-supporting box, to be hereinafter particularly referred to; and Fig. 5 is a horizontal section of the guiding-uprights on the line 5 5, Fig. 4, and a plan view of one of the shaft-supporting boxes guided thereon, the post-piece for one of the tubular plunger-rods shown in Fig. 4 being removed.

The frame indicated by A in the drawings comprises the stationary table *a*, mounted on legs *b*, rigidly braced, the border rails *d* running the length of the table at each side thereof and of a height above the same to form a suitable trough, which is open at each end, and the uprights *f f* at each side of the central portion of the table, to support and form guides for parts below described, said uprights being rigidly held by suitable cross-bracing *e*.

B represents the reciprocating pressure-box, and *g g* represent a pair of independent

mangle-rolls, which in operation are transversely disposed between the table and said pressure-box, said rolls being of a length slightly less than the width of the table within the border rails *d d*. At the middle of the table another transverse roll *h* is horizontally hung for rotation by a supporting journal-rod *k*, which passes through the roll and the said side rails *d*, and, as shown, said roll is of a diameter slightly reduced from that of either of the mangle-rolls *g*. When the pressure-box B is projected to the limit of its movement at either end of the machine, the end of the box opposite to such end is then run off from one of the mangle-rolls *g* and is supported upon the other mangle-roll and on the said middle roll *h*. The pressure-box B on its top near each side is provided with a rack-bar *l*, with which rack-bars mesh pinions *m m*, carried on a horizontal transverse shaft *n*, outwardly extended beyond said pinions and having bearings for rotation in the said uprights *f f*. The said bearings consist of blocks *p p*, having the transverse journal-bore 10, through which the pinion-shaft *n* is passed, said blocks on their vertical edges being grooved to fit over the guide-tongues 12 on the inner edges of the opposing upper bifurcated parts 13 of each of the said uprights *f*, said bifurcated parts at their upper ends being joined by a cross-web 15. The said blocks *p p* are held under spring-pressure from above and below, so as to be normally about in equilibrium, and the spring-supporting devices for the journals are comprised in mechanism to be now described, namely: said blocks rest upon the upper ends of plunger-rods 20 20, which play vertically in and above sockets 22 in the base of the uprights *f*, a spiral spring 23 being disposed around each of said plunger-rods between the mouth of the socket and the under side of the block. Plunger-rods 25 25, resting by their lower ends on the upper side of said blocks *p*, extend upwardly through guide-holes in the cross-webs 15 at the top of the uprights, and between the under side of said cross-webs and the tops of said blocks are placed spiral springs 26 26, all as shown in Figs. 1 and 3.

As particularly shown, the said guide-plunger rods 25 above the journal-blocks are formed tubular, being closed at their upper

ends by plugs 27, and below the lower ends thereof the blocks are bored vertically, as at 29, to communicate with the horizontal pinion-bearings, permitting the easy introduction of oil thereto, and the said blocks in their upper surfaces are also provided with grooves 30, leading to the edgeways, whereby oil may also be applied on the vertical runner-ways, said latter formations being plainly shown in the detail views, Figs. 4 and 5.

Each plunger-rod at its point of contact with the blocks is preferably provided with a foot or enlargement 32, said feet being let in within the upper and lower surfaces, respectively, of the journal-blocks, insuring a connection between the said parts, which is not liable to displacement, and more particularly to insure the proper bearing action by the springs. A hand-wheel *t*, or crank-arm, is applied at either or both ends of the pinion-shaft, whereby the same is turned to project the pressure-box longitudinally. The pressure-box is preferably inclosed by a sliding cover *u*, and is to be weighted to any desired degree, in accordance with the character of the work to be done thereby.

While the under set of springs 23 might be dispensed with, with more or less operative results, the employment of said springs is a very desirable and important auxiliary, for under their use binding between the pinions and the racks is prevented and the force required on the hand-wheel to project the pressure-table longitudinally is reduced to a minimum.

The mangle described is capable of the use and to be operated in substantially the usual manner for machines of this class, and whether the fabric is rolled around the mangle-rolls and rolled therewith, or placed flat upon the table and the rolls passed over same, the machine is effective in an unusual degree, and, as will be understood from the construction shown and described, is a double - ender—that is, when the pressure-box is being projected to one end of the table to mangle fabric on one roller the other end of the table passes off from the other mangle-roll, and is then supported on a single mangle-roll and the fixed roller *h*, when fabric may be wound upon the then disengaged mangle-roller *g*, and on the reverse movement of the table the rolling pressure thereon is had.

It will be observed that the ends of the box B are formed to flare upwardly and outwardly from the bottom of the box, as seen at *v*, which provision insures a gradual engagement between the bottom of the box and the fabric to be smoothed when on the mangle-roller.

The racks at each of their ends are pro-

vided with abutment-stops *w*, so that when the box is run to one end just enough to be out of engagement with one of the mangle-rollers the further movement of the box will be limited by the abutment of the said stops carried by the racks on said box against the pinions *m*, which are immovable, except for a rotation.

What I claim as my invention is—

1. In a clothes-mangle, the combination, with a table provided with the side rails *d d*, and a transverse roller *h*, supported for rotation from said side rails midway of said table, of an independent mangle-roll *g*, of a diameter slightly greater than that of said median roll, and the longitudinally-movable box B, substantially as and for the purpose described.

2. In a clothes-mangle, the combination, with a table provided with side uprights, of mangle-rollers *g g*, a longitudinally-movable pressure-box provided with a rack, a transverse shaft *n*, having a pinion engaging said rack, the bearing-blocks for said shaft vertically movable on said uprights, and the springs above and below said blocks, substantially as and for the purpose described.

3. In a clothes-mangle, in combination, the table having bifurcated side uprights *f f*, having the base-sockets 22, and provided with the guide-tongues 12 and the apertured cross-webs 15, mangle-rolls, and a longitudinally-movable pressure-box provided with a rack, a transverse shaft having a pinion engaging said rack, the bearing-blocks *p p* for said shaft having the vertical aperture 29 therein, and provided with the edge-runner grooves and the horizontal ways 30 30, leading thereto, the plunger-rods 20 below said guide-blocks playing in said sockets 22, the springs 23, the tubular guide-rods 25 above said blocks playing through said apertured web, and the springs 26, substantially as shown and described.

4. In a clothes-mangle, the combination, with a table provided with side uprights *f f* and with the side rails *d*, and a transverse roller *h*, suspended for rotation from said side rails midway of said table, of one or more independent mangle-rollers *g g*, of a diameter slightly greater than that of said median roll, and the longitudinally-movable pressure-box provided with a rack having the end stops *w*, a transverse shaft *n*, having a pinion engaging said rack, and the bearing-blocks for said shaft vertically movable on said uprights, substantially as described.

GEORG K. GEIGER.

Witnesses:

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