March 13, 1956 O. BERKER 2,738,248

FURNITURE HOUSING FOR A PORTABLE SEWING MACHINE

Filed May 22, 1952 3 Sheets-Sheet 1

Fig. 1

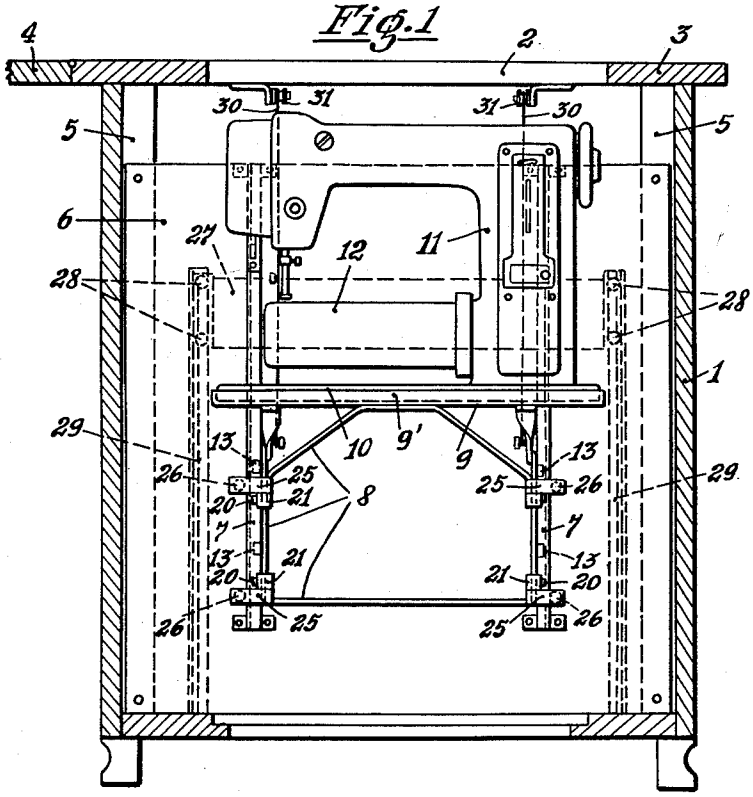
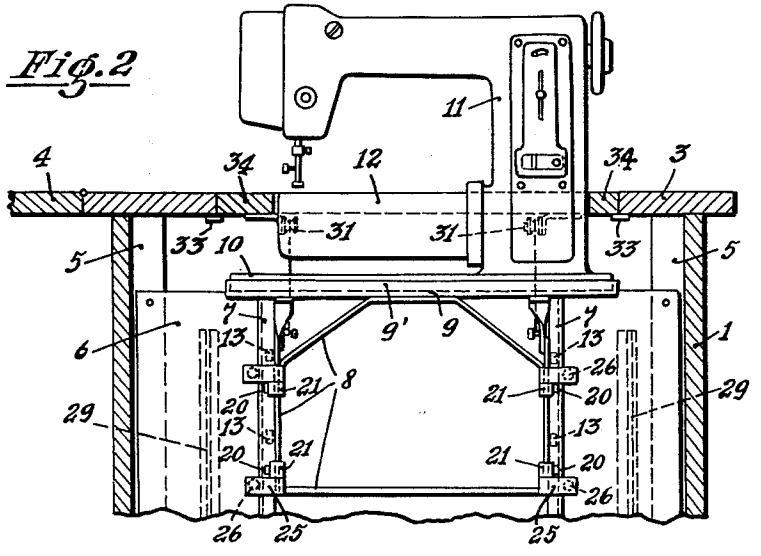


Fig. 2



Inventor

OTTO BERKER

By E. J. Freeman

Attorney

March 13, 1956 O. BERKER 2,738,248

FURNITURE HOUSING FOR A PORTABLE SEWING MACHINE

Filed May 22, 1952 3 Sheets-Sheet 2

Fig. 3

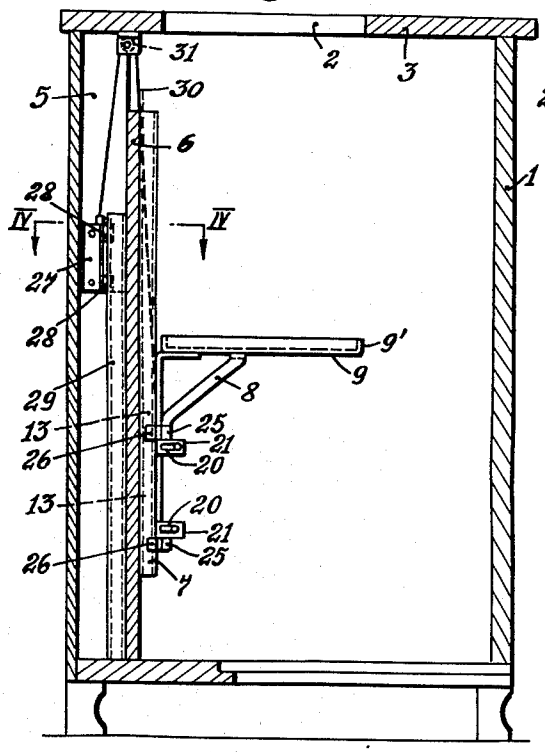


Fig. 4

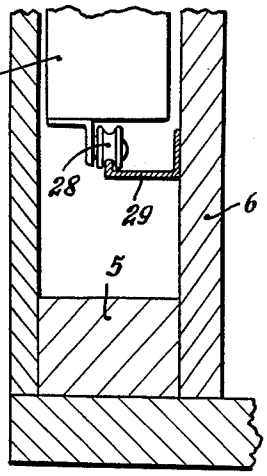


Fig. 5

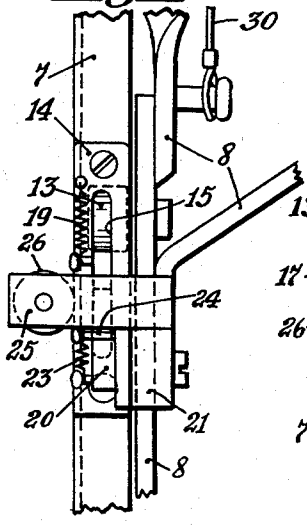


Fig. 6

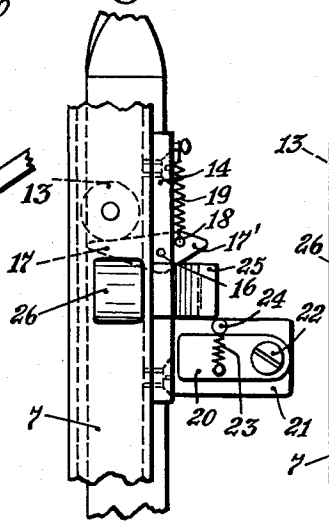
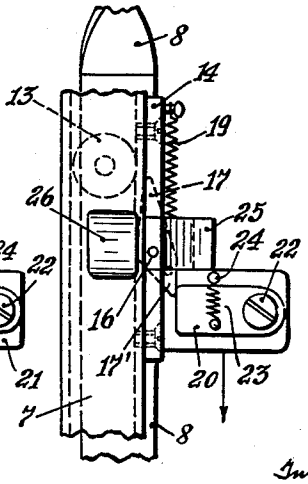


Fig. 7



Inventor
OTTO BERKER
By E. T. Freeman
Attorney

March 13, 1956 O. BERKER 2,738,248

FURNITURE HOUSING FOR A PORTABLE SEWING MACHINE

Filed May 22, 1952 3 Sheets-Sheet 3

Fig. 8

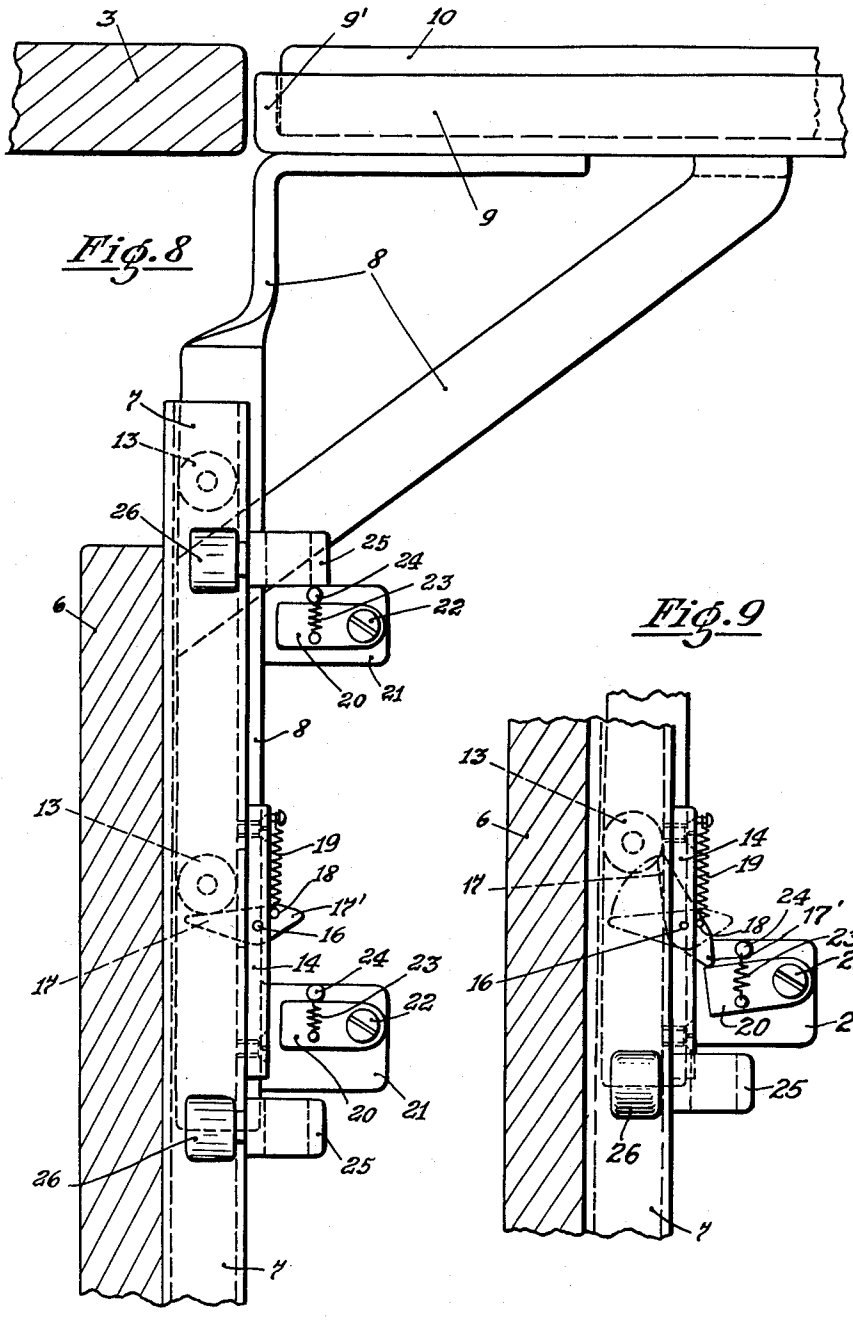


Fig. 9

INVENTOR:
OTTO BERKER
By Freeman & Marmorek,
His Agents.

United States Patent Office

2,738,248

Patented Mar. 13, 1956

2,738,248

FURNITURE HOUSING FOR A PORTABLE SEWING MACHINE

Otto Berker, Zurich, Switzerland

Application May 22, 1952, Serial No. 289,399

Claims priority, application Switzerland February 25, 1952

5 Claims. (Cl. 312—29)

This invention relates to a furniture housing for a portable sewing machine.

The object of the invention is to use a portable machine of the free arm type in the working manner of table machine or alternatively with the free arm feature, and to create a furniture housing for the machine from which it may be moved into the position for use as a table machine or into another position for use of the free arm feature.

Another object is to create a novel mechanism, whereby the sewing machine may be conveniently brought in either one of the two working positions, or returned into the furniture housing. In this endeavor a two-armed locking lever is actuated by a control lever, to set the locking lever for supporting the carrier of the sewing machine and on the other hand at a reciprocating manual movement of the carrier to rotate the locking arm of the locking lever out of the rail passage for the carrier guide roller.

In the following the invention is more particularly described with reference to the accompanying drawings, in which:

Fig. 1 is a sectional elevation through the furniture housing, showing the sewing machine therein.

Fig. 2 is a fragmentary sectioned elevation through the furniture housing, showing the sewing machine in one working position.

Fig. 3 is a cross-section through the furniture housing showing the carrier and the counter-weight.

Fig. 4 is a section on the line IV—IV of Fig. 3.

Fig. 5 is a detail pertaining to Fig. 2.

Fig. 6 is a detail pertaining to Fig. 5.

Fig. 7 is also a detail pertaining to Fig. 5, showing the locking lever held in a position by the control lever where the carrier roller can move past the locking lever in downward direction.

Fig. 8 is a fragmentary large scale sectional view taken on the same secant line as Fig. 3, but showing the parts in a second, topmost elevated position wherein the base of the sewing machine is flush with the operating table. And

Fig. 9 is a fragmentary large scale sectional view similar to Fig. 8, illustrating a detail indicated in Fig. 8, but showing the parts during lifting of the sewing machine as one of the rollers clears the locking lever immediately preceding a subsequent lowering of the sewing machine to rest the roller on the locking lever.

There is provided a cabinet **1** which has side walls supporting a working plate or work table **3** that has an opening **2**. A cover **4** is hinged to the table **3** and may be tilted about the hinge axis between an open position (Fig. 1), and a closed position wherein the cover **4** covers the aperture **2**.

On the interior of the housing there are provided corner pieces **5** which are parallel to the rear wall of the cabinet **1**, and a partition **6** (Fig. 4) is mounted to the corner pieces **5** parallel to the rear wall of the cabinet **1**. On the front of the partition **6** there are mounted two vertical steel channels **7** facing each other with their open fronts, and each channel **7** is mounted to the partition **6** with one of its flanges. The two channels **7** form guide rails for a carrier **8** that includes a carrier plate **9**. The carrier plate **9** has curbed edges **9'** to receive and to support the base **10** of a sewing machine **11** that includes an arm **12** that is supported on one end and freely suspended on the other. The arm **12** has a horizontal top surface which includes a conventional stitching plate (not shown).

The carrier **8** includes vertical elements, each adjacent a channel **7**, and each vertical element carries two rollers **13** that are spaced from each other for a vertical distance. The rollers **13** are guided on the interior of the channel **7**. The vertical distance between the rollers **13** of each channel **7** corresponds to the vertical distance between a topmost sewing position (Fig. 8), wherein the top surface of the base **10** is flush with the working surface of the table **3** and, respectively, an intermediate sewing position (Fig. 2), wherein the top surface of the free arm **12** including the stitching plate is flush with the working surface of the table **3**. There is a third position provided for the sewing machine **11**, namely a concealed position (Fig. 1) wherein the sewing machine is lowered into the interior of the cabinet **1**.

Below each roller **13** there is mounted on the carrier **8** a tiltable control lever **20** pivoted about a pin **22** to an extension **21** that is secured to the carrier **8**. Each control lever **20** is urged by a spring **23** into a horizontal position wherein it abuts from below against an abutment pin **24**. There are thus provided two rollers **13** and two control levers **20** for each channel **7**, making a total of four rollers **13** and four control levers **20** for the entire cabinet **1**. The rollers **13** of each channel **7** are spaced from each other for the same distance, and the axes of the lower rollers of both channels **7** coincide, and respectively the axes of the upper rollers **13** of both channels **7** also coincide.

At a predetermined height there is pivoted to each of the channels **7** a locking lever or latch **17**, that cooperates with the rollers **13** and the control levers **20** of its channel **7**. Each latch **17** is tiltable about a pin **16** and is disposed in a slot **15** that extends through the flange of the channel **7** oppositely relative to the partition **6** and through a plate **14** that is secured on that opposite flange. The pin **16** is borne laterally of the latch **17** in the plate **14** on both sides of the slot **15**.

The latch **17** is moved between a horizontal position (Figs. 6 and 8) wherein its major part projects into the path of the roller **13** on the interior of the channel **7** and, respectively, a vertical position (Fig. 7) wherein the latch **17** clears that path. The latch **17** includes an extension or projection **17'** that projects in the horizontal position (Fig. 8) into the path of the control lever **20** and, respectively, in the vertical position (Fig. 7) clears the path of the control levers **20**. On the extension **17'** there is mounted a pin **18** that abuts in the horizontal position of the latch **17** (Fig. 8) against the front surface of the plate **14** and thereby limits the rotational movement of the latch **17** in the downward direction (counter-clockwise of Figs. 6 and 8). A spring **19** biases the latch **17** to be normally in the horizontal position.

During lifting of the carrier **8**, from the lowermost position (Figs. 1 and 3) in which the sewing machine **11** is concealed in the cabinet **1**, the top roller **13** of each of the channels **7** will first strike from below the latch **17** that projects into the roller path to move the latch **17** out of the path for passage of the top roller **13** upwardly. Following that passage, the spring **19** will return the latch **17** from the vertical position into the horizontal position, as best shown in Fig. 9. During continued lifting of the carrier **8**, the upper control lever **20** will subsequently strike the projection **17'** and will be tilted downwardly against the force of the spring **23** during passage

past the extension 17' and will following that passage resume its position in abutment from below against the pin 24 under the bias of the spring 23. During continued further upward movement of the carrier 8, the lower roller 13 will first displace the latch 17 from its horizontal position, and subsequently the lower control lever 20 will be displaced downwardly, for passage of the lower roller 13 and the lower control lever 20 past the latch 17.

If it is desired to lift the sewing machine 11 only to the intermediary position (Fig. 2), the lifting movement will be discontinued after the top roller 13 has cleared the latch 17 (Fig. 9), and the latch has been returned by the spring 19 to the horizontal position; at that instant, the operator will lower the sewing machine 11 until the upper roller 13 rests on the top surface of the horizontally positioned latch 17 (Fig. 6). If it is desired to lift the sewing machine 11 to the topmost position (Fig. 8) the lifting is continued until the lower roller 13 clears during its upward movement the latch 17, and the machine 11 is then lowered until the lower roller 13 comes to rest on the top surface of the latch 17.

In order to lower the sewing machine 11 from either working position, it is necessary to raise the carrier 8 until a control lever 20 passes from below the extension 17'. Thereafter, a lowering of the carrier 8 will cause that control lever 20 to turn the extension 17' and therewith the latch 17 into the vertical position. The contact surfaces between the control lever 20 and the extension 17' during the downward movement of the carrier 8, as best shown in Fig. 7, are so arranged that the abutment will still be active when the roller 13 associated with that control lever 20 will be in position to block the return movement of the latch 17, and will thus clear it during downward movement. If it is desired to lower the machine 11 from the topmost position (Fig. 8) into the concealed position (Fig. 1) the latch 17 will first be turned by the lower control lever 20 and thereafter by the upper control lever 20, though the latch 17 will between the downward passage of the lower roller 13 and the striking between the upper control lever 20 temporarily return to its normal horizontal position.

Although the foregoing has been described with the elements pertaining to one of the channels 7, it will be understood that corresponding parts will simultaneously be operated in connection with both channels 7.

Guide-rollers 26 are fastened to a plate 25 of the carrier 8. The guide-rollers 26 are in guiding contact with the back side of the channel; better guidance of the carrier is established by these additional guide rollers 26, limiting the lateral play of the carrier to a minimum.

To balance the weight of the carrier with the machine, a counter-weight 27 moving on rails 29 by means of rollers 28 is provided. The counterweight is situated on the back-side of the partition wall 6, and by means of cable 30 guided by rope sheath 31 is connected to the carrier 8. Filler pieces 34, consisting of two parts, fill out the space between the free arm of the sewing machine and the edges of the opening 2; this condition is created when the sewing machine assumes the position indicated in Fig. 2. The pieces 34 are suitably supported at their corners by fittings 33. When the machine is raised into the second working position, the fillers 34 must be removed.

Raising of the machine from the furniture housing is facilitated by the counterweight 27. At this operation the locking lever 17, 17' is rotated out of the passage of the rollers 13 against the force of the spring 19. The machine may be raised into the first or second working position. At the first working position the stitching plate is flush with the surface of the top plate of the furniture housing. This is shown in Fig. 2. from this position the machine may be raised further into the second working position (Fig. 8), where the base 10 of the machine is brought into the opening 2 of the plate 3, and the machine is positioned to be used by the convenience of its free arm 12.

To lower the machine from the first or second working position into the inside of the furniture housing, said reciprocating movement described above must be performed.

I claim:

1. In a cabinet, for use in connection with a sewing machine having a free arm including a stitching plate on the top surface of said arm and a base below said arm, in combination, a frame structure defining on its interior a hollow chamber and including a horizontal apertured table defining on its top a work surface, vertical guide rails positioned in said chamber, a carrier supporting said base of said sewing machine and guided by said rails and being movable vertically in opposite directions to move and to support said sewing machine between a concealed position within said chamber, a topmost position wherein said base is disposed in said aperture and an intermediary position wherein said stitching plate is flush with said work surface, and a mechanism operable for releasably supporting said carrier in either of the last named two positions comprising a latch connected to each rail, and means connected to said carrier and movable therewith including a guiding element and a control element for each of said two positions for each rail, said latch being movable between a normal active station wherein it projects into the path of said elements and operable to support either guide element from below and respectively a release station wherein it clears the paths of said elements, each guide element being operable to move during raising said latch to the inactive station, and each control element engageable with said latch to move the latch to the inactive station during lowering movement, each control element being arranged below its guiding element whereby during raising the latch will be displaced by a guiding element and during lowering movement the latch will be displaced by a control element for passage of said guide elements.

2. In a cabinet as claimed in claim 1, said guide rails including two channels facing each other with their open sides, each latch including a latching element projecting into the interior of a channel and including an extension on the channel exterior, said guide elements including rollers disposed on the channel interiors, and said control elements including tiltable levers spring biased to clear said extension during upward movement.

3. An arrangement in a furniture housing for a sewing machine, according to claim 1, wherein other rollers in guiding contact with the outside of the rail are fastened to the carrier to minimize lateral play of the carrier in respect to the rail.

4. In a cabinet as claimed in claim 1, said frame structure including a rear wall, a partition parallel to said rear wall disposed in said chamber, said rail guide being mounted on said partition, and counter-balancing means including a weight and a pulley, and a cable suspended between said carrier, said pulley and said weight, said weight being movable in the space between said rear wall and said partition.

5. An arrangement in a furniture housing for a sewing machine, according to claim 1, wherein the carrier has a mounting plate with curbed edges for the portable sewing machine, to permit of easy mounting and demounting of the latter.

References Cited in the file of this patent

UNITED STATES PATENTS

298,277	Bolton	May 6, 1884
300,684	Bolton	June 17, 1884
651,665	Johns	June 12, 1900
1,778,510	Richardson	Oct. 14, 1930
2,575,045	Chason	Nov. 13, 1951

FOREIGN PATENTS

346,562	Great Britain	Apr. 16, 1931