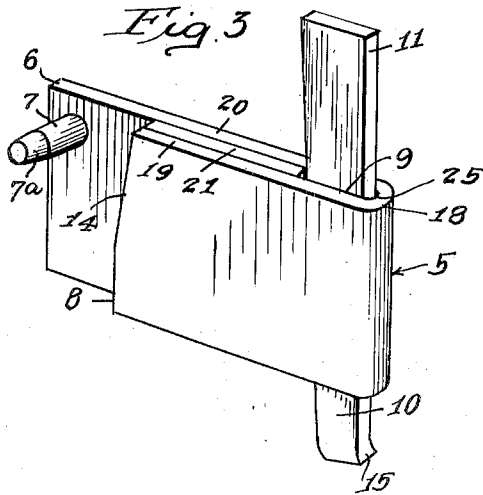
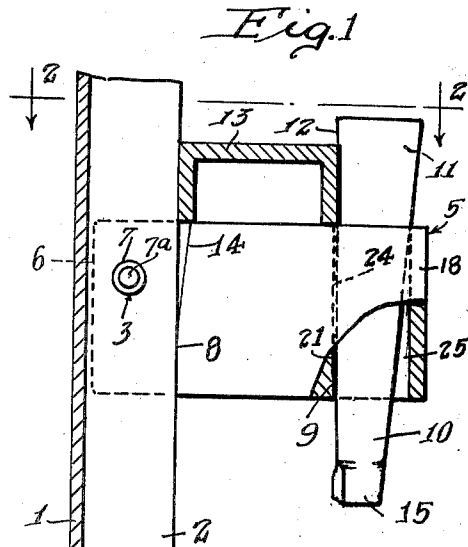
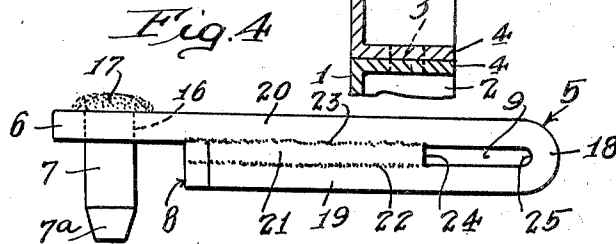
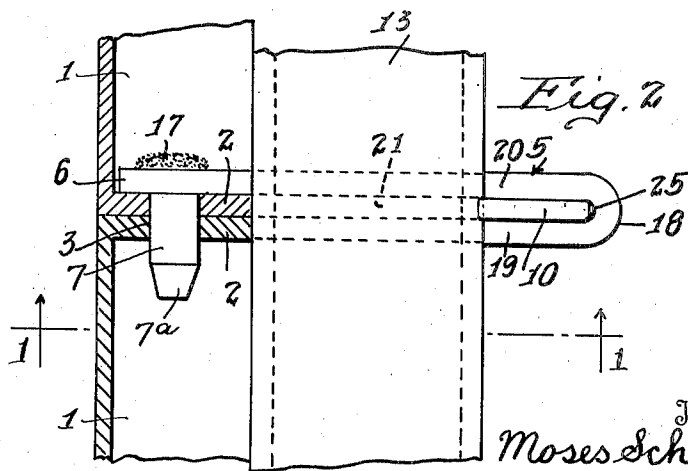


April 8, 1941.

M. SCHLATTER
WALER DOG AND CLAMP

2,237,366

Filed Aug. 26, 1939



Inventor
Moses Schlatter

By

Lyon & Lyon
Attorneys

UNITED STATES PATENT OFFICE

2,237,366

WALER DOG AND CLAMP

Moses Schlatter, Los Angeles, Calif.

Application August 26, 1939, Serial No. 292,082

4 Claims. (Cl. 254—104)

This invention relates to a device employed in setting up forms such as are used for molding walls of cementitious material.

These forms are usually constructed of unit sections formed of a plate, or plates, and having marginal flanges that match together in making the complete form. These matching flanges have aligning openings at which it is usual to apply ordinary bolts and nuts to secure the plate sections together. In this way the units are held in alignment and secured together. The present device is intended particularly for application to such aligning flanges, and enables the same to be aligned through the medium of their aligning holes, and at the same time enables a bar extending transversely to the flanges to be secured or clamped up against the units to connect them rigidly together. Although this device may be applied to the superposed horizontal flanges of the units, in the present application the device is described as applied to the vertical flanges, in which case it enables horizontal waler bars to be clamped against the edges of the aligning flanges of the units.

An object of the invention is to provide a waler dog or clamp of simple construction, capable of performing the functions of a pin or bolt to co-operate with the aligning openings of the flanges to bring them into proper alignment with each other, and also to provide the same with means for clamping waler bars to the pinned flanges, and extending transversely to the same.

In practice, in setting up a mold for a wall, a great number of these devices are needed. Hence one of the objects of the invention is to provide a device for this purpose, which will be very inexpensive to manufacture, though capable of operating efficiently to perform its functions.

A further object of the invention is to construct the device so that it can be very quickly attached and disconnected, and which is at the same time, capable of cooperating with a waler of channel-form to secure the same rigidly extending in a transverse direction, against the edges of the flanges of the units.

Further objects of the invention will appear hereinafter.

The invention consists in the novel parts and combination of parts to be described hereinafter, all of which contribute to produce an efficient waler dog and clamp.

A preferred embodiment of the invention is described in the following specification, while the

broad scope of the invention is pointed out in the appended claims.

In the drawing:

Fig. 1 is a fragmentary vertical section taken through a form adjacent to vertical aligning flanges, and illustrating a transverse horizontal waler bar in section. This view also shows a portion of the waler dog broken away and shown partially in section. This section is taken on the line 1—1 of Fig. 2.

Fig. 2 is a horizontal section taken about on the line 2—2 of Fig. 1, and passing through two abutting vertical flanges of two adjacent form units, and showing an adjacent portion of the waler bar broken away.

Fig. 3 is a perspective of the waler dog and clamp removed from the flanges with which it co-operates.

Fig. 4 is a plan view looking down on the upper edge of the waler dog and clamp.

Before proceeding to a more detailed description of the waler dog and clamp, it should be stated that it is now common practice to employ metal units that are set up to form a mold for concrete walls, and these units are usually formed of metal plates having marginal flanges to give the same stiffness, and to facilitate the connection of the units together. Heretofore aligning holes have been placed in these flanges, and they have been connected together by the use of ordinary bolts and nuts. The placing and tightening up of these bolts consumes considerable time. In addition to securing the flanges of the form units together, it is also necessary to secure them together by means of horizontal and vertical bars that are clamped against their outer sides. In ordinary practice this would entail the use of special clamps for this purpose. The waler dog and clamp of the present invention performs the function of the aligning bolts, and also provides means for clamping transverse bars such as waler bars to the flanges of the units to connect them into a rigid structure. The device is constructed so that it can be very quickly applied to the aligning flanges of the units, and it does not necessitate the use of any bolts and nuts. It also provides guiding means for a wedge to clamp a transverse bar against the flanges of the units.

Referring more particularly to the parts and especially to Figs. 1 and 2, 1, 1 indicates two form units each of which has a plate-form body, and these bodies have marginal flanges 2, 2 that abut together when the parts of the form are being assembled. At suitable intervals, for ex-

ample, six inches, these flanges 2 have alignment openings or holes 3. These holes are formed in the horizontal flanges 4, 4 of the units as well as in the vertical flanges 2 (see Fig. 1).

The vertical flanges 2 are held in alignment with each other by means of my waler dog and clamp 5, which is preferably constructed with a plate-form body having a tongue 6 projecting from the same at its inner end. This tongue is provided with a laterally projecting aligning pin 7 which is preferably formed with a tapered nose 7^a to facilitate its introduction into the aligning holes 3. The waler dog 5 is also constructed so that it presents a shoulder 8 extending in a substantially vertical direction, and when the dog is applied to the flanges 2 as indicated in Fig. 2, this shoulder 8 rests against the edges of the flanges.

The outer end of the waler dog is formed with guiding means 9 for guiding the wedge 10, which wedge is mounted so that it can slide through the waler dog in substantially the same plane in which the plate-form body of the dog lies. In order to guide the wedge 10, I prefer that the guiding means 9 is in the form of a small slot passing through the waler dog from its upper edge to its lower edge, and the wedge 10 is inserted in this slot from above so that the butt end 11 of the wedge is located uppermost. This enables the wedge to be driven in a downward direction and so as to enable its tapered edge 12 to clamp up against the outer flange of a waler bar 13 extending transversely to the flange 2 which, in the present instance, is in a horizontal direction as illustrated in Fig. 2.

In order to facilitate the insertion of the pin 7 in the aligning openings 3, the shoulder 8 of the dog is preferably provided with a relieving face or chamfer 14 that is located toward the upper edge of the device.

Furthermore, the device is constructed so that when it is in place the extreme end of the tongue 6 will have considerable clearance between it and the body plate of the form unit.

The wedges 11 are preferably provided with means to prevent them from becoming disconnected from the bodies of the waler dogs 5. For this purpose the small end of each wedge 10 may be formed with a slight twist 15. This twist is formed in the wedges after they are put in place, and prevents them from being withdrawn.

In constructing the waler dog, I prefer to punch an opening 16 (see Fig. 4) at the location for the pin 7. The pin 7 is then inserted and secured in place by a head 17 of welding metal that is welded in position.

Although this waler dog may be constructed in different ways, I prefer to employ a method of forming it, which makes these waler dogs very inexpensive. To this end I prefer to form the waler dog and clamp out of a blank plate that is bent around to form a folded edge or bight 18, the end of the blank plate being bent around to form an outer side plate 19 opposite the main plate 20 that carries the tongue 6, and between the outer plate 19 and the inner plate 20 I weld in an intermediate slab or block 21 of similar material, which is connected in position by welds along the places 22 and 23, as indicated in Fig. 4. The outer edge 24 of this intermediate plate 21 is previously cut on a taper so as to enable this edge to cooperate with the inner edge 25 of the bight 18 to form the tapered opening 9 for the wedge.

With this construction it will be evident that when the wedge 11 is clamped up tight, the waler

dog 5 will be rigidly secured to the flanges 2, and at the same time, the adjacent units 1, 1 will be rigidly secured together.

It will also be evident that these waler dogs can be very quickly put in position and clamped up on the waler bars 13 without consuming much time. This will effect a considerable saving in expense in setting up forms of this type.

While I have described the waler dog as applied to vertical flanges, it will be evident that it can just as readily be applied to horizontal flanges. In that case the waler dog would be applied in the position illustrated in Fig. 4, with the pin 7 extending down from above through the horizontal flanges. In this case, of course, the clamping bars corresponding to the waler bar 13, would extend in a vertical direction instead of a horizontal direction. It is preferable to have the pin 7 located off center as shown, and opposite the chamfered or beveled edge 14.

Many other embodiments of this invention may be resorted to without departing from the spirit of the invention.

What is claimed and desired to be secured by Letters Patent is:

1. A waler dog and clamp for securing abutting flanges with aligning holes, and for clamping the same to a waler bar extending across the edges of the flanges, said waler dog having a body with a tongue at its inner end to rest upon the abutting flanges and having a pin to project through the aligned holes, said body having a shoulder on its under side to lie adjacent to the edges of said flanges, said body having wedge guiding means at its outer end for guiding a wedge to advance substantially in the plane of the body, and a wedge guided in said guide means operating to develop a stress between the side of the pin and the inner edge of the wedge to clamp a waler bar against the edges of the flanges.

2. A waler dog and clamp for securing abutting flanges with aligning holes, and clamping the same to a waler bar extending across the edges of the flanges, said waler dog having a plate form body with a projecting tongue at its inner end to overlie the said abutting flanges, a pin projecting down from said tongue to be received in the aligning holes of the flanges, said body also having a wedge guide at its outer end for guiding a wedge in substantially the plane of the body, and a wedge carried in said wedge guide and capable of developing a stress between the side of the pin and the wedge to clamp the waler bar against the edges of said flanges.

3. A waler dog and clamp for securing abutting flanges with aligning holes, and clamping the same to a waler bar extending across the edges of the flanges, said waler dog having a body formed of a plate with a projecting tongue at its inner end to overlie the abutting flanges, the outer portion of said plate being bent around so as to form a plate carrying the tongue and side plate, the inner edge of said side plate forming a shoulder to abut the edge of the adjacent flange, said tongue having a pin to be received in the aligning holes of the flanges, and a wedge in the wedge guide for clamping a waler bar against the edges of the flanges.

4. A waler dog and clamp for securing abutting flanges with aligning holes, and clamping the same to a waler bar extending across the edges of the flanges, said waler dog having a body formed of a plate with a projecting tongue at its inner end to overlie the abutting flanges, the outer portion of said plate being bent around

so as to form a plate carrying the tongue and a side plate, the inner edge of said side plate forming a shoulder to abut the edge of the adjacent flange, an intermediate separator plate secured between the upper and lower plate, leaving a wedge guide between its outer edge and the

bent edge of the body, said tongue having a pin to be received in the aligning holes of the flanges, and a wedge in the wedge guide for clamping a waler bar against the edges of the flanges.

MOSES SCHLATTER.