

No. 778,393.

PATENTED DEC. 27, 1904.

C. M. ABERCROMBIE.
SEWING MACHINE CLOTH PRESSER.
APPLICATION FILED SEPT. 30, 1904.

Fig. 1.

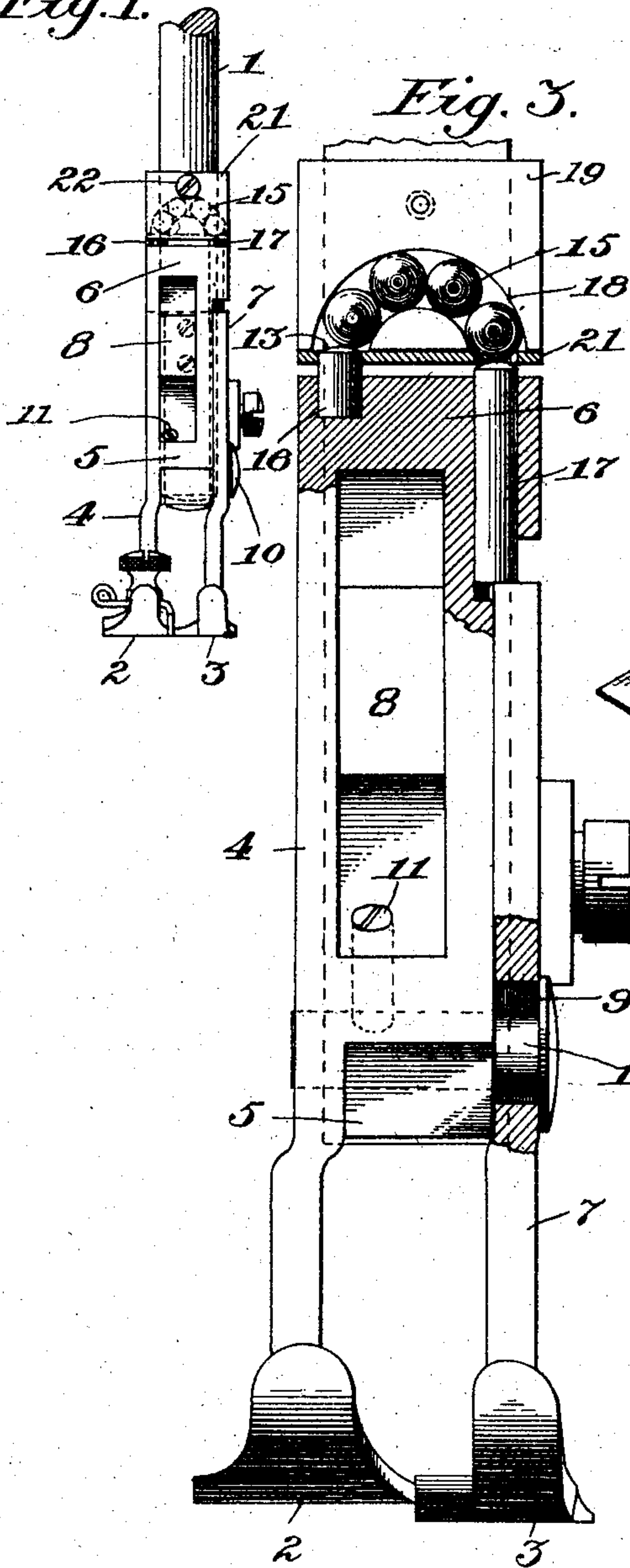


Fig. 3.

Fig. 2.

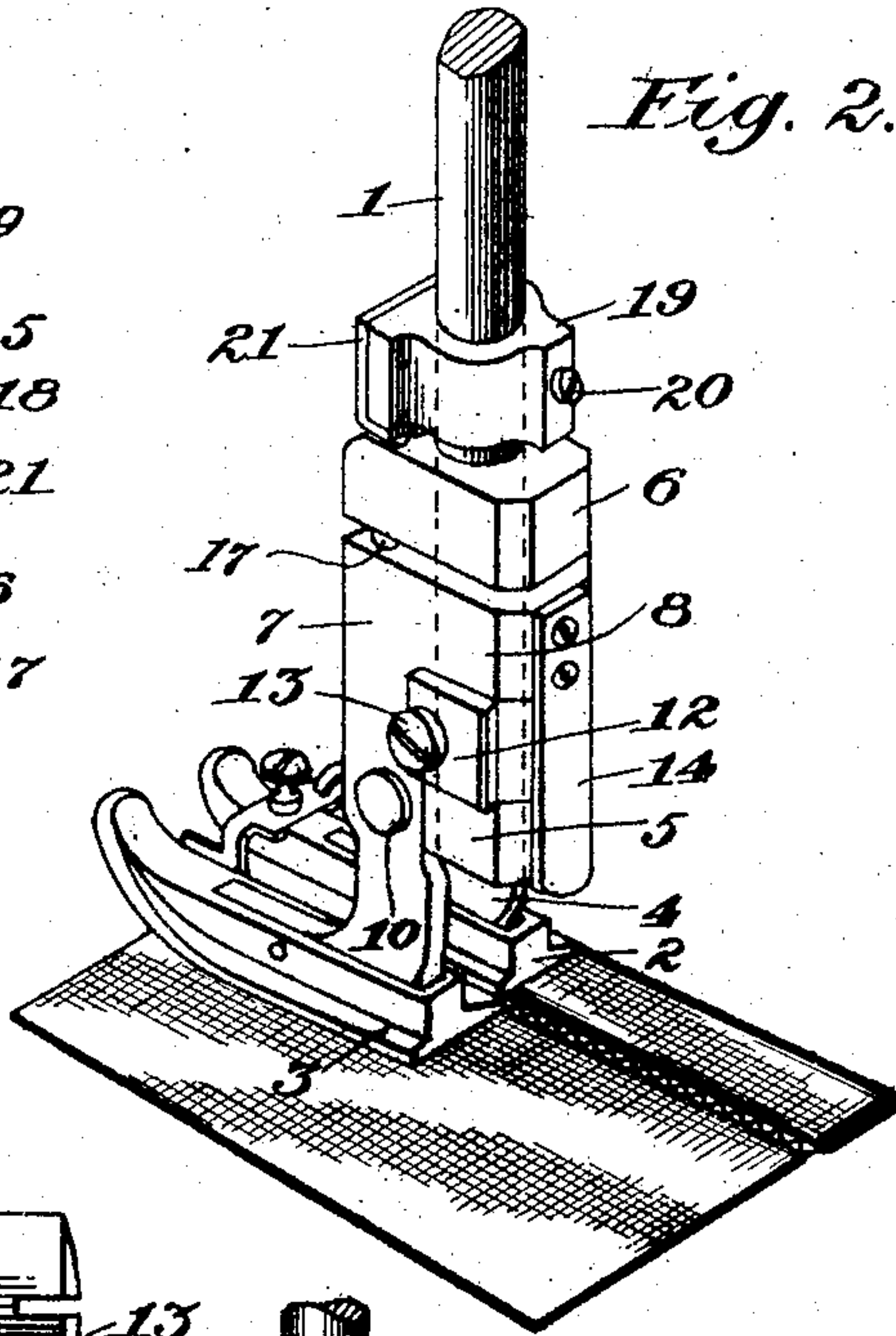
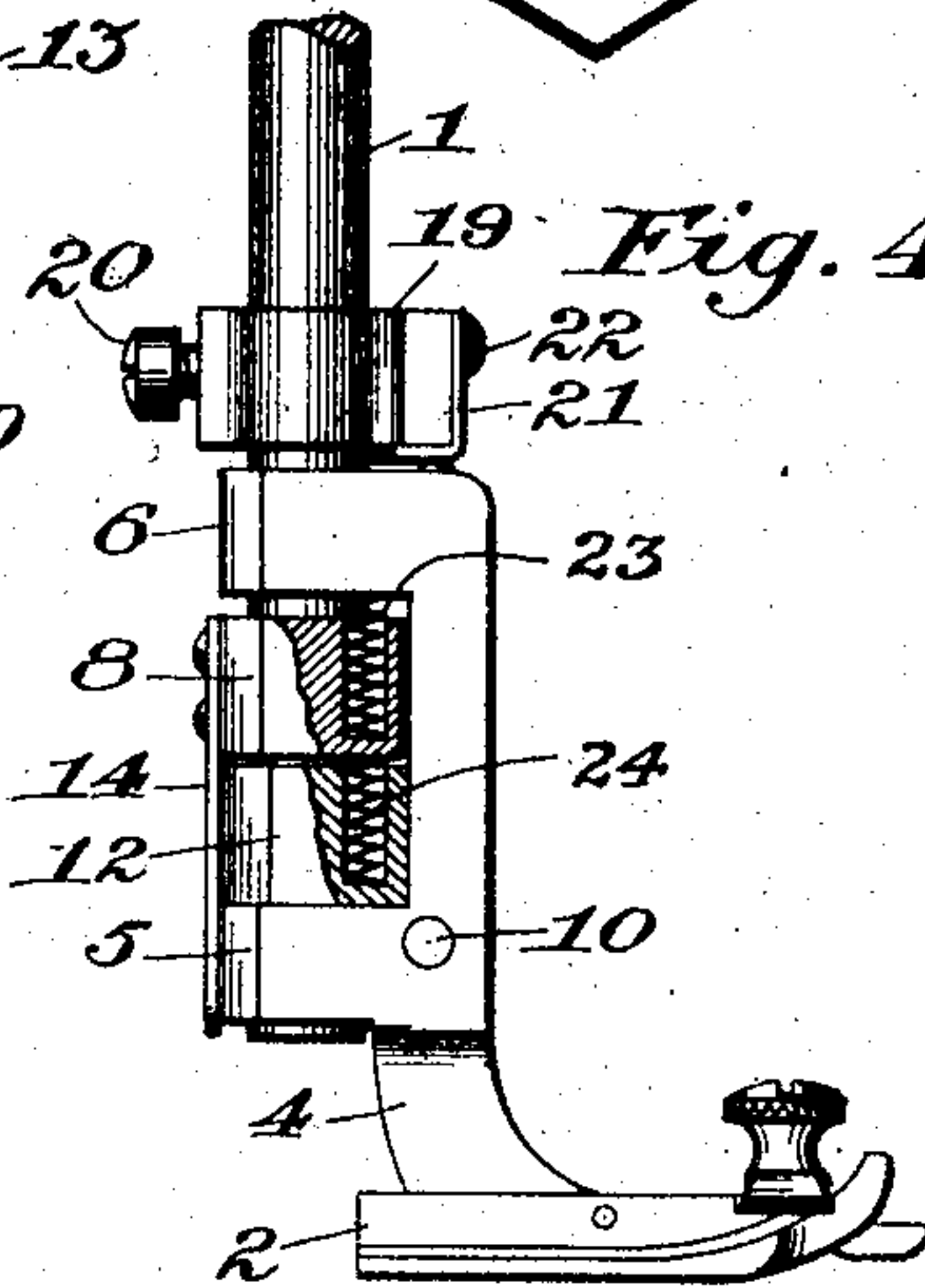


Fig. 4.



WITNESSES:

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CHARLES M. ABERCROMBIE, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR
TO WHEELER & WILSON MANUFACTURING COMPANY, OF BRIDGE-
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SEWING-MACHINE CLOTH-PRESSER.

SPECIFICATION forming part of Letters Patent No. 778,393, dated December 27, 1904.

Application filed September 30, 1904. Serial No. 226,643.

To all whom it may concern:

Be it known that I, CHARLES M. ABERCROMBIE, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented a certain new and useful Improvement in Sewing-Machine Cloth-Pressers, of which the following is a full, clear, and exact description.

This invention relates to that class of presser-feet for sewing-machines in which a duplex or divided foot is used, the parts of which are independently movable, so as to automatically conform to variations in the thickness of the material being sewed.

The present invention consists in a presser-foot of the character described having an equalizing device interposed between its movable members in such way that movement of one of the members will be transmitted to the other, and thus while the parts of the presser-foot may yield independently to inequalities in the work still the pressure maintained on the individual parts will be the same. A convenient equalizing device consists of a series of antifriction-balls interposed between the shanks of the parts of the presser-foot, with or without auxiliary lifting-springs.

In the accompanying drawings, illustrating the invention, in the several figures of which like parts are similarly designated, Figure 1 is a front elevation. Fig. 2 is a perspective view from the rear. Fig. 3 is a front elevation, enlarged and partly in section. Fig. 4 is a side elevation, partly in section.

The bar 1 is the usual presser-bar, with which is connected a depressing-spring. (Not shown.)

2 and 3 are the presser-feet. The presser-foot 2 is pivoted to a shank 4, which is provided with two bearing-lugs 5 and 6, which are perforated vertically, so as to slide longitudinally of the presser-bar 1. The presser-foot 3 is pivoted to a shank 7, which is provided with a single bearing-lug 8, also perforated vertically and applied to the presser-bar so as to be capable of longitudinal movement thereon. This shank 7 is made with a longitudinal slot 9, and in this slot is arranged

a headed pin 10, which is held in place therein by the set-screw 11. Between the lug 5 of shank 4 and lug 8 of shank 7 is interposed an adjustable block 12, held upon the presser-bar 1 by means of a set-screw 13, so as to regulate the extent of relative rise and fall of the presser-feet and to secure them in position on the presser-bar.

The lug 8 is provided with a flat spring 14, extending vertically downward to assist in alining the shanks in their longitudinal movement.

The shank 4 is recessed to receive the shank 7, and thereby preserve the symmetry of the presser-foot as a whole.

While I prefer the construction of the divided presser-foot hereinabove described, still my invention is not limited to it, but it is applicable as well to any other construction of divided presser-foot.

As herein shown, the equalizing device of this invention comprises a series of antifriction-balls 15, interposed between the shanks of the presser-foot in such way that as one presser-foot rises it will move the balls against the other presser-foot, and thus equalize the pressure between the two.

A convenient means for transmitting motion comprises a follower-pin 16, fitted in the shank 4 and alined with the balls 15, and a plunger-pin 17, slidably fitted in the lug 6 in line with the shank 7, so that as the presser-foot 2 and its shank rise the balls will be pushed over by the pin 16 against the pin 17 and depress it against the shank 7, and thereby transmit to the presser-foot 3 the pressure that is upon the presser-foot 2, and vice versa.

The balls 15 are arranged in a suitable groove 18 in a block 19, mounted upon the presser-bar 1 above the lug 6 and adjustably fixed on said presser-bar by a set-screw or other device 20, and the balls are held within the groove by means of a flanged face-plate 21, fixed to the block 19 by a set-screw 22 or other suitable device.

While I prefer to use the series of balls as the equalizing device, the principle of my invention is embodied in any positively-acting

medium interposed between the shanks of the respective presser-feet and capable of transmitting the motion of one to the other, so as to equalize the pressure upon said presser-feet as they accommodate themselves to inequalities in the work. Moreover, springs or other counterbalancing or reacting devices may be used as auxiliaries to the balls, and in Fig. 4 I have shown one such use of springs.

23 is a coiled spring interposed in a pocket in bearing-lug 8 to react between that lug and lug 6, and 24 is a coiled spring interposed in a pocket in block 12 and reacting against bearing-lug 8, so that since these springs exert a lifting action against the presser-foot shanks the pins 16 and 17 will be maintained in contact with the antifriction-balls. The invention, however, is not limited to the use of these springs or their equivalents. Either or both of the springs or their equivalents may be used, as desired, or omitted at pleasure.

What I claim is —

1. A divided presser-foot for sewing-machines, having independently-movable members adapted to accommodate themselves to inequalities in the work, and an equalizing device, including antifriction-balls, interposed between said independently-movable members and serving to transmit the pressure of one to the other.

2. A divided presser-foot for sewing-machines, having independently-movable members adapted to accommodate themselves to inequalities in the work, and a positive-action equalizing device, including antifriction-balls, interposed between said independently-movable members and serving to transmit the pressure of one to the other.

3. A divided presser-foot having independently-movable shanks, a presser-bar on which they are mounted, antifriction-balls interposed between said shanks, and a plunger-pin interposed between one of the shanks and the antifriction-balls.

4. A divided presser-foot having independently-movable shanks, a presser-bar on

which they are mounted, antifriction-balls interposed between said shanks, a follower-pin on one of the shanks alined with the antifriction-balls, and a plunger-pin alined between the other shank and said antifriction-balls.

5. A divided presser-foot having independently-movable shanks, a presser-bar upon which they are mounted, a block fixed to the presser-bar above the shanks, antifriction-balls arranged in said block and between the shanks and serving to equalize the pressure upon said independently-movable shanks.

6. A divided presser-foot having independently-movable shanks, a presser-bar upon which they are mounted, a block fixed to the presser-bar above the shanks, antifriction-balls arranged in said block, a follower-pin on one of said shanks in alinement with the balls, and a plunger-pin interposed between the other shank and said balls.

7. A divided presser-foot for sewing-machines, having independently-movable members adapted to accommodate themselves to inequalities in the work, a positive-action equalizing device interposed between said independently-movable members and serving to transmit the pressure of one to the other, and an auxiliary spring for maintaining the movable members in engagement with the equalizing device.

8. A divided presser-foot for sewing-machines, having independently-movable members adapted to accommodate themselves to inequalities in the work, a positive-action equalizing device interposed between said independently-movable members and serving to transmit the pressure of one to the other, and a lifting-spring for each movable member.

In testimony whereof I have hereunto set my hand this 28th day of September, A. D. 1904.

CHARLES M. ABERCROMBIE.

Witnesses:

A. S. KEITH,

R. F. GARDNER.