

G. A. SMITH.
FEEDING MECHANISM FOR SEWING MACHINES.

No. 99,962.

Patented Feb. 15, 1870.

FIG. 1.

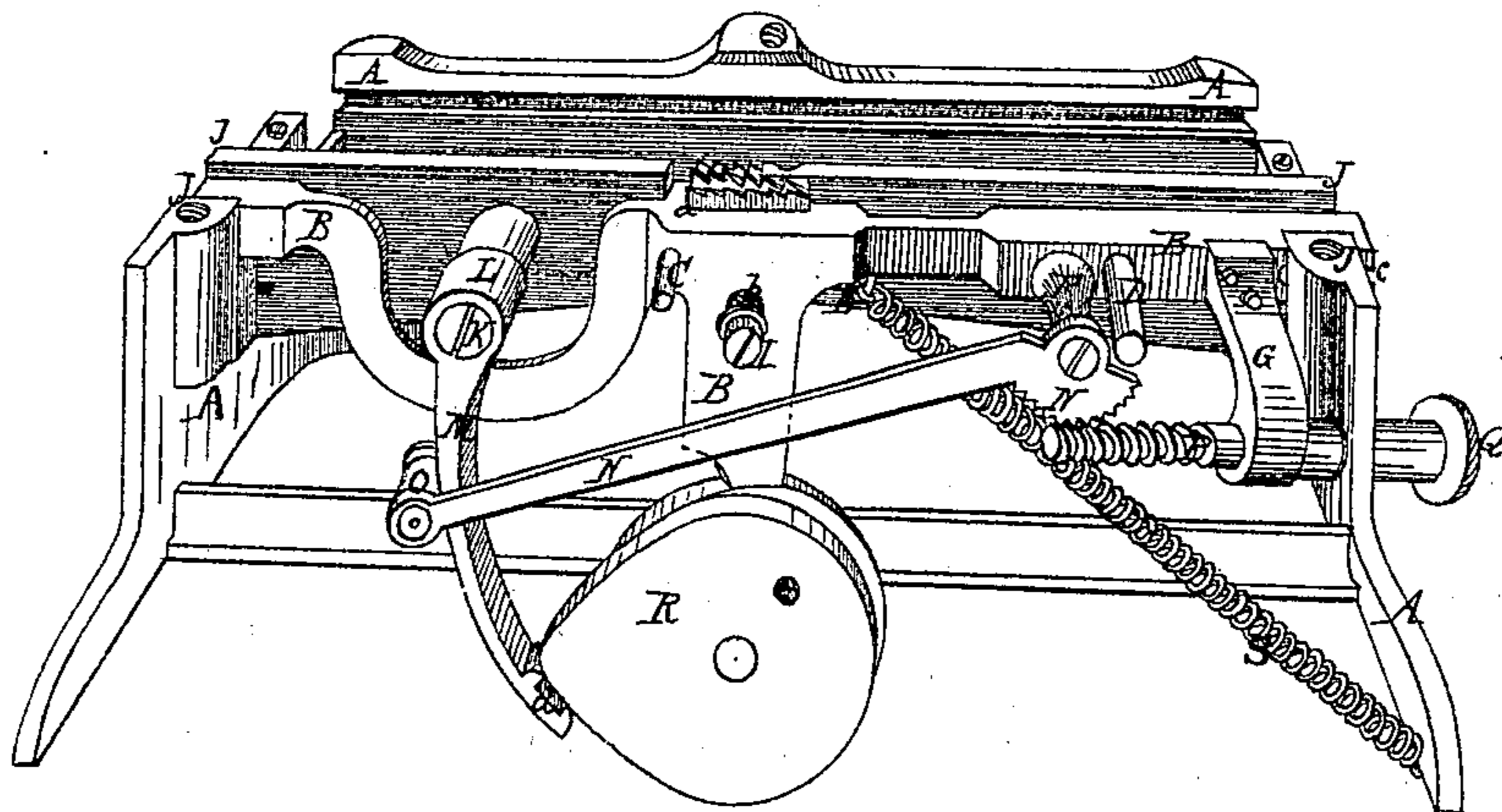
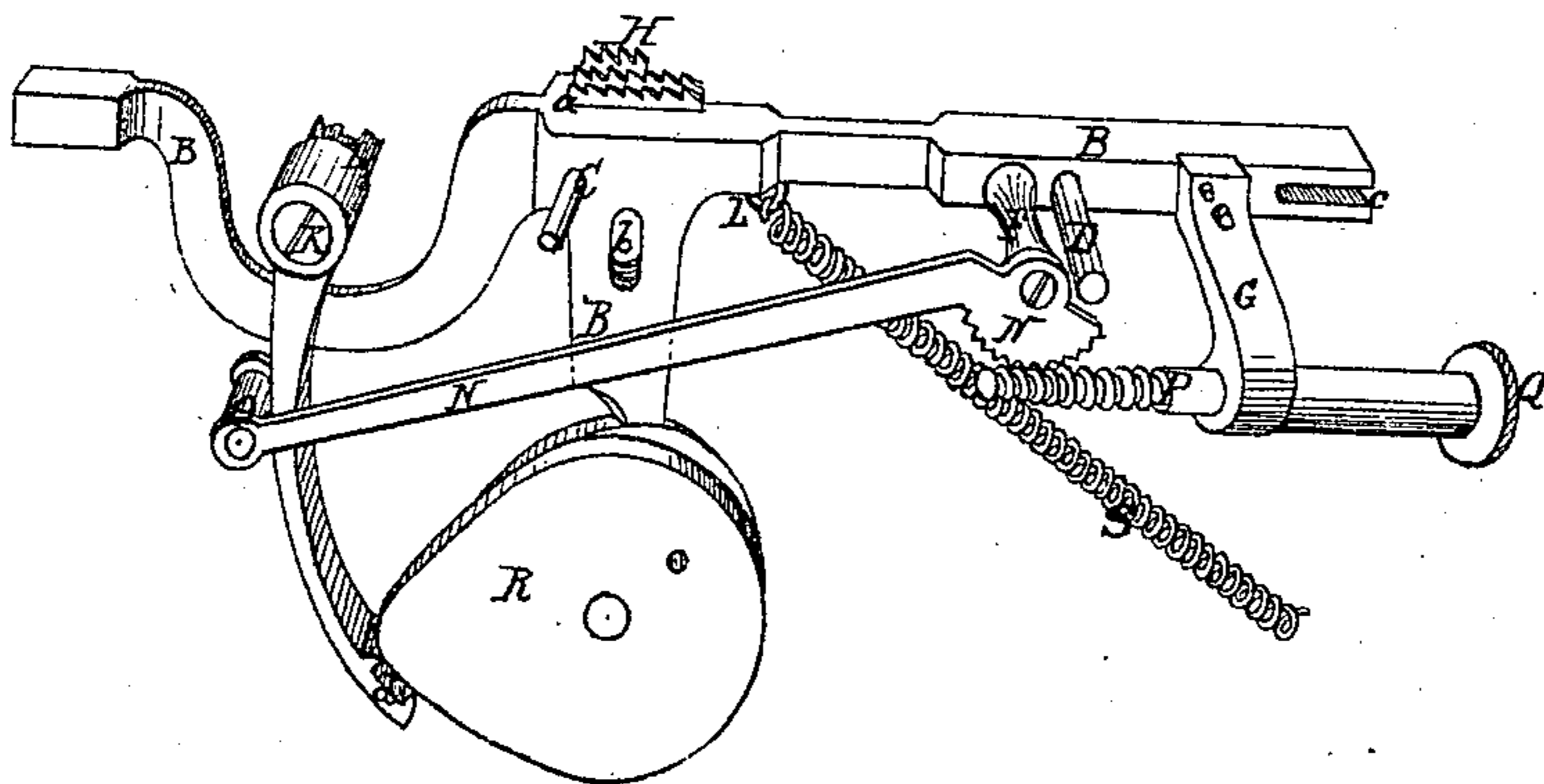


FIG. 2.



Witnesses.
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Letters Patent No. 99,962, dated February 15, 1870.

IMPROVEMENT IN FEEDING MECHANISM FOR SEWING-MACHINE.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, GEORGE A. SMITH, of the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Sewing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the annexed drawings which forms a part of this specification, and in which—

Figure 1 is a perspective view of so much of a sewing-machine as is necessary to the exhibition of my improvement, and

Figure 2 is a perspective view of the same detached from the frame.

The same letters of reference designate the same parts in both figures.

My invention relates more particularly to the devices whereby the throw of the feed is adjusted so as to make a longer or shorter stitch as may be desired; and

It consists in mounting the adjusting device on the vibrating feed-bar, so as to move with it, and in combining it with a radius bar and vibrating arm, as herein-after described.

That others skilled in the art to which my invention appertains may be enabled to make and use the same, I hereby describe its construction and operation.

A A, fig. 1, is a part of the frame of a sewing-machine.

B B is the feed-bar, to which are attached the stops C D, the eye E, the stud F, and the lug G.

The feed-bar is provided with a groove seen at *a*, in which the feed-dog H, whose upper surface is serrated, slides vertically, and may be adjusted at any desired height by the set-screw I working in the slot *b*.

The feed-bar slides longitudinally in the guides J J, fig. 1, cast on the frame A.

A pin, not shown in the drawing, passes through the slot *c*, fig. 2, preventing vertical motion of that end of the feed-bar, while the other end thereof is free to move vertically in the guides.

K is a pin or stud screwed into the frame, and serving as a pivot for the tubular rock-shaft L of the vibrating arm M, the end of which is grooved, as seen at *d*, for the insertion of rawhide or similar material, to be moistened with oil.

N is a radius bar, provided with a pin, O, at its extremity, which bears against the arm M.

The radius bar is pivoted to the stud F, around which it is formed into a toothed segment, whose teeth gear into the thread of the adjusting worm P, so that by turning the milled head Q the radius bar is vibrated and its extremity elevated or depressed.

R is a cam mounted on the driving shaft of the machine, and constructed with two cam faces, on one of which the feed-bar B bears, while the end of the vibrating arm is pressed against the other face by the pin O of the radius bar, the latter being pivoted as aforesaid to the stud F on the feed-bar, and the feed-bar being retracted by the spring S, one end of which is hooked to the eye E, and the other to the frame.

The operation is as follows:

When the cam is revolved by the revolution of the driving shaft, the feed-bar is raised by the inner face of the cam, and at the same time carried forward by the action of the outer cam face on the vibrating arm, which bearing against the pin O draws the radius bar and feed-bar forward, and when the cam ceases to bear against the vibrating arm, the feed-bar is retracted by the spring S, and at the same time descends by its own weight, the inner face of the cam permitting it to fall.

By means of the adjusting worm, the throw of the feed-bar may be varied and the stitch thereby made longer or shorter as described. The throw is lengthened by depressing the extremity O of the radius bar, and shortened by raising it. The adjustment is limited in either direction by the stops C D.

Instead of a worm gearing into a cogged segment, a screw or other equivalent device may be attached to the feed-bar for the purpose of elevating or depressing the radius bar.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

The adjusting screw or worm attached to and vibrating with the feed-bar, in combination with a radius bar and vibrating arm.

G. A. SMITH.

Witnesses:

JOHN WHITE,

W. A. A. MCKINLEY.