June 14, 1932. R. L. HEWITT 1,863,524

TOGGLE FASTENING APPLIANCE FOR DOORS

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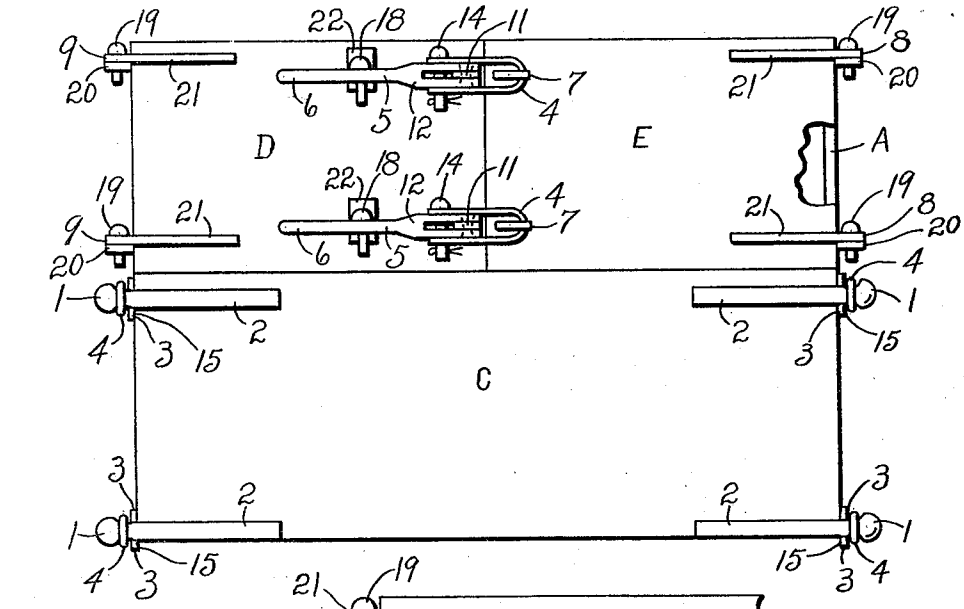


Fig. 1.

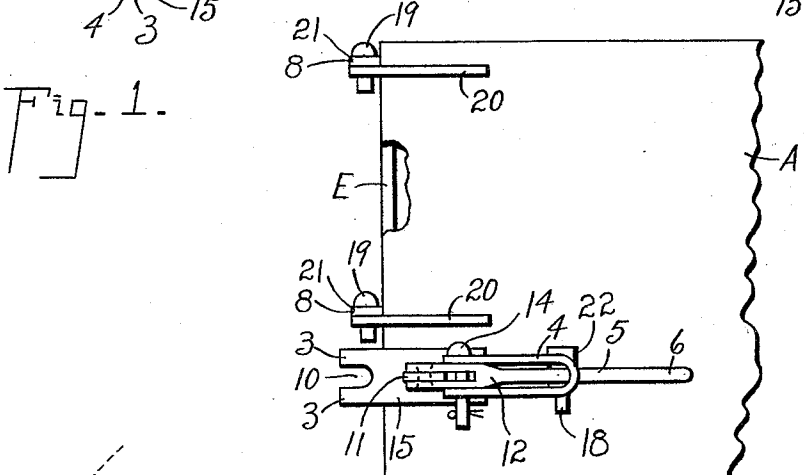
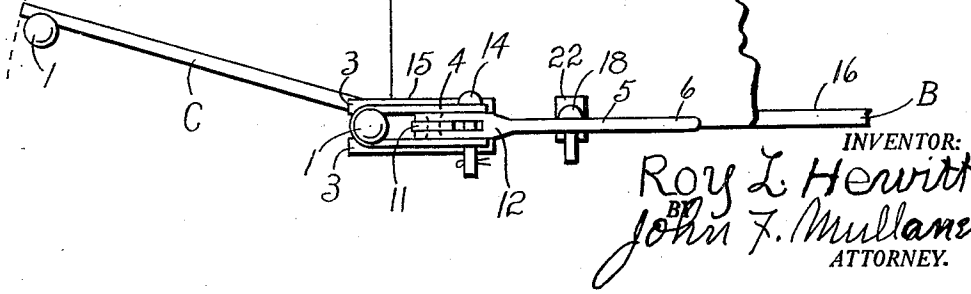


Fig. 2.



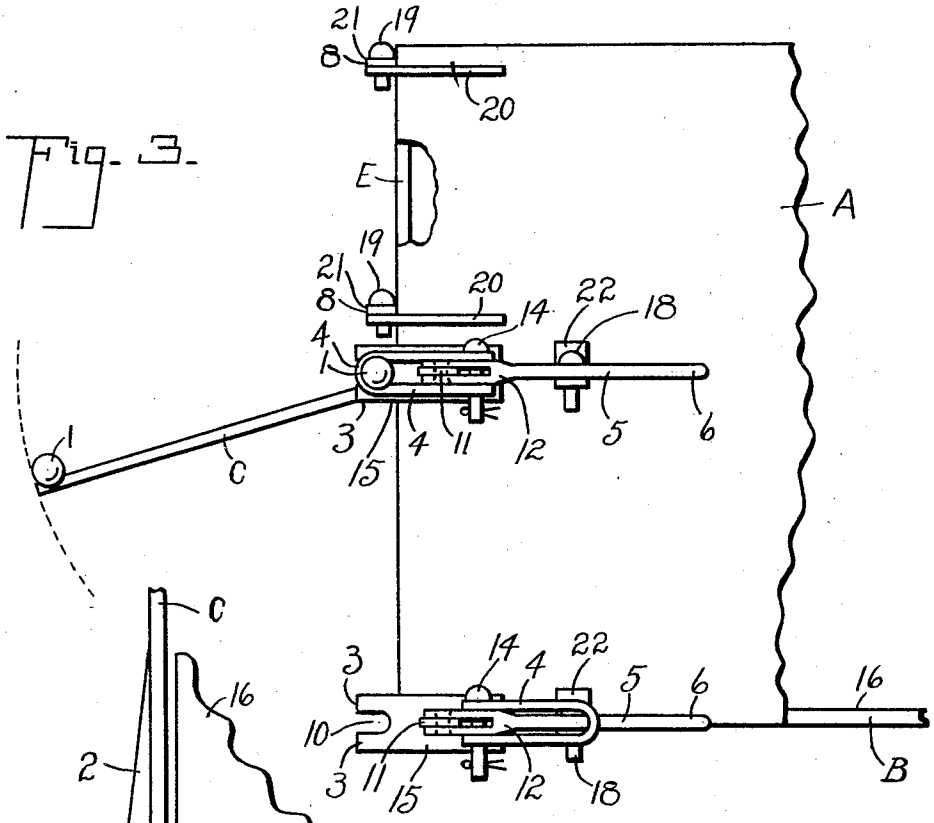
INVENTOR:
Roy L. Hewitt
BY
John F. Mullaney
ATTORNEY.

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Fig. 3.



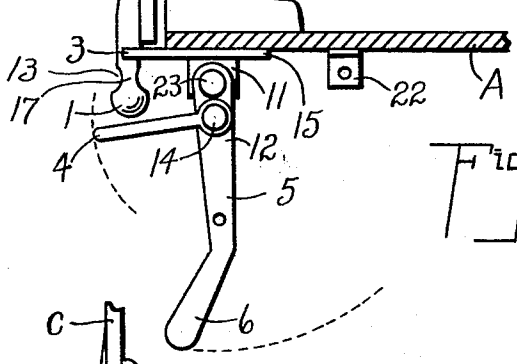


Fig. 4.

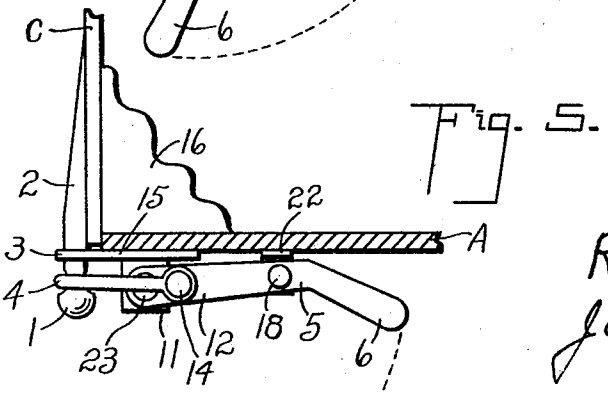


Fig. 5.

INVENTOR:
Roy L. Hewitt
BY
John F. Mullaney
ATTORNEY.

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UNITED STATES PATENT OFFICE

ROY L. HEWITT, OF COLORADO SPRINGS, COLORADO

TOGGLE FASTENING APPLIANCE FOR DOORS

Application filed November 21, 1930. Serial No. 497,112.

My invention relates to improvements in fastening for doors and their hinges in which I have a detachable hinge on each of the opposite edges of the door allowing it to be released at either of the swing sides or entirely removed at the attached hinged edge or the edge at which two doors are connected; and the objects of my invention are, first, to provide hinges that are detachable from the door by the operation of a toggle fastening appliance; second, to provide a toggle latching means by which two doors or members may be securely and detachably connected; third, to provide means for removably securing a door or gate to a truck box or wagon box; fourth, to provide means securing walls detachably together to form enclosures.

I attain these objects by means of the mechanisms illustrated in the accompanying drawings, in which—

Figure 1 is a diagrammatic elevation of a three piece endgate for a truck vehicle; Fig. 2 is a diagrammatical elevation of a part of one side of the side wall A of a truck vehicle bed and showing the lower part of the endgate detached at its top connection and hinged at its lower connection; Fig. 3 is a diagrammatic elevation of similar construction of Fig. 2, but with the gate member C, released at its lower edge and hinged at its top edge and swung out at its lower edge; Fig. 4 is a sectional plan view of a part of the door, wall and fastening appliance released; and Fig. 5 is a plan view similar to Fig. 4, but showing fastening appliance securely latched and forming a hinged, and toggle connection between the endgate and the bed or other inclosure.

Similar designating letters and numerals refer to similar parts throughout the several views.

The stub-lug 2 adapted to fit rotatably into the recess 10 and the clevis 4 adapted to secure it therein by means of the toggle lever or latching lever 5, constitute the principal appliances for securing doors in my invention.

The end door C, herein described, represents the door appropriate for a truck for shipping coal or other freight material and is appropriate to be supplied with a dumping mechanism. The vehicle is not shown, as the fastening appliance may be used on other enclosures besides vehicle boxes. But the application of my invention is illustrated herein as more appropriate for a three-door end for freighting truck vehicles.

In Figure 1, C represents the lower end door hinged at its top edge and at its bottom edge by means of the toggle fastening appliance illustrated in various positions in Figs. 1, 2, 3, 4 and 5.

In Fig. 2, is shown said door C, released at its top and is allowed to drop down to an almost horizontal position, where it may be sustained by chains or other means, and in Fig. 3, the said door C, is secured at its upper edge in a hinged condition, and is released from its former hinged condition, at its lower edge and is allowed to swing open backwardly and upwardly from the lower edge of the bed or box to allow a loose load, as coal, to slide out.

If the door C is held in the position shown in Fig. 2, it is appropriate for carrying long material, as lumber or metal rods.

Some coal trucks now are adapted to carry as much as ten tons of coal at a load, and this requires an end door at least seven feet by four or five feet, and such a door is too heavy to be safely handled by one man. This invention provides a three-piece door as illustrated, and its mechanism obviates the need for it to be entirely released or dismounted from the truck box at any time of its operation, so that one man can manipulate it for any desired emergency as shown illustrated.

The doors E and D are hinged so as to swing three fourths of a circle or about 270 degrees and may be secured open and against the outside of the box when not in use. When brought together, as shown in Fig. 1, they are securely latched by hooking the bow of the clevis 4, over the projecting lug 7 and securing the latching lever 5 against the door D, while the toggle position of the pins 14 and 18 with the lug 7, which are out of a direct line as shown in Figs. 4 and 5, will allow

the resiliency of clevis 4 to prevent pivot 14 from going past dead center.

Also this manner of mounting the doors E and D, provides a stiffening brace to prevent the walls A from careening or spreading. In Fig. 2, a view of the latches shown on D and E in Fig. 1, is omitted to show a form of E to abut inside of the walls A. In Fig. 2, the numeral 16 represents the top surface of B.

Figures 3, 4 and 5, illustrate the mechanism of the latching lever in detail. On the body A, is securely mounted, by welding or otherwise, a member carrying two projecting lugs 3 forming therebetween the recess 10 adapted to receive the stub-lug 2. The stub-lug 2, which is rigidly secured to the door by welding or otherwise, is pressed into said recess 10 by the clevis 4 encircling it and riding in the provided annular groove 17 in the stub-lug 2, and said clevis is secured to the part 12 of the latching lever 5, by means of the clevis pin 14 which latches in toward the wall of A past a direct line of the contact of the clevis 4 with the stub-lug 2 and the hinging of the lug 11 with the latching lever 5 so that the spring of the stretching of the clevis 4 tends to hold said lever in place. The handle 6 is shown in Figs. 4 and 5 as projecting outwardly from the projected line of the latching lever 5 so as to provide a convenient handle to be readily grasped, and these latching levers are provided with safety pins 18 to insure their retaining their clevises in place. In the doors E and D it will be noticed that the hinge members 21 are rigidly secured to the respective doors and the hinge members 20 are rigidly secured to their respective walls, and in a manner to allow them to be swung outwardly against their respective walls or entirely dismounted.

B represents the floor of the box and 1 represents the head or enlarged outer end of stub-lug 2. In Fig. 2 is shown the lugs 3 formed on a rectangular piece, and in Fig. 3 they are shown on a bar 15 supposed to be welded to the frame of A. This shows the two ways I have had this construction formed and I prefer the form on the bar 15, but they may be secured to the bar 16 and the wall A, as in Figs. 4 and 5.

The pressure side 13 of the stub-lug 2 is the part of contact with the clevis 4 and holds stub-lug 2 in place in the recess 10 and thus forming a complete bearing for the rolling of said lug as it hinges the door to the body of the box.

The hinges 8 on the door E and the hinges 9 on the door D, are not claimed as novel, in themselves, but appropriate in this form of construction with the addition of the securing means 18 and 22, or similar appliance.

Having thus described my invention I claim—

1. A toggle fastening appliance for doors, comprising in combination, a journal bearing secured to the wall of enclosure, a journal operatively mounted in said bearing and secured rigidly to a door and a toggle clamping means releasably securing said journal in said bearing, said means comprising a clevis member having its ends pivotally pinned to a toggle lever and the bow of said clevis member operatively enclasping said journal to draw it within said bearing.

2. In a toggle fastening appliance of the class described, a closure and a removable door therefor, a hinging member rigidly secured to a wall of said closure and having a U-shaped recess in its projecting end, a journal member rigidly secured to the edge of said door and adapted to turn in said recess, a clevis member adapted to enclasp said journal member and secure it in said recess, a toggle lever pivotally secured to an integral lug extending outwardly from said hinging member, a clevis pin securing said clevis pivotally to said lever near its pivoted end and adapted to latch past the line of said integral lug pivoting with said lever and pinning means securing the swing end of said lever to the wall of said closure.

3. A toggle fastening for doors comprising in combination a closure and a door therefor, a connecting member secured rigidly to the wall of said closure and having a substantially U-shaped recess opening at its projecting end and adapted to receive a journal, a stub journal secured rigidly to said door and projecting from one of its edges and adapted to enter and turn in said recess operatively, a lug projecting from said connecting member parallel with said journal and level therewith, a clamping lever hinged to said lug at one end, a clevis hooked over the projecting end of said journal and securely and operatively pinned to said lever near its hinged end and adapted to draw said journal tightly into said recess by swinging and by latching said lever back against said closure and means securing the swing end of said lever in latched position, said means comprising a projecting lug secured to the wall of said closure underneath the swing end of said lever and a securing pin passing down through registering holes provided in said lever and in said projecting lug.

4. A toggle fastening for detachable doors comprising in combination with a closure and a door therefor, a projecting member rigidly secured to the wall of said closure and having a substantially U-shaped recess opening in its projecting end and adapted to receive a journal operatively, a stub journal secured near the corner of said door and projecting from its edge and adapted to turn in said recess and having an annular recess between its end and its point of contact with said projecting member, a lug rigidly projecting from said projecting member on a

line parallel with said journal, a clamping lever pivoted at one end to said lug at a point farther from a line parallel to said closure than is said annular recess, a clevis member adapted to hook over the projecting end of said journal and enter said annular recess, a clevis pin securing the ends of said clevis member pivotally to said lever near its end connected to said lug, and said lever being adapted to swing from said journal back against the wall of said closure and past a line of said pivot and said annular recess to hold said journal in said recess and means for locking the swing end of said lever in the latched position of said wall.

5. A toggle fastening for connecting the swing edges of twin doors comprising in combination a projecting lug with a hooking recess on one door, a projecting member opposite said lug on the other door, a latching lever pivotally secured to said projecting member, a clevis member adapted to engage the recess in said lug, a clevis pin securing operatively the ends of said clevis to said lever near its pivoted end, and toggle means adapted to secure said lever at its swing end against said other door to draw said lug and said projecting member securely toward each other and locking means securing the swing end of said lever in latched position.

ROY L. HEWITT.