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SLIDING DOOR CLAMP

Filed April 20, 1931

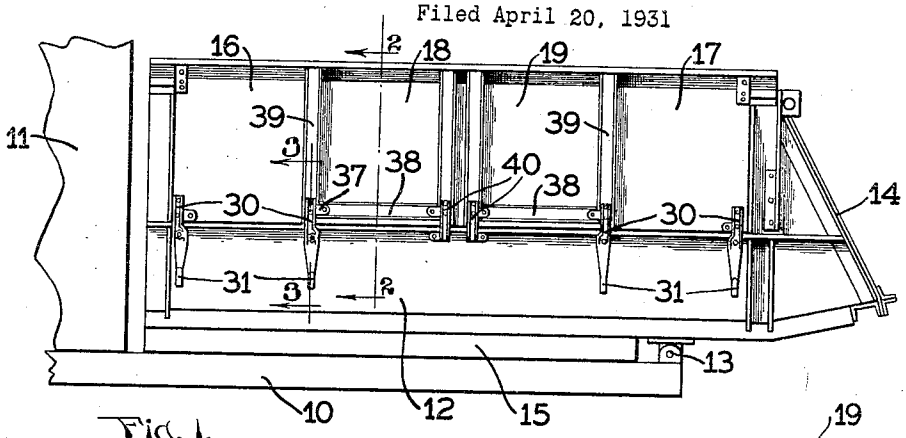


Fig. 1.

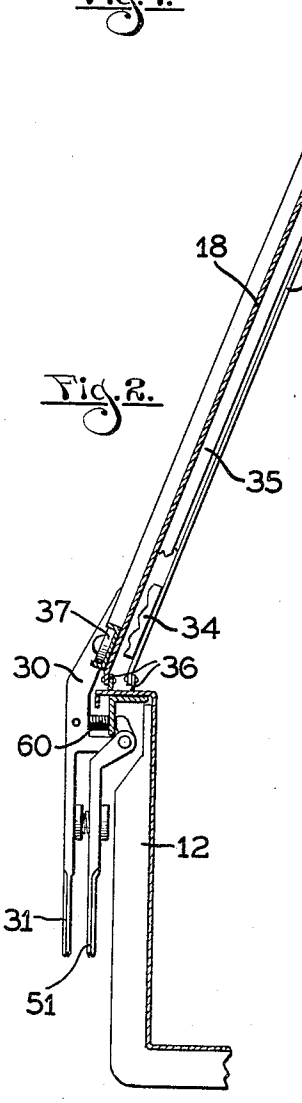


Fig. 2.

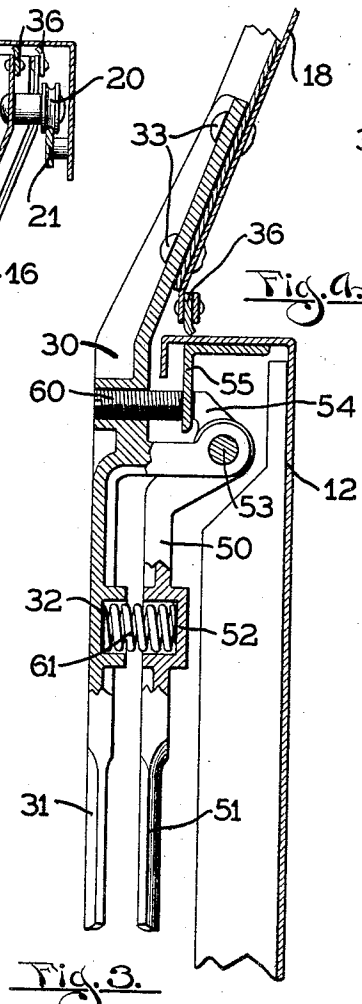


Fig. 3.

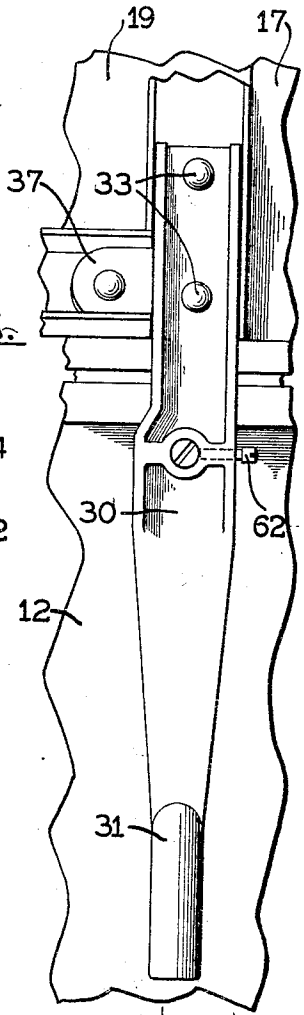


Fig. 4.

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UNITED STATES PATENT OFFICE

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SLIDING DOOR CLAMP

Application filed April 20, 1931. Serial No. 531,351.

This invention relates or pertains to a clamp and more particularly to a sliding door clamp which will automatically lock in the position in which it is set. Furthermore, the members of the clamp serve as a guiding means for that edge of the sliding door to which they are attached.

Sliding doors as now constructed are open to the objection that they cannot be easily secured in the desired position and hence they oftentimes slide farther open or shut thus wasting the time of their operator who must again adjust them. This is especially true of the sliding doors which are used on trucks, as for example, as set forth in our patent application for an inclosed dump body, Serial No. 426,621, filed February 18th, 1930.

It is the object of our invention to inventively construct a clamp which may be attached to the lower edge of a sliding door to serve as a guiding means therefor. Moreover, this clamp not only serves to maintain the door in a fixed locked position, when the clamp is released, but the clamp also serves to guide the bottom part of the door when it is in an open position. Thus the clamp serves two distinct functions.

Another advantage gained is that the clamping jaws may slide relative to their track and thus the body may twist or warp while in use without causing the doors to bind or jam, or break the brackets. The clamps slide upwardly and downwardly as the body twists.

Briefly described our invention consists of a fixed handle member which extends downwardly from the bottom and outer side of the sliding door and an inner movable handle member which is pivoted to the fixed handle member so that its upper portion is located interiorly of the angle member, which serves as a guide for the lower part of the door, while the lower portion of the movable handle member extends downwardly in parallelism with the fixed handle member. A coiled spring extends between the handle members and serves to keep the top portion or jaw of the movable handle member contacting tightly against the angle guide whereby the door is locked in position.

The nature and scope of the invention are set forth in the following specification, taken with the drawing showing the construction in which the principle of our invention is embodied; and the novel features thereof are specified in the appended claims. But this disclosure is explanatory only and we may in practice vary the structural details actually shown, without departing from the spirit of the invention, to the full extent indicated by the broad and general meaning of the terms in which the appended claims are expressed.

In the drawing:

Fig. 1 is a side view or elevation of a truck chassis having sliding doors thereon, these sliding doors being equipped at their bottom edges with clamps constructed in accordance with our invention.

Fig. 2 is a view in cross section taken along the plane of the line 2—2 of Fig. 1.

Fig. 3 is a view, also in cross section, taken along the line 3—3 of Fig. 1.

Fig. 4 is an enlarged fragmentary view taken at right angles to the view shown in Fig. 3.

Similar numerals refer to similar parts throughout the several views.

Referring to Fig. 1, 10 designates the chassis of a truck, having a cab 11, and a body 12. The body 12 is pivotally mounted as at 13 whereby it may tilt rearwardly to dump its contents through the tail gate 14 in the usual manner. The body 12, when horizontal, rests upon the sill or supporting member 15.

As shown in Fig. 1, two inner doors 16 and 17 are located at opposite ends of the body and two intermediate doors 18 and 19 are located therebetween. These doors carry rollers 20 which traverse the track element 21 in the usual manner.

Referring to Figs. 2, 3 and 4, 30 indicates a member which has a depending handle 31, which is recessed at 32, is fastened to its particular plate member as at 33. Each of the sliding doors carries one of these members 30 as clearly shown in Fig. 1. The sliding doors 18 and 19 have the members 30 attached thereto as shown in Fig. 3, while the doors

16 and 17, being positioned behind the other two doors, have the members 30 attached to blocks 34 as shown in Fig. 2. Such is necessary in order that the member 30, which forms part of the clamping means for holding the doors as desired, should be in alined position. Flexible strap members 35, see Fig. 2, are placed between the several doors in order to prevent the escape of dust and the like from the interior of the enclosed truck body. Strap members 36 are positioned at the top and bottoms of the several doors for a like purpose.

Members 30, which serve as supporting brackets for the movable arms 50 of our clamping device, have ears 37 extending laterally therefrom. These ears are adapted to seat and be fastened into the ends of the horizontal channel members 38, see Fig. 1, while, as previously stated, the upper part of the bracket 30 is fixed into the vertical channel 39. If desired, additional lower members 40 may be provided at the corners of the sliding doors as shown in Fig. 1.

Movable arms 50 have a depending handle member 51, which is recessed as indicated at 52 and a pivot 53 connects the movable arm to the bracket member 30 as clearly shown in Figs. 2 and 3. The movable arm 50 has an upper portion or jaw 54 which is adapted to lie inside of the angle member 55, this angle member 55 being fixed to the body 12 as shown in Fig. 3. The bracket member or fixed handle member 30 has a stud 60 received therein, this stud being oppositely disposed to the jaw 54 of the movable handle member 50 and located on the outer side of the angle member 55. A spring 61 is positioned in the recesses 32 and 52 and serves to press the handles 31 and 51 from each other. Thus the jaw 54 of the handle member 50 is pressed against one side of the flange of the angle 55 and the set screw or stud 60 abuts exactly opposite thereto. The stud 60 is locked in position by means of the set screw 62.

The operation will be readily understood. The doors slide in overlapping relationship to each other as is obvious from an inspection of the drawing. The doors depend from rollers 20 and hence move very easily when they are free to do so. However, the spring 61 keeps the handle member pushed inwardly and thus the jaw 54, acting in conjunction with the adjustable screw 60, clamps the flange of the longitudinally extending angle 55 therebetween and hence prevent any movement of the door until the members 31 and 51 are grasped by the operator and pressed toward each other whereby the clamping device is released. When this occurs the doors may be slid longitudinally as desired and release of the handle member locks the same in position.

While we have described a complete embodiment of our invention we do not wish to be limited to the particular construction shown, our invention being in fact limited solely by the attached claims.

We claim:

1. A sliding door clamp of the class described comprising, a bracket attached to and rigid with the sliding door, said bracket extending beyond the periphery of the door, a guide adjacent to said bracket, a movable member pivoted onto said bracket and having a jaw adjacent the guide whereby movement of the movable member will release or clamp the guide to thereby maintain the sliding door in a certain fixed position, and means to actuate the movable member.

2. A sliding door clamp as set forth in claim 1 but further characterized by the fact that a spring is interposed between the bracket member and the movable member whereby the jaw member of the movable member is actuated.

3. In combination, a door, means at the upper end of the door to slidably mount the same, a member fixed to and depending from the lower edge of said door, a movable member pivoted to the said previously mentioned member, said last mentioned member having a jaw extending upwardly, a fixed guide running parallel to the path of movement of the sliding door and located adjacent said jaw, adjustable means extending through the first mentioned member in alinement with said jaw, and handle means on the movable member whereby said jaw may be brought toward said adjustable means to clamp the guiding member therebetween.

4. A clamping device as set forth in claim 3 but further characterized by the fact that spring means is interposed between the first and second members whereby the adjustable means and the jaw means are respectively urged toward each other.

5. In combination with a sliding door, a bracket depending therefrom, a movable handle member pivoted to said bracket member and extending in both directions from its pivot, a guiding member located between one end of said movable member and the bracket member whereby actuation of the other end of the movable member clamps the guiding means therebetween.

6. In a device of the class described, a door, means at the upper edge of said door to mount the same whereby it may be slid in a horizontal direction, a bracket mounted on said door, a movable arm pivoted to said bracket, and guiding means interposed between said bracket and said movable arm, said guiding means permitting movement of the bracket and arm thereover.

7. In combination with a sliding door, a bracket depending therefrom, a movable handle member pivoted to said bracket mem-

ber and extending in both directions from its pivot, a guiding member located between one end of said movable member and the bracket member whereby actuation of the other end of the movable member clamps the guiding means therebetween, said guiding member being flat whereby movement of the member clamped thereagainst is permitted.

8. A sliding door clamped of the class described comprising, a bracket attached to and rigid with the sliding door, said bracket extending beyond the periphery of the door, a flat member located adjacent to said bracket, a movable member pivoted onto said bracket and having a jaw adjacent the guide whereby movement of the movable member will release or clamp the guide to thereby maintain the sliding door in a certain fixed position, and means to actuate the movable member, said jaw being adapted to slide on the guide when clamped thereagainst under the influence of an excessive predetermined pressure.

9. In a dump truck body having an inclined wall with an opening therethrough, the combination of a track element mounted on the body, a door, roller means interposed between the door and the track element whereby the door is suspended from the track element, said door being located on the upper side of said opening, a guide located adjacent the lower portion of the door, and adjustable means on the door abutting against the guide whereby the door is held substantially parallel to the opening in the truck body.

10. In combination, a body having an inclined wall with an opening therethrough, a track near the top of the opening, a guide element near the bottom thereof, a door mounted on the track for rolling engagement therewith, said door being above the opening, and sliding means interposed between the guide element and the door, said sliding means permitting the door to swing about its axis of rolling engagement whereby warping and distortion of the body will not cause binding of the door therewith.

11. A combination of elements as recited in claim 10 in which the sliding means is adjustable to vary the position of the door relative to the body, said door being varied perpendicularly to its path of sliding movement.

In testimony whereof we affix our signatures.

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WILLIAM J. HULLEY.