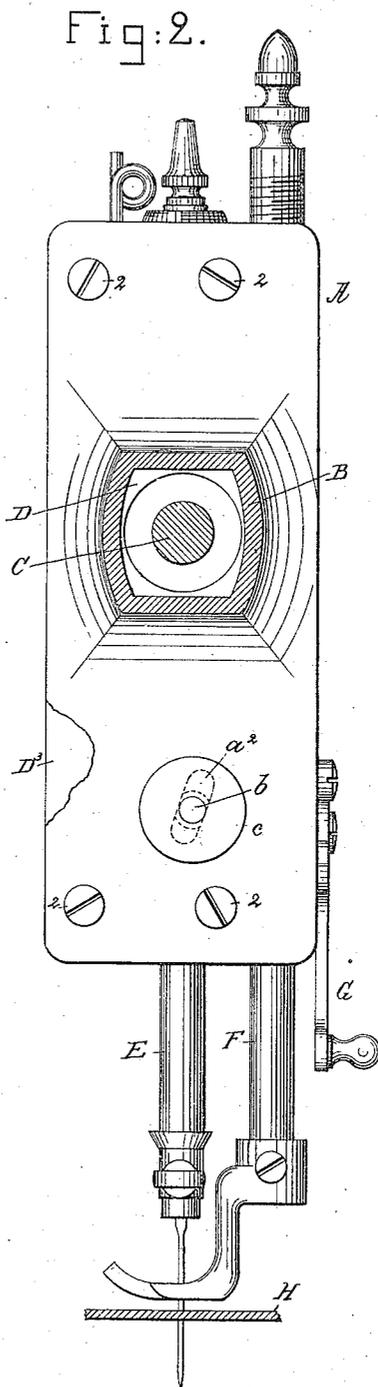
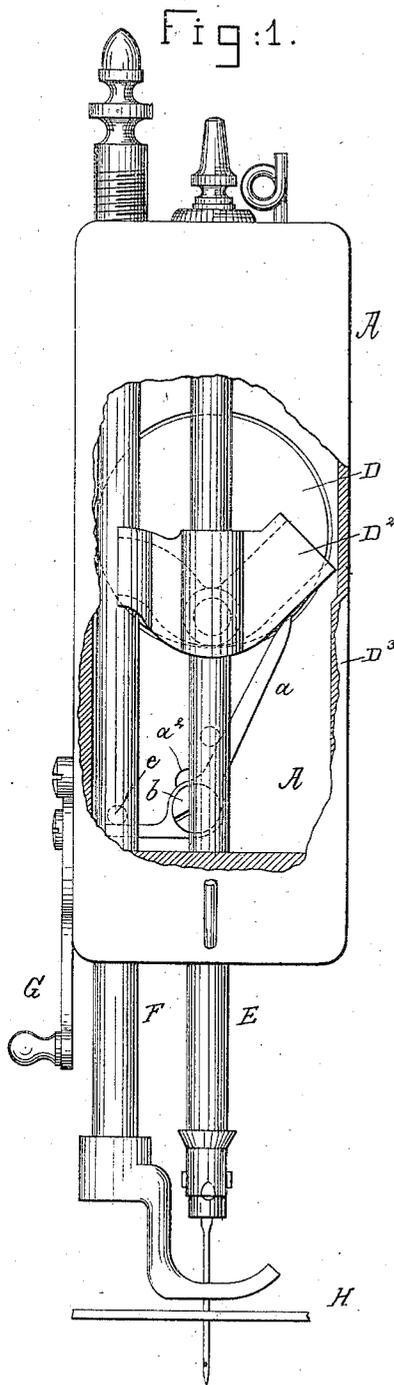


(No Model.)

LE ROY WILLIAMS.
SEWING MACHINE.

No. 309,672.

Patented Dec. 23, 1884.



Witnesses.

Arthur Lippelen.
Henry Marsh

Inventor.

LeRoy Williams.
by Crosby & Gregory Attys

UNITED STATES PATENT OFFICE.

LE ROY WILLIAMS, OF LANSING, MICHIGAN, ASSIGNOR TO THE WEED SEWING MACHINE COMPANY, OF HARTFORD, CONNECTICUT.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 309,672, dated December 23, 1884.

Application filed February 8, 1884. (No model.)

To all whom it may concern:

Be it known that I, LE ROY WILLIAMS, of Lansing, county of Ingham, State of Michigan, have invented an Improvement in Sewing-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention in sewing-machines relates especially to improvements in mechanism for lifting the presser-bar and its foot.

In this my invention a lever pivoted on a fulcrum-screw made adjustable in a diagonal slot made through the rear side of the machine-head has its shorter arm extended under a pin or lug projected from the inner side of the presser-bar, while the upper end of the said lever is acted upon by the under side of the cross-head attached to the needle-bar, the same being made of suitable shape to operate the said lever and lift the presser-foot as usual while the needle is in the material and the direction of movement of the material being sewed is being changed, substantially as hereinafter particularly set forth and claimed.

Figure 1 represents a sufficient portion of a sewing-machine in front view (the face of the needle and presser-bar guiding-block being partially broken out) to show my invention; and Fig. 2, a rear side view of the machine-head, the supporting-arm and needle-bar-actuating shaft being in section.

The head A, forming part of the usual supporting-arm, B, the needle-bar-actuating shaft C, its attached disk D, provided with a roller-stud to enter the cross-head D², the needle and presser bars E F, respectively, the guiding-block D³, attached to the head A by screws 2, the presser-foot-raising device G, and the cloth-plate H, (but partially shown,) are as common to the Weed sewing-machine as known in the market, so need not be herein further described. The cross-head D², secured to the needle-bar and grooved at its inner side, as usual, to receive the roller-stud of the disk D, has its under side shaped substantially as shown in Fig. 1, to act against the upper end or longer arm of the presser-foot-lifting lever a, pivoted upon the fulcrum-screw b, extended from the inner side of the head A through a diagonal slot, a², (shown best by dotted lines

in Fig. 2,) the said fulcrum-screw at its outer end, at the rear side of the head, receiving upon it a thumb or check nut, c, by which to hold the said fulcrum-screw in adjusted position, a washer (not shown) being preferably interposed between the said nut and the rear side of the head. The slot is diagonal, so that the arms of the lever a may be preserved in the adjusted positions of the lever in proper relation to the cross-head and the pin on the presser-bar, hereinafter referred to. The shorter lower arm of the lever a is extended under a pin or lug, e, projecting from the inner side of the presser-bar F, as shown by dotted lines, Fig. 1. At each descent of the needle-bar the under side of the cross-head D² strikes the longer arm of the lever a, and moves it to lift the presser-bar and its attached foot against the stress of the usual spring, which co-operates therewith to hold the presser bar and foot down in a yielding manner.

I am aware that the disk which carries the roller-stud that actuates the needle-bar has been provided with a cam projection to act upon a lever and lift the presser-foot. An independent cam has also been provided on the needle-shaft for operating such a lever; and, furthermore, the cross-head of a sewing-machine has had a cam-surface applied to or made on its upper edge, to operate a lever which is connected by a link to the presser-bar.

By employing the cross-head to actuate the presser-foot-lifting lever at each descent of the needle-bar, it is possible to lift the presser automatically with but little strain upon the machine, the movement of the parts are made easy and uniform, and the guiding-block in which the needle-bar slides may be made thin, thus insuring a compact arrangement of parts.

I have herein shown the cross-head which acts upon the presser-foot-lifting lever as that provided with the groove which receives the roller-stud which actuates the needle-bar; but I desire it to be understood that I might employ an additional piece or cross-head projecting from the needle-bar in suitable position and direction to act directly upon the presser-foot-lifting lever.

I claim—

1. The lever a and a fulcrum-pin therefor, fitted in a diagonal slot in the sewing-machine

head, combined with said head, the needle-
bar, the cross-head D^2 , to operate said needle-
bar, and constructed, as set forth, to actuate the
5 lever a also, the driving-shaft C , and connec-
tions between the cross-head and shaft, and
the presser-bar and its pin e , substantially as
shown and described.

2. The lever a , having the screw-threaded
fulcrum b , projecting through a diagonal slot,
10 a^2 , in the sewing-machine head, and provided
with the set-nut c , combined with said head,

the needle-bar, the cross-head D^2 thereon, the
driving-shaft C , and connections between said
cross-head and shaft, and the presser-bar and
its pin e , substantially as shown and described. 15

In testimony whereof I have signed my name
to this specification in the presence of two
subscribing witnesses.

LE ROY WILLIAMS.

Witnesses:

THOMAS W. HELEHANT,
S. M. MILLER.