(No Model.)

C. H. WILLCOX & C. CARLETON.

SEWING MACHINE.

No. 572,042. Patented Nov. 24, 1896.

Fig. 1.

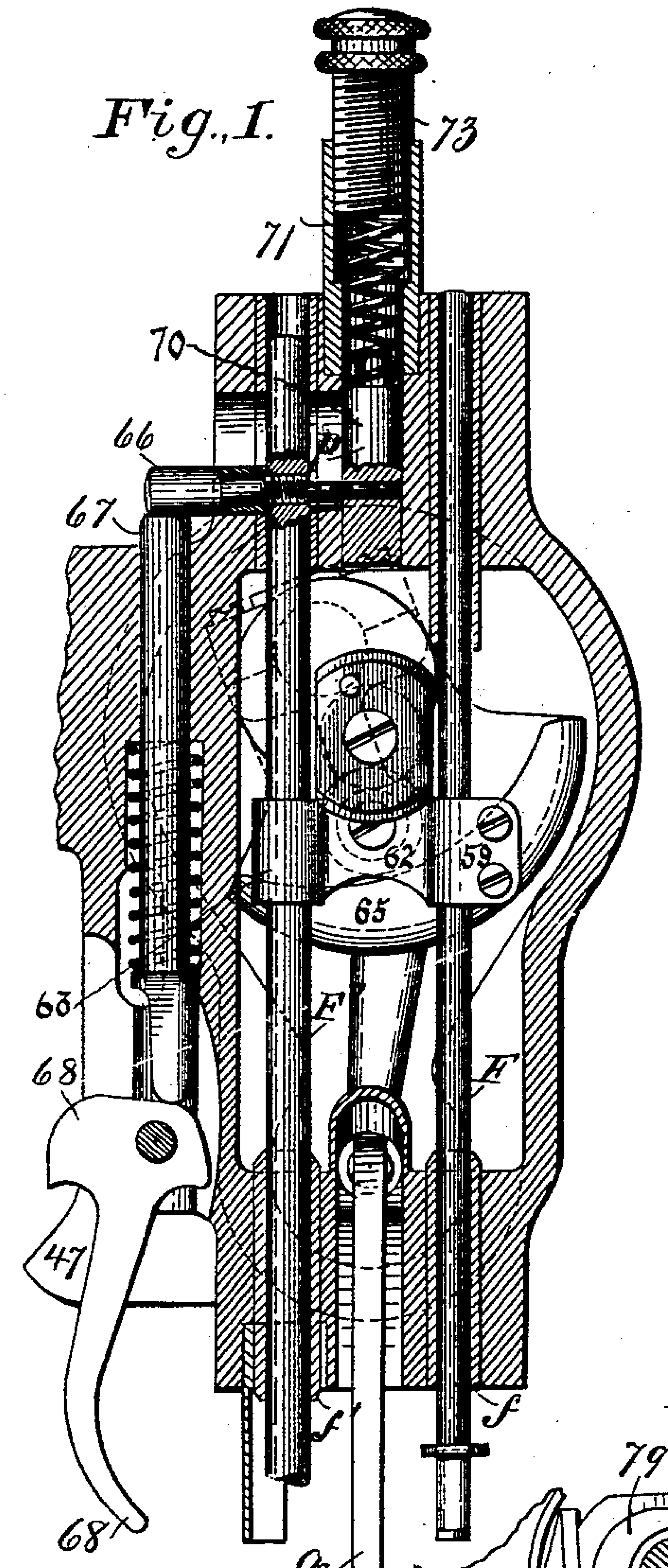


Fig. 2.

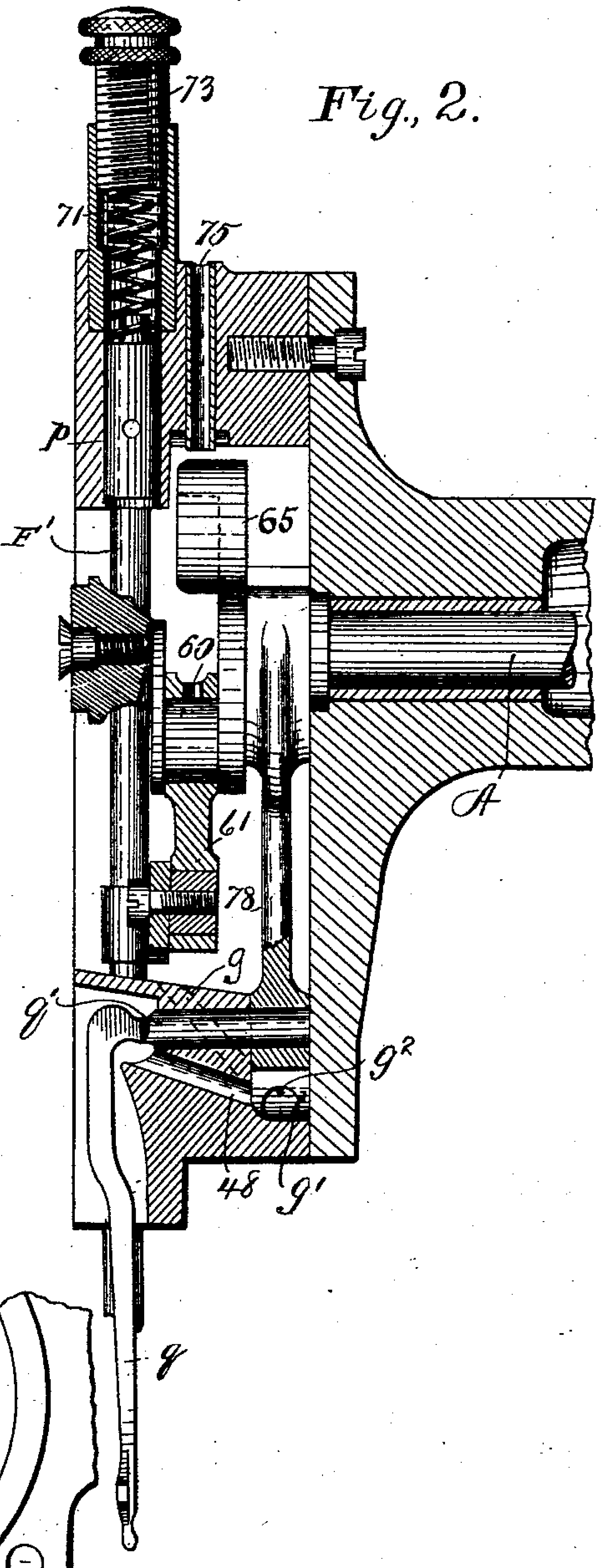
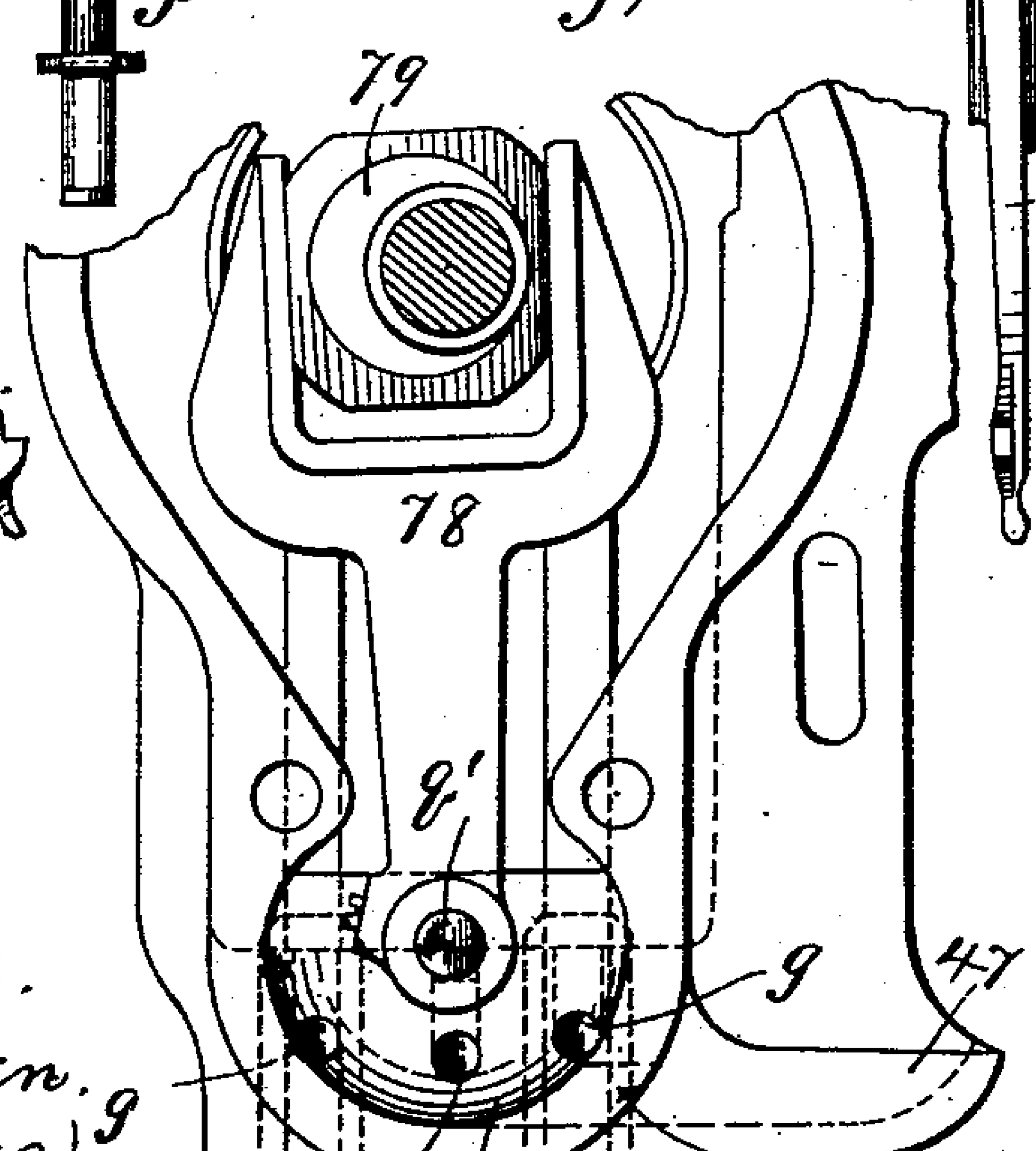


Fig. 3.



Witnesses.
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[illegible]

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES H. WILLCOX, OF NEW YORK, N. Y., AND CYRUS CARLETON, OF PROVIDENCE, RHODE ISLAND, ASSIGNORS TO THE WILLCOX & GIBBS SEWING MACHINE COMPANY, OF NEW YORK, N. Y.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 572,042, dated November 24, 1896.

Application filed August 10, 1895. Serial No. 558,854. (No model.)

To all whom it may concern:

Be it known that we, CHARLES H. WILLCOX, of New York, N. Y., and CYRUS CARLETON, of Providence, Rhode Island, have invented new and useful Improvements in Sewing-Machines, which improvements are fully set forth in the following specification.

This invention has reference more particularly to improvements in the construction of the head of the machine and of parts operating in and upon the same; and its main object is to provide for the proper oiling of such parts, and also to take care of the excess of oil escaping from the bearing-surfaces and thrown by the moving parts against the sides of the head in the chamber thereof.

The lower bearings for the needle-bar and presser-bar are formed by bushings inserted in openings bored in the metal of the head, the upper ends of these bushings, which project above the bottom of the chamber in the head, being beveled off to an annular edge closely embracing the bar and acting to strip off the excess of oil as the bar descends into the bushing.

The head is provided on one side with an exterior cup or receptacle communicating by a suitable passage or passages with the chamber in the head, so that oil flowing down the sides and collecting at the bottom of said chamber is led into said cup or receptacle, where it can readily be wiped out.

The thread-shield or needle-finger which acts to prevent the thread being caught on the point of the needle is carried by a spindle having a bearing in a hole bored through the head. The latter is provided with a drip-surface projecting under the outer end of this bearing, and a backwardly-inclined oil-passage leads therefrom, carrying the escaping oil to the receptacle already referred to. These provisions aid materially in preventing the escape of oil over surfaces where it might come in contact with the threads or drop on the goods.

In the accompanying drawings, Figure 1 is a cross-section through the head of a sewing-machine in elevation, looking toward the arm or gooseneck thereof. Fig. 2 is a section at right angles to Fig. 1. Fig. 3 is a partial rear elevation of the head detached.

The needle-bar F and presser-bar F′ have bearings in the metal forming the top and bottom of the head I of the machine. The needle-bar receives motion, as in prior machines, from a crank 60 on the main shaft and a short pitman 61 and cross-head 62, the latter being attached to the needle-bar by a loop 59 and clamp-screws at one end and having at the other a loop 63, which slides freely over the presser-bar, the latter thus acting as a guide to the cross-head. A counterweight 65 is placed on the crank-head to aid in suppressing the jar occasioned by the rapid reciprocation of the needle-bar and other working parts in the head.

Presser-bar F′ has near the upper end a transverse screw-pin 66 tapped through it, and passing at its inner end into a plunger 70, working in a socket in the upper part of the head against the pressure of a coiled spring 71. A screw-cap 73, centrally perforated for the admission of oil, furnishes a bearing for the upper end of said spring. The outer end of pin 66 overlies the lifter-rod 67, and the usual lifter 68 is provided to raise the presser-bar.

Thread-shield q is carried by a spindle q', having a bearing in the lower part of the head and receiving an oscillating motion from a yoke 78, actuated from an eccentric 79 on the main shaft A. These and other working parts of the machine may be of any ordinary or suitable construction.

The needle-bar F has its lower bearing in a tubular bushing f, fitted into a hole bored vertically in the metal of the head. Presser-bar F′ has a bearing in a similar bushing f'. Each bushing is, at its upper end, which projects above the bottom of the chamber in the head, beveled to an edge closely surrounding the bar F or F′ and acting to strip off excess of oil and divert it to the bottom of the chamber in head I. In consequence of this provision no more oil runs down the needle-bar or presser-bar than is required for its lubri-

cation. In other words, the amount of oil supplied to the bearing is regulated by the angle given to the end of the bushing.

The oil stripped off the bars F F′, as well as the oil thrown against the sides of the chamber and running down the same, collects on the bottom of the chamber and is carried by inclined oil-holes g g to a ledge g' at the back of the head, from which it flows through a transverse hole g^2 to the cup or receptacle 47 outside the head. Beneath the needle-shield spindle q' is an inclined oil-channel 48, also leading back to the ledge g'.

Oil for the working parts of the apparatus is supplied through a vertical oil-hole 75, Fig. 2, which is directly over the pitman 61, by which the needle-bar is operated from a crank 60 on the end of main shaft A in a manner well understood.

Modifications may be made in the details of construction. For example, while we have shown the bearings for the presser-bar and needle-bar formed by separate tubular bushings, they may obviously be integral with the head.

Having now particularly described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a sewing-machine, the combination with the chambered head, of a reciprocating bar (such as the needle-bar) having a bearing in said head, and an annular projection extending above the bottom of the chamber in said head and embracing said bar, the top of said projection being beveled off to an edge, substantially as and for the purpose set forth.

2. In a sewing-machine, the combination with the chambered head of a reciprocating bar (such as the needle-bar) and a bushing inserted in a hole in the head and forming a bearing for said bar, the upper end of said bushing projecting above the bottom of the chamber in the head and being beveled off to an edge surrounding the bar, substantially as described.

3. In a sewing-machine the combination with the head, having a chamber therein, the needle and foot bars having bearings in said head, and driving mechanism in said chamber, of an oil cup or receptacle outside the head and chamber and channels in said head for draining the oil from said chamber into said cup or receptacle, substantially as described.

4. In a sewing-machine, the combination with the chambered head, of a transverse horizontal shaft or spindle having a bearing in said head, the latter being provided with an inclined oil-passage beneath said bearing and projecting beyond the forward end thereof, substantially as described.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

CHAS. H. WILLCOX.
CYRUS CARLETON.

Witnesses as to Chas. H. Willcox:
J. PARMLY,
S. BORTON.

Witnesses as to Cyrus Carleton:
CHARLES PEASE,
C. H. PEASE.