

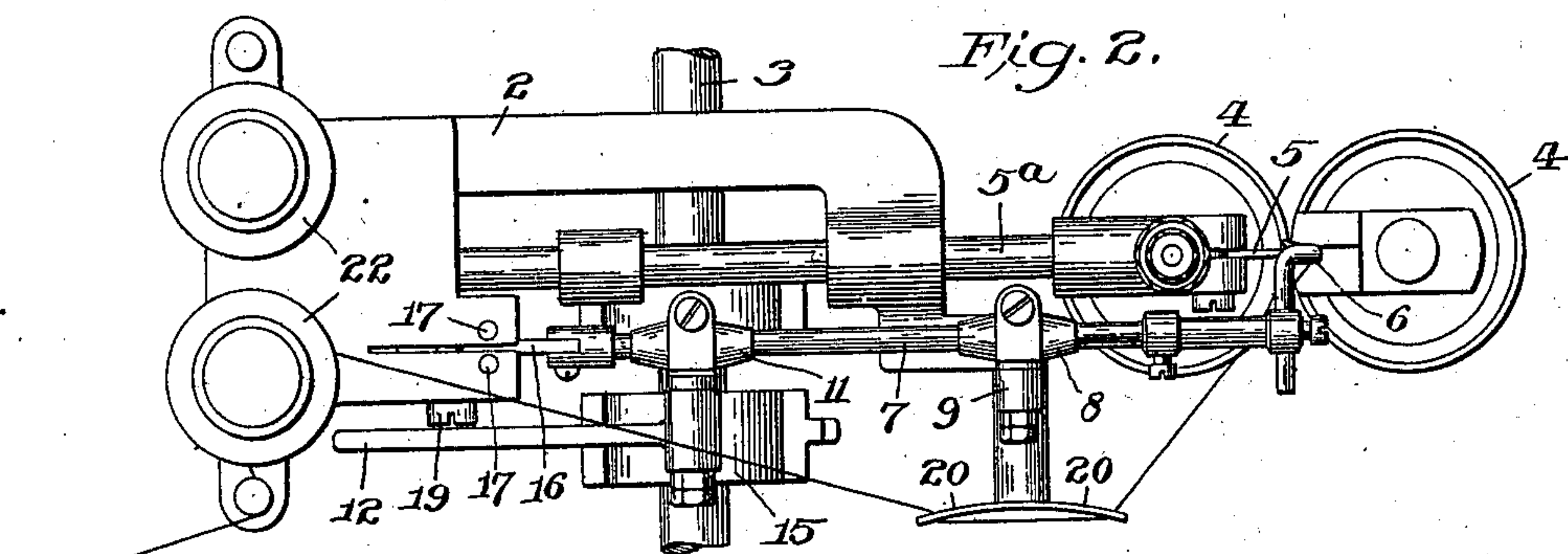
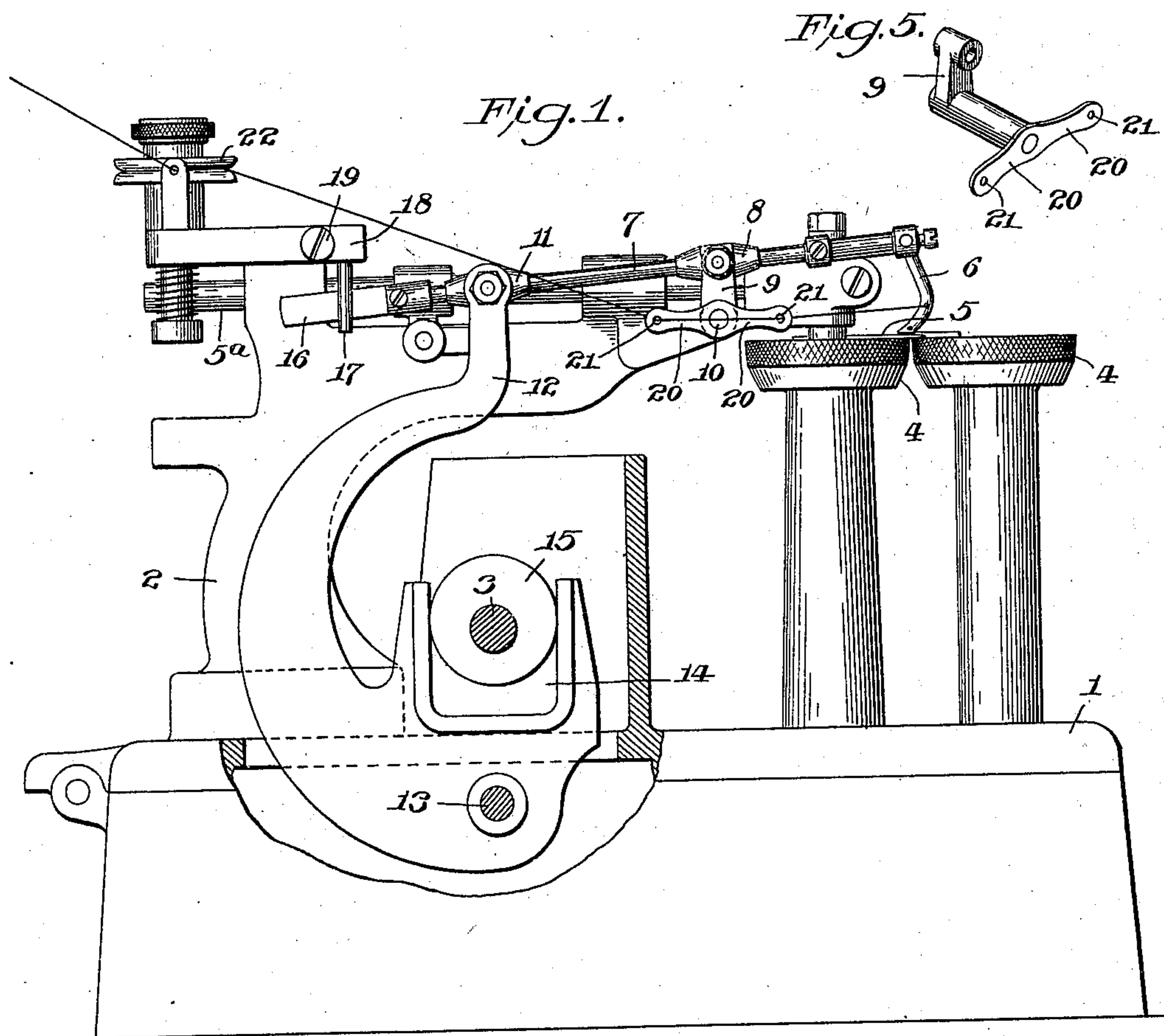
No. 724,017.

PATENTED MAR. 31, 1903.

G. KEYSER.
OVEREDGE SEWING MACHINE.
APPLICATION FILED JAN. 27, 1902.

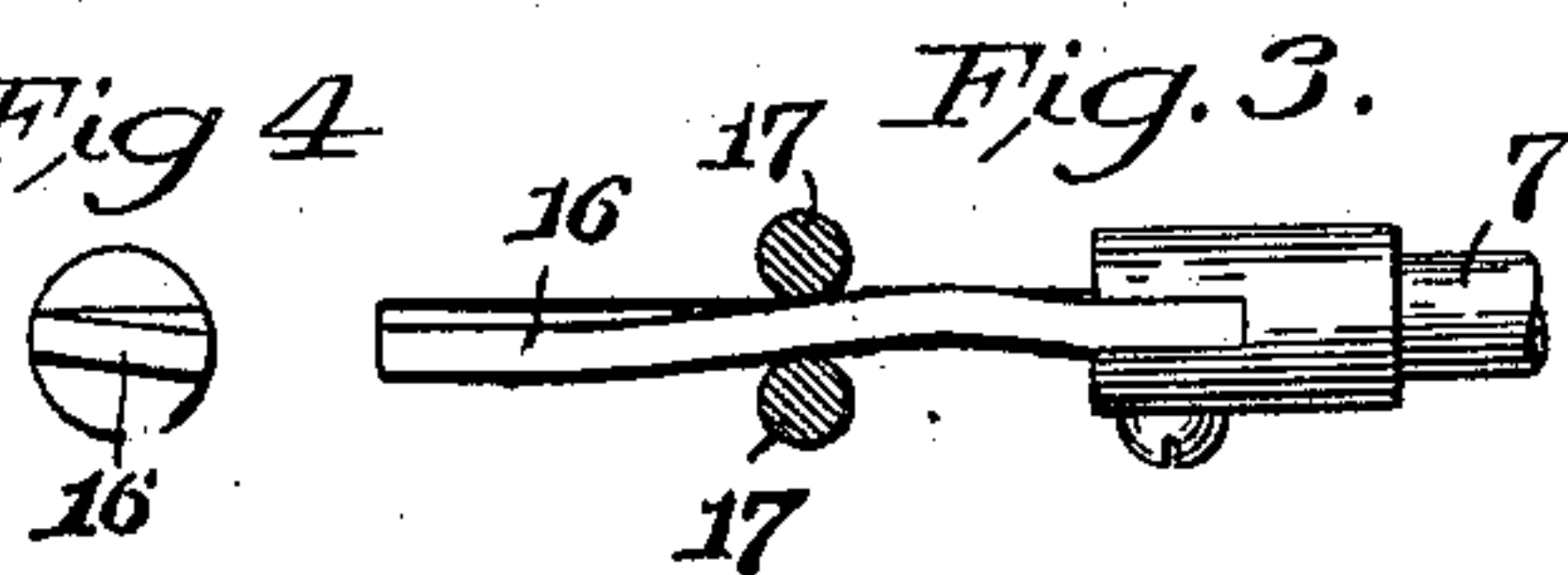
NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES:

A. V. Group
S. Nolan



INVENTOR

George Keyser
BY John R. Nolan
ATTORNEY.

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2 SHEETS—SHEET 2.

Fig. 6.

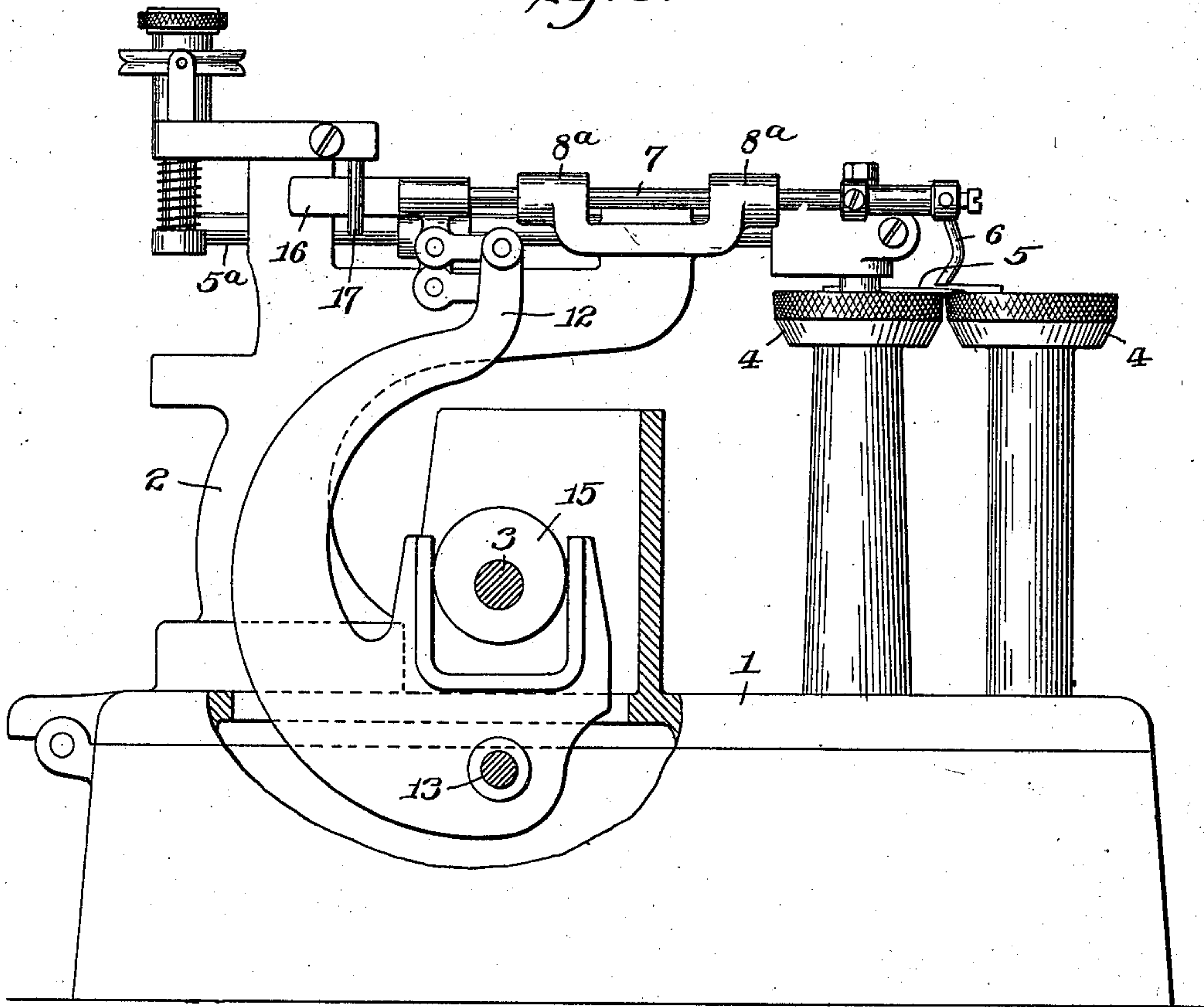
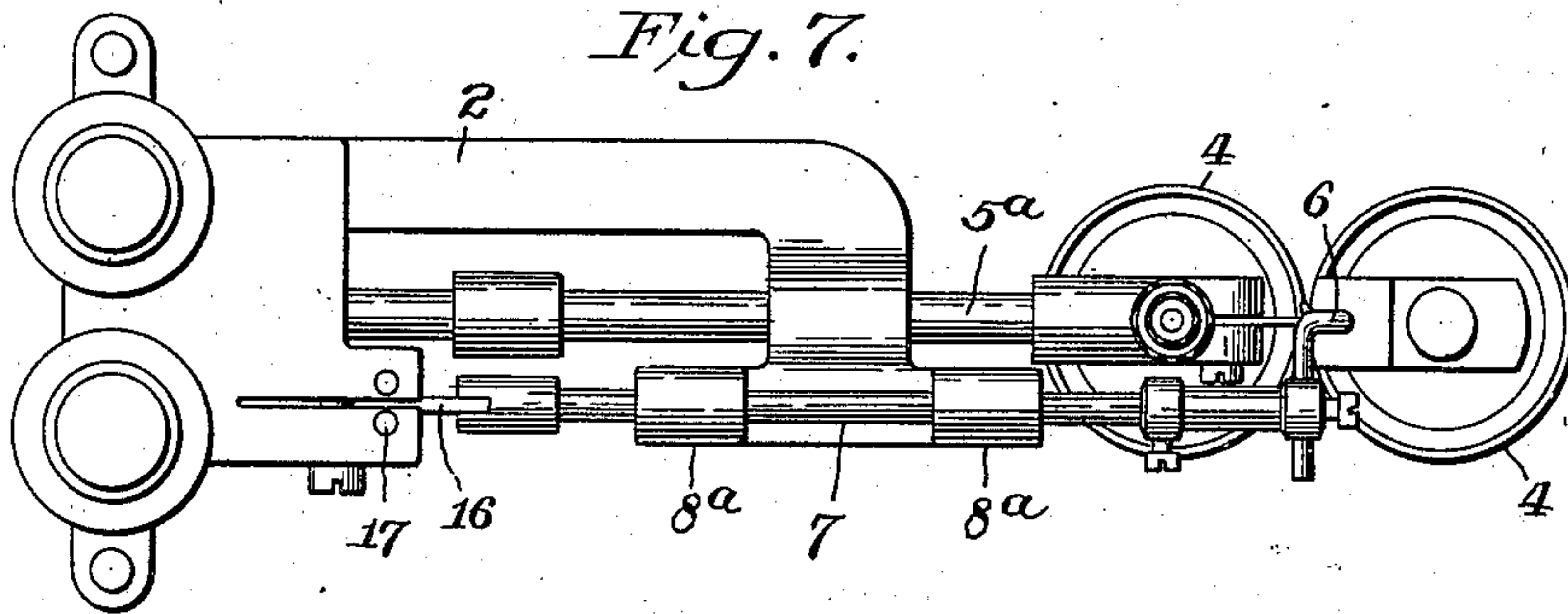


Fig. 7.



WITNESSES:

A. V. Grouper
S. Nolan

INVENTOR

George Keyser
BY John R. Nolan
ATTORNEY.

UNITED STATES PATENT OFFICE.

GEORGE KEYSER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO JOHN W. HEPWORTH, OF PHILADELPHIA, PENNSYLVANIA.

OVEREDGE SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 724,017, dated March 31, 1903.

Application filed January 27, 1902. Serial No. 91,344. (No model.)

To all whom it may concern:

Be it known that I, GEORGE KEYSER, a citizen of the United States, residing in the city and county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Overedge Sewing-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to overedge sewing-machines, having reference to a simple and efficient construction and organization of mechanism for imparting the requisite compound movement to the looper-hooks of such machines and also to a novel take-up device for the looper-threads, as will be hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation, partly in section, of a portion of a sewing-machine embodying my invention. Fig. 2 is a partial plan thereof. Fig. 3 is a detail of the rearward portion of the looper-bar, showing the actuating-pins therefor in section. Fig. 4 is an end view of Fig. 3. Fig. 5 is a detail in perspective of the thread-take-up devices and connections. Fig. 6 is a view, similar to Fig. 1, of a modification. Fig. 7 is a partial plan thereof.

1 is the base-plate. 2 is a post rising from and overhanging the same, and 3 is the main drive-shaft.

4 4 are the usual intermittently-rotatable feed-cups, by and between which the edges of the fabric to be united are progressively fed to the stitching mechanism, and 5 is the needle, carried by the usual needle-bar 5^a and reciprocative thereby horizontally across the bite of the feed-cups in a manner to penetrate the said edges in the usual manner.

6 is the looper-hook, which is arranged above the feed-disks and is actuated in respect to the needle to accomplish the requisite enchainment of the looper and needle threads for the formation of the stitches upon the edges of the fabric. This hook has, as usual, a compound movement comprising a rising-and-falling motion, a forward-and-back motion, and also a slight lateral motion, the whole being properly timed relatively to the reciprocations of the needle. In the preferred

embodiment of my invention the looper-hook is carried by the forward end of a bar 7, located laterally of the needle-bar. This bar 7 is rotatably supported in a sleeve or collar 8, pivoted to a crank-arm 9, the shaft 10 of which has its bearing at the forward end of the post 2. The rearward end of the bar is rotatably supported in a sleeve or collar 11, to which is pivoted the upper arm of an oscillatory frame 12, which is fulcrumed on a transverse shaft 13, supported on the under side of the bed-plate. This frame is provided with a bifurcated portion 14 for the reception of an eccentric 15 on the main shaft, whereby during the rotation of the latter the frame is continuously oscillated, and the bar 7 is longitudinally reciprocated to impart the forward-and-back motion to the looper-hook.

The rearward end of the bar 7 is provided with a blade 16, which is bent or twisted longitudinally and is embraced by a pair of pins 17, depending from a bracket 18 on the post 2. The bend or twist of the blade is such that during the longitudinal reciprocation of the bar said blade, through the action of its faces upon the opposing pins, effects the axial oscillation of the bar in the collars 8 11, thereby swinging the looper-hook across the needle and at the same time, in consequence of the lateral position of said bar in respect to the needle, imparting a rising-and-falling movement to the hook. During the longitudinal movement of the bar the crank-arm 9 is oscillated thereby, the sleeve or collar 8, with the bar 7, thus swinging in an arc described from the axis of the crank and increasing such rising-and-falling movement of the hook.

To provide for the minute adjustment of the pins 17 toward and from each other, and thus insure their accurate action upon the opposing faces of the blade, I split the end of the bracket 18 intermediate the pins to afford two yielding members and extend transversely through said members a set-screw 19, by the manipulation of which the said members may be nicely adjusted toward and from each other, as desired.

As a simple and efficient means to take up the slack of the looper-thread during the movements of the looper I provide on the outer end of the crank-shaft 10 a pair of op-

positely-extending arms 20, having near their respective outer ends guide-eyes 21, through which extends the looper-thread on its passage from the tension 22 to the looper-hook.

5 Obviously these arms are rocked during the described movement of the looper-hook, and thereby the otherwise-resulting slackness of the thread is taken up.

In Figs. 6 and 7 I have illustrated a slight
10 modification of the looper-hook-actuating mechanism, wherein the crank is dispensed with and the bar 7 is supported in fixed bearings 8^a, the rising-and-falling movement of the hook thus being effected entirely by the
15 oscillation of the looper-bar.

I claim—

1. In a sewing-machine, stitch-forming mechanism comprising the looper-hook, and
20 its bar, means for longitudinally reciprocating said bar, said bar being provided with a twisted portion, and means coacting with said twisted portion to effect axial rotation of the bar upon reciprocation thereof.

2. In a sewing-machine, stitch-forming
25 mechanism comprising the looper-hook and its bar, means for longitudinally reciprocating said bar, a twisted blade on said bar, depending pins embracing said blade, and a support for said pins.

30 3. In a sewing-machine, stitch-forming mechanism comprising the looper-hook and its bar, means for longitudinally reciprocating said bar, a twisted blade on said bar, depending pins, a support for said pins, and
35 means whereby the pins may be adjusted toward or from each other as desired.

4. In a sewing-machine, stitch-forming mechanism comprising the looper-hook and

its bar, an oscillatory member to which said bar is pivoted, means for longitudinally re- 40 ciprocating the bar, a flat twisted portion on said bar, and means coacting with such portion to effect axial rotation of the reciprocating bar.

5. In a sewing-machine, stitch-forming 45 mechanism comprising the looper-hook and its bar, an oscillatory member to which said bar is pivoted, means for longitudinally reciprocating the bar, a twisted blade on said bar, depending pins embracing said blade 50 upon opposite sides thereof, and a support for said pins.

6. In a sewing-machine, stitch-forming mechanism comprising the looper-hook and
55 its bar, an oscillatory member to which said bar is pivoted, means for longitudinally reciprocating the bar, a twisted blade on said bar, depending pins embracing said blade, a support for said pins, and means whereby the pins may be adjusted toward or from each 60 other as desired.

7. In a sewing-machine, stitch-forming mechanism comprising the looper-hook and
its bar, the bar being provided with a twisted blade, a crank, a pivoted collar thereon 65 through which the bar extends, means for longitudinally reciprocating the bar, and lateral bearing devices for said blade.

In testimony whereof I have hereunto af-
fixed my signature in the presence of two sub- 70 scribing witnesses.

GEORGE KEYSER.

Witnesses:

W. W. CANBY,

ANDREW V. GROUPE.