

W. O. GROVER.  
Feeding Devices for Sewing-Machines.

No. 216,791.

Patented June 24, 1879.

Fig. 1.

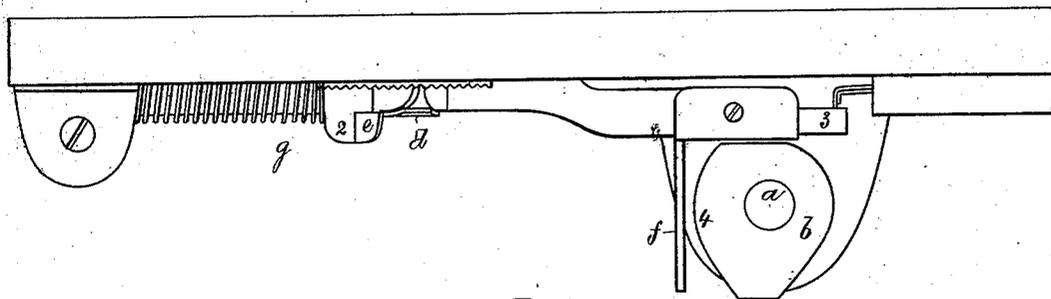


Fig. 2.

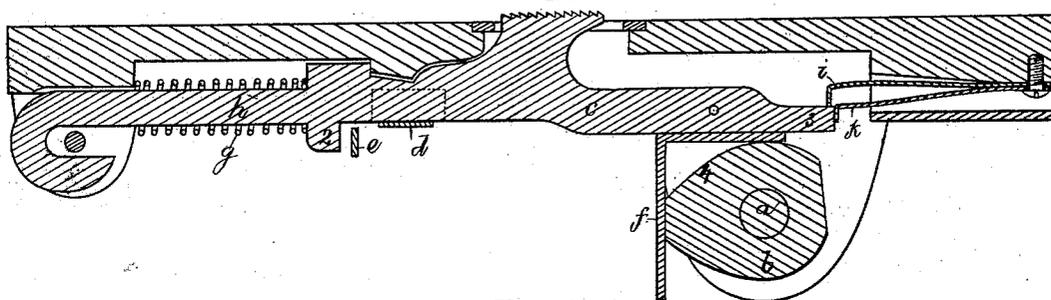
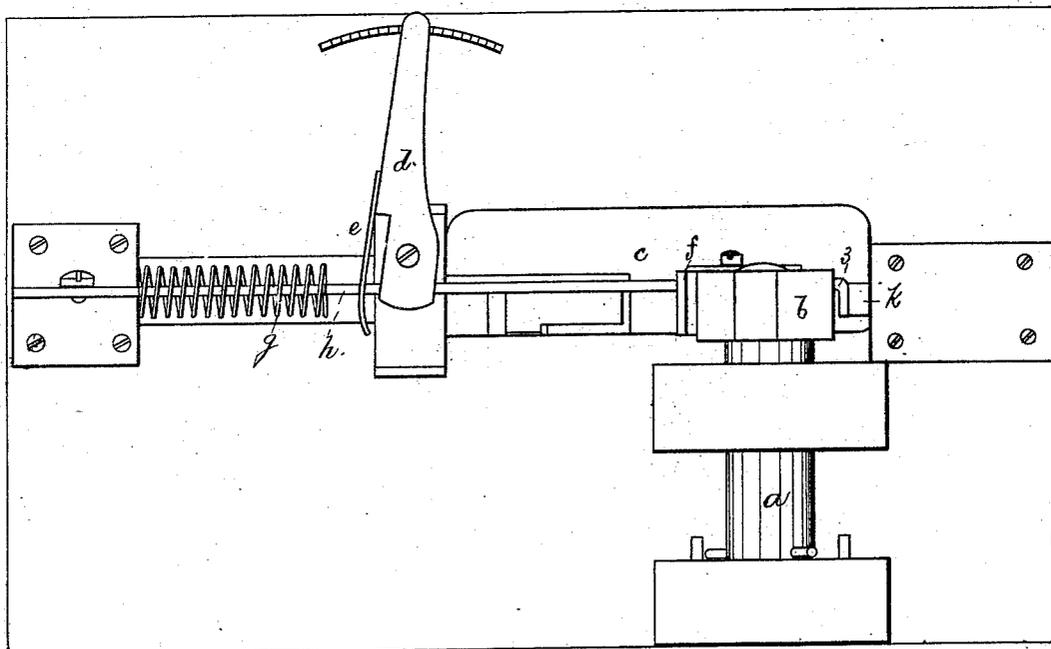


Fig. 3.



Witnesses.

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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN FEEDING DEVICES FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. **216,791**, dated June 24, 1879; application filed January 29, 1879.

*To all whom it may concern:*

Be it known that I, WM. O. GROVER, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Feeding Devices for Sewing-Machines, of which the following description, in connection with the accompanying drawings, is a specification.

This invention relates to sewing-machines, and has special reference to the construction and mode of operation of the feeding mechanism.

In this my invention a four-motioned feeding device has its rising or grasping and forward or feeding movements imparted to it by a single cam on a rock-shaft located below the cloth-plate.

Figure 1. is an end view of a sewing-machine cloth-plate with the feed-bar depressed; Fig. 2, a similar view in section with the feed-bar elevated and moved forward; and Fig. 3 is an under-side view.

The shaft *a*, below the cloth-plate will, by a crank-and-link connection, or by any other usual mechanism, be rocked from a rotating shaft of the machine, which rotating shaft will operate the needle-bar and other parts of the machine in any usual way. At the forward end of this shaft is a cam, *b*, which has a movement from the position shown in Fig. 1, wherein the feed-bar *c* is depressed to its lowest position, to the position in Fig. 2, wherein the feed bar is most elevated and thrown fully forward.

In Fig. 1 the feed-bar is not in its most backward position, for the stitch-regulating lever *d* or the spring *e* thereon is, in that figure, as in Fig. 3, so placed as to check the backward movement of the said bar, the shoulder 2 meeting the said spring and preventing the projection *f* of the feed-bar from receding

to the face 4 of the cam. The feed-bar is moved backward after each stitch by the spring *g*, located upon the part *h* of the bar, until the shoulder 2 meets spring *e*, and the spring so receiving the shoulder reduces the noise usually accompanying the working of the feed-bar. The end 3 of the feed-bar is acted upon by a depressing-spring, *i*, which always exerts a tendency to depress that end of the bar toward the cam *b*, while the spring *k* acts as a stop to hold the end 3 of the feed-bar and prevent it from being thrown backward by spring *g* while it is descending under the action of spring *i* until the cam *b* moves from the position shown in Fig. 2 nearly to that shown in Fig. 1.

I claim—

1. The feed-bar and rocking shaft and single cam thereon, combined with the depressing-spring and yielding stop at the end 3 of the bar, to operate substantially as described.

2. A feed-bar provided with a shoulder or projection, combined with a stitch-regulating lever provided with a spring-arm, to act against its shoulder and check the backward movement of the feed-bar, substantially as described.

3. The combination, with the feed-bar and means to impart to it its feeding motions, of a yielding stop, to co-operate with the forward portion of the feed-bar, substantially as described.

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

WILLIAM O. GROVER.

Witnesses:

G. W. GREGORY,  
L. F. CONNOR.