

March 5, 1940.

W. A. ADAMS

2,192,170

POWER TABLE FOR SEWING MACHINES AND THE LIKE

Filed Feb. 14, 1936

3 Sheets-Sheet 1

Fig. 1.

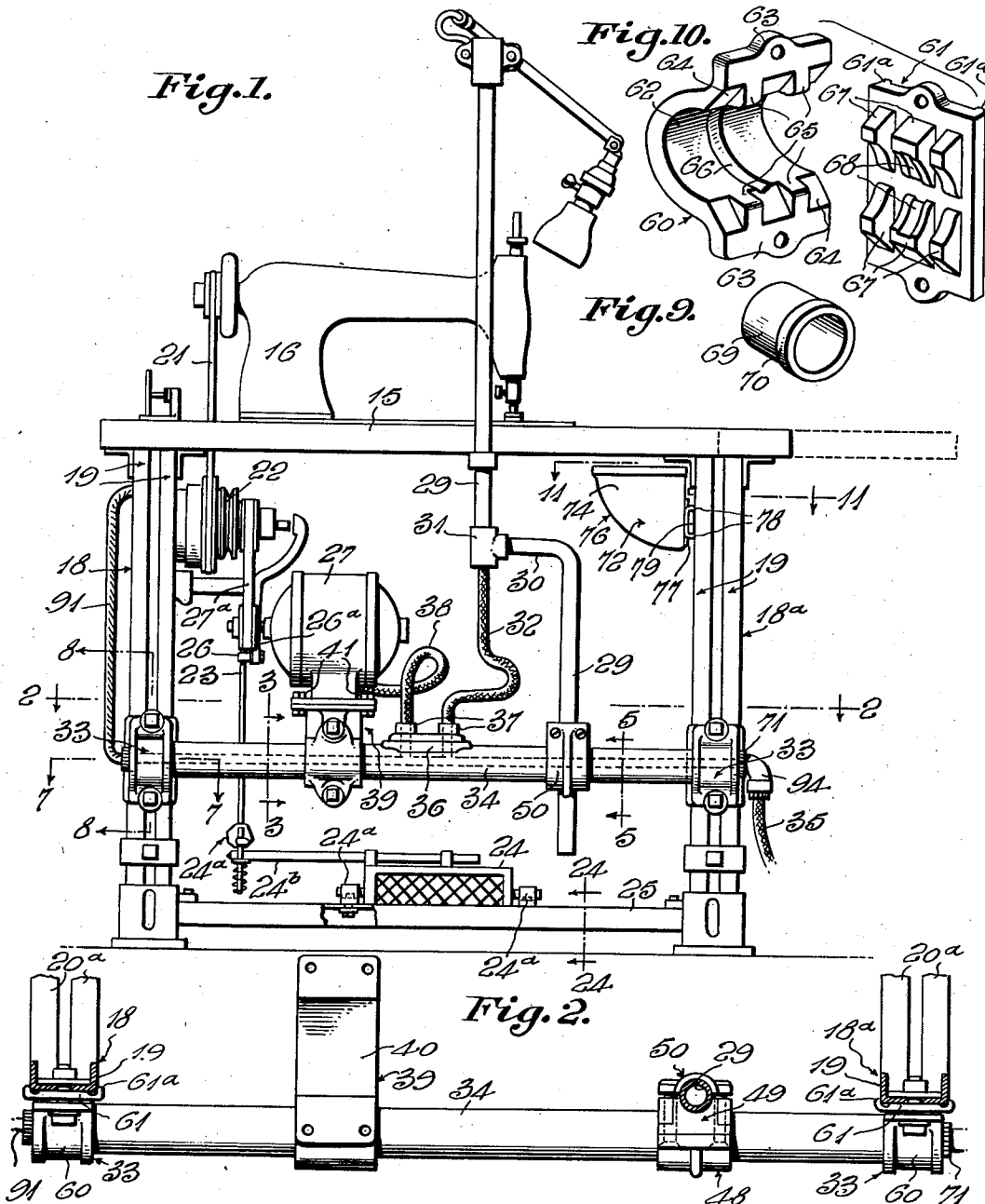


Fig. 10.

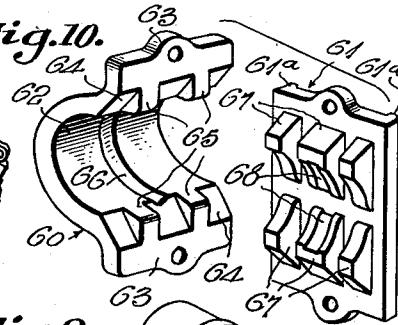


Fig. 9.

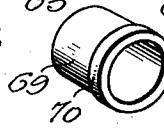


Fig. 2.

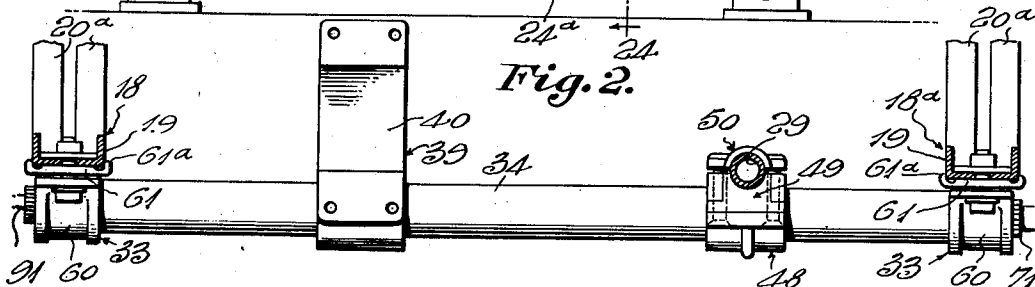
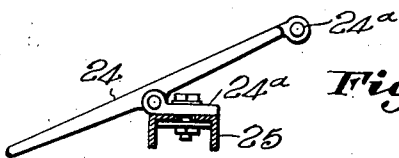


Fig. 24.



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3 Sheets-Sheet 2

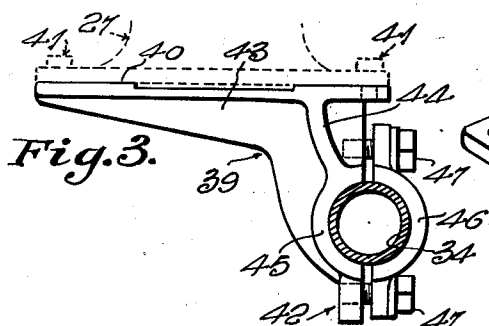


Fig. 3.

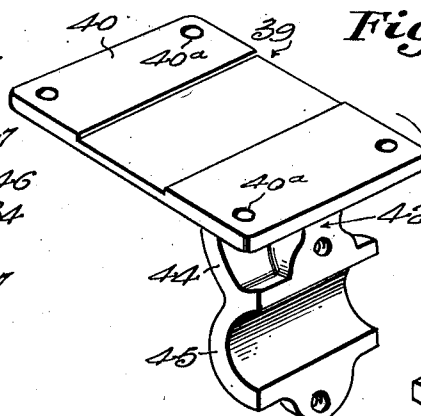


Fig.4.

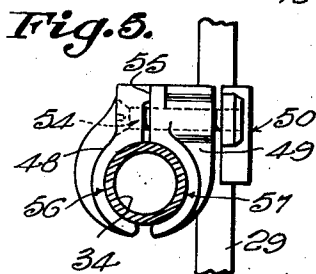


Fig. 5.

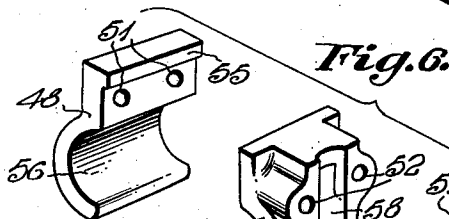


Fig. 6.

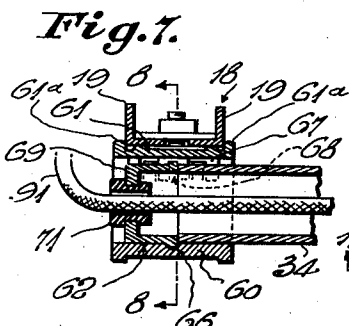


Fig. 7.

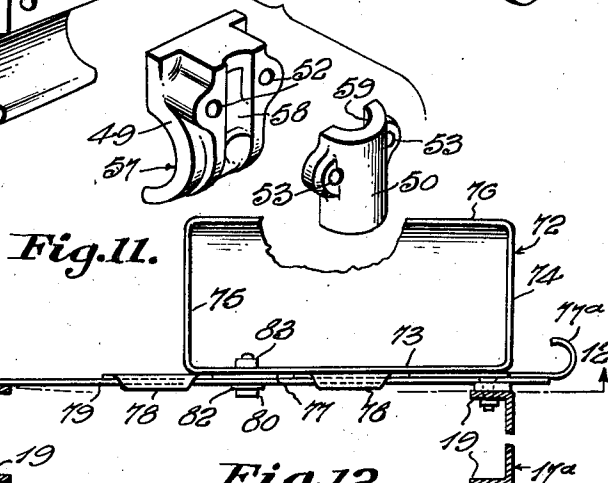


Fig. 11.

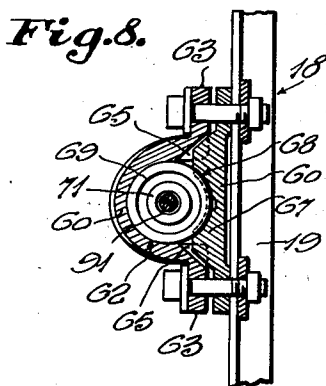


Fig. 8.

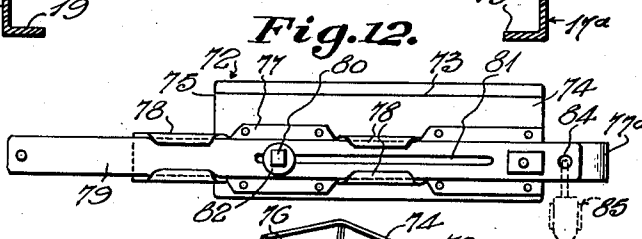


Fig. 12.

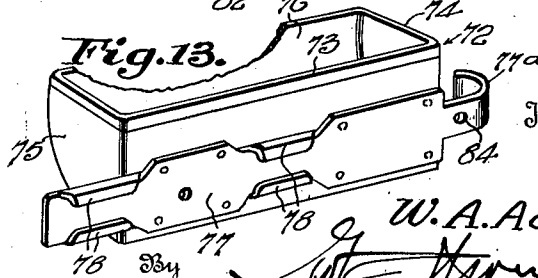


Fig. 13.

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Fig. 14.

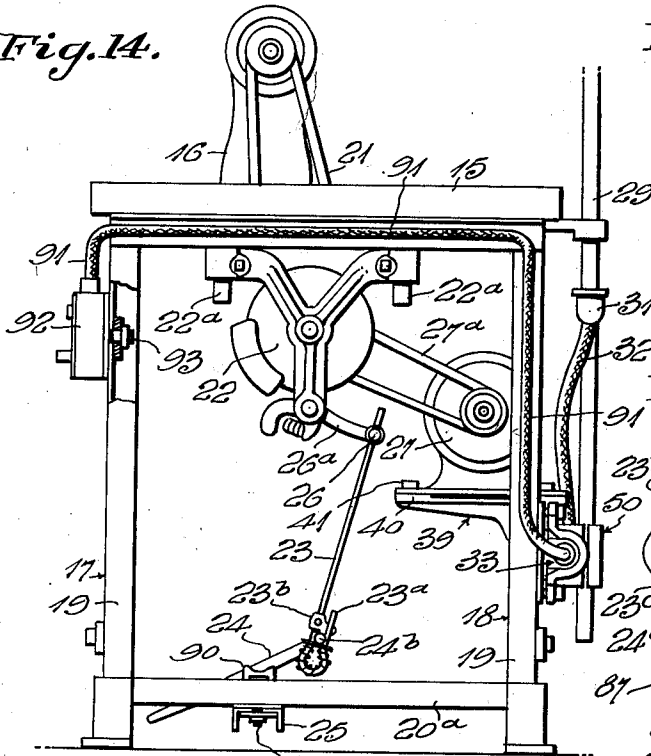


Fig. 17.

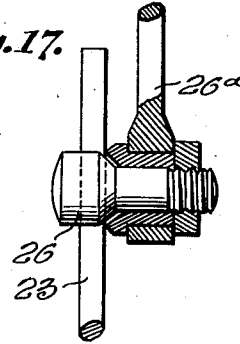


Fig. 15.

Fig. 16.

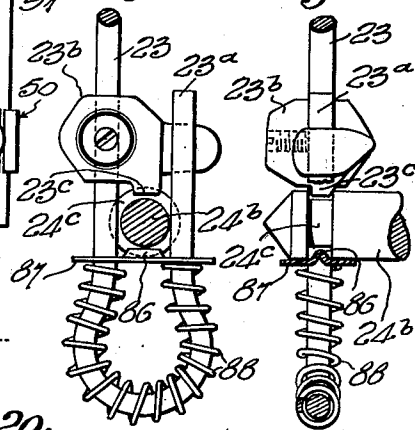


Fig. 18.

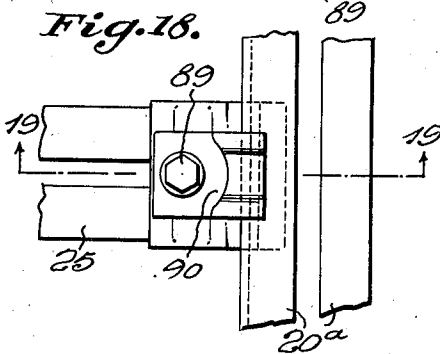


Fig. 20.

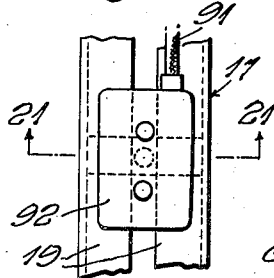


Fig. 22.

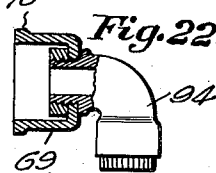


Fig. 19.

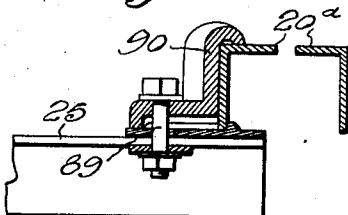


Fig. 21.

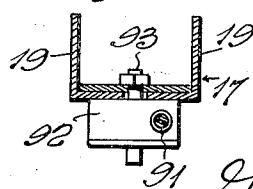
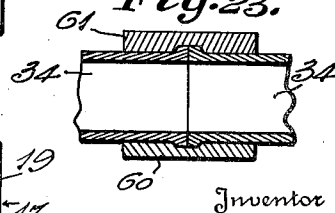


Fig. 23.



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UNITED STATES PATENT OFFICE

2,192,170

POWER TABLE FOR SEWING MACHINES
AND THE LIKE

Walter A. Adams, Rochester, N. Y.

Application February 14, 1936, Serial No. 63,977

2 Claims. (Cl. 311—13)

The present invention relates generally to power tables, and more particularly to power tables of the character most commonly used for the support and operation of sewing machines, and has for its primary object the provision of a rugged and durable construction, of a sectional unit formation, the individual units or parts thereof being adaptable for rearrangement in such multiple table lines as may be required for economical production, without loss and with minimum labor costs.

Tables of the above character must permit of a wide range of adjustment to insure adaptability to the needs of the many makes and types of sewing machines used for manufacturing purposes, and must have, in other words, great flexibility in their adaptation in practical use. Hence, it is another object of the invention to promote such adaptation by novel construction of the various component parts in which, and by which, to promote maximum adjustability and adaptability and thus best fit the same for large scale production in certain industries.

It is a further object of the invention to provide a power table, the various relatively adjustable and interchangeable parts of which are supported in connection with the frame or leg structure apart from the table top, leaving the latter free for movement with the machine without disturbing the other parts.

A still further object of the invention is the provision of the various parts as, and in the form of, separate units, so that each thereof may be added, adjusted and discarded without disturbing the others and with minimum effort and loss of time.

The above and other objects of the invention relating to the particular manner of adjustably clamping the various parts will more clearly appear in the course of the following detailed description thereof, reference being made to the accompanying drawings, which form a part of this specification, and in which:

Figure 1 is a rear elevation of the table.

Figure 2 is a horizontal sectional view through the rear portion thereof, taken on line 2—2 of Figure 1.

Figure 3 is a detail vertical section taken on line 3—3 of Figure 1 adjacent to one side of the motor bracket.

Figure 4 is a detail view, in exploded perspective, of the motor bracket.

Figure 5 is a detail vertical section taken on line 5—5 of Figure 1 adjacent to the light standard clamp.

Figure 6 is a detail view, in exploded perspective, of the light standard clamp.

Figures 7 and 8 are respectively a horizontal section on line 7—7 of Figure 1 and a vertical section on line 8—8 of the same figure, showing one of the end connections of the support.

Figure 9 is a detail perspective view of one of the end caps.

Figure 10 is a view, exploded in perspective, of one of the support clamps.

Figure 11 is a detail horizontal sectional view on line 11—11 of Figure 1.

Figure 12 is a vertical sectional view taken on line 12—12 of Figure 11.

Figure 13 is a detail perspective view of the drawer.

Figure 14 is a side elevation of the power table shown in Figure 1.

Figures 15 and 16 are detail side and rear views of the connecting portions of the treadle bar and its connecting rod, both being partly broken away and in section.

Figure 17 is a detail sectional view through the adjustably engaged portions of the connecting rod.

Figure 18 is a detail plan view of one of the connected ends of the treadle rail.

Figure 19 is a detail vertical section taken on line 19—19 of Figure 18.

Figure 20 is a detail front elevation of the switch box.

Figure 21 is a detail horizontal section taken on line 21—21 of Figure 20.

Figure 22 is a detail section through one of the end caps showing the same with an elbow cable guide.

Figure 23 is a sectional view illustrating a possible connection of the adjacent ends of two tubular supporting members, and

Figure 24 is a detail section through the treadle rail, taken on line 24—24 of Figure 1.

Referring now to these figures, there is shown in Figures 1 and 14 a power table including a table top 15 adapted to support a suitable operating device as, for instance, a sewing machine 16, said top 15 being in turn supported upon the upper ends of upright front legs 17 and 17a and rear legs 18 and 18a. Each of the several legs is formed of spaced apart vertical angle bars 19 forming between them a vertical slot for a purpose which will presently appear.

The rear legs 18 and 18a are rigidly connected at their upper ends to the front legs 17 and 17a by angle members 20 which, with the upper ends of the legs, form the direct supports of the top

15, and the front and rear legs are also connected adjacent to their lower ends by side frame members 20a, consisting of spaced bars similar to those of the legs.

5 The sewing or other machine 16 is shown driven by a belt 21 from a lower transmitter 22 which is of conventional well-known structure and may be supported for vertical adjustment on studs 22a pendant from the upper side rails of the frame as seen in Figure 14. As well known, the transmitter 22 includes a clutch controlled by the operator through treadle connections operated from a lower treadle 24, the transmitter being connected by a belt 27a with a pulley on the shaft of the operating motor 27. 10 The treadle 24, as seen in Figure 24, works in bearings 24a, clamped to twin angle bars forming a treadle rail 25, and these bearings may be shifted in the slot of rail 25 to adjust the treadle longitudinally of the machine. The treadle connections include a treadle bar 24b slidable lengthwise in connection with treadle 24 and having at its outer end an annular groove 24c, as seen in Figures 15 and 16. These connections also include a connecting rod 23, adjustably engaged at its upper portion, by an easily engaged and disengaged clamp 26, see Figure 17, with the clutch arm or transmitter driving lever 26a, and having a returned or reverting lower end 23a normally held in spaced relation thereto by a hook clamp 23b to provide a space for receiving the grooved end of the treadle bar and portions to enter the groove of said bar at diametrically opposite sides thereof. The hook clamp 23b also has a portion 23c (Figures 15 and 16) entering the groove 24c of the treadle bar at a point diametrically opposite the groove-entering portion 86 of a plate 87 on the lower portion of the connecting rod 23, supported by a spring 88 coiled around the lower bight between the connecting rod and its reverting end 23a. Thus the effective movements of the treadle to lower the connecting rod 23 for engaging the transmission clutch will be cushioned by spring 88, and it is obvious clamp 26 provides for readily adjusting the normal inclination of treadle 24 to suit the particular operator of the machine.

The treadle may be shifted forwardly and backwardly in the frame by reason of the adjustable connection of the ends of the treadle rails 25, as seen particularly in Figures 18 and 19, said ends being engaged by the clamping bolts 89 of clamps 90 in connection with the inner angle bars of the lower frame side members 20a. These clamps leave the members 20a free to receive the similar clamps 90 of an adjacent machine where several machines are mounted in line.

There is also shown in Figure 1 the lighting fixture 28 which is an essential feature of the power table as used for the present purposes, and which involves an upright or standard 29 of tubular metal having in the present instance an offset 30 below the table. This offset may include a T fitting 31 to receive the cable 32 at this point of the standard. Such fitting 31 may, however, be dispensed with and cable 32 for the light 28 led into the lower end of the standard, if so desired.

Extending across the rear of the table with its ends in connection with the rear legs 18 and 18a, through clamps 33 as presently described, is a support preferably in the nature of a tube 34 adapted to house the feed cable 35 and for con-

venience provided intermediate its ends with a rigid open saddle plate 36 secured thereto around a slotted opening of the tubular support to receive outlets 37, from one of which cable 32 may lead, and from the other of which a cable 38 may extend to the motor 27.

Supply cable 35 may lead into and through the supporting tube 35, with branches to the outlets 37 and a branch 91 extending from the other end of said tube to a manually controlled switch 92 clamped to the front leg 17 and adjustable vertically thereof by reason of its clamping bolt 93 working in the slot of the leg, as seen in Figures 20 and 21.

When the operator manually closes switch 92, the motor circuit is completed, and it then remains but for the operator to press downwardly on treadle 24 in order to clutch the normally, freely rotatable pulleys of the transmission 22 and thus quicken the machine 16 in operation.

For the support of the motor 27, a bracket 39 is provided of the form shown in detail in Figures 3 and 4. This bracket includes a plate 40 apertured as at 40a in order that the motor may be bolted thereto as by bolts 41. At one end of plate 40, a depending part 42, integral with the plate through webs or fins 43 and 44 longitudinally and transversely of the plate, forms one-half 45 of a clamp, the other half 46 of which is connected thereto by machine screws 47, so that the clamp, as a whole, may be effectively secured around a selected portion of the tubular support 34 and easily adjusted lengthwise of the latter as well as shifted circumferentially thereof in aligning the motor 27 in proper driving relation with the transmitter 22 and thereafter tightening the belt between these parts when necessary.

As best seen in Figures 5 and 6, the light standard 29 is supported from the tubular support 34 by means of a three part clamp including the parts 48, 49 and 50, intermediate part 49 cooperating with part 48 to clamp support 34 and with part 50 to clamp standard 29. For this purpose, the several parts 48, 49 and 50 have aligned openings 51, 52 and 53 through the upper portions thereof to receive machine screws 54, openings 53 of part 50 being threaded so that tightening of the screws 52 serves to bring the three parts into effective clamping relation.

Above the openings 51, clamping member 48 has a cross rib 55 to engage the upper portion of the adjacent face of member 49. Below its openings 51, member 48 has a horizontal concave clamping face 56 to cooperate with a similarly concave adjacent face 57 of member 49 whereby to engage the tubular support 34.

Between its openings 52, clamping member 49 has at its opposite face a vertical groove 58 of approximately semi-cylindrical form which cooperates with a similar groove 59 of the member 50 to receive and clamp the light standard 29. In this way, it is only necessary to loosen the screws 54 in order to rotate or raise and lower the light standard 29, or to shift the same horizontally, lengthwise of the tubular support 34.

The tubular support 34 is not only held against rotative movement in the end clamps 33, but is effectively prevented from longitudinal creeping or other movement which might be urged by the natural vibrations of the machine in operation, and for these purposes, each of the end clamps 33 embodies cooperating clamping members 60 and 61. Of these, the outer member 60 has a curved body presenting an inner concave clamp-

ing face 62 with upper and lower apertured portions 63. Between its clamping face 62 and the apertured portions 63, member 60 has upper and lower surfaces cut away at inclined angles at 64 to form between such surfaces spaced apart projections 65. Moreover, its clamping face 62 is bisected by a vertically extending groove 66, as seen in Figure 10.

The clamping member 61 has a flat body provided upon its obverse face with upper and lower series of tapering ribs 67 outstanding therefrom in laterally spaced relation to receive between them the upper and lower projections 65 of member 60. These two series of ribs have their inner opposing faces curved to cooperate with the clamping face 62 of member 60, and the central ribs are provided with grooves 68 which, when the two members are properly together, align with the groove 66 of member 60.

By reason of the above construction, the ends of tubular support 34 may be effectively gripped by clamping members 60 and 61 in abutting relation to end caps 69 having annular ribs 70 around the inner ends thereof extending into the grooves 66 and 68, so that support 34 will be effectively locked against endwise movement or play. If so desired, clamps 60-61 may be used as in Figure 23 to clamp the flanged abutting ends of tubes 34 of adjacent machines in line.

The end caps 69, one of which is shown in detail in Figure 9, may be closed at the outer ends thereof, or one may carry a suitable socket to receive an electrical plug of cable 35, or simply have an insulated bushing 71 into which the cable is extended. Moreover, the end caps 69, as seen in Figure 22, may have elbows 94, or cable guides of other shapes or forms.

At the sides of its outer face, clamping member 61 may have upright ribs 61a which, as seen in Figure 7, engage the sides of the leg bars 19 and thus when the members 60 and 61 are engaged in effective clamping action upon the tubular support 34 and its end caps 69, by reason of clamping bolts in connection with the rear legs 18, the clamps will be held against shifting laterally with respect to the legs.

Another feature of my improved table resides in the provision of a drawer attached to the leg frame entirely apart from the table top 15 without in any way interfering with full leg room under the top 15, and to this end I provide a drawer 72 which, as seen in Figures 1, 11, 12 and 13, is of narrow elongated form, with one vertical side wall 73, front and rear end walls 74 and 75, and a side wall 76 which curves downwardly and inwardly to the lower edge of the vertical wall 73 so that any object placed within the drawer immediately falls or slides by gravity to a position immediately adjacent to the lower edge of the vertical wall 73 and may be easily and quickly located, saving time and trouble.

Lengthwise along the lower portion of the side wall 73 is a rigid slide strip 77 having at spaced points along its upper and lower edges outwardly and oppositely bent tongues 78 to slidably em-

brace the upper and lower edges of a rigid guide strip 79 securely fastened to the upper portions of oppositely disposed front and rear legs 18 as seen in Figure 11. The forward end of slide strip 77 has a reduced extension 77a projecting forwardly beyond the drawer and curved inwardly in spaced relation to the front wall 74, forming a drawer pull.

Adjacent to the rear end of the drawer, its wall 73 and slide strip 77 have aligned threaded openings to receive a combined limiting and tension member in the form of a machine screw 80, the shank of which extends through the longitudinal slot 81 of the guide strip 79, and the head of which adjustably tensions sliding movement of the drawer by reason of its bearing on guide strip 79, through a spring washer 82. It is preferable that the shank of screw 80 extend into the drawer 72 so that a nut 83 may be used thereon to lock the screw in selective adjustment.

If desired, the forward end of guide strip 79 may be extended forwardly beyond the front leg 18 to which it is attached, and provided with an aperture 84 as seen in Figure 12 to align with a similar aperture in the drawer pull 77a for the reception of a lock 85 whereby the drawer may be locked in inner or closed position to prevent unwarranted removal of such accessories as the operator may wish to preserve at hand.

However, these parts as well as the other parts previously described are susceptible of various changes and modifications in connection with different installations, and it is to be understood all such modifications are contemplated as within the spirit of this invention.

What is claimed is:

1. A power table for sewing machines and the like including a table top, a frame supporting the table top, having front and rear standards at the sides thereof, side rails connecting the lower portions of the said front and rear standards at opposite sides of the frame, a power controlling treadle, and a treadle bar on which said treadle is adjustable laterally of the frame, said treadle bar being in adjustable connection at its ends with said side rails for adjustment forwardly and rearwardly in the frame and being in connection with the inner portions only of said side rails to permit of similar connection of adjacent treadle bars with the outer portions of the side rails.

2. A power table for sewing machines and the like comprising a frame including lower forwardly and rearwardly extending side bars, each consisting of a pair of similar rails in juxtaposed relation, a table top on the frame, a treadle for controlling power means, and a treadle bar lengthwise of the frame adjustably supporting the treadle and having adjustable connections at its ends with the inner rails only of said lower side bars of the frame for adjustment forwardly and rearwardly of the frame, permitting of similar connection of adjacent treadle bars with the outer rails of said side bars.

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