

M. HEMLEB.
MOTOR ATTACHMENT FOR SEWING MACHINES.
APPLICATION FILED JULY 18, 1919.

1,395,640.

Patented Nov. 1, 1921.
3 SHEETS—SHEET 1.

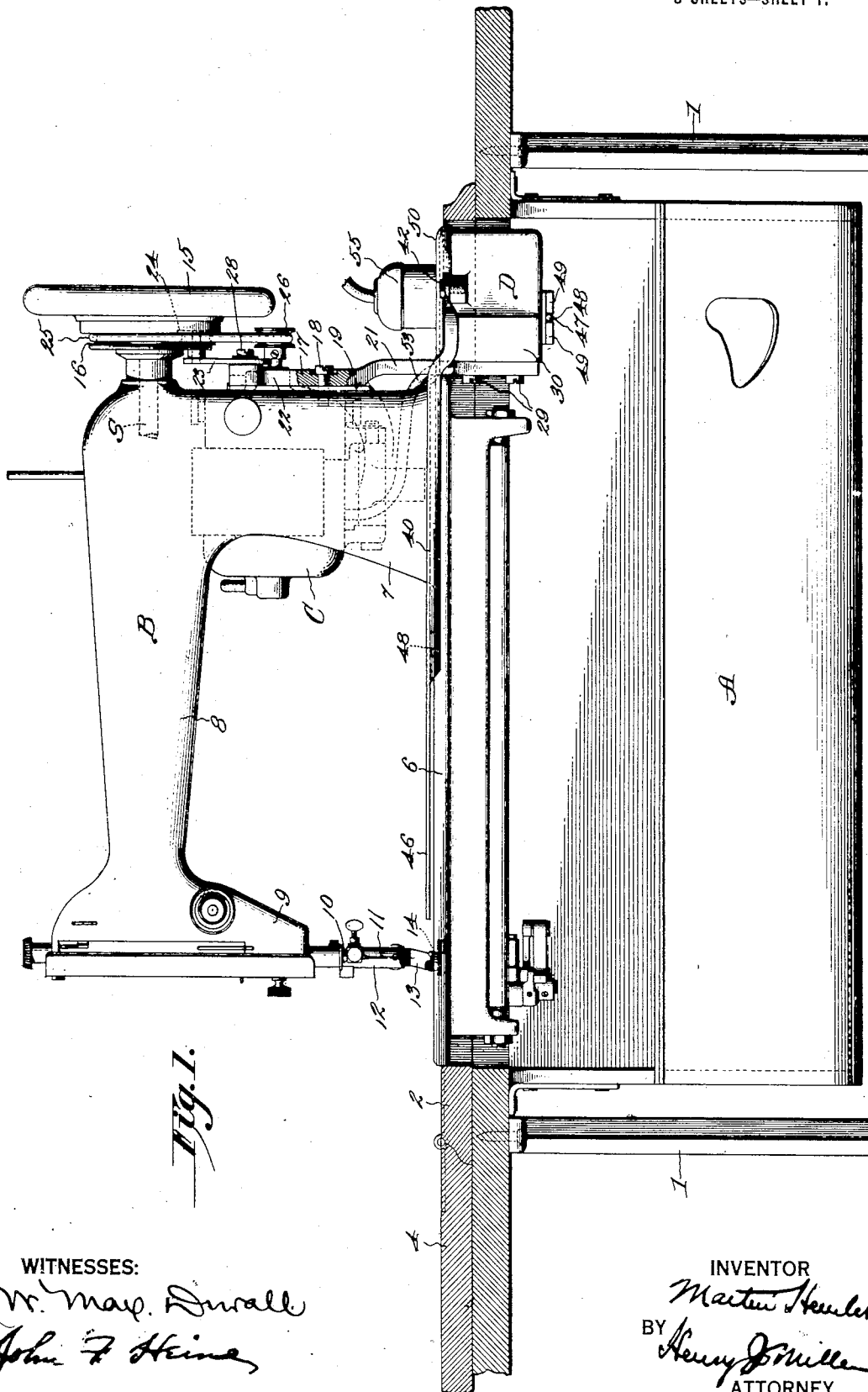


Fig. 1.

WITNESSES:

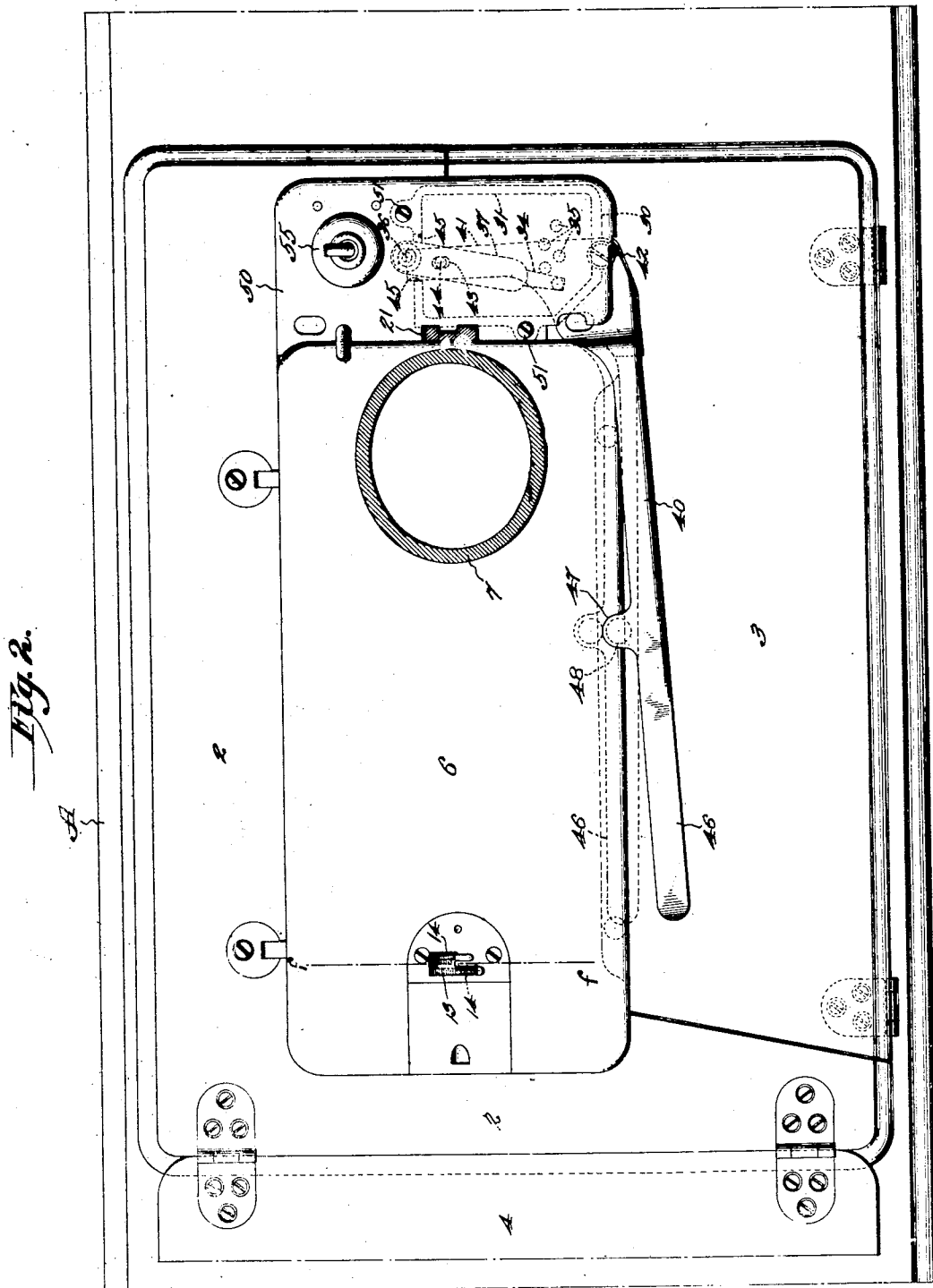
Mr. Max. Dwall
John F. Heine

INVENTOR
Martin Hemleb
BY Henry J. Miller
ATTORNEY

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WITNESSES:
Mr. Max. Small
John F. Heine

INVENTOR
Martin Hemleb
BY *Henry J. Miller*
ATTORNEY

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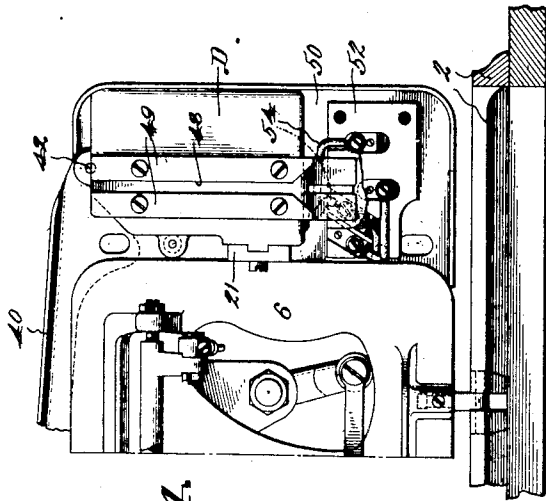


Fig. 4.

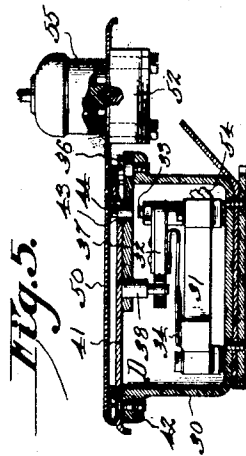


Fig. 5.

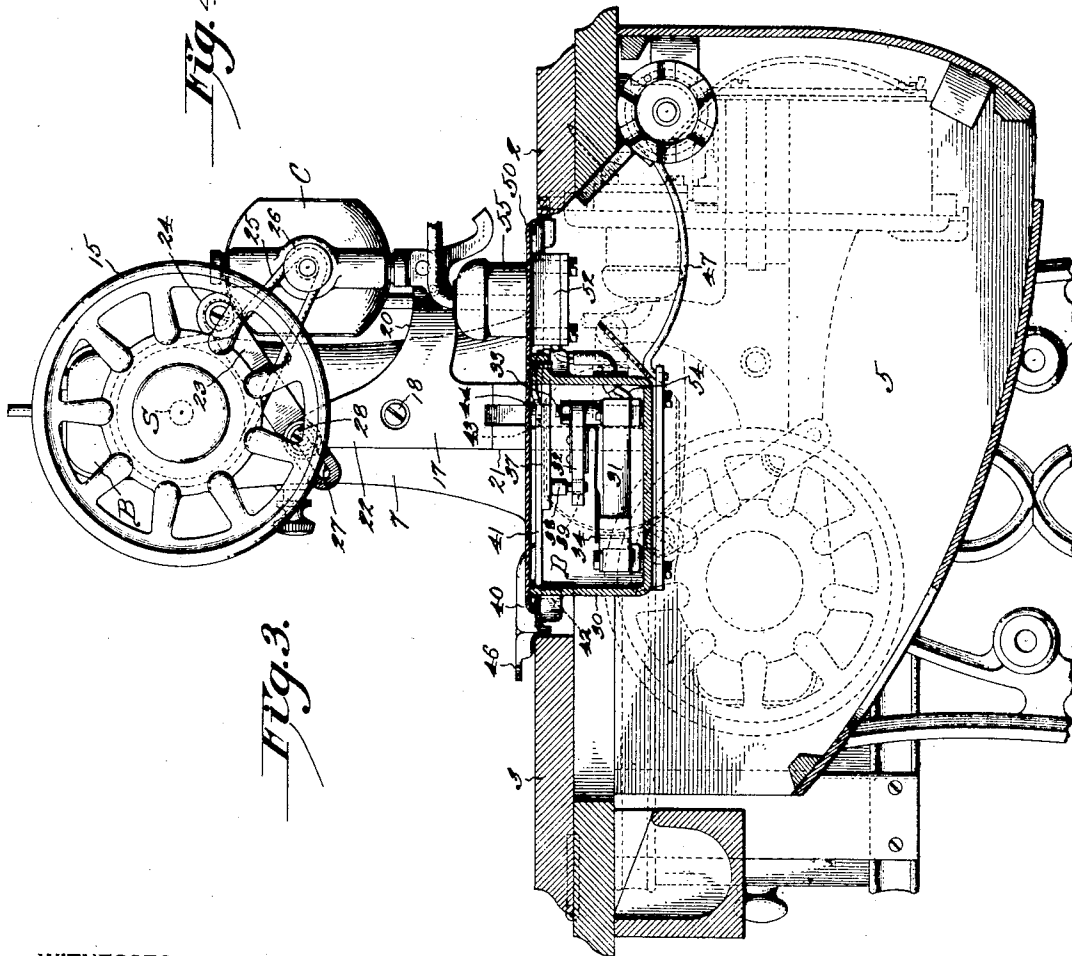


Fig. 3.

WITNESSES:

W. Mear. Durrall
John F. Heine

INVENTOR

Martin Hemleb
BY *Henry J. Miller*
ATTORNEY

UNITED STATES PATENT OFFICE.

MARTIN HEMLEB, OF ELIZABETH, NEW JERSEY, ASSIGNOR TO THE SINGER MANUFACTURING COMPANY, A CORPORATION OF NEW JERSEY.

MOTOR ATTACHMENT FOR SEWING-MACHINES.

1,395,640.

Specification of Letters Patent.

Patented Nov. 1, 1921.

Application filed July 18, 1919. Serial No. 311,849.

To all whom it may concern:

Be it known that I, MARTIN HEMLEB, a citizen of the United States, residing at Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Motor Attachments for Sewing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

10 Motor attachments for sewing machines, as heretofore constructed, commonly included a driving motor with a suitable supporting bracket adapted for attachment to a sewing machine head, and a motor-controller in the form of a treadle-operated rheostat electrically connected to the motor and adapted to be placed upon the floor beside the sewing machine stand and within reach of the operator's foot. A foot-controller of the type indicated is easily disarranged from position for convenient operation and is not, under certain conditions, as sensitive or responsive to the wishes of the operator, as might be desired.

25 An object of the present improvement is to provide a sewing machine motor attachment including a controller which may be easily and conveniently manipulated and which is free from the foregoing and other disadvantages of prior motor attachments.

30 A further object of the invention is to provide a complete sewing machine motor and controller attachment adapted for ready application as a unit to an ordinary sewing machine, particularly of the so-called "drop head" type.

Still further, the invention has for an object to provide a complete sewing machine motor attachment including a hand-operated controller which may be manipulated by the operator without necessitating relinquishment of full manual control of the work being stitched.

40 To the attainment of the above and other objects, as will hereinafter appear, the invention in its preferred embodiment comprises a bracket adapted to be secured to the standard of the usual sewing head and having a rearwardly extending arm and a downwardly extending arm. Both the driving motor and its controller are mounted upon this bracket; the motor being sustained by the rearwardly extending arm while the controller is mounted upon the downwardly ex-

tending arm, whereby a unitary motor and controller structure is provided. The controller includes a hand-lever which extends along the front edge of the bed-plate of the sewing head and terminates closely adjacent the line of feed. The controller-handle is thus within reach of and may be manipulated by the third and fourth fingers of the operator's right hand while the thumb and first two fingers are active in guiding the work being stitched.

In the accompanying drawings, Figure 1 is a front side elevation of a drop-head sewing machine embodying the invention. Fig. 2 is a horizontal section through the standard of the sewing head showing the cloth-plate and supporting table-top in plan. Fig. 3 is a transverse vertical section through the sewing machine stand showing the motor-controller partly in section and the sewing head and driving motor in rear end elevation. Fig. 4 is a bottom view of the controller as applied to the sewing head and Fig. 5 is a detail sectional view through the controller.

In the preferred embodiment of the invention as illustrated, A represents the usual drop-head sewing machine cabinet or stand comprising the legs 1, 1, table-top 2 including the hinged sewing-head supporting leaf 3 and folding end leaf 4. The table-top is apertured as usual for reception of the sewing head B which may be dropped or swung within the cavity 5, Fig. 3, when not in use.

The sewing head B may comprise the usual flat cloth-plate 6 from one end of which rises the standard 7 of the bracket-arm 8 terminating in the head 9 in which is journaled the reciprocating needle-bar 10 carrying the needle 11 in coöperative relation with suitable loop-taker mechanism (not shown) below the cloth-plate. The head 9 also carries the usual presser-bar 12 and foot 13 which coöperates with the feed-dog 14 to advance the work along the line of feed $f-f$. Mounted on the main-shaft S of the machine at the rear of the standard 7 is the usual hand or balance-wheel 15 formed with a belt-groove 16 for reception of power usually supplied from a treadle-operated fly-wheel beneath the table-top 2.

The present improvement is designed to facilitate the conversion of a foot power sewing machine of the type indicated into

an electrically driven machine, and to this end the driving motor C and controller D are associated in unitary relation for ready attachment to the sewing head B. Preferably, the motor C and controller D are

carried in common by a bracket 17 which may be detachably secured by means of a screw 18 to the seat 19 usually provided on the sewing machine standard 7.

The bracket 17 preferably comprises a rearwardly extending arm 20, a depending arm 21 and an upward extension 22; the driving motor C being carried by the arm 20 and the controller D by the arm 21, while the extension 22 supports an arm 23 carrying an idler 24 for tightening the belt 25 which runs in a grooved motor-pulley 26 and in the groove 16 of the balance-wheel 15. The idler-arm 23, being slotted at 27 and secured to the extension 22 by means of a screw 28 passing through said slot, may be readily adjusted to produce the desired tension on the belt 25.

The controller D which is secured to the depending arm 21 of the bracket by means of screws 29, comprises a metallic casing 30 within which is mounted the controller element preferably in the form of a rheostat 31 including the swinging contact arm 32 pivoted at 33 and carrying the contactor-spring 34 which plays over the usual contact points 35. Pivoted on the casing 30 at 36, above the arm 32, is a second arm 37 from the free end of which depends a pin 38 the reduced lower extremity of which enters a slot 39 in the arm 32. Movement of the arm 37 about its pivot 36 will, of course, shift the rheostat arm 32 and cause the contactor 34 to move over the contact points 35 and alter the speed of the motor C in the customary manner.

The operating handle of the controller D is in the form of a bellcrank-lever 40, 41, which is pivoted at 42 to the top of the front side wall of the controller box 30. The rearwardly extending arm 41 of the controller hand-lever is slotted at 43 to receive the upstanding pin 44 carried by the arm 37, and the free end of the arm 41 is adapted to strike the opposed shoulders 45 at the top of the rear wall of the controller-box, which shoulders serve as stops to limit the movement of the hand-lever.

The laterally extending arm of the bellcrank controller-lever extends along the front edge of the cloth-plate 6 and terminates in a handle 46 closely adjacent the line of feed $f-f$. The controller-lever is movable from the dotted line position, Fig. 2, to full line position to start or speed up the machine, and in the opposite direction to slow down or stop the machine. The arm 40 is formed with a lateral extension 47 which carries a spacer 48 at its under side slidably resting upon the cloth-plate

and serving to support the handle 46 at a level slightly above the surface of the cloth-plate.

In certain aspects, the present construction may be regarded as a modification of that disclosed in my copending application Serial No. 311,850, filed July 18, 1919, wherein an operating hand-lever similar to that disclosed herein is shown and described. My prior construction, however, while of general application, is particularly adapted for use in connection with a portable sewing machine outfit, while the present improvement is adapted more particularly for use with sewing heads such as are customarily mounted upon the usual treadle stands. The present invention is not to be understood, however, as limited to such use.

A drop-head sewing machine cabinet of the type herein disclosed usually embodies a counter-balancing spring 47 such as shown and described in the patent to Diehl & Kraemer No. 541,474, of June 25, 1895. In the present instance, the free end of the spring 47 is adapted to slide along the groove 48 between the spaced guides 49 at the under side of the controller-box 30. This spring 47 sustains part of the weight of the sewing head B making it easier for the operator to lift the machine out of the cavity 5 and swing it to full line position, Fig. 3.

The top side of the controller case or box 30 is closed by means of a tight fitting cover 50, the upper surface of which forms a continuation of the surface of the cloth-plate 6, as shown in Fig. 1, the cover 50 being secured in position by means of screws 51 threaded into lugs formed on the controller-box. Secured to the under side of the cover 50, externally of the controller-box, is a fiber or bakelite connection block 52 where the conductors 53, 54, from the motor and rheostat, respectively, are connected up in any suitable or usual manner. The connection block is adapted to receive the plug 55 which is connected to the source of electrical energy.

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

1. A motor attachment for sewing machines comprising, a bracket adapted for attachment to the frame of a sewing machine, a driving motor carried by said bracket with its shaft in position for operative connection to the sewing machine, and a motor-controller mounted on said bracket and electrically connected to said motor.

2. A motor attachment for sewing machines comprising, a bracket adapted for attachment to the frame of a sewing machine, a driving motor mounted on said bracket and including a grooved driving pulley, a motor-controller mounted on said bracket and electrically connected to said motor, and

a grooved idler-pulley shiftably mounted on said bracket and adapted for engagement with a belt running over said driving pulley.

3. A motor attachment for sewing machines comprising, a bracket adapted for attachment to the frame of a sewing machine and having laterally extending and depending arms, a driving motor carried by the laterally extending arm, and a motor-controller mounted upon the depending arm and electrically connected to said motor.

4. A motor attachment for sewing machines comprising, a bracket adapted for attachment to the frame of a sewing machine, a driving motor carried by said bracket in position for operative connection to the sewing machine, a controller-box mounted on said bracket and an operating lever fulcrumed on said controller-box.

5. A motor attachment for sewing machines comprising, a bracket adapted for attachment to the frame of a sewing machine, a driving motor carried by said bracket with its shaft in position for operative connection to the sewing machine, and a motor-controller mounted on said bracket and electrically connected to said motor, said controller including an operating lever formed with a handle extending laterally in the same general direction as the motor-shaft.

6. A motor attachment for sewing ma-

chines comprising, a bracket adapted for attachment to the frame of a sewing machine, a driving motor carried by said bracket in position for operative connection to the sewing machine, an inclosed motor controlling rheostat mounted on said bracket and an operating handle sustained by said rheostat.

7. A motor attachment for sewing machines comprising, a bracket adapted for attachment to the frame of a sewing machine, a driving motor carried by said bracket in position for operative connection to the sewing machine, a controller-box mounted on said bracket, a controller element inclosed within said box and including contact points and a shiftable contactor, and an operating lever fulcrumed on said controller-box and operatively connected to said contactor.

8. A motor attachment for sewing machines comprising, a bracket adapted for attachment to the frame of a sewing machine, a driving motor carried by said bracket with its driving shaft arranged horizontally in position for operative connection to the sewing machine, and a motor-controller mounted on said bracket and including an operating handle pivotally sustained to move on a vertical axis.

In testimony whereof, I have signed my name to this specification.

MARTIN HEMLEB.