April 19, 1938. J. M. LANCASTER 2,114,390

DRAWER CLAMP

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Fig. 1.

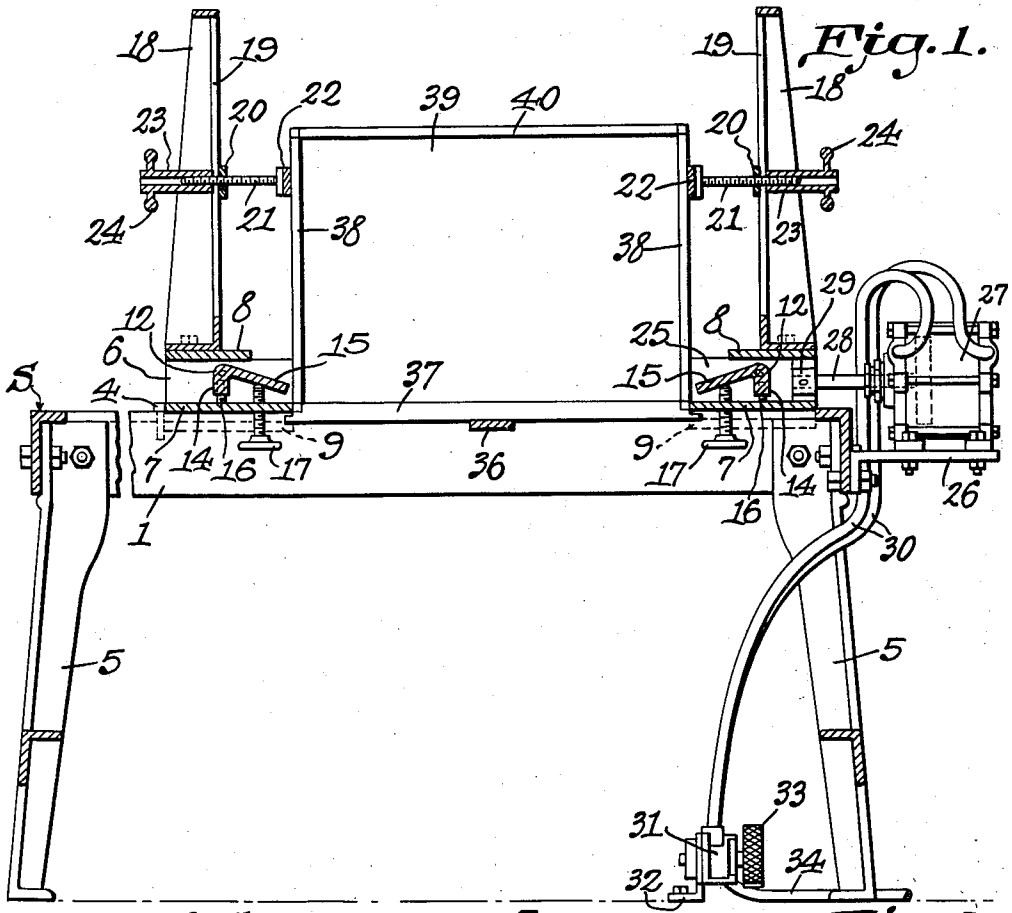
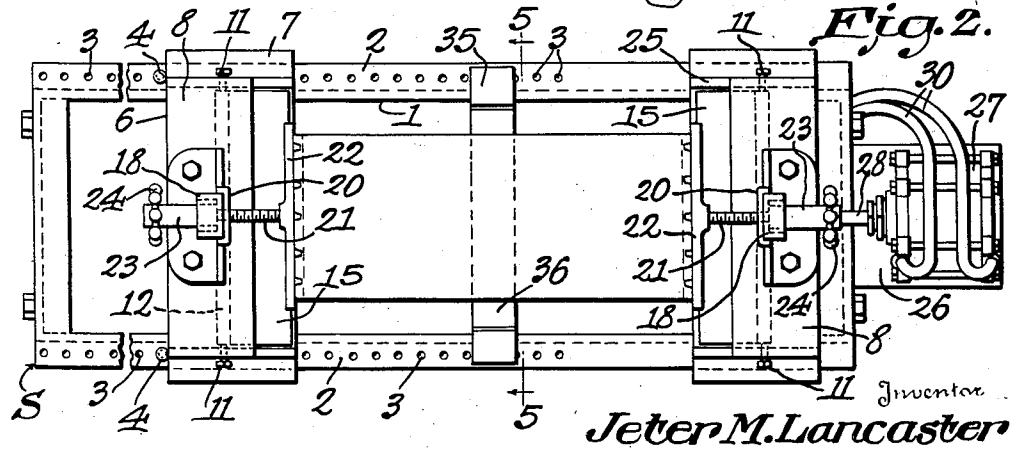


Fig. 2.



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Fig. 6.

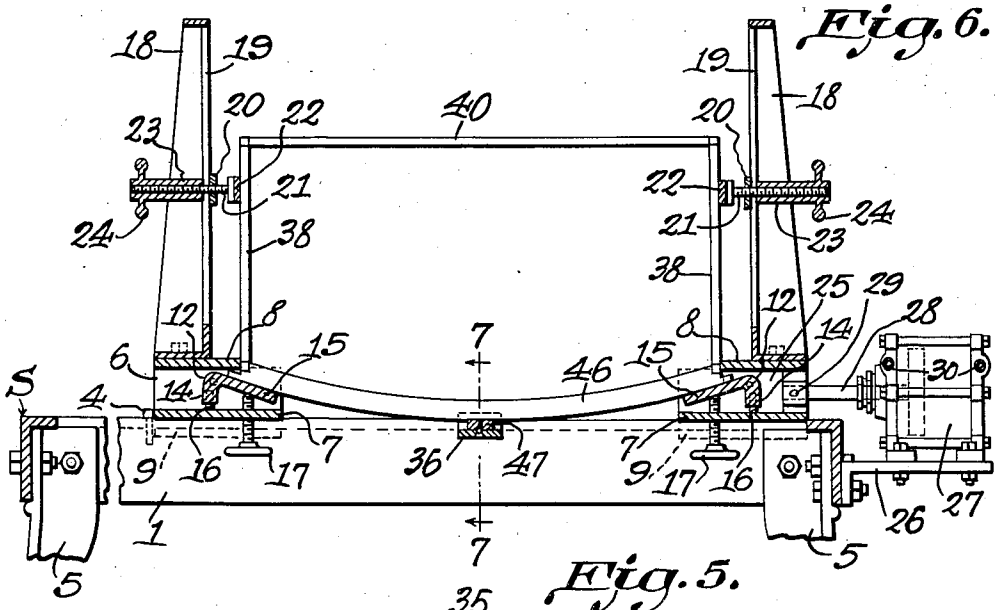


Fig. 5.

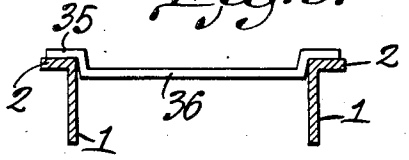


Fig. 3.

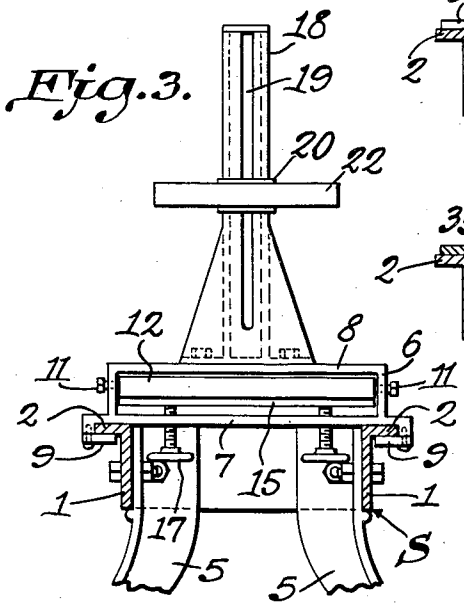


Fig. 7.

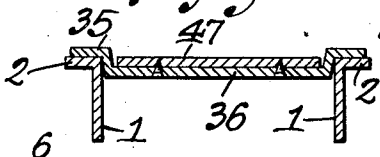


Fig. 8.

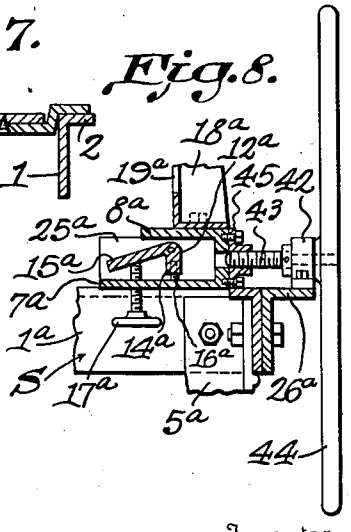
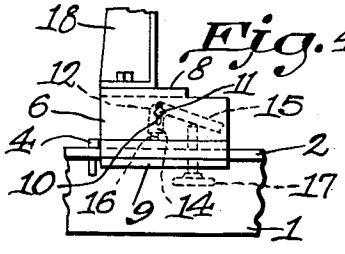


Fig. 4.



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DRAWER CLAMP

Jeter M. Lancaster, High Point, N. C.

Application March 26, 1937, Serial No. 133,283

3 Claims. (Cl. 144—291)

This invention aims to provide novel means for assembling under pressure, the parts of a drawer, the dovetails on the parts of the drawer being securely interengaged, and the parts of the drawer being so held that the drawer will be of proper form when completed. Another object of the invention is to provide a device of the class described which will handle a drawer having a straight front or a curved front. A further object of the invention is to supply novel means for making the machine adjustable to accommodate drawers of different sizes and shapes.

It is within the province of the disclosure to improve generally and to enhance the utility of devices of that type to which the present invention appertains.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, may be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings:

Fig. 1 shows, in vertical longitudinal section, a machine embodying the invention, and operating on a drawer having a straight front;

Fig. 2 is a top plan of the structure shown in Fig. 1;

Fig. 3 is a transverse section, looking toward the fixed but adjustable abutment;

Fig. 4 is a fragmental side elevation showing a portion of one of the carriages;

Fig. 5 is a section on the line 5—5 of Fig. 2;

Fig. 6 is a view similar to Fig. 1 but showing the parts as they appear when the drawer has a curved front;

Fig. 7 is a section on the line 7—7 of Fig. 6;

Fig. 8 is a vertical longitudinal section showing a modification.

In carrying out the invention, there is provided a support which, as a whole, is marked by the letter S, the support including an elongated rectangular top frame 1 having outstanding lateral longitudinal flanges 2, provided with holes or seats 3, spaced apart longitudinal of the frame 1 and adapted to receive shiftable stops 4, which may be headed pins. The frame 1 is supported on legs 5.

A normally fixed but adjustable abutment is provided, and includes a box-like slide 6, comprising a base plate 7 and a top plate 8, the inner edge of the top plate being set back with respect to the inner edge of the base plate, the base plate resting on the flanges 2 of the frame 1 and being provided with retainers 9, which extend beneath the flanges 2 and hold the slide 6 on the frame 1 for adjustment longitudinally of the frame, although in the operation of the machine, the slide 6 is fixed, since the base plate 7 abuts against the stops 4.

The side walls of the slide 6 (Fig. 4) have elongated slots 10, receiving pivot elements 11, carrying an angular rest 12 disposed within the slide 6. The rest 12 has a depending outer arm 14 and a downwardly and inwardly inclined arm 15. Stops 16, such as screws, are threaded into the lower end of the arm 14 and are adapted to engage the base plate 7 of the slide 6. Adjusting screws 17 are threaded into the base plate 7 of the slide 6 and bear against the under surface of the arm 15 of the rest 12.

A post 18 is secured to the top plate 8 of the slide 6 and has a vertical slot 19. A clamp strip 20 engages the inner surface of the post 18 and is channel-shaped, as shown in Fig. 2, to receive the post 18, the clamp strip thus being held at right angles to the length of the post 18. Into the clamp strip 20, a screw 21 is threaded, the screw being provided at its inner end with a transverse fixed head 22. The screw 21 extends backwardly through the vertical slot 19 of the post 18. On the outer end of the screw 21, a tubular nut 23 is threaded, and the nut is provided with a hand wheel 24.

A second slide 25 is provided. Structurally, the second slide 25 is like the first slide 6. Functionally, however, the second slide 25 differs from the first slide 6, in that the slide 25 is reciprocated on the frame 1, during the operation of the machine. The second slide 25 has all the parts of the first slide 6 and those parts, in the second slide 25, are indicated by numerals already used.

The means for imparting reciprocation to the second slide 25 may be of any desired sort. If preferred, a bracket 26 may be secured to one end of the frame 1, the bracket carrying a fluid pressure cylinder 27, the piston actuated rod 28 of which is connected at 29 to the slide 25. The fluid pressure conduits 30 for the cylinder 27 lead downwardly to a valve 31, secured to the floor of the shop in which the machine is located, the securing means being marked by the numeral 32. The valve 31 may be operated by a pedal 33. The fluid pressure supply conduit leading to the valve 31 is designated by the numeral 34. A bridge piece 35 is located between the carriages 6 and 25 and the ends of the bridge piece 35 rest on the

flanges 2 of the frame 1, as shown in Fig. 5. The bridge piece 35 has a depressed central portion 36.

Referring first to Fig. 1, suppose that the drawer to be assembled has a straight front 37. The front 37 is placed on the central portion 36 of the bridge piece 35. The ends 38 of the drawer are disposed vertically, the dovetails of the ends 38 and the front 37 being coated with glue. By means of the pedal 33, the valve 31 is operated, fluid pressure is supplied to the cylinder 27, the carriage 25 is advanced on the frame 1, and the inner edges of the base plates 7 of the slides 6 and 25 force the dovetails of the ends 38 into engagement with the dovetails of the front 37, the ends 38 of the drawer being in engagement with the heads 22 of the screws 21 and in engagement with the inner portions of the slides 6 and 25. The bottom 39 of the drawer is slid downwardly to place, in the grooves provided for its reception in the ends 38, and the back 41 of the drawer is forced downwardly by hand, until the dovetails of the back 40 interengage with the dovetails of the ends 38. The pressure in the cylinder 28 then may be relieved, by a proper actuation of the pedal 33, and the slide 25 and parts carried by it will be retracted.

It is not necessary that the fluid pressure mechanism of Fig. 1 be resorted to in order to advance the slide 25. In Fig. 8, parts hereinbefore described have been designated by numerals already used, with the suffix "*a*". In the modification disclosed in Fig. 8, the bracket 26*a* carries a bearing 42, in which a feed screw 43 is held for rotation but against longitudinal movement, the outer end of the feed screw carrying a hand wheel 44 or the equivalent thereof. The inner end of the feed screw 43 is threaded into a cap piece 45, secured to the outer end of the slide 25*a*, and when the screw 43 is rotated by means of the hand wheel 44, the slide 25*a* will be advanced or retracted.

The drawer may have a curved front 46, as shown in Fig. 6. Under such circumstances, a spacing strip 47, preferably made of wood, is secured to the intermediate portion 36 of the bridge piece 35, the thickness of the spacing strip 47 depending upon the bow and shape of the front 46. The stops 16 are adjusted in the arms 14 of the rests 12 until the arms 15 of the rests have an inward and downward slope which corresponds to the curvature of the front 46, the adjusting screws 17 being threaded upwardly until they engage the arms 15 of the rests 12 and hold the rests securely in the position of Fig. 6, the stops 16 engaging the base plate 7.

When the carriage 25 is advanced, the dovetails of the drawer ends 38 and the dovetails of the front 46 will be forced into interengagement, the ends of the drawer front 46 being carried by the arms 15 of the rests 12. Owing to the fact that the front 46 is bowed, its ends are raised higher than are the ends of the straight front 37 of Fig. 1. The inner edges of the top plates 8 of the slides 6, and not the base plates 7 of the slides, then constitute parts which engage the drawer ends 38 to crowd the dovetailed extremities of the drawer ends 38 into engagement with the corresponding parts on the curved front 46.

The reasons for having the slots 10 (Fig. 4) in the side walls of the slides 6, for the reception of the pivot elements 11 of the rests 12 are that, owing to the curvature and the thickness of the front 46, and owing to the extent that the ends of the front 46 project outwardly beyond the parts 38 of the drawer, some vertical adjustment of the rests 12 may be necessary, in addition to the tilting adjustment afforded by the pivot elements 11.

The tubular nuts 23 may be backed off, and by means of the heads 22, the screws 21 may be threaded in or out in the clamp strips 20, the heads 22 being adjusted horizontally. The screws 21 may be moved up or down in the slots 19 of the posts 18, and when the desired position has been attained, the nuts 23 may be threaded up to the position shown in Fig. 1, the posts being clamped between the strips 20 and the inner ends of the nuts 23, the screws 21 thus being held in any position to which they may have been adjusted, and the position of the heads 22 being fixed accordingly.

The necessary adjustment in the position of the heads 22 for the dimensions of different drawers, measured from front to back, may be attained by shifting the screws 21 vertically in the slots 19 of the posts 18. As to the adjustment necessary for drawers of different lengths, measured between the ends 38, that adjustment may be obtained by shifting the stop pins 4 to the appropriate holes or seats 3 in the frame 1, the base plate 7 of the slide 6 engaging the stops, as disclosed in Figs. 1 and 6.

The operation of the machine results in a saving of hand labor, the work is done rapidly, the drawer comes from the machine in true and proper form, and there is no marring of the drawer to disfigure any portions of it which are exposed.

Having thus described the invention, what is claimed is:

1. In a device for assembling drawers, a support, cooperating members, means for fixing one of said cooperating members on the support, means for mounting the other of said cooperating members on the support for sliding movement toward and away from the fixed member, each of said members comprising vertically spaced upper and lower parts, the upper parts being spaced apart more widely than are the lower parts, vertically tiltable rests carried by said members, means for tilting the rests to cause them to conform to the curvature of a curved drawer front, the upper parts being disposed above the rests and constituting means for applying pressure to the ends of a drawer which are to be assembled with the ends of a curved front mounted on the rests, the lower parts constituting means for applying pressure to the ends of a straight drawer front which is out of engagement with the rests, and means under the control of an operator for moving said other of the cooperating members toward and away from the fixed member.

2. In a device for assembling drawers, a support, cooperating members, means for fixing one of said members on the support, means for mounting the other of said members on the support for sliding movement toward and away from the fixed member, each of said members comprising vertically spaced upper and lower parts, the upper parts being spaced more widely than are the lower parts, vertically tiltable rests carried by said members, means for tilting the rests to cause them to correspond to the curvature of a drawer front, the upper parts being disposed above the rests and constituting means for applying pressure to the ends of a drawer which are to be assembled with the ends of a curved front mounted on the rests, the lower parts constituting means for applying pressure to the ends of a straight drawer front which is out of engagement with the rests, means under the control of an operator for moving said other of the cooperating members

toward and away from the fixed member, posts carried by said cooperating members, heads constituting means for engaging the ends of a drawer, and means for mounting the heads on the posts for adjustment transversely of the posts and longitudinally of the posts.

3. In a device for assembling drawers, a support, cooperating members, means for mounting one of said members on the support in fixed adjusted positions longitudinally of the support, with respect to the other of said members, means for mounting the other of said members on the support for sliding movement toward and away from the fixed member, each of said members comprising vertically spaced upper and lower parts, the upper parts being spaced more widely apart than the lower parts, vertically tiltable rests carried by said members, means for tilting the rests to cause them to conform to the curvature of a drawer front, the upper parts being disposed above the rests and constituting means for applying pressure to the ends of a drawer which are to be assembled with the ends of a curved front mounted on the rests, the lower parts constituting means for applying pressure to the ends of a straight drawer front which is out of engagement with the rests, and means under the control of an operator for moving said other of the cooperating members toward and away from the first-specified one of said members.

JETER M. LANCASTER.