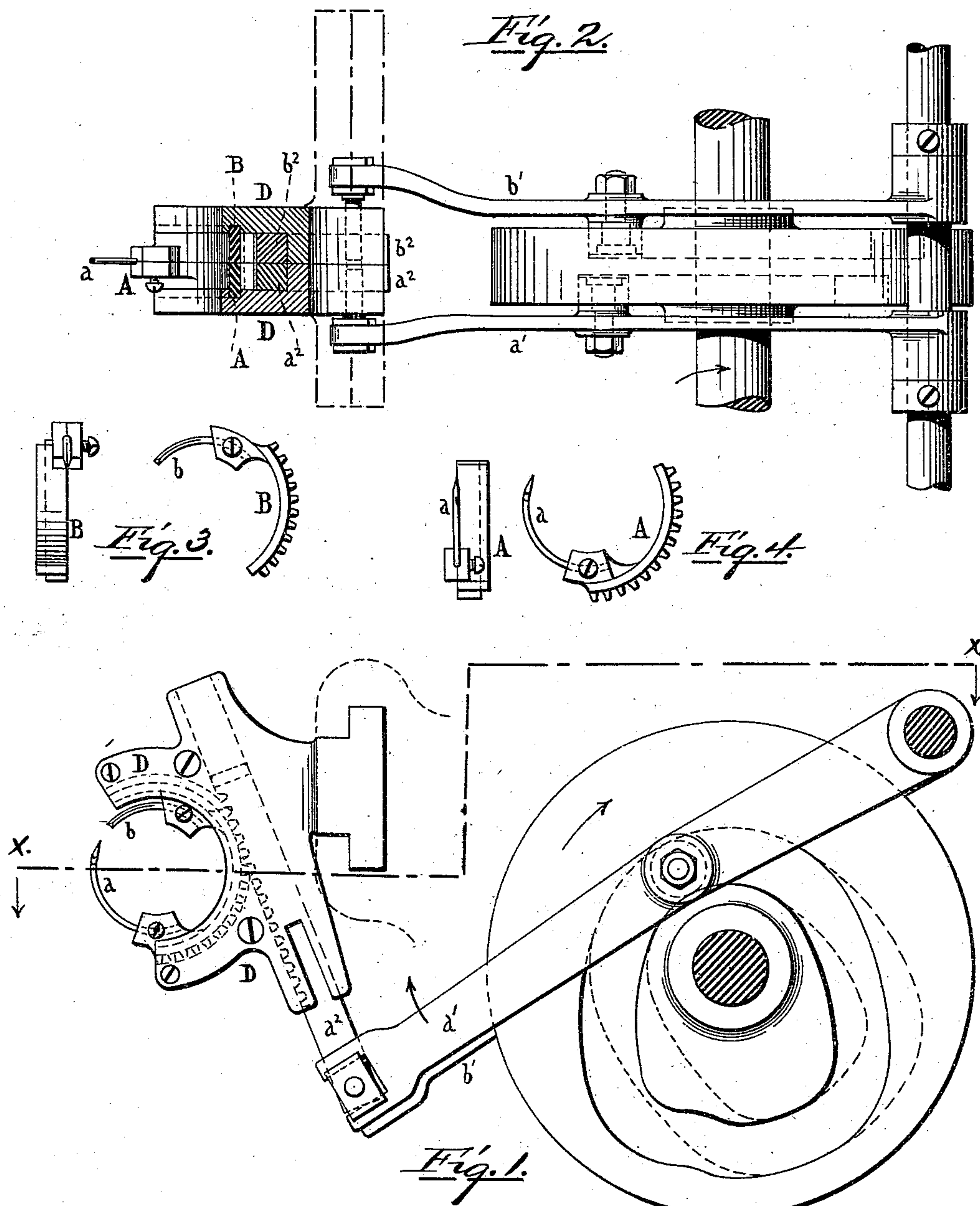


(No Model.)

A. B. FOWLER & G. E. WARREN.  
SEWING MACHINE.

No. 549,353.

Patented Nov. 5, 1895.



Witnesses:

Charles Hannigan  
John R. Snow

Inventors:

Alfred B. Fowler  
George E. Warren  
by J. E. Magnum ATTY

# UNITED STATES PATENT OFFICE.

ALFRED B. FOWLER AND GEORGE E. WARREN, OF PAWTUCKET, RHODE ISLAND, ASSIGNORS TO THE CAMPBELL MACHINE COMPANY, OF SAME PLACE.

## SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 549,353, dated November 5, 1895.

Application filed May 28, 1894. Serial No. 512,694. (No model.)

*To all whom it may concern:*

Be it known that we, ALFRED B. FOWLER and GEORGE E. WARREN, both of Pawtucket, in the county of Providence and State of Rhode Island, have invented a new and useful Improvement in Sewing-Machines, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is an elevation showing my invention as applied to both penetrating instruments; Fig. 2, a section on line *xx* of Fig. 1; Fig. 3, two views of the awl-holder, and Fig. 4 two views of the needle-holder.

Our invention relates to means for supporting and actuating the needle and awl, and one feature of our invention consists in arranging the holders for the needle and awl in a single support, another feature being the use of a curved rack in a curved guideway as the holder for the needle or for the awl, or for both, thereby providing a clear space, which has heretofore been occupied by the shaft or journal of the holder.

In the drawings, which illustrate the best form of mechanism embodying both features of our invention, A is the needle-holder and *a* the needle, B the awl-holder and *b* the awl, and D the support for both. This support D is shown as a feed-slide, but may, of course, be fixed to the frame of the machine if some other feed be provided.

The support D receives both holders A and B and confines each to movement about its axis, and the needle *a* and awl *b* are mounted each in an offset on its holder in order that the points of both may move in the same plane. One advantage of putting both holders A and B in a single support D is that the offset may be reduced to the minimum, and thereby bring the thrust of each as nearly direct with relation to its support as is possible, and in addition the construction is sim-

plified as well as made more compact. This feature of our invention is applicable in any machine using a needle-holder and an awl-holder, and may be used with or without the second feature of our invention, which relates wholly to getting free space within the circular path of the needle-point, this being especially desirable in hooked-needle sewing-machines, in order to give ample room for the material to be sewed and also mechanism for bringing the thread into proper relation with the hook of the needle, and this feature of our invention consists in a needle-holder which is a curved rack combined with a support provided with a curved guideway by which the rack is confined to its proper motion in the arc of a circle without the need of any central support.

The holders A and B are shown as actuated by the racks *a*<sup>2</sup> and *b*<sup>2</sup>, their levers *a*<sup>1</sup> and *b*<sup>1</sup>, and suitable cams, as will be plain without further description.

What we claim as our invention is—

1. In combination a curved needle; a needle holder which is the segment of a ring; a curved awl; an awl holder which is the segment of a ring; and a casing with curved guide ways for both segments; all substantially as described.

2. In combination a curved rack carrying a clamp for the shank of the needle; a support inclosing the curved rack; curved guide ways connecting the curved rack and the support and confining the rack to motion in its arc of curvature; and a toothed driver engaging with the curved rack, substantially as described.

ALFRED B. FOWLER.  
GEORGE E. WARREN.

Witnesses:

DANIEL MCNIVEN,  
M. E. DOLLOFF.