

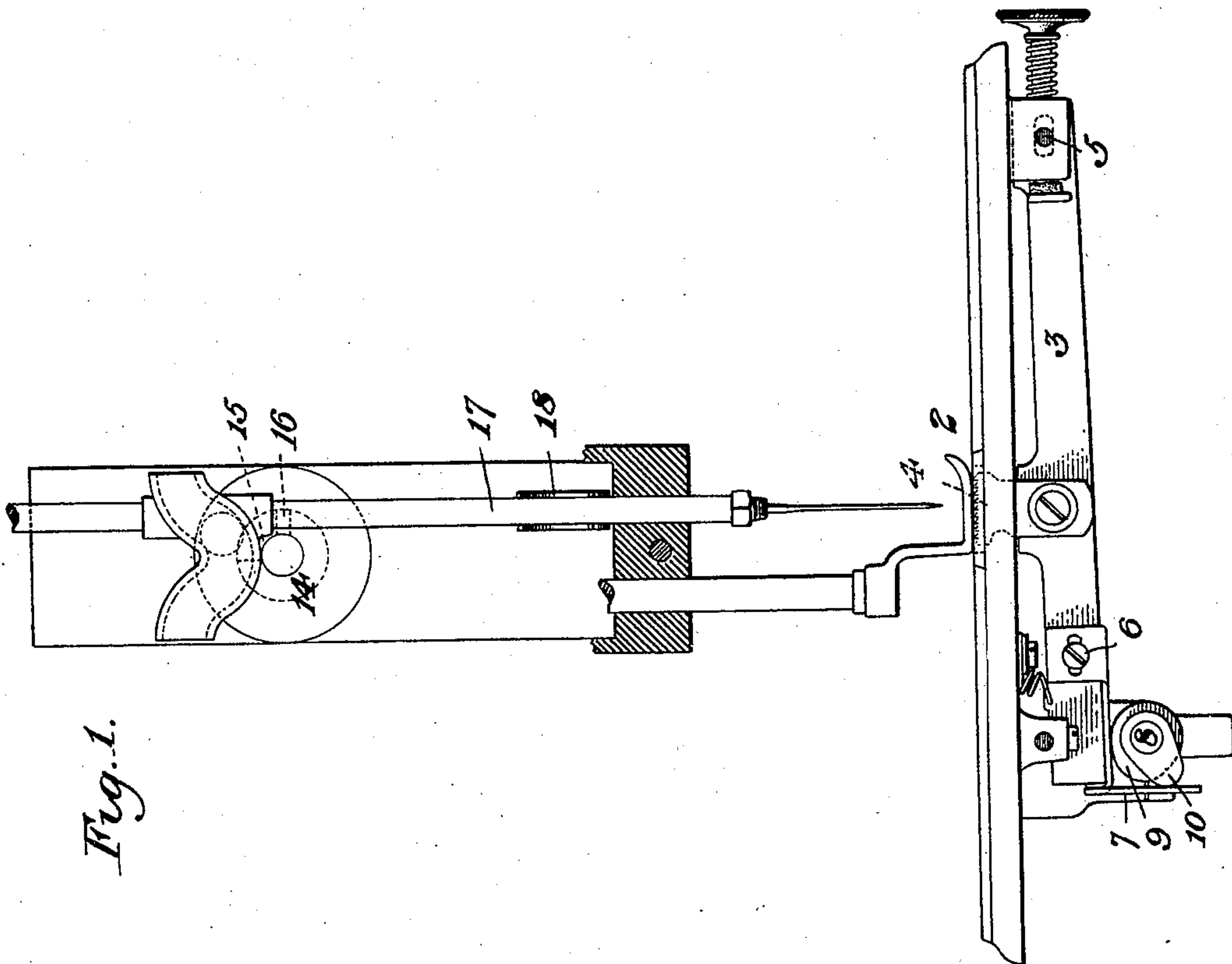
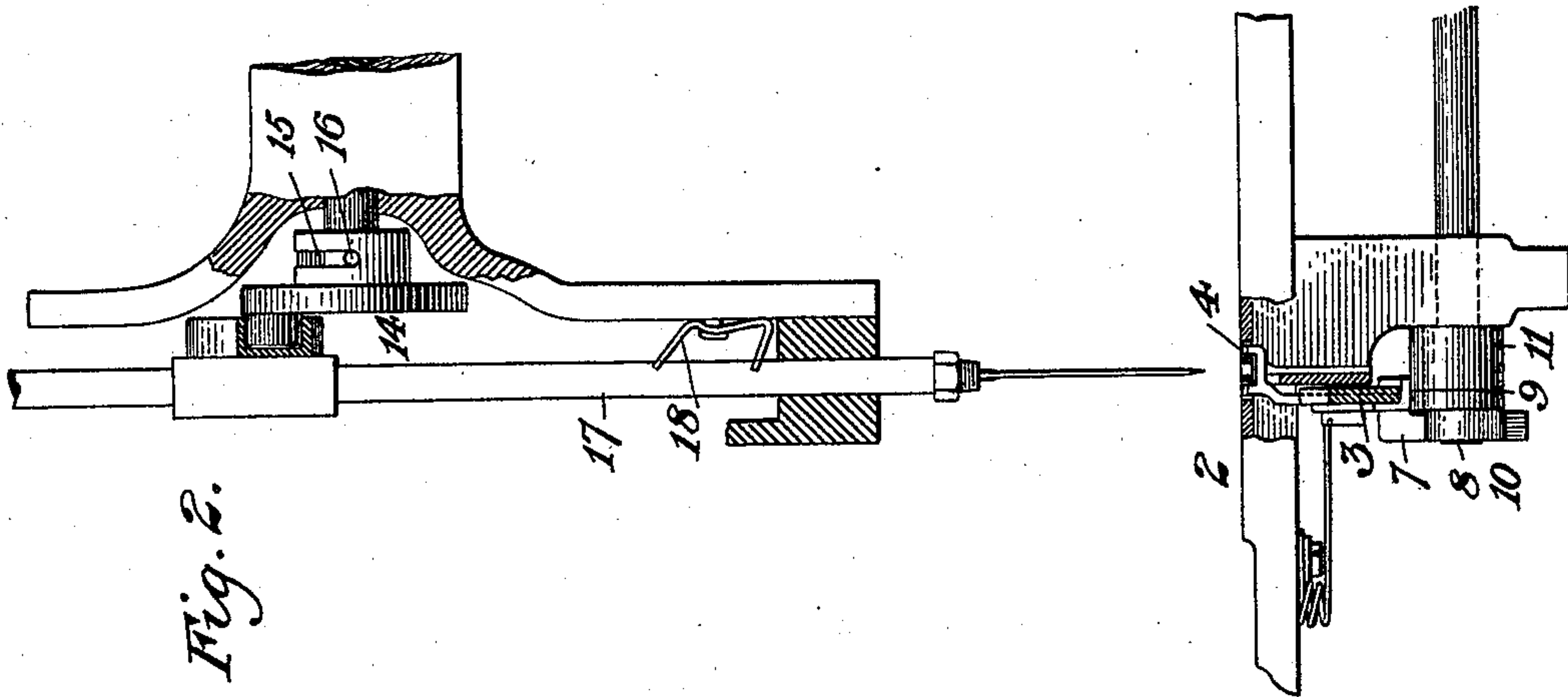
(No Model.)

2 Sheets—Sheet 1.

J. A. JONES.
FEED MECHANISM FOR SEWING MACHINES.

No. 581,162.

Patented Apr. 20, 1897.



WITNESSES

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Fig. 3.

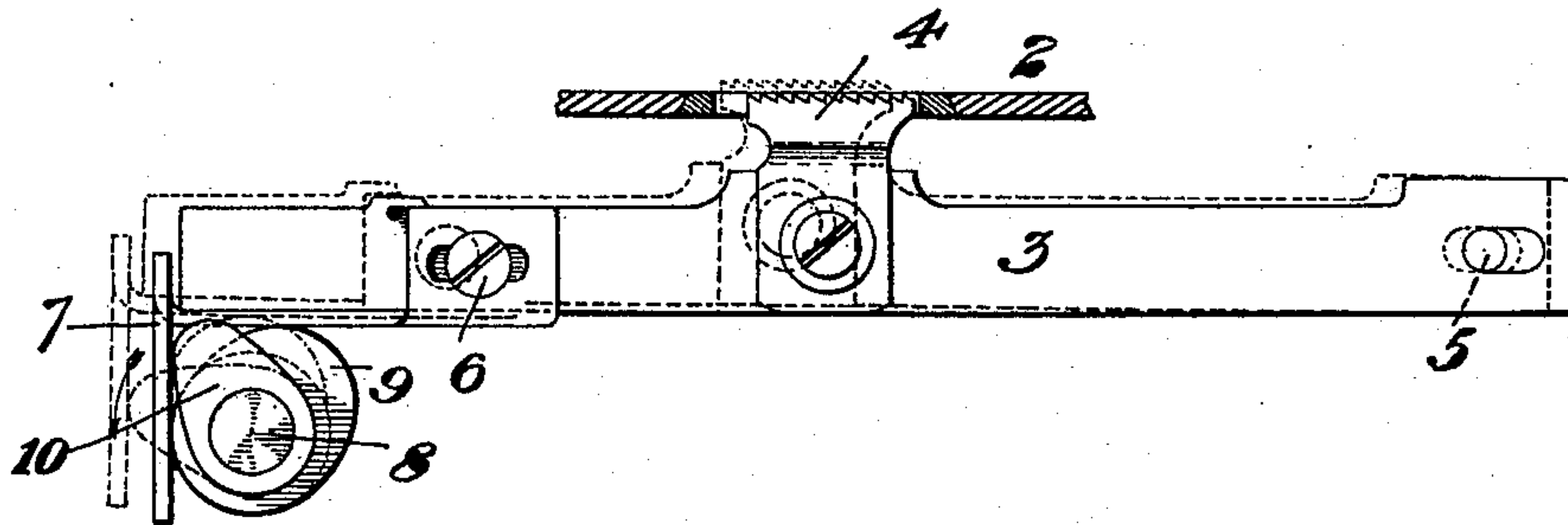


Fig. 4.

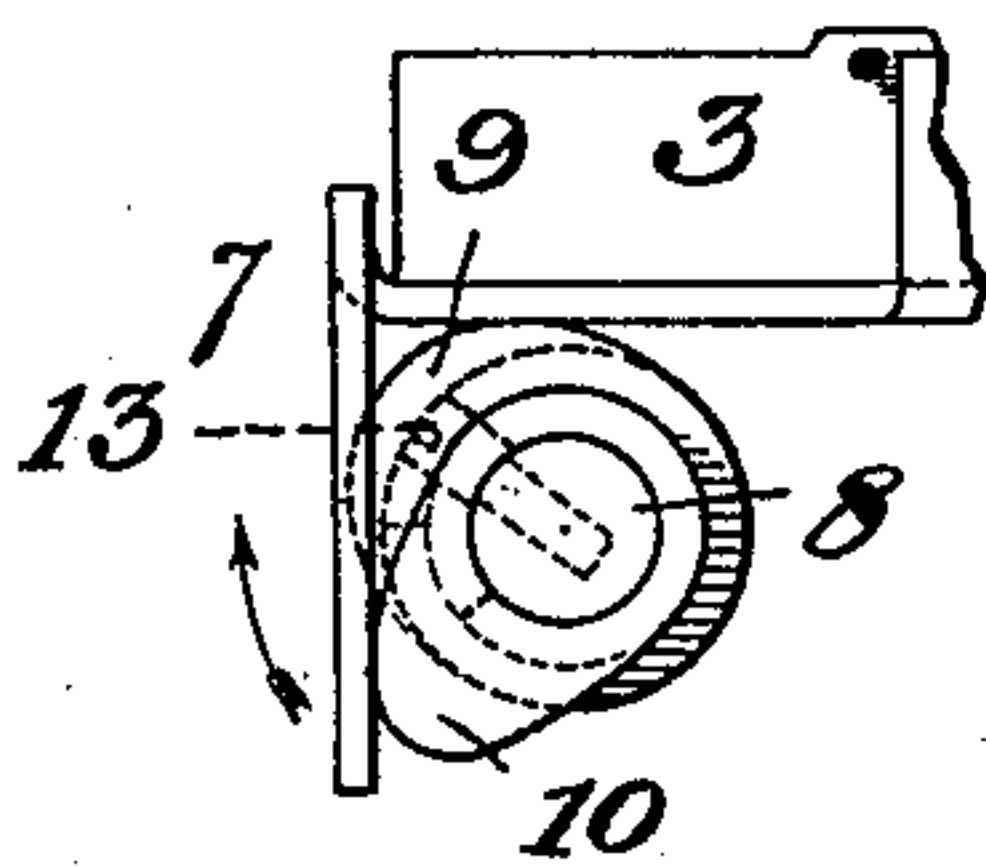


Fig. 5.

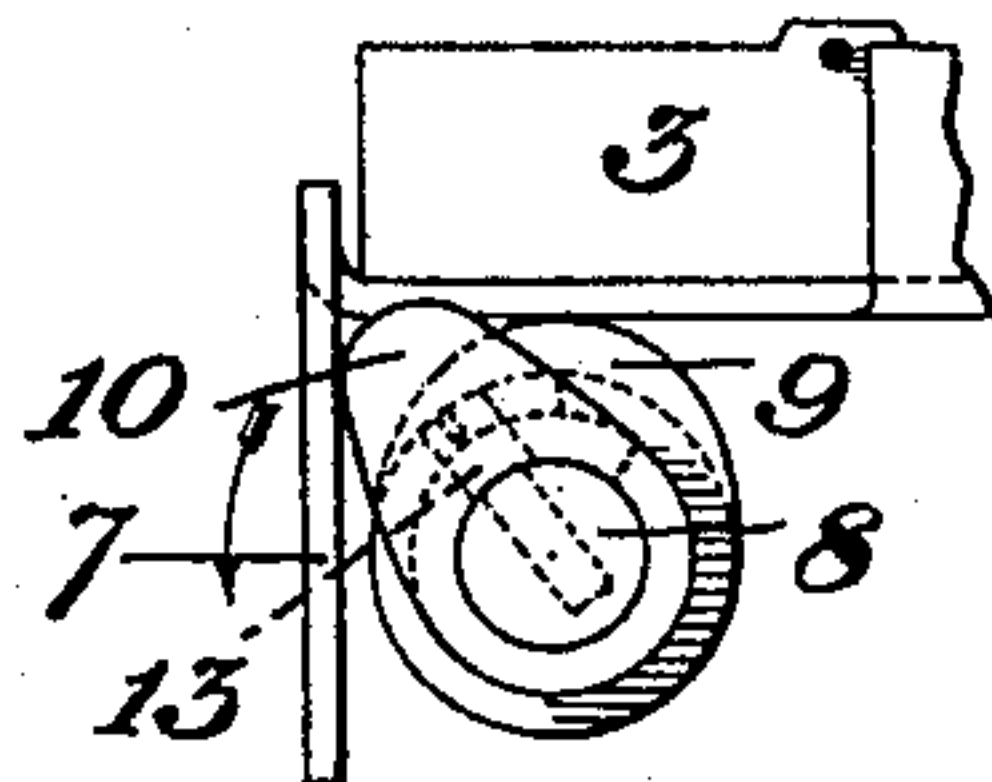


Fig. 6.

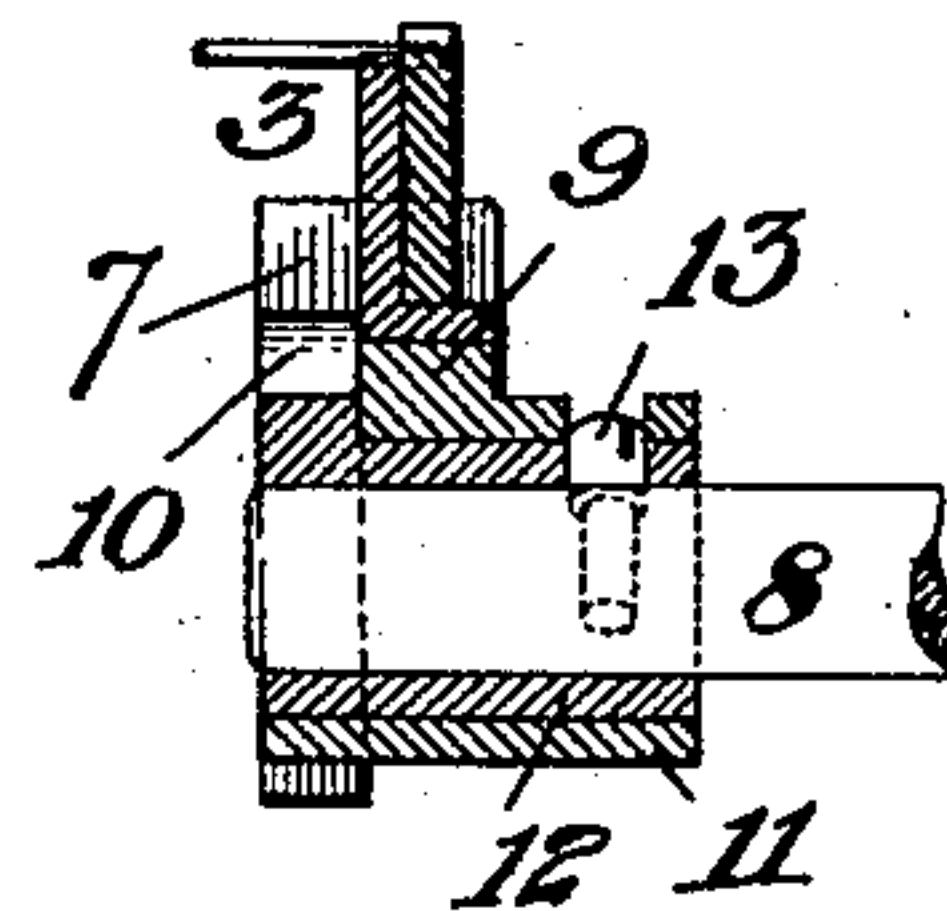


Fig. 7.

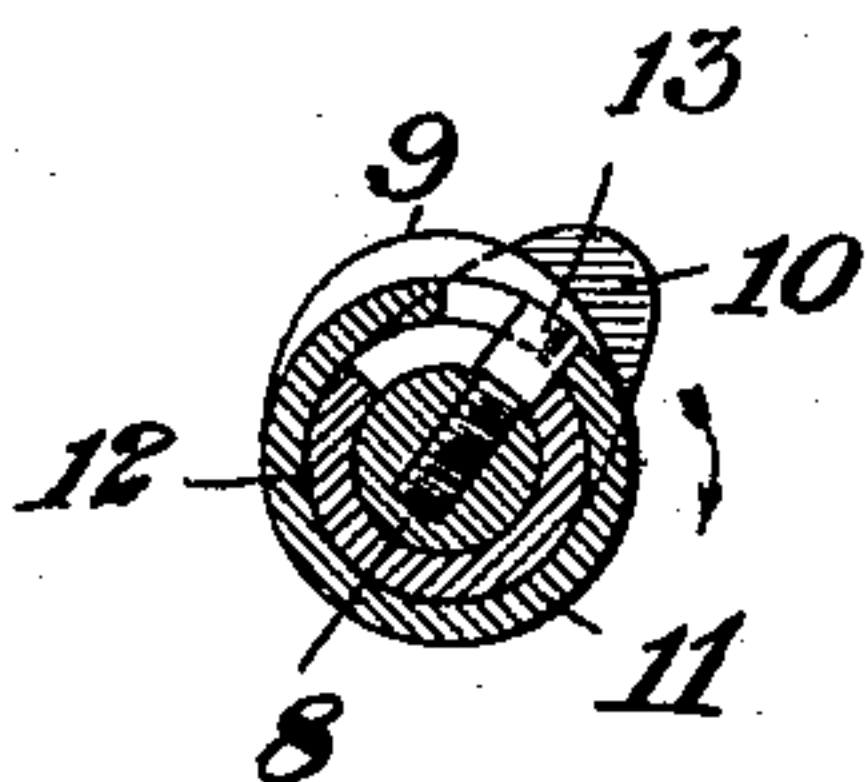
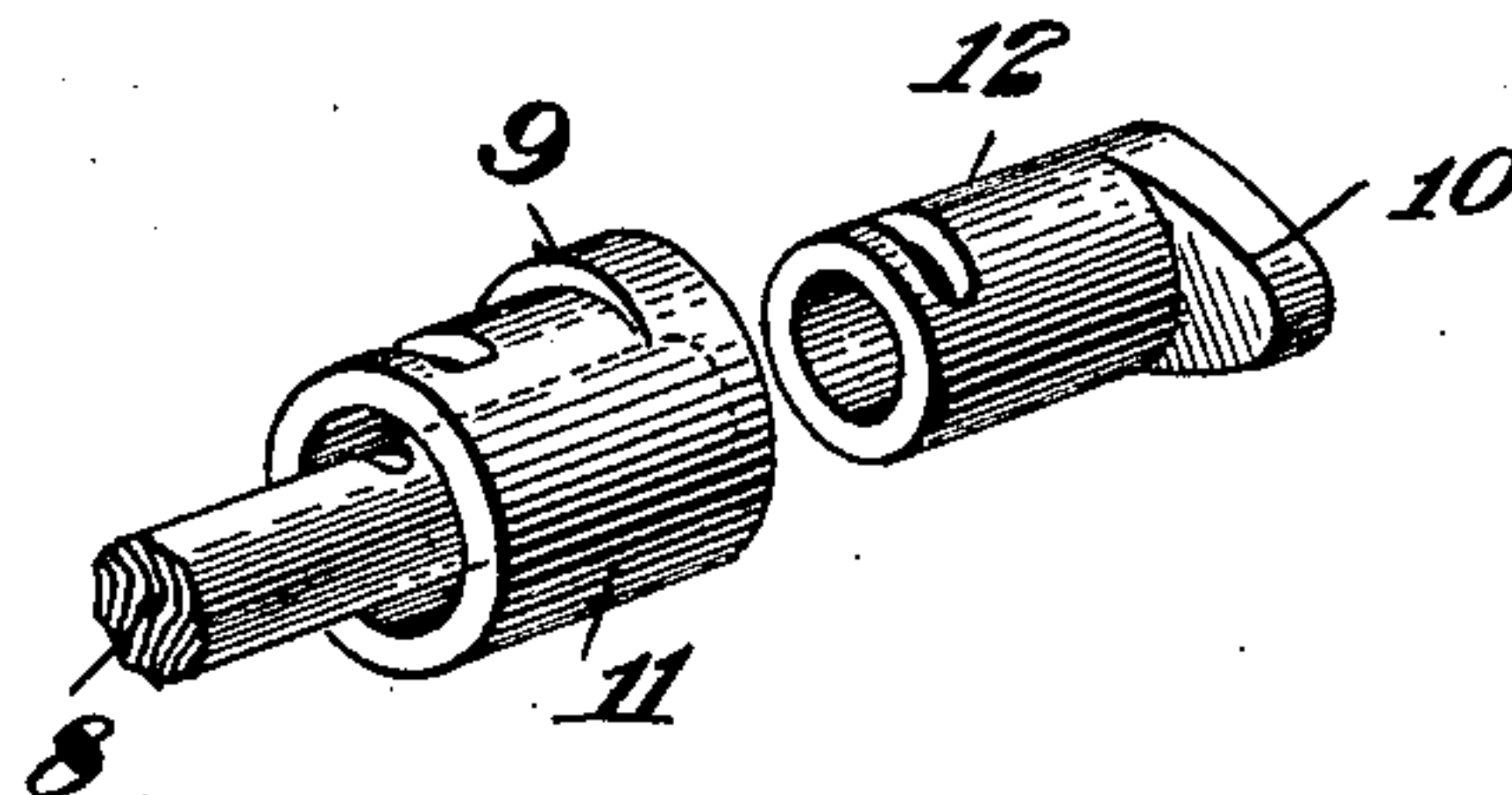


Fig. 8.



WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN A. JONES, OF PITTSBURG, PENNSYLVANIA.

FEED MECHANISM FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 581,162, dated April 20, 1897.

Application filed September 3, 1895. Serial No. 561,265. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. JONES, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Sewing-Machine Feed Mechanism, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation, partly in section, of a portion of a sewing-machine provided with my improved feed mechanism. Fig. 2 is an end elevation, also partly broken away. Fig. 3 is an enlarged detail view of the feed-bar and operating-cams. Figs. 4 and 5 are detail views of the end portion of the bar, showing the cams in different positions. Fig. 6 is a longitudinal sectional view of the cams. Fig. 7 is a transverse section through the cam-shaft and cams, and Fig. 8 is a perspective view showing the mode of attaching the cams to their shaft.

My invention relates to sewing-machines, and is designed to provide a machine in which the treadle and shaft may be moved in either direction and the work will always be moved forward and the needle moved downwardly at the correct moment.

In the drawings, 2 represents the cloth-plate, and 3 the feed-bar, carrying the feed-dog 4, which works through the throat-plate. This feed-bar is pivoted near one end upon a pin 5, which passes through a slot in the bar and allows the same to move longitudinally thereon, the other end of the bar having adjustably secured to it by a set-screw 6 the usual depending hook 7. Beneath the hook extends the shaft 8, having thereon two cams 9 and 10, the first of which lifts the feed-bar, while the second gives it the longitudinal reciprocation. These cams are so arranged upon the shaft as to have a certain amount of lost motion thereon in order that their movements may have the proper relation to each other, since if rigid upon the shaft and so arranged that when rotating in one direction the lifting-cam operates first and swings the bar upwardly, after which the other moves the bar longitudinally when rotated in the other direction, the second cam would move the bar endwise before it was lifted,

and hence the cloth would not be moved properly.

By arranging the cams each with a certain amount of lost motion upon the shaft, when its motion is reversed the cams will rotate freely about the shaft until they reach the proper position to give the desired motions to the bar. I have shown the cams as provided with sleeves 11 and 12, which slip over the shaft, one within the other, and are secured by a screw 13, which passes through registering slots in the sleeves, but it is evident that the particular means employed for securing the cams and giving them the lost motion may be varied widely without departing from my invention. In order that the needle may also descend at the proper moment when the rotation of the shafts is reversed, I similarly provide a suitable amount of lost motion in its operating-cam 14, which is slotted, as shown at 15, and secured to the shaft by a pin 16 passing therethrough.

To prevent the needle-bar 17 from dropping down while the cam rotates freely upon its shaft, I provide a friction device 18, of any suitable character, which bears thereon and prevents its downward movement except when positively actuated by its cam.

The advantages of my invention will be apparent to those skilled in the art, since the operator may start the treadle and shaft in either direction and the work will be moved forward and the same length of stitch given irrespective of the particular direction of rotation.

Many changes may be made in the form and arrangement of the parts without departing from my invention, since

I claim—

1. In a sewing-machine a needle-bar and a cam arranged to operate the same, said cam having a determined amount of lost motion upon its actuating-shaft, and means for preventing the dropping of the needle-bar while the lost motion occurs; substantially as described.

2. In a sewing-machine, the combination with a feed-bar and a shaft having cams arranged to operate said bar, at least one of said cams having a certain amount of lost motion upon the shaft, of a needle-bar pro-

vided with an operating-cam also having a
determined amount of lost motion upon its
shaft, and means for preventing the dropping
of the needle-bar while the lost motion oc-
5 curs, whereby the operating-shaft may be
revolved in either direction; substantially as
described.

In testimony whereof I have hereunto set
my hand.

JOHN A. JONES.

Witnesses:

HUGH MACK,
DAVID JONES.