May 2, 1944. I. F. WEBB ET AL 2,348,043

STAND FOR SEWING MACHINES

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Fig. 1.

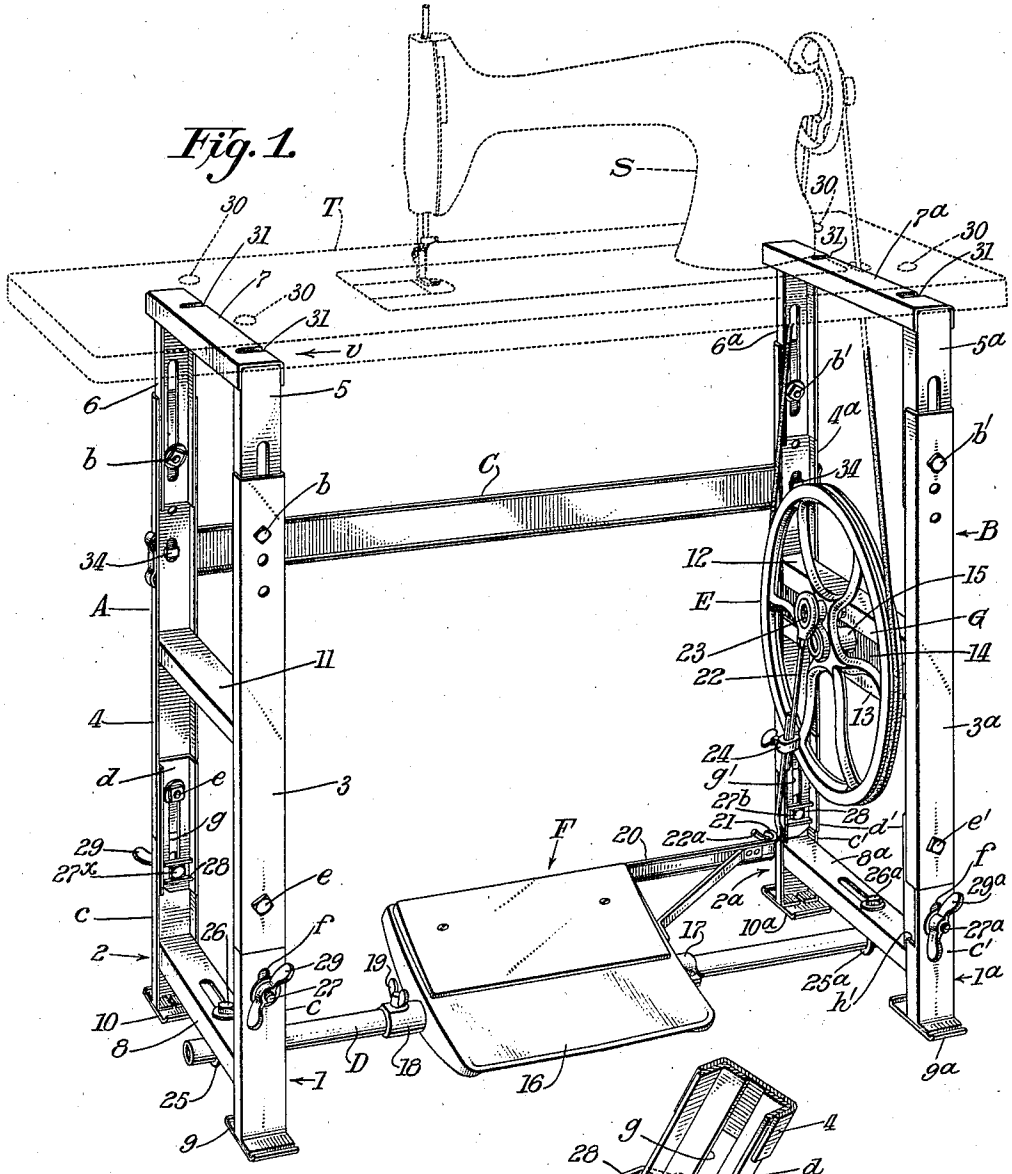
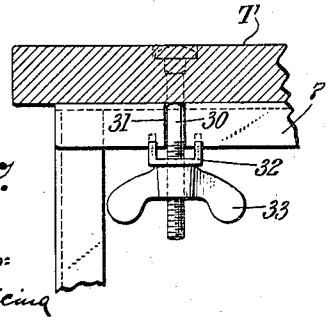
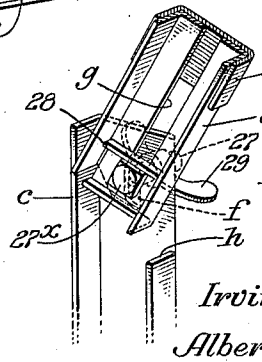


Fig. 7.



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Fig. 5.



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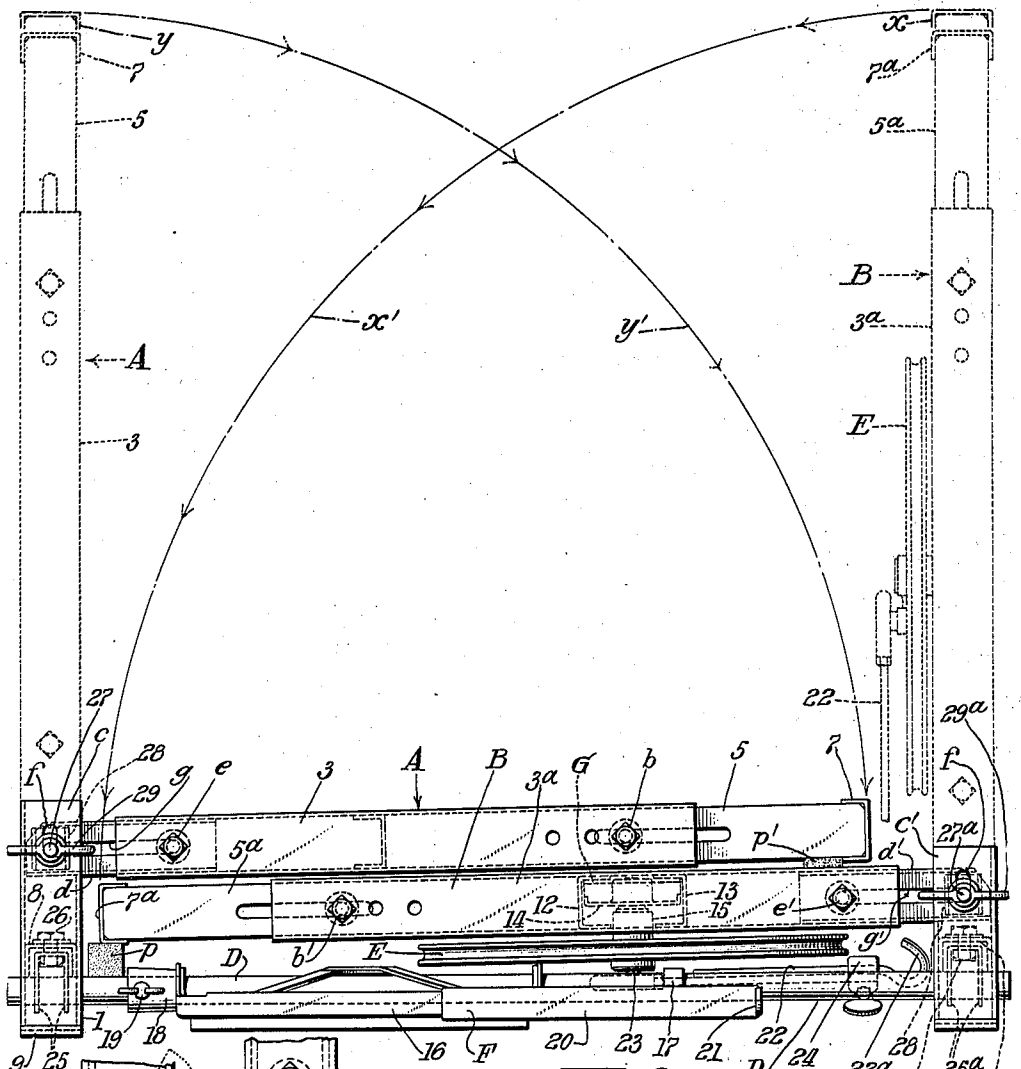


Fig. 2.

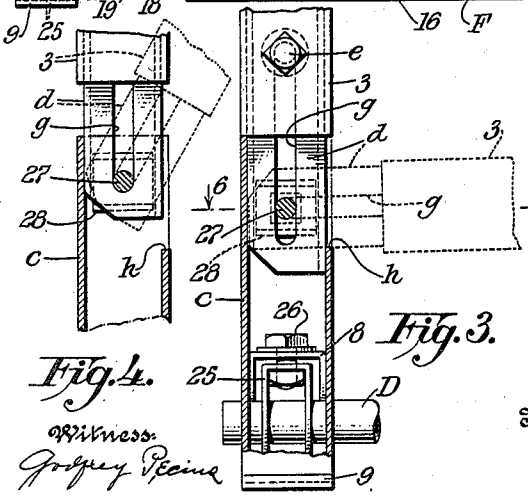


Fig. 4.

Fig. 3.

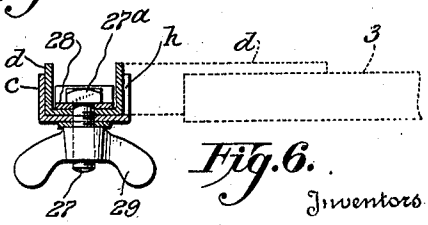


Fig. 6.

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STAND FOR SEWING MACHINES

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5 Claims. (Cl. 248—13)

This invention relates to stands for sewing machines and more particularly to foldable treadle-stands which may be set up to hold sewing machines in conventional sewing position or collapsed into a relatively small compass for storing or shipping purposes.

The invention has as a primary object to provide a relatively light weight collapsible treadle-stand which, when set up for use, will be extremely strong and rigid and will compare favorably with non-collapsible treadle stands.

Another object of the invention is to provide a treadle-stand which readily and easily may be collapsed into relatively small compass by the removal and adjustment of a minimum number of parts.

With the above and other objects in view, as will hereinafter appear, the invention comprises the devices, combinations and arrangements of parts hereinafter set forth and illustrated in the accompanying drawings of a preferred embodiment of the invention, from which the several features of the invention and the advantages attained thereby will be readily understood by those skilled in the art.

In the drawings,

Fig. 1 is a perspective view of collapsible treadle-stand embodying the present invention and showing, in dotted lines, a table-top and a sewing machine mounted thereon.

Fig. 2 is a side elevation showing, in full lines, the treadle-stand of Fig. 1 collapsed and, in dotted lines, the legs in their upper or operative positions.

Fig. 3 is a detail sectional elevation of the lower part of one of the legs and the foot-portion to which it is pivotally and slidably connected.

Fig. 4 is a fragmentary view similar to Fig. 3 showing, in full lines, the leg-portion slid upwardly and unlocked from the foot-portion and, in dotted lines, the leg partially turned about its pivotal connection, with the foot-portion.

Fig. 5 is a detail perspective view illustrating the sliding and pivotal connection between one of the legs and its supporting foot.

Fig. 6 is a detail sectional view taken on the line 6—6 of Fig. 3.

Fig. 7 is a detail view, looking in the direction indicated by the arrow *v* in Fig. 1, illustrating the means for removably securing the table top to the collapsible stand.

Referring more specifically to the drawings, the invention is disclosed as embodied in a collapsible treadle stand comprising end frames A and B, a brace-bar C removably secured at its opposite ends to the upper portions of said end frames, a longitudinally extending brace-tube D connecting the lower portions of said end frames. a treadle-wheel E carried by the end frame B and a treadle mechanism F rockably mounted on the tube D and adapted to be operatively connected with the treadle-wheel E. A table-top T is adapted to be removably secured to the upper ends of the end frames A and B and to support a sewing machine S.

The end frame A comprises front and rear foot-portions 1 and 2, complemental leg-portions 3 and 4, of channel iron, pivotally and slidably mounted on said foot-portions, channel iron extension-elements 5 and 6 adjustably mounted in the upper end of the leg-portions 3 and 4, respectively, and held in adjusted positions by clamp bolts *b* and a table-top-supporting cross-rail 7 secured upon the upper ends of the extension-elements 5 and 6. A cross-brace 8, of channel iron, is fixedly secured, at its opposite ends, to the foot-portions 1 and 2, which latter comprise upstanding shanks of channel iron having secured to their lower ends horizontally arranged feet 9 and 10, respectively.

A cross-brace of channel iron 11 has its opposite ends permanently connected to the legs 3 and 4.

The end frame B is similar to the end frame A and comprises foot-portions 1^a 2^a having channel iron shanks, horizontally disposed feet 9^a, 10^a, leg-portions 3^a and 4^a pivotally and slidably mounted on the foot-portions, extension-elements 5^a and 6^a adjustably mounted in the upper end of the leg-portions and held in adjustable positions by clamp bolts *b'*, and a table-top-supporting cross-rail 7^a secured upon the upper ends of the extension-elements 5^a and 6^a. A cross-brace 8^a similar to the cross-brace 8 is connected at its opposite ends to the foot-portions 1^a, 2^a. Secured at its opposite ends to the leg-portions 3^a and 4^a, substantially midway between the ends thereof, is a combined leg-brace and treadle-wheel support G. This member consists of a pair of oppositely facing channel irons 12 and 13 (see Fig. 2) secured at their opposite ends to the leg-portions 3^a and 4^a, and a central web 14 secured within the channel irons 12 and 13 and which supports a bearing 15 for the treadle-wheel E.

The treadle mechanism F comprises a treadle 16 pivotally mounted on the tube D between a collar 17, permanently secured on the tube, and a collar 18 adjustably secured on the tube and maintained in adjusted position by a thumb-screw 19. Projecting laterally from the treadle

16 is an arm 20 having an offset and perforated ear 21 adapted to receive the hooked lower end 22a of a pitman 22 normally connecting the treadle with a crank-pin 23 carried by the treadle-wheel E. For convenience in assembling and disassembling, the pitman 22 is preferably formed of two parts connected together by a coupling element 24.

As is well understood, when the treadle is connected with the treadle-wheel and the treadle-wheel is connected by a belt to the sewing machine, actuation of the treadle will effect operation of the sewing machine.

The treadle-supporting and frame-bracing tube D is secured, at its opposite ends, to the cross-braces 8 and 8a by means of stirrups 25 and 25a connected to the cross-braces by bolts 26, 26a, respectively.

An important feature of this invention is the construction and arrangement of the pivotal and sliding connections between the leg-portions 3, 4 and 3a, 4a and the foot-portions 1, 2 and 1a, 2a, respectively, which rigidly secure the legs to the feet when the legs are in upright position and yet which permit the legs to be folded downwardly relative to the foot-portions and into overlapping relationship with each other when it is desired to store or ship the treadle-stand. Each foot-portion 1 and 2 comprises an upstanding channel iron c within which is slidingly fitted the lower end of a smaller channel iron d, the upper end of which is secured within one of the legs, as by a bolt e. The channel irons d constitute reduced extensions of the legs 3 and 4. The foot-portions 1a, 2a comprise similar upstanding channel irons c' and smaller channel irons d' secured therein by bolts e' and forming reduced extensions of the legs 3a and 4a.

Combined clamp and pivot bolts 27 pass through slots f and g in the channel irons c and d, respectively, and serve as sliding pivots for the legs 3 and 4. The heads 27x of the bolts 27 are arranged within channel washers 28 fitted within the channel irons d, and wing-nuts 29 are threaded upon the outer ends of the bolts.

The inner sidewall of each of the channel irons c is cut away as indicated at h in Figs. 3, 4 and 5, to permit the legs 3 and 4 to be folded downwardly as hereinafter will be described.

The legs 3a and 4a and the leg-extension channel irons d' carried thereby are slidingly and pivotally connected to the channel irons c' by slots f', g' pivot bolts 27a having heads 27b and wing nuts 29a.

The inner wall of each of the channel irons c' of the foot-portions 1a and 2a is cut away as indicated at h' in Fig. 1 to afford a clearance aperture through which the legs 3a, 4a may be folded downwardly, as later will be described.

It is to be noted that the channel irons c of the foot-portions 1 and 2 are materially longer than the channel irons c' of the foot portions 1a and 1b. It is also to be noted that the pivot bolts 27 are arranged at a materially greater distance from the feet 9 and 10 than the bolts 27a are from the feet 9a, 10a. This relative positioning of the pivot bolts is important as it facilitates proper collapsing of the stand as later will be explained.

The table-top T is removably secured upon the cross-rails 7, 7a by means of bolts 30 (see Fig. 7) having their heads located within cavities in the upper surface of the table-top and their shanks passed through open slots 31 formed in the cross-rails. Clamp-plates 32 fitted upon the bolts 30 engage the undersides of the cross-rails and wing nuts 33 threaded upon the bolts and engaging the under-side of the clamp-plates serve to draw the bolts downwardly and securely clamp the table-top to the cross-rails.

When the end frames A and B are swung to the positions shown in Fig. 1 and the brace-bar C is bolted thereto as by bolts 34, and the wing nuts 29 and 29a are tightened on the bolts 27 and 27a and the table-top is secured to the cross rails 7 and 7a, as above described, a very strong and rigid treadle-stand is produced. Rigidity of the legs is enhanced by reason of the fact that when the legs are in upright position the lower ends of the leg portions rest upon the upper ends of the foot portions and the leg extensions d and d' are telescoped within and tightly fitted between the opposite sidewalls of the foot-portions, as shown in Fig. 3.

The slots f, g and f', g' permit the leg-portions to have endwise movement relative to the foot-portions when the end frames A and B are erected or collapsed.

Assuming that the stand is erected and the table-top and its attached sewing machine are secured thereto, as indicated in Fig. 1, and it is desired to collapse the stand to the position shown in Fig. 2 for the purpose of storing or shipping, the following procedure is followed: First the wing nuts 33 are loosened and the table-top is shifted endwise to remove the bolts 30 from the slots 31 thereby removing the table top from the stand. Next the bolts 34 are released and the brace-bar C is removed. Then the hooked end 22a of the pitman 22 is disconnected from the ear 21 of the treadle and the treadle is swung about the tube D to a position beneath the tube and, after loosening the thumb screw 19, the collar 18 and the treadle 16 are shifted along the tube D to the position shown in Fig. 2 so as not to interfere with the treadle-wheel when the end frame B is subsequently collapsed. Next the wing nuts 29a, on the pivot bolts 27a are loosened. The end frame B is then lifted relative to the foot portions 1a, 2a, (the slots f', g' permitting such relative movement) until the end frame is in the position indicated by dot-dash lines x in Fig. 2 and the parts 3a, d' and c' are in positions corresponding to the positions of the parts 3, d and c in Fig. 4, thus breaking the telescopic connection between the leg-portions 3a, 4a with the foot-portions 1a, 2a. Then end frame B is swung downwardly as indicated by the dot-dash line x' in Fig. 2. To prevent the metallic parts from resting one upon the other a pad or cushion p may be inserted between the end frame and the tube D. In practice the collapsed frame will usually be housed within a suitable box or casing which will include abutment blocks to hold the parts in the desired positions.

After the end frame B has been swung downwardly the end frame A is similarly released, lifted and folded downwardly in the opposite direction upon the end frame B. This is effected by loosening the wing nuts 29, raising the end frame A from the position shown in dotted lines in Fig. 2 to the position shown in dot-dash lines y, thereby shifting the leg extension d from the position shown in full lines in Fig. 3 to the position shown in full lines in Fig. 4 and breaking the telescopic connection between the legs 3 and 4 and the foot-portions 1 and 2. The end frame A is then swung downwardly as indicated by the dot-dash line y' into overlapping relation with the

end frame B. If desired, pad or cushion *p'* may be inserted between the end frames A and B.

Because of the construction and arrangement of the pivots for the end frames A and B, the frame B may be folded downwardly into a position above the treadle mechanism and the frame A into a position overlying the frame B with all the parts compact and in substantially parallel relation.

From the foregoing it will be perceived that this invention has provided an improved treadle-stand for sewing machines which, when in operative position, is strong and rigid and which by removal and adjustment of a minimum number of parts readily may be collapsed into relatively small compass for the purpose of storing or shipping.

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

1. An adjustable and collapsible sewing machine stand comprising a pair of interconnected end frames adapted to support a sewing machine table-top, each end frame including interconnected foot-portions, interconnected leg-portions, and table-top-supporting extension elements adjustably mounted in the upper end of said leg-portions, separable telescopic connections between said foot-portions and leg-portions for holding said leg-portions in upright position on said foot-portions, and a pivotal connection embodied in each of said telescopic connections for permitting said leg-portions to be folded downwardly into overlapping relation after the elements of said telescopic connections have been separated, said pivotal connections being arranged at different elevations thereby to permit said leg-portions to assume substantially parallel positions when they are folded into overlapping relation.

2. A collapsible sewing machine stand comprising a pair of interconnected end frames adapted to support a sewing machine table-top, each end frame including interconnected foot-portions and interconnected leg-portions, a brace element connecting said foot-portions, separable telescopic connections between said foot-portions and leg-portions for holding said leg-portions in upright postion on said foot-portions, a horizontally disposed brace-bar removably connected at its opposite ends to said end frames, and a pivotal connection embodied in each of said telescopic connections permitting said leg-portions to be folded downwardly into overlapping relation after said brace-bar has been removed and the elements of said telescopic connections have been separated, said pivotal connections being arranged at different elevations thereby to permit said leg portions to assume substantially parallel positions when they are folded into overlapping relation.

3. A collapsible sewing machine treadle-stand comprising a pair of interconnected end frames adapted to support a sewing machine table-top, each end frame including foot-portions and leg-portions pivotally mounted on said foot-portions, means for locking said leg-portions to said foot-portions with the former in upright position, a cross-brace connecting the foot-portions of each of said end frames, a longitudinal brace connecting said cross-braces, a treadle-wheel rotatably journaled on the inner face of one of said end-frames, a treadle journaled on said longitudinal brace and normally located mainly thereabove, a detachable pitman connecting said treadle and treadle-wheel, means permitting manual disconnection of said treadle from said treadle-wheel and the turning of said treadle about its supporting brace to a position mainly therebelow to afford clearance above said longitudinal brace, said leg-portions being adapted to be folded downwardly into overlapping relation above said longitudinal brace when said leg-locking means is released, to cause the treadle-wheel to occupy the position normally occupied by the treadle.

4. A collapsible sewing machine treadle stand comprising a pair of interconnected end frames adapted to support a sewing machine table-top, each end frame including connected foot-portions and connected leg-portions pivotally mounted on said foot-portions, means for locking said leg-portions to said foot-portions with the former in upright position, a longitudinal brace connecting said end frames, a treadle-wheel rotatably journaled on one of said end-frames, a treadle journaled on said longitudinal brace and shiftable axially thereof and normally located mainly thereabove, a detachable pitman connecting said treadle and treadle-wheel, means permitting manual disconnection of said treadle from said treadle-wheel and the turning of said treadle about its supporting brace to a position mainly therebelow, to afford clearance above said longitudinal brace, and the shifting of said treadle axially of its supporting brace to a position where it is out of the path of travel of said treadle-wheel, said leg-portions being adapted to be folded downwardly into overlapping relation above said longitudinal brace when said leg-locking means is released, to cause the treadle-wheel to occupy the position normally occupied by the treadle.

5. A collapsible sewing machine stand comprising a pair of interconnected end frames adapted to support a sewing machine table-top, each end frame including a pair of spaced and connected foot-portions, and a pair of spaced and connected leg portions of channel iron, each foot-portion comprising a horizontally disposed foot proper and an upstanding shank of channel iron corresponding in size to the channel iron of the associated leg portion and supporting the same endwise thereon, one side wall of the shank being cut away to afford a clearance aperture, a smaller channel iron having one end secured in the lower end of the leg portion and its other end pivotally and slidingly mounted in the upstanding shank of a foot-portion and adapted to be folded downwardly through said clearance aperture, the pivotal connections of one pair of leg-portions with their associated foot-portions being at a higher elevation than the pivotal connections of the other leg-portions with their associated foot-portions whereby the first named pair of leg-portions may be folded into overlapping relation with the other pair of leg-portions and into substantial parallelism therewith.

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