

(No Model.)

F. WILCOMB.

MOVABLE CAM FOR STRAIGHT KNITTING MACHINES.

No. 350,794.

Patented Oct. 12, 1886.

Fig. 1.

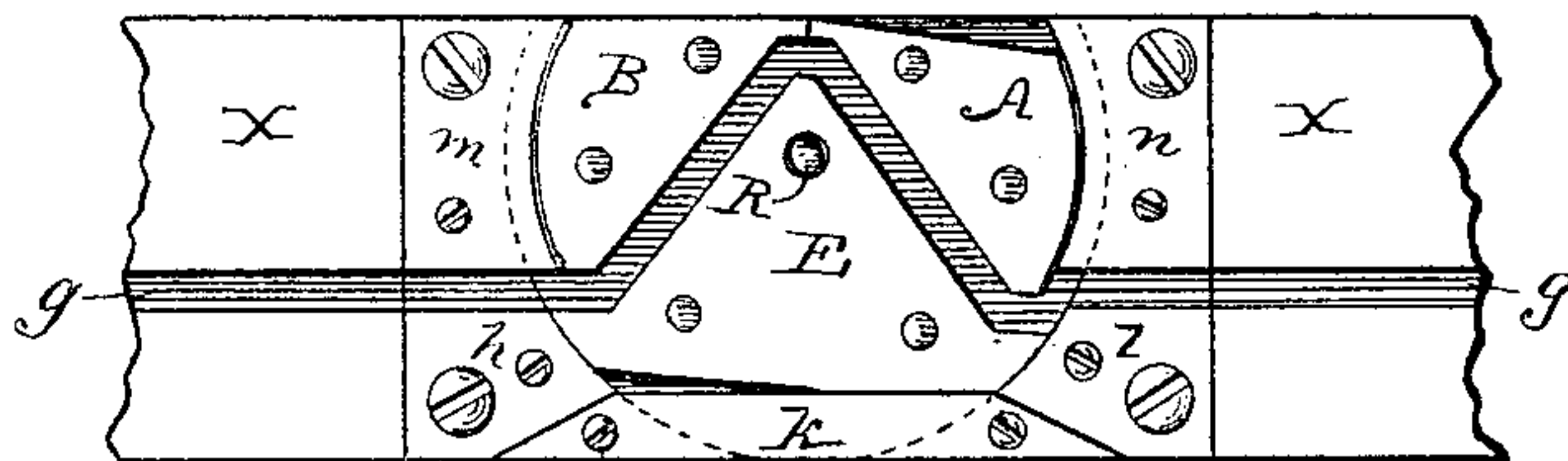


Fig. 2.

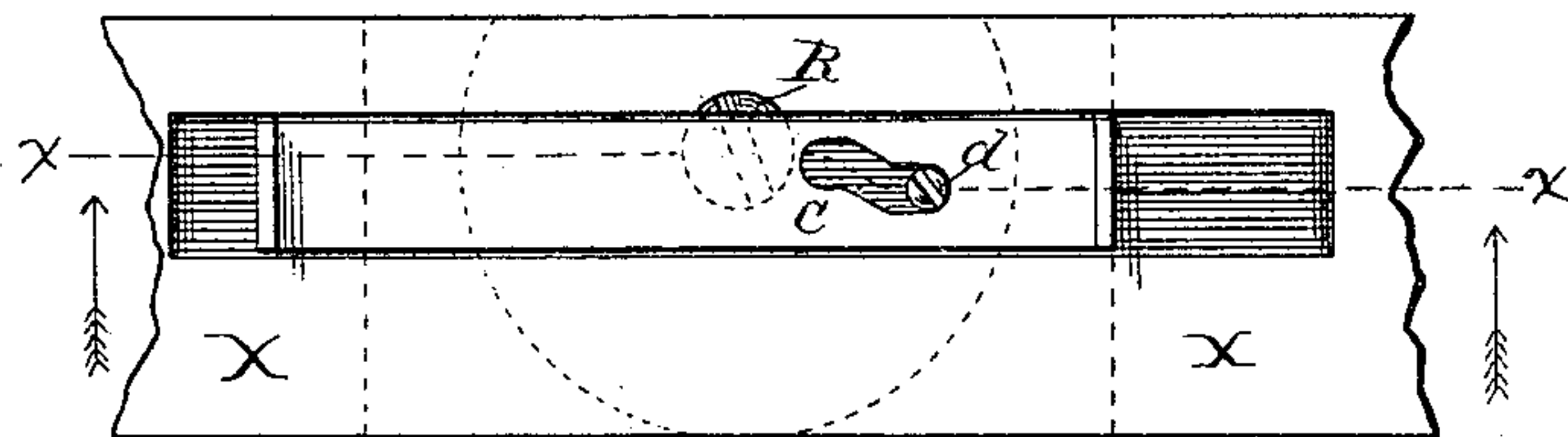


Fig. 3.

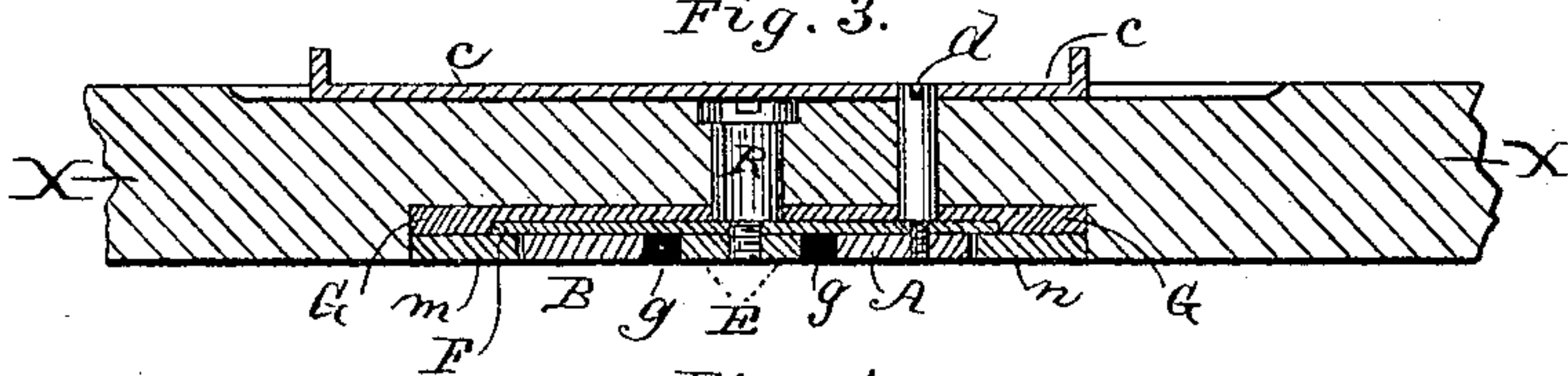


Fig. 4.

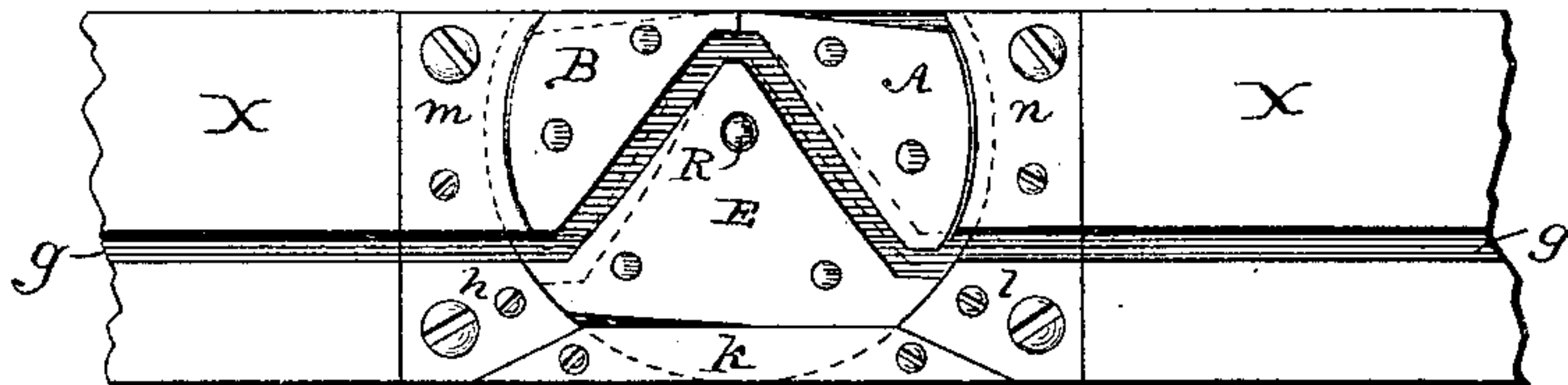


Fig. 5.

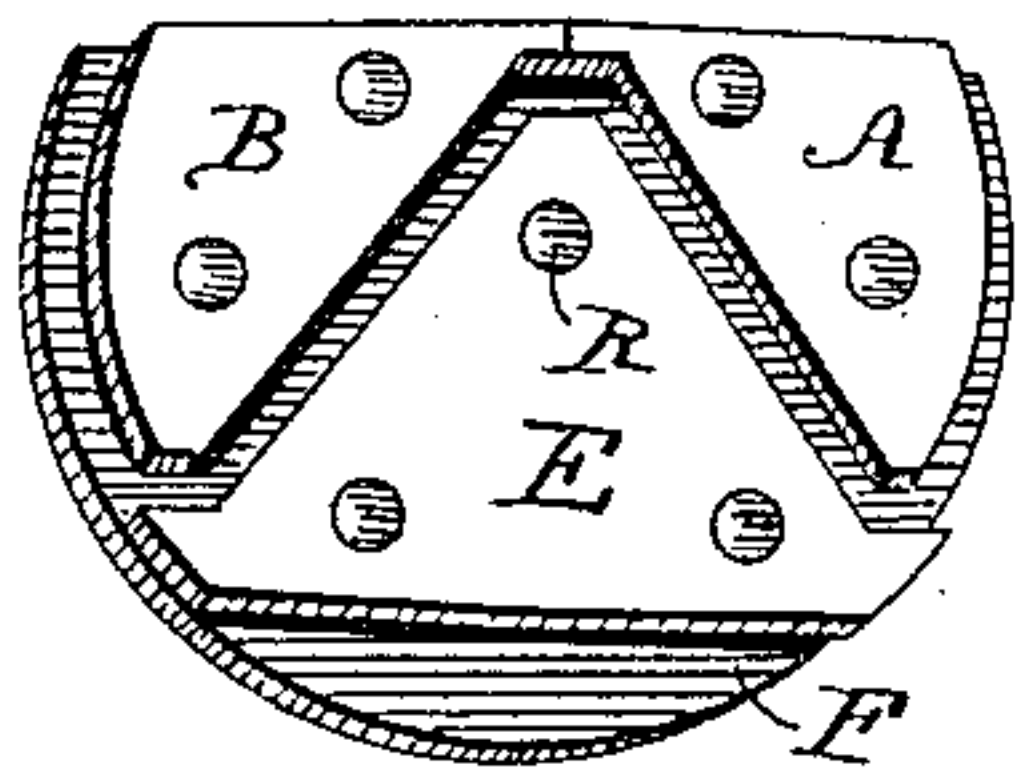


Fig. 6.

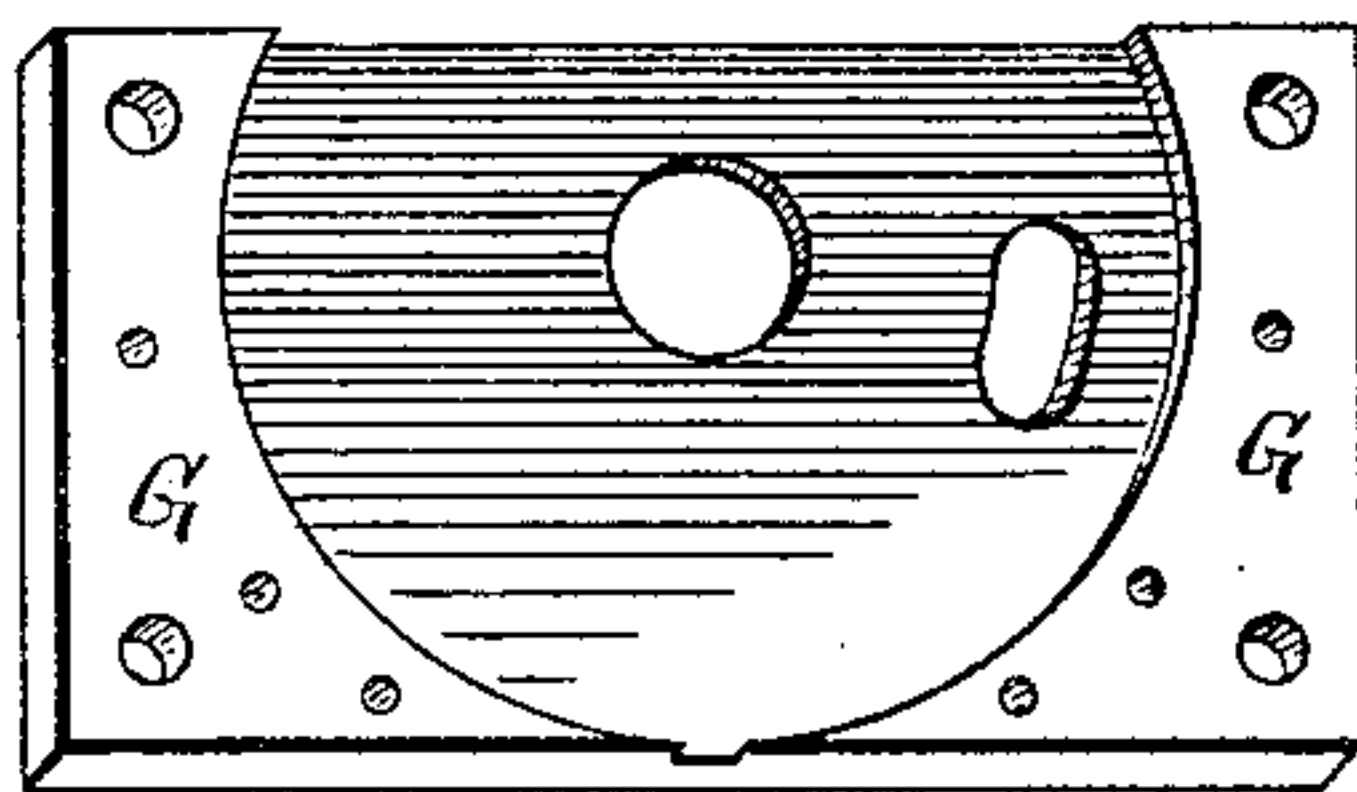
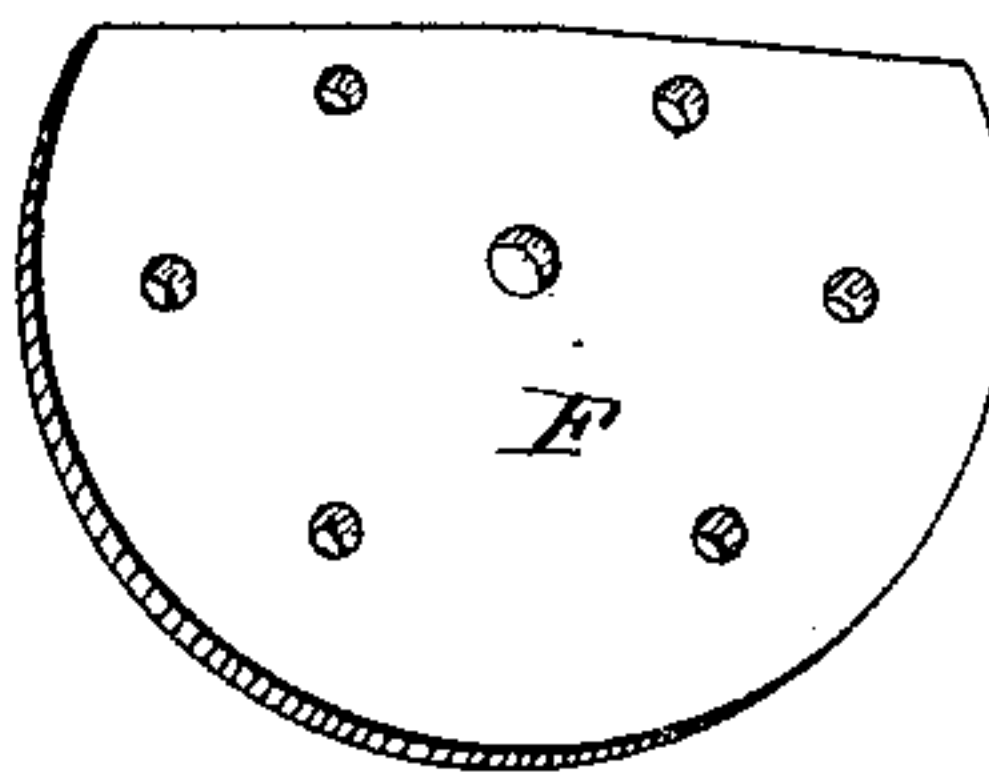


Fig. 7.



WITNESSES

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## MOVABLE CAM FOR STRAIGHT-KNITTING MACHINES.

SPECIFICATION forming part of Letters Patent No. 350,794, dated October 12, 1886.

Application filed April 1, 1886. Serial No. 197,391. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK WILCOMB, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Movable Cams for Straight-Knitting Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

Figure 1 is a bottom plan view of my movable cams attached to a slide-bar, X X, of a straight-knitting machine. Fig. 2 represents the top of a slide-bar, X X, with a sliding cam, C, attached. Fig. 3 represents a longitudinal section of the several parts. Fig. 4 is a bottom plan view, with dotted lines indicating the respective positions of the cams A, B, and E in their oscillating movements as the needle-shanks pass through the grooves *g g* in the progress of knitting. Figs. 5, 6, 7 are views of several parts detached.

Like letters designate corresponding parts in all the figures.

The object of my invention is to produce movable or oscillating cams for straight-knitting machines which will, in the progress of knitting, not only direct the course of the needles, but prevent their breaking, thereby protecting the needle-bed from injury and the machine from other damage by the needle-shanks striking the exposed corners of the cams, as they do in the movable cams now in use.

My invention consists of movable stitch-cams A B, of the shape and design shown in Figs. 1 and 4, and a center V-shaped movable cam, E, with its broad end slightly sloping from center to side, attached to a circular plate, F, having a rotary or oscillating movement on a pivot or axis, R, the plate F set into a socket-plate, G, and secured in place by plates *h, k, l, m, n*, the whole attached to a slide-bar, X X, of any straight-knitting machine—such as is in common use, or as in patent of Nesmith, No. 15,435, of July 29, 1856, the said slide-bar having thereon a sliding cam, C, operated by coming in contact with stops at the extreme end of the stroke of the said slide-bar, connected with the circular movable plate F and the stitch-cam A by a

stud, *d*, by means of which a rotary or oscillating movement is imparted to the cams A, B, and E in the process of knitting.

In Fig. 1 the stitch-cam A is represented to be in the position it would occupy in the act of making the stitches in knitting, and stitch-cam B represented as drawn out of the way of the needles as they pass into the grooves between the cams.

The socket-plate G may be dispensed with, if desired, and the slide-bar X X countersunk to admit the plate F. The V-shaped cam E and plates *h, k, l, m, n* may also be made in one piece and the cam E remain stationary; but the design heretofore described, with the cam E movable, is preferable, as the incline of the cam along the track of the needles is not so steep as when stationary, and it requires less power to operate the needles through the grooves between the cams. It will be seen that by the use of the circular plate F, for supporting the cams, all the friction is taken from the said cams and they are protected from wear, the frictional wear coming alone upon the plate F and upon the axis on which it oscillates. When the parts are in place within the case G, as described, or countersunk, the cap-plates, which hold the circular plate F in place, serve also to protect the edges of the cams.

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

1. In combination with the slide-bar of a knitting-machine, a circular plate, F, mounted on the axis R, having a rotary or oscillating movement thereon, the stitch-cams A B, the central cam, E, all attached to the said circular plate, and cap-plates for retaining said circular plate in place, all substantially as described.

2. The stitch-cams A B and center cam, E, and a rotary plate, F, to which the said cams are attached, in combination with a socket-plate, G, cap-pieces *h k l m n*, a slide-cam, C, stud *d*, and a slide-bar, X X, substantially as and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK WILCOMB.

Witnesses:

W. B. McCLELLAN,  
GEO. R. WILSON.