

(No Model.)

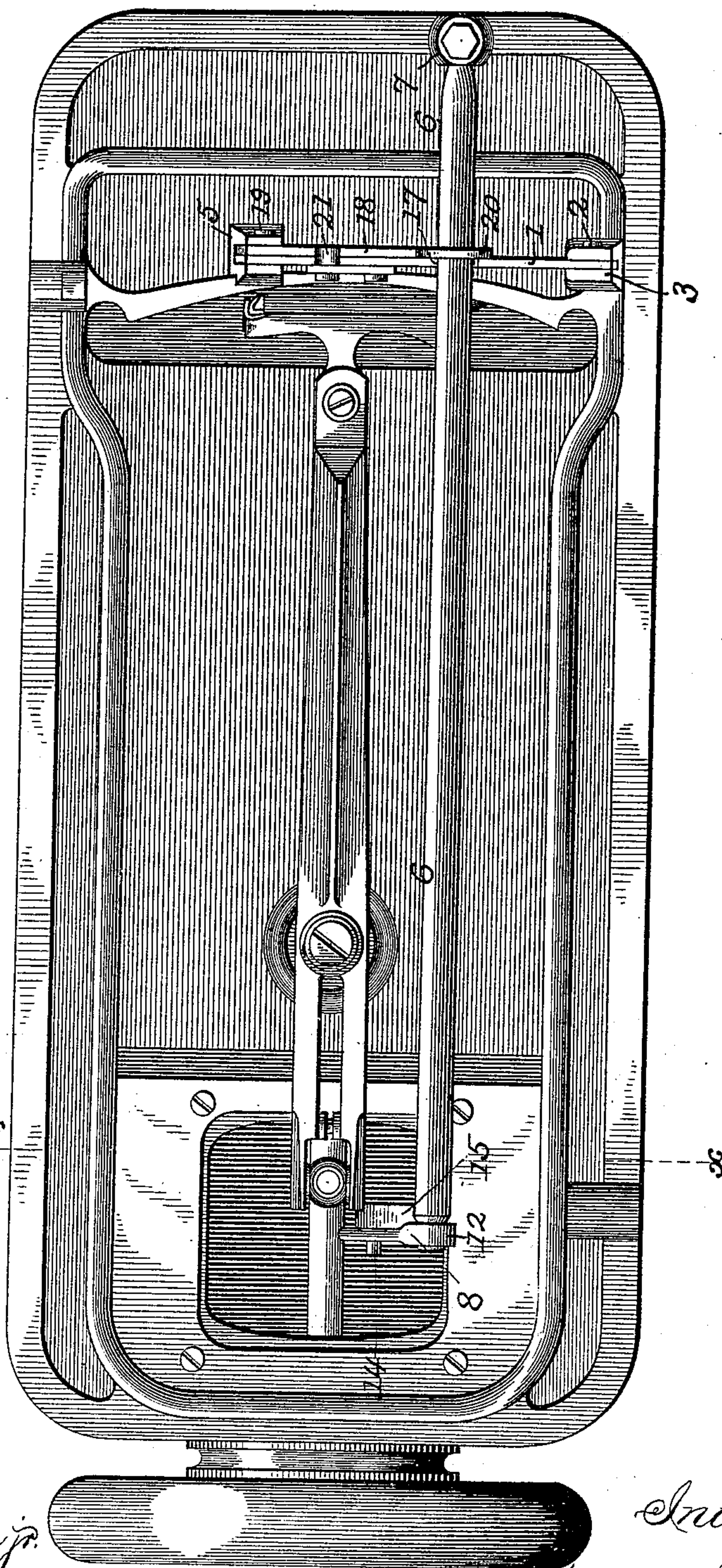
2 Sheets—Sheet 1.

W. J. STEWART.
FEED MECHANISM FOR SEWING MACHINES.

No. 562,161.

Patented June 16, 1896.

Fig. 1.



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Inventor
William J. Stewart
by Robert Burns Att'y

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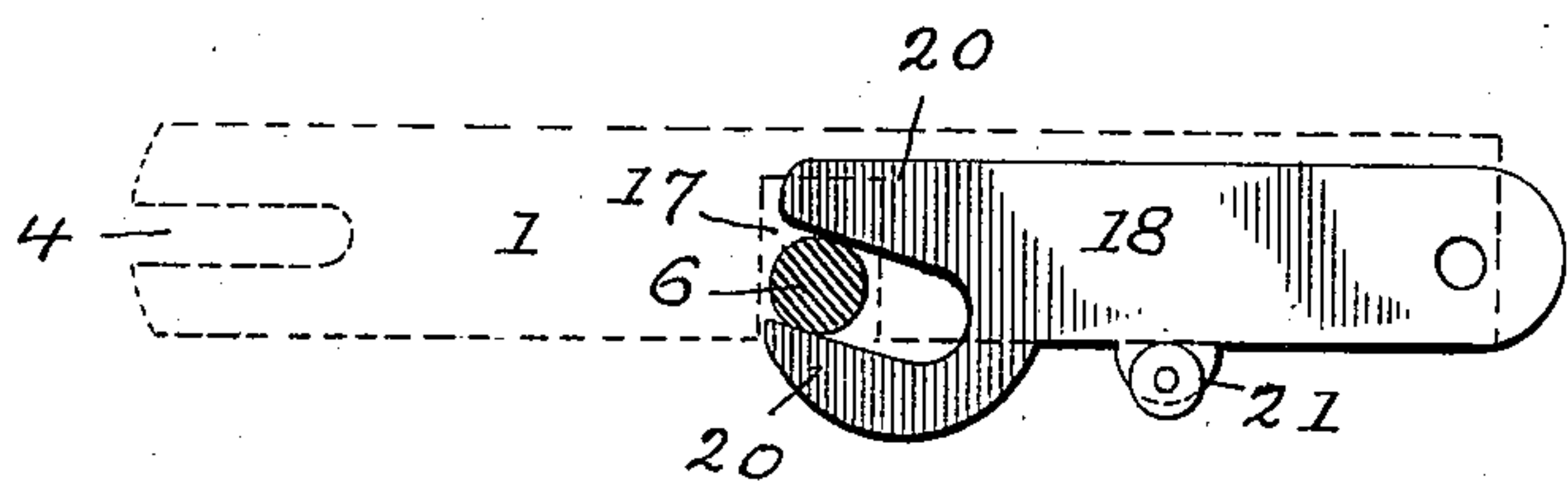
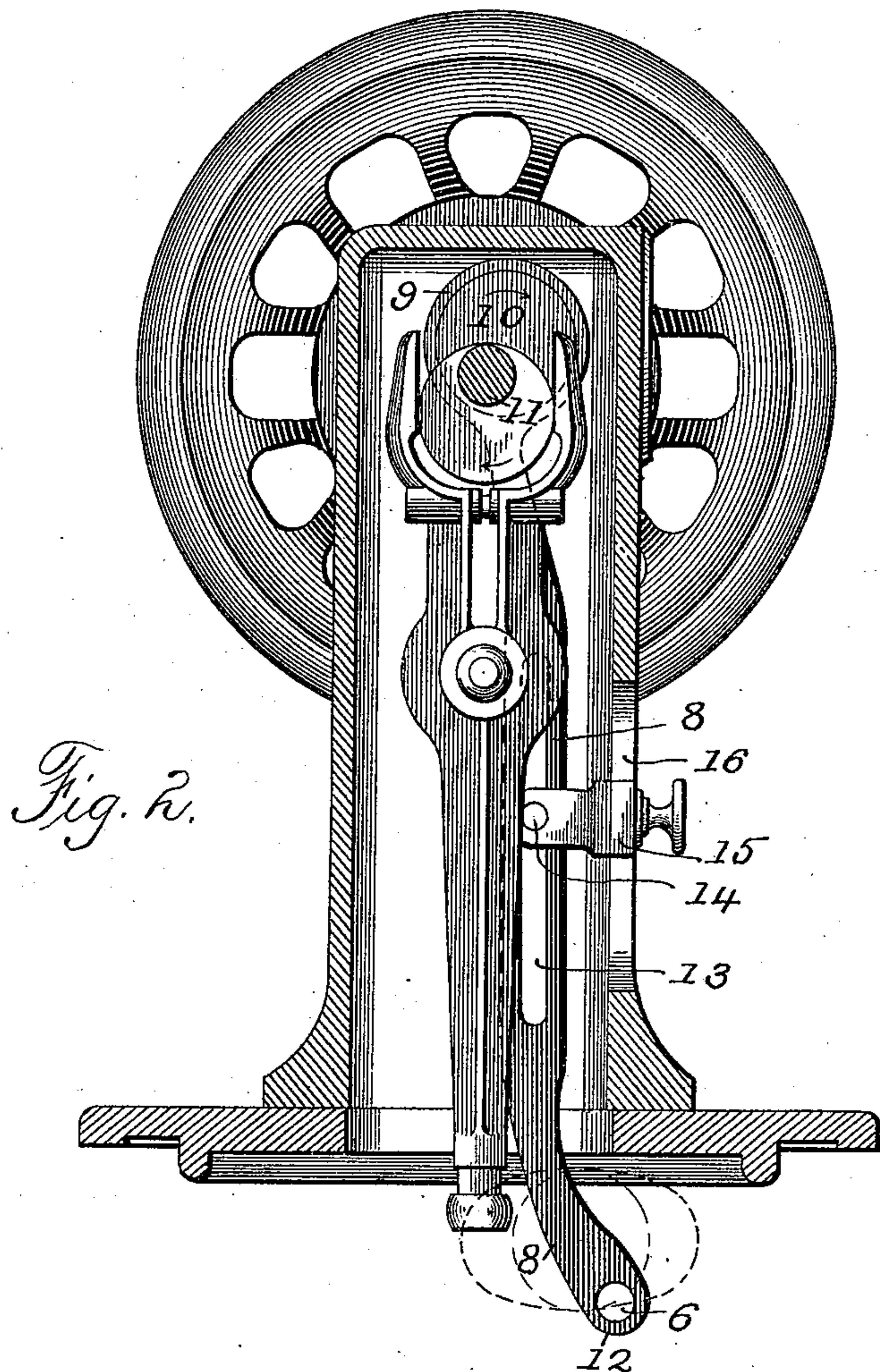
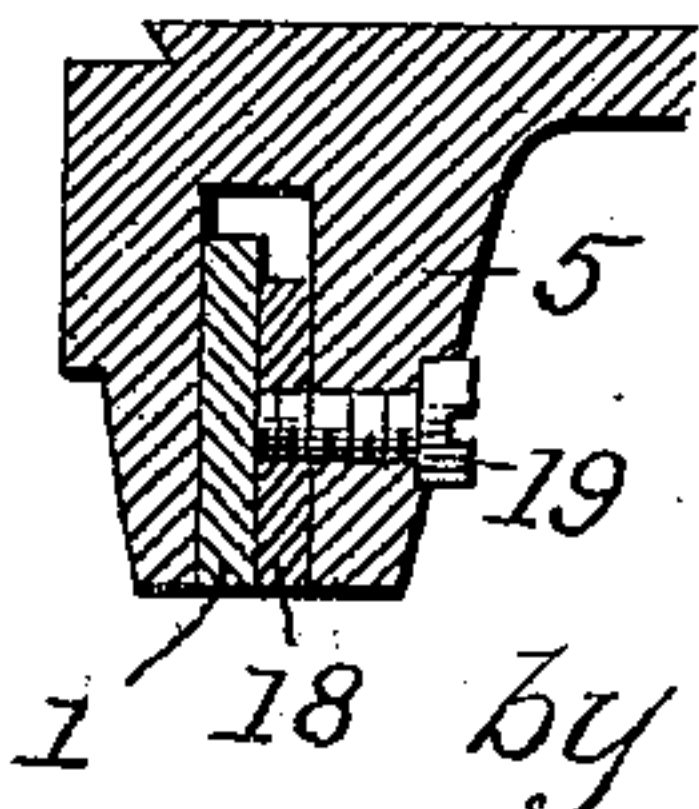


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM J. STEWART, OF CHICAGO, ILLINOIS.

FEED MECHANISM FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 562,161, dated June 16, 1896.

Application filed October 31, 1894. Serial No. 527,561. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. STEWART, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Feed Mechanism for Sewing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification.

The present invention relates to that type of cloth-feeding mechanism, for sewing-machines, that forms the subject-matter of my former Letters Patent, No. 460,730, dated October 6, 1891, and my prior application for Letters Patent, filed December 26, 1893, Serial No. 494,776.

The object of the present improvement is to provide a simple, durable and efficient intermediate connecting mechanism between the gyratory operating-shaft and the four-motion feed-bar of the machine, as will hereinafter more fully appear, and be more particularly pointed out in the claims. I attain such object by the construction and arrangement of parts illustrated in the accompanying drawings, in which—

Figure 1 is an inverted plan view of a sewing-machine bed, illustrating my present invention; Fig. 2, a vertical section of the same at line *x x*, Fig. 1; Fig. 3, a detail transverse sectional elevation illustrating the present improved connecting mechanism between the gyratory operating-shaft and the four-motion feed-bar of the machine; Fig. 4, a detail longitudinal section through the rear guide-post of the four-motion feed-bar.

Similar numerals of reference indicate like parts in the several views.

As represented in the drawings the general arrangement of parts will be the same as in my former inventions above referred to. The four-motion feed-bar will be fulcrumed at its forward end upon a cross-pin 2 of the forward pendent post 3, upon which pin the feed-bar has movement by means of the elongated slit 4 at its forward end; while its rear end is confined against side movement by a guide-slot in the rearward pendent post 5; such rear end being free to move up and down as well as forward and back, in said guide-slot.

The gyratory shaft 6, as in my former inventions, is pivoted forward of the feed-bar in a pendent post 7 on the bottom of the base-plate of the machine; the rear end of said shaft being left free to gyrate, such motion being imparted to it by the link connection 8, the upper end of which is formed with an eccentric yoke 9, engaging an operating-eccentric 10 on the driving-shaft 11 of the machine, the lower end of the link connection 8 being provided with a cylindrical eye 12 to receive the spherically-formed rear end of the gyratory shaft 6, as shown in Fig. 1.

Variations in the nature of the gyratory motion of the shaft 6 to vary the "stitch" is effected, as in my former application, Serial No. 494,776, filed December 26, 1893, by means of a vertical elongated slot 13 in the link connection 8, in which engages a vertically-adjustable fulcrum-pin 14 to form a variable fulcrum for said link, such fulcrum-pin being carried by a vertically-adjustable slide 15, moving in a guide-slot 16 in the hollow vertical arm of the machine, that incloses the above-described operating mechanism.

In the present invention the pivot-post 7 of the gyratory shaft 6 is located some distance forward of the feed-bar, as shown, so that the throw of the shaft 6 will be sufficient to give the usual forward-and-backward movement to the feed-bar 1; the said shaft 6 for this purpose engaging in a vertical recess 17 in the bar, of a width a little in excess of the diameter of such shaft.

18 is a supplementary bar fulcrumed in the rearward pendent post 5 by a fulcrum screw or stud 19. The forward end of this bar is bifurcated to form a pair of fingers 20, that engage the shaft 6, in order that such bar 18 will have an up-and-down movement imparted to it as the shaft 6 gyrates. The motion thus obtained by the supplementary bar 18 is imparted to the main feed-bar 1 by a support 21 on the bar 18, about its mid-length, that projects beneath the main feed-bar to support the same in proper position. Such support may be an ordinary finger integral with the bar 18, but preferably a friction-reducing roller is shown mounted on a stud on said bar.

The engaging fingers 20 may have a horizontal arrangement without departing from

the spirit of my invention. I however prefer the oblique arrangement of the same as shown in the drawings, as affording a comparatively more rapid or abrupt upper movement to the feed-bar than the corresponding downward movement of the same.

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

10 1. A feeding mechanism for sewing-machines, comprising in combination, the four-motion feed-bar 1, fulcrumed at its forward end, a gyratory shaft 6 journaled at a point forward of the feed-bar, and engaging in a
15 vertical recess 17 in the same, a supplementary bar 18, fulcrumed at its rear end to the bed of the machine, and provided with intermediate support 21, that engages under the feed-bar, and fingers 20, at its forward end
20 that engage the gyratory operating-shaft 6, and means for imparting a gyratory motion to the rear end of the shaft 6, substantially as set forth.

25 2. A feeding mechanism for sewing-machines, comprising in combination, the four-motion feed-bar 1 fulcrumed at its forward end, a gyratory shaft 6, journaled at a point forward of the feed-bar and engaging in a vertical recess 17, in the same, a supplemen-

tary bar 18, fulcrumed at its rear end to the 30 bed of the machine and provided with an intermediate support 21, formed by a friction-reducing roller that engages under the feed-bar, and fingers 20 at its forward end that engage the gyratory operating-shaft 6, and 35 means for imparting a gyratory motion to the rear end of the shaft 6, substantially as set forth.

3. A feeding mechanism for sewing-machines, comprising in combination, the four- 40 motion feed-bar 1, fulcrumed at its forward end, a gyratory shaft 6, journaled at a point forward of the feed-bar and engaging in a vertical recess 17 in the same, a supplementary bar 18, fulcrumed at its rear end to the 45 bed of the machine and provided with an intermediate support 21, that engages under the feed-bar, and obliquely-arranged fingers 20, at its forward end that engage the gyratory operating-shaft 6, and means for im- 50 parting a gyratory motion to the rear end of the shaft 6, substantially as set forth.

In testimony whereof witness my hand this 15th day of October, 1894.

WILLIAM J. STEWART.

In presence of—

ROBERT BURNS,
JAMES LAIALLIN.