

UNITED STATES PATENT OFFICE.

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DEVICE FOR LIFTING SEWING-MACHINE PRESSER-FEET.

SPECIFICATION forming part of Letters Patent No. 386,868, dated July 31, 1888.

Application filed February 20, 1888. Serial No. 264,594. (No model.)

To all whom it may concern:

Be it known that we, GEORGE H. DIMOND and ANDREW C. CAMPBELL, citizens of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Devices for Lifting Sewing-Machine Presser-Feet; and we do hereby 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.

Our invention has for its object to provide a device that will enable an operator at a sewing-machine to raise and lower the presser-foot by movement of the knee or foot, the construction thereof being such that the portions of the device upon the machine and upon the table are wholly detached from and independent of each other, so that the application of the device does not affect the interchangeability of machines and tables; and, furthermore, when it is required to turn the machines backward, as in oiling parts below the bed-plate, there are no parts that require to be disconnected, the device being always ready for use when the machine is in operative position on the table.

In the accompanying drawings, forming part of this specification, Figure 1 is a rear elevation of a sewing-machine, showing the manner in which our invention is applied, the face-plate being removed and the drip-pan partially broken away; and Fig. 2 is a cross-section of the table on the line *x x* in Fig. 1, showing in elevation the parts of the lifting device that belong to the table.

As it makes no difference so far as the principle of our invention is concerned whether the device is operated by the knee or foot of the operator, and as we ordinarily employ a knee-lever in practice, that form only has been illustrated in the drawings.

1 denotes the table, 2 the drip-pan, 3 the arm of the machine, 4 the presser-foot, 5 the presser-foot bar, and 6 the presser-foot spring, all of which may be of any ordinary construction.

It will of course be understood that this invention is applicable to all classes and styles of machines. We have therefore omitted de-

tails of the stitch-forming mechanism from the drawings, and have simply shown the parts necessary to illustrate the principle and mode of operation of our invention.

7 and 8 denote levers pivoted to the back of the arm of the machine, as at 7^a and 8^a, and to each other, as at 9. At the forward end of lever 8 is a projection, 10, which is adapted to be engaged by a roller, 11, upon an arm, 12, projecting backward from a collar, 13, secured to the presser-foot bar.

14 denotes a rod which extends downward from the rear end of lever 7, passes through the base of the arm and the bed-plate of the machine, and terminates below the table. At the lower end of this rod is a nut, 15.

16 is a spring bearing against the under side of the bed-plate of the machine (denoted by 17) and against nut 15, which acts to force the rod 14 downward. This spring is not a vital part of our invention, and may be omitted, if preferred, as the forcing down of the presser-foot by the ordinary presser-foot spring necessarily acts through the intermediate connections to carry rod 14 downward.

The operation of this portion of our invention will be clearly understood from the drawings. The normal position of the parts is clearly shown in Fig. 1. To raise the presser-foot, rod 14 is pressed upward. This movement raises the rear end of lever 7 and lowers its forward end and the rear end of lever 8, which of course raises the forward end of lever 8, and at the same time raises the presser-foot against the power of the presser-foot spring through the engagement of the roller on arm 12 with projection 10 on lever 8. As a means for raising rod 14 and the presser-foot, we preferably employ a swinging arm, 18, which is pivoted in any suitable manner to the under side of the table, as at 18^a.

19 denotes a downward extension of swinging arm 18, for the convenience of the operator in pressing against it with the knee.

20 is an arm projecting forward from swinging arm 18, which carries a rod, 21, having at its upper end a head, 22, which is adapted to engage the lower end of rod 14 for the purpose of raising said rod and the presser-foot. Rod

21 is adjustable in arm 20, and is secured in any desired position by a set screw, 23, or in any suitable manner. It will be noticed that head 22 is large enough to allow for slight variation in different machines and tables. A flange, 24, is preferably formed around the opening in the drip-pan, through which rod 21 passes to prevent oil from escaping and injuring the clothing of the operator. Head 22 is made sufficiently large to fully cover the opening and insure that oil dropping upon it will be carried outside of the flange.

The important features of our invention are the use of compound levers and a rigid connection between the operative parts above the table and those below the table, said connection being permanently carried by the machines and arranged to register with a part below the table, but wholly disconnected therefrom, the lifting of the presser-foot being effected by an upward movement of said connection.

It is simply necessary in practice to so arrange the rigid connection—*i. e.*, rod 14—that when the head is in operative position it will register with a part below the table—*e. g.*, head 22 upon the swinging arm—so as to raise said rod when the swinging arm is pressed toward the left, as seen in Fig. 1, or toward the right as the operator sits at the machine.

It will of course be understood that the de-

VICES below the table may be actuated by the foot by a simple arrangement of treadle and rod, which is not deemed to require illustration, and that the various details of construction and arrangement may be varied within reasonable limits without departing from the spirit of our invention.

We claim—

A lifting device for sewing-machine presser-foot, consisting, essentially, of two levers pivoted to the machine-arm and to each other, the forward end of the forward lever being adapted to engage the presser-foot bar and the rear end of the rear lever being provided with a rod extending through the bed-plate of the machine, and a spring under the bed-plate and bearing against the bed-plate and against a projection upon the rod, thus acting to draw said rod downward, so that the forward end of the forward lever is lowered, leaving the usual presser-foot spring free to act until said rod is raised, which lifts the presser-foot against the power of the presser-foot spring.

In testimony whereof we affix our signatures in presence of two witnesses.

GEORGE H. DIMOND.
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Witnesses:

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