Jan. 5, 1937. W. A. ANDRES 2,067,038

PRESSER LIFTER ACTUATING DEVICE FOR SEWING MACHINES

Filed Nov. 26, 1935 2 Sheets-Sheet 1

Fig. 1.

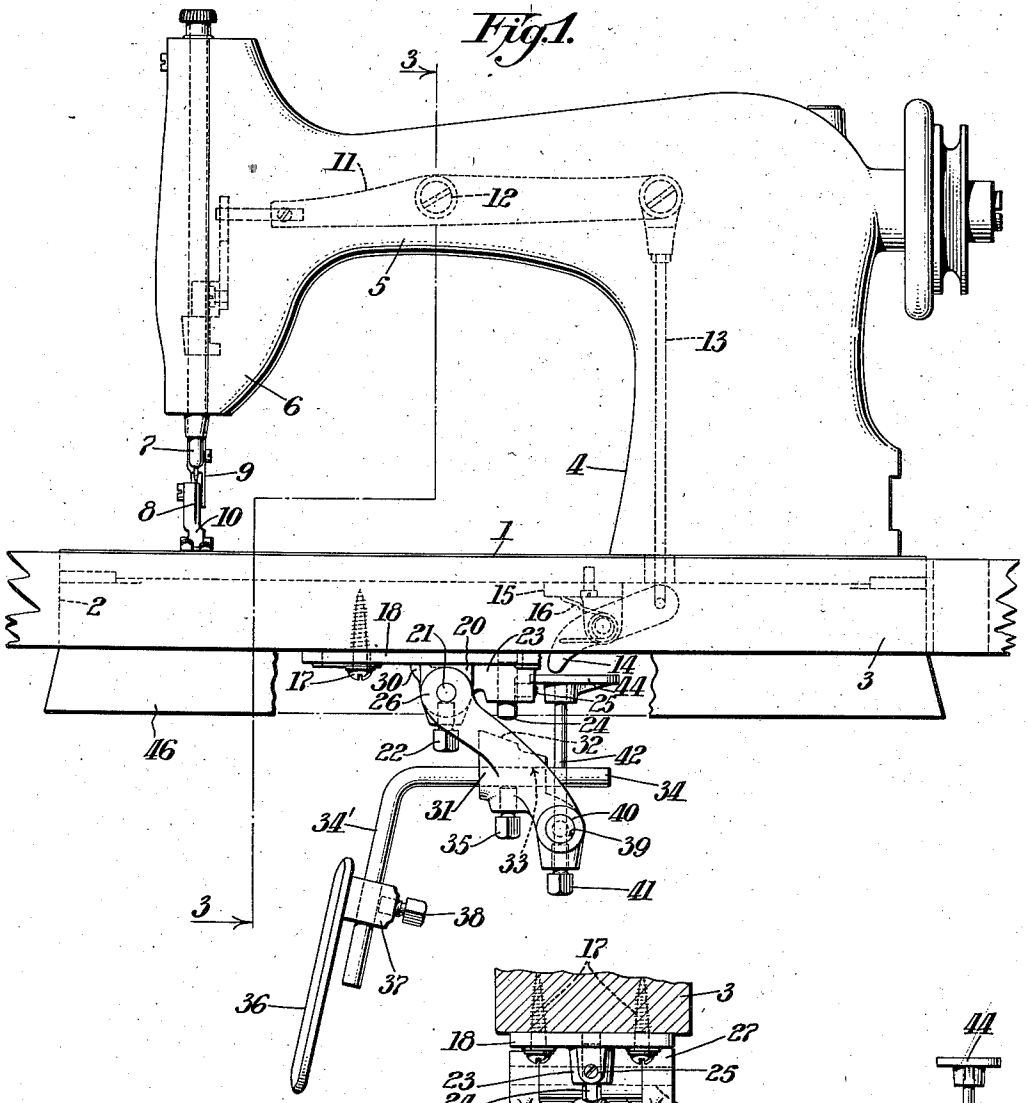
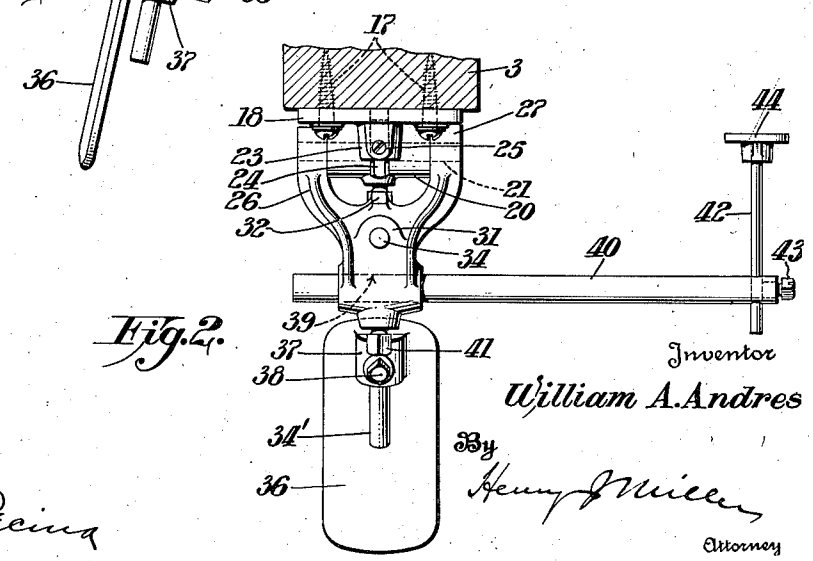



Fig. 2.




Witness:
Joseph Peccia

Inventor
William A. Andres
By Henry J. Miller
Attorney

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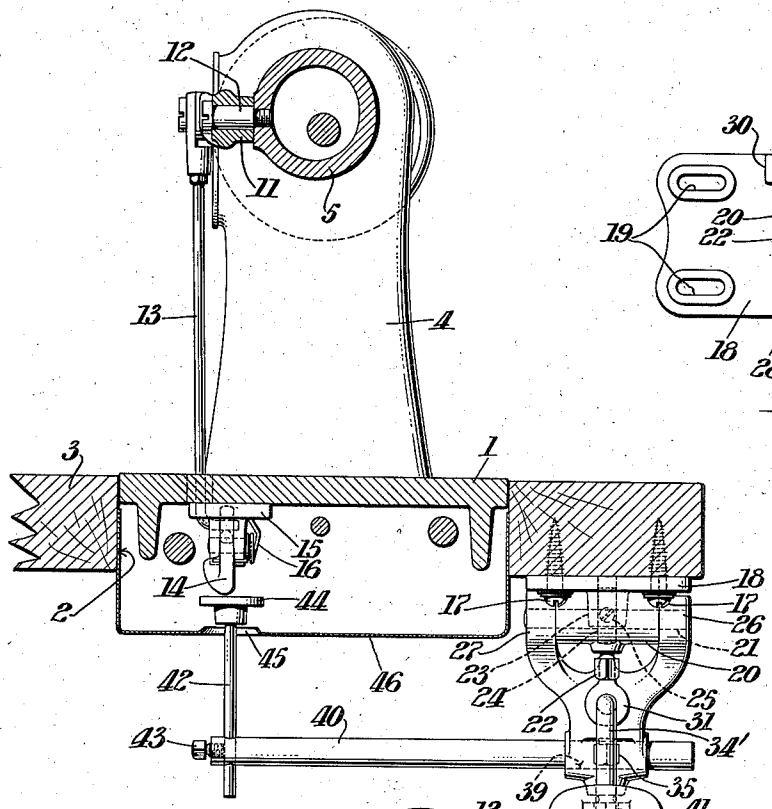



Fig. 3.

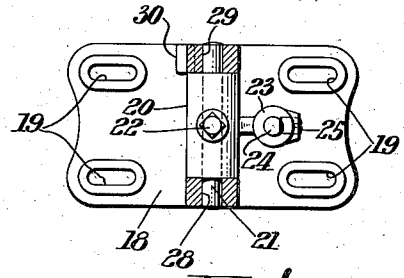



Fig. 4.

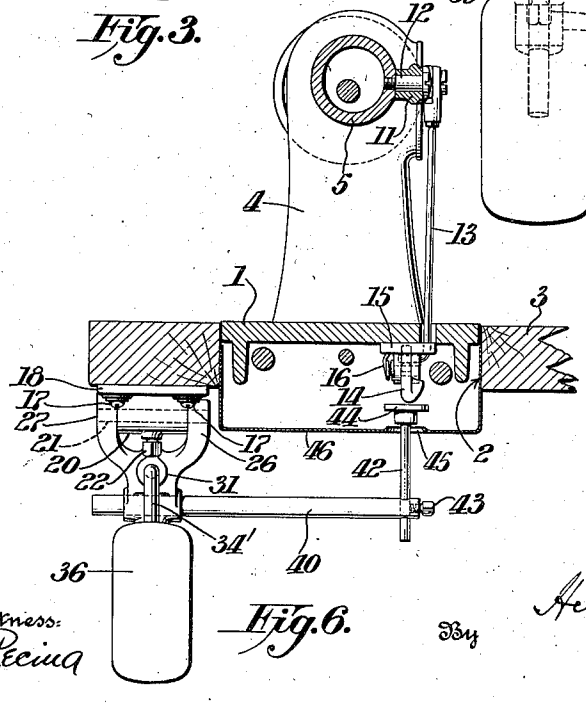



Fig. 6.

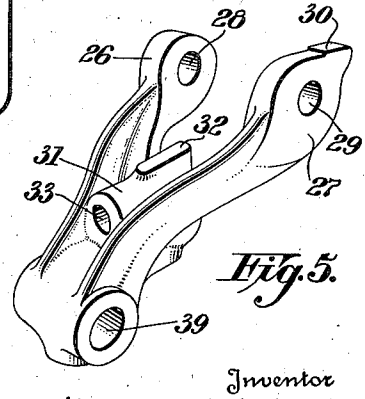



Fig. 5.

Witness:
J. Pecina

By

Inventor
William A. Andres

Henry J. Miller
Attorney

Patented Jan. 5, 1937 2,067,038

# UNITED STATES PATENT OFFICE

2,067,038

## PRESSER-LIFTER ACTUATING DEVICE FOR SEWING MACHINES

William A. Andres, Bridgeport, Conn., assignor to The Singer Manufacturing Company, Elizabeth, N. J., a corporation of New Jersey

Application November 26, 1935, Serial No. 51,571

8 Claims. (Cl. 112—237)

This invention relates to improvements in knee-shift devices for operating presser-lifter mechanisms of sewing machines and has for one of its objects to facilitate the installation of knee-shift devices of this character.

The invention also aims to provide a knee-shift device which is adaptable for actuating the presser-lifter mechanisms of different types of sewing machines and to meet the individual requirements of different sewing machine operators.

With these and other objects in view, as will hereinafter appear, the invention comprises the devices, combinations and arrangements of parts hereinafter described in connection with the accompanying drawings which illustrate a preferred embodiment of the invention and in which:

Fig. 1 is a front side elevation of a sewing machine and of the improved knee-shift presser-lifter device applied to the under side of the table supporting the machine. Fig. 2 is an elevation of the knee-shift device as viewed from the right in Fig. 1. Fig. 3 represents a vertical section taken substantially on the line 3—3 of Fig. 1. Fig. 4 is a bottom plan of the supporting bracket of the knee-shift device with the swinging member arms connected thereto shown in section. Fig. 5 represents a perspective view of the swinging yoke-member of the knee-shift device. Fig. 6 represents a sectional view similar to Fig. 3, but with the knee-shift device applied to the table for use with a left-hand sewing machine, i. e., a sewing machine having its driving pulley at the left hand side of the operator.

Referring to the drawings, the sewing machine has a bed-plate 1, suitably supported in an opening 2 provided in the machine-supporting table 3. Rising from the bed-plate 1 is the standard 4 of a bracket-arm 5, overhanging the bed-plate and terminating at its free end in a head 6. Journaled for vertical reciprocation in the head 6 is the usual needle-bar 7 carrying at its lower end a needle 8, the needle-bar being reciprocated by any usual or suitable actuating mechanism.

Also journaled in the head 6 for vertical movement is the usual yieldingly depressed presser-bar 9, to the lower end of which is secured a presser-foot 10. Operatively connected to the presser-bar 9 is one arm of a lifter-lever 11 extending lengthwise of and disposed at the rearward side of the bracket-arm 5, the lifter-lever 11 being pivotally supported, intermediate its ends, by a fulcrum-screw 12 threaded into the rear wall of said bracket-arm. Pivotally connected to the other end of said lifter-lever 11 is a connecting-rod 13 having its bent lower end hooked to one arm of an intermediate lever 14. The lever 14 is fulcrumed between the depending ears of a bracket 15 secured to the under side of the machine bed-plate 1 adjacent to the rear edge thereof, a spring 16 yieldingly urging the connecting-rod arm of said lever 14 into raised position. The above described presser-lifter mechanism is commercially well known.

Secured by screws 17 to the under side and adjacent the front edge of the table 3 is the supporting bracket 18 of the improved knee-shift device. The bracket 18 is provided with slots 19 receiving said screws 17, the slots 19 being elongated to provide for adjustment of the bracket longitudinally of the table 3. At the under side of the bracket 18 is a bearing boss 20 apertured to receive a fulcrum-pin 21, extending transversely of the bed-plate 1 and projecting beyond the opposite ends of the boss 20, said fulcrum-pin being secured by a set-screw 22. The bracket 18 is additionally provided with a lug 23 which is vertically apertured to adjustably receive a stop-pin 24 secured in adjusted position by a set-screw 25.

Pivotally hung upon the fulcrum-pin 21 are the laterally spaced arms 26 and 27 of a swinging member or yoke, said arms having alined apertures 28 and 29 receiving the fulcrum-pin 21. The arm 27 of the swinging member is extended beyond the fulcrum-pin to provide a stop-lug 30 adapted to engage the lower face of the bracket 18 at the side of the bracket-boss 20 opposite to that provided with the stop-pin 24. The stop-lug 30 is arranged to arrest the movement of the swinging member into retracted position, in which said member is inclined to the vertical plane containing the pivotal axis of the swinging member. The swinging member is provided, between the arms 26 and 27 thereof, with a lug 31 having a stop-shoulder 32 adapted to engage the stop-pin 24 to limit the presser-foot lifting movement of the swinging member.

The lug 31 is provided with an aperture 33 in which an angular knee-pad carrier rod 34 is secured, by a set-screw 35, for adjustment of the rod 34 angularly and also horizontally crosswise of the pivotal-axis of the swinging member. The rod 34 has a downwardly bent arm 34' upon which is secured a knee-pad 36 having an apertured lug 37 receiving the rod-arm 34'. A knee-pad securing set-screw 38 provides for adjustment of the knee-pad vertically upon and also angularly about the rod 34.

The free end of the swinging member has a

transverse aperture 39 detachably receiving an endwise and angularly adjustable supporting bar 40 disposed substantially parallel to the fulcrum-pin 21, said bar being adjustably secured to the swinging member by a set-screw 41. The bar 40 extends rearwardly from the swinging member toward the rearward side of the machine bed-plate, the rearwardly extending portion of said bar having a transverse aperture to receive a vertically extending rod 42 secured to the bar 40 by a set-screw 43 for vertical and also angular adjustment of the rod 42. The upper end of the rod 42 is suitably provided with a cap-plate 44 underlying and disposed contiguously to the intermediate lever 14. As illustrated in the drawings, the rod 42 extends through a suitably formed aperture 45 provided in the usual drip-pan 46 disposed in the table-opening 2.

It will be understood, from the foregoing description, that the adjustable knee-pad 36 and carrier rod 34 provide for adapting the device to meet the requirements of different operators. The single supporting bracket 18, together with the provision for adjustment thereof, provide for conveniently securing the device to the under side of the machine table in required position. The adjustability of the cap-rod 42 and the stop-pin 24 provide for meeting the presser-foot lifting requirements of the machine, while the gravitational return into retracted position of the pad-carrying swinging member makes for ease of operation of the knee-shift.

An outstanding feature of the present invention is that the present knee-shift device is adapted for use with either left- or right-hand sewing machines. As illustrated in Fig. 6 of the drawings, the lifter-lever 11 and the connecting-rod 13 therefor of a left-hand machine are disposed at the rearward side of the bracket-arm, as in right-hand machines, the operator using the left knee to lift the presser-foot. To employ the present knee-shift device with a left-hand machine, or to provide for operating the device by the left knee of an operator, the supporting bracket 18 is turned end for end, the reversed bracket being secured to the under side of the table 3, adjacent to the front edge thereof, in a suitable position of the bracket. The bar 40 is removed from the swinging member and is inserted into the aperture 39 from the rearward side thereof, i. e., to extend rearwardly from the swinging member, said bar 40 being again secured by the set-screw 41 in a position such that the cap-plate 44 underlies the intermediate lever 14 which is pivotally supported at the under side of the machine bed-plate adjacent the rearward edge thereof. It will be understood that no additional parts are required in the adaptation of the lifter device to either a left- or a right-hand sewing machine, i. e., for either left or right knee operation.

Having thus set forth the nature of the invention, what I claim herein is:—

1. A knee-shift device for operating presser-lifter mechanisms of table-supported sewing machines, comprising, a swinging member sidewise reversibly attachable to the sewing machine supporting table to depend from the under side of said table, a bar extensible in the same direction from said member in either of the reverse positions of said member, and means carried by said bar for transmitting operative movements of said member to the sewing machine presser-lifter mechanism.

2. A knee-shift device for operating presser-lifter mechanisms of table-supported sewing machines, comprising, a swinging member sidewise reversibly attachable to the sewing machine supporting table to depend from the under side of said table adjacent the front edge thereof, a bar rearwardly extensible from said member in either of the reverse positions of said member, means for rigidly securing said bar to said member in different set positions of the bar, and means carried by the rearwardly extending portion of said bar for transmitting operative movements of said member to the sewing machine presser-lifter mechanism.

3. A knee-shift device for operating presser-lifter mechanisms of table-supported sewing machines, comprising, a bracket attachable in end-for-end reverse positions thereof to the under side of the sewing machine supporting table, a member pivotally depending from said bracket and provided with an aperture below and substantially parallel to the pivotal axis of said member, a bar having one end thereof insertable in the aperture of said member from either end of said aperture to extend in the same direction from said member in either of the reverse positions of said bracket, means for rigidly securing said bar to said member in different set positions of the bar, and means carried by said bar for transmitting operative movements of said member to the sewing machine presser-lifter mechanism.

4. A knee-shift presser-lifter actuating device for table-supported sewing machines having a presser-lifter lever, comprising, a swinging member sidewise reversibly attachable to the sewing machine supporting table to depend from the under side of said table adjacent the front edge thereof, a knee-pad carried by said member for adjustment in substantially transverse directions, a bar rearwardly extensible from said member in either of the reverse positions of said member, and an endwise adjustable rod carried by and extending transversely of said bar adapted to operatively engage the sewing machine presser-lifter lever.

5. A knee-shift device for operating presser-lifter mechanisms of table-supported sewing machines, comprising, a bracket attachable to the under side of the sewing machine supporting table adjacent the front edge thereof, a member pivotally depending from said bracket, opposed stops for limiting swinging movements of said member, a knee-pad carried by said member for adjustment in substantially transverse directions, a bar extending rearwardly from said member, means for securing said bar to said member in different set positions of the bar, and means carried by the rearwardly extending portion of said bar for transmitting operative movements of said member to the sewing machine presser-lifter mechanism.

6. A knee-shift device for operating presser-lifter mechanisms of table-supported sewing machines, comprising, a bracket attachable in end-for-end reverse positions thereof to the under side of the sewing machine supporting table adjacent the front table-edge, a member pivotally depending from said bracket for swinging movements about an axis extending crosswise of said table, a bar detachably secured to and rearwardly extensible from said member in either of the reverse positions of said bracket, said bar in secured position thereof being disposed substantially parallel to the pivotal axis of said member, and means carried by the rearwardly extending portion of said bar for transmitting operative

movements of said member to the sewing machine presser-lifter mechanism.

7. A knee-shift device for operating presser-lifter mechanisms of table-supported sewing machines, comprising, a bracket attachable to the under side of the sewing machine supporting table, a swinging member having laterally spaced arms pivotally attached to and depending from said bracket, an apertured lug carried by said member and providing a stop-shoulder disposed between said arms, a knee-pad carrying rod secured in the lug aperture, means carried by said member for transmitting operative movements of said member to the sewing machine presser-lifter mechanism, and a stop-pin adjustably disposed upon said bracket for engagement by said stop-shoulder in the swinging movement of said member in one direction.

8. A knee-shift device for operating presser-lifter mechanisms of table-supported sewing machines, comprising, a bracket attachable to the under side of the sewing machine supporting table, a swinging member having laterally spaced arms pivotally attached to and depending from said bracket, one of said arms having an extension thereof disposed for engagement with said bracket and limiting swinging movement of said member into inoperative position, a lug carried by said member and apertured transversely of the pivotal axis of said member, a stop-pin adjustably disposed upon said bracket for engagement by said lug and limiting movement of said swinging member into operative position, a knee-pad carrying rod secured in the lug aperture, and means carried by said member for transmitting operative movements of said member to the sewing machine presser-lifter mechanism.

WILLIAM A. ANDRES.