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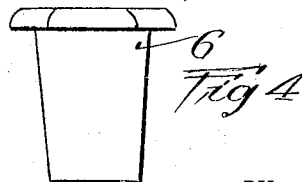
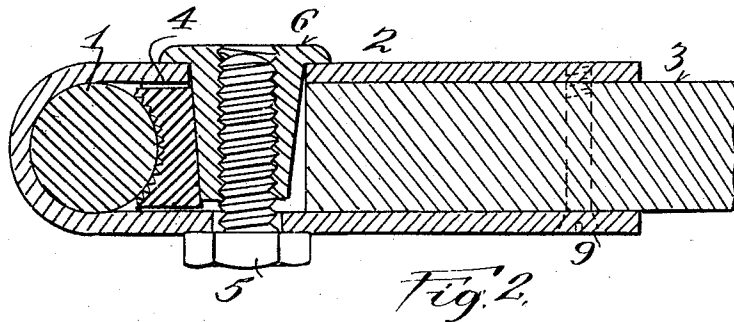
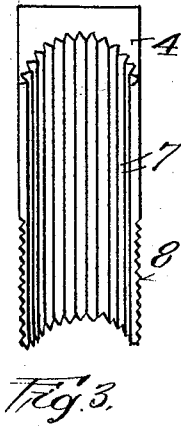
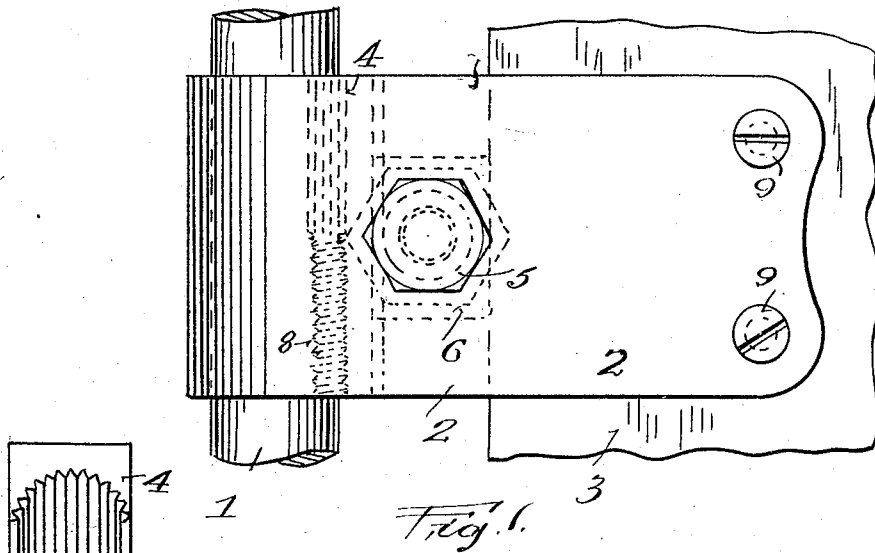
A. F. PAUL

1,787,017

DOOR STRAP CLAMP

Filed June 16, 1926

2 Sheets-Sheet 1



INVENTOR
Abram Frank Paul
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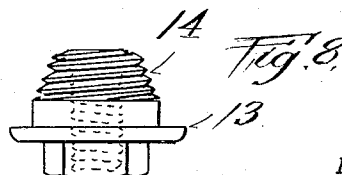
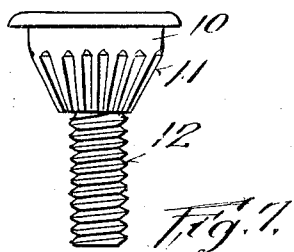
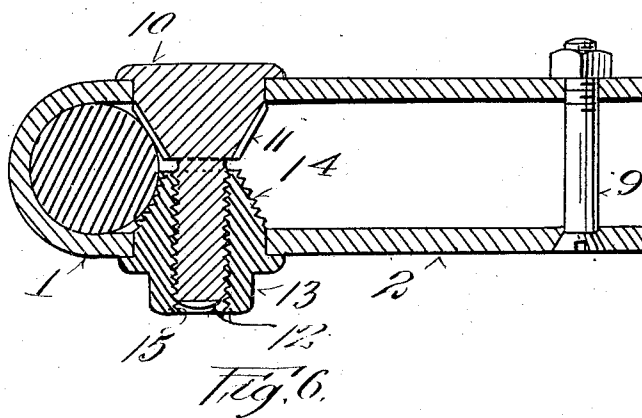
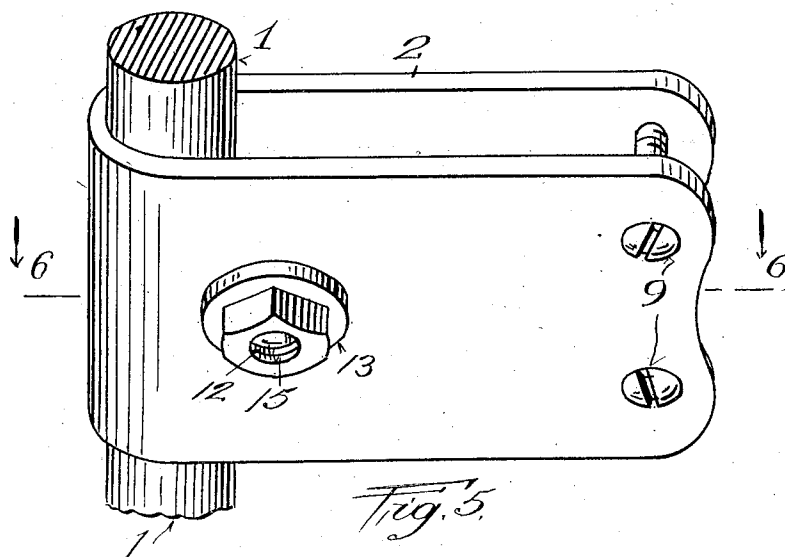
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BY

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UNITED STATES PATENT OFFICE

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DOOR-STRAP CLAMP

Application filed June 16, 1926. Serial No. 116,252.

This invention relates to improvements in means for attaching the doors of vehicles to their operating shafts.

One of the objects of this invention is the construction of a clamping device for mounting doors on their operating shafts which is simple and easy to construct and cheap in its manufacture and which may be readily replaced in case of breakage.

Another object of this invention is the construction of a strap clamp which is readily adjustable on the door shaft to provide for ease in correctly mounting doors on their operating shafts.

Another object of this invention is the construction of a door strap clamp which has a large bearing surface on the door operating shaft so as to provide a device which is not easily gotten out of adjustment.

A still further object of this invention is the construction of a door strap for mounting doors on their operating shafts which comprises a serrated wedge member and means for adjustably clamping the wedge in place.

This invention resides substantially in the construction, combination, arrangement and relative location of parts, all as will be more fully indicated in the following specification:

Referring to the drawings in which the same reference numerals will be used throughout the several views to indicate the same or similar parts,—

Figure 1 represents an enlarged side elevational view of a portion of a door shaft and the door with my novel clamping strap;

Fig. 2 is a horizontal cross sectional view taken through the center of the clamping nut at Fig. 1;

Fig. 3 is a side elevational view of the serrated wedge;

Fig. 4 is a side elevational view of the clamping thimble;

Fig. 5 is a view of a modified strap mounted on the door shaft;

Fig. 6 is a sectional view taken on the line 6—6 of Fig. 5 looking in the direction of the arrows;

Fig. 7 is an enlarged side elevational view of the tapered clamping bolt; and,

Fig. 8 is a side elevational view of the nut used in conjunction with the clamping bolt.

It has been common heretofore to mount the doors of railway vehicles on a vertical rotatable shaft by means of which the doors may be opened and closed. It has been common in former constructions to secure the door to the operating shaft by means of U-shaped metal pieces known in the art as door straps. These straps have been secured to the operating shaft by means of tapered pins but it has been found that in every day use, the pins have worn in their sockets and the doors became loose on the operating shafts and were thus thrown out of alignment. Other disadvantages of this construction, were the rattling caused by the loosening of the pins in their sockets. In assembling structure of this type it was necessary to actually measure and then drill the operating shaft to receive the tapered pins and if, for any reason, the work was inaccurately laid out, it meant that the work must be done over again.

These disadvantages have been overcome in my novel construction by means of which the doors may be readily secured to their operating shafts by merely clamping the straps to the shaft at the desired place. The construction is such that when once clamped in place, the doors cannot, ordinarily, move either longitudinally or circumferentially with respect to the operating shafts. However, in the advent of any such undesired movement, quick and cheap readjustment may be secured.

Referring to Figs. 1 to 4, the operating shaft is shown at 1, around which fits the U-shaped strap member 2 between the arms of which is secured the door 3 by means of bolts 9. Extending across the strap through holes in the walls thereof is a frusto-conical shaped thimble 6 which is internally threaded to receive the threaded bolt 5. Mounted between the shaft 1 and this thimble is a wedge member 4 having its surface adjacent the shaft 1 concaved and having its other face transversely inclined so as to cooperate with the

frusto-conical thimble 6. As shown in Fig. 3, the sides of the wedge are serrated as at 8 and the concave surface is longitudinally serrated as at 7. It will be readily apparent from this construction that the wedge or serrated member 4 may be quickly and easily jammed against the door shaft to force it firmly into its seat in the strap.

In the modification shown in Figs. 5 to 8, the U-shaped strap 2 is shown extending around the door shaft 1 as before and the bolts 9 are disclosed for clamping the door within the arms of the door strap. In this construction the means of nesting or seeding the shaft 1 within the strap has been somewhat modified. Extending through holes in the walls of the strap 2, is the bolt 10, having a frusto-conical shank below the head in which are formed a plurality of serrations 11. A threaded integral portion 12 is provided for cooperation with the nut 13 which also has a frusto-conical shaft with circumferential serrations 14 and which is internally threaded as at 15. It will be seen that as the nut 13 is drawn up the serrations 11 will bite into the shaft 1 as will the serrations 14 on the nut.

It will be evident from these constructions that the clamping means having two directional serrations, the movement of the strap with respect to the shaft, either longitudinally or circumferentially is prevented. The serrations 7 engage the door shaft and prevent longitudinal movement of the wedge member and hence of the strap on the shaft. It will also be clear that the door may be quickly and easily clamped at any desired point on the operating shaft and without fear of its displacement.

While I have disclosed the use of this clamp in connection with folding doors to be mounted on operating shafts in vehicles, I do not, of course intend to be limited to this specific use, but rather to all the uses to which my invention is readily adapted. I am of course aware that many changes in detail of construction and operation may readily occur to those skilled in the art and it is not my desire to be limited to the particular illustrative arrangement shown by me, but rather to my invention as it is defined in the appended claims.

What I seek to secure by United States Letters Patent is:

1. In combination with a shaft and a strap, a tapered member channeled on one side to fit said shaft and having vertical serrations in said channel and horizontal serrations on the sides adjacent said channeled side and means to clamp said shaft, tapered member and strap together.

2. In combination with a shaft and a strap, a tapered member channeled on one side to fit said shaft and having vertical serrations in said channel and horizontal serrations on

the sides adjacent said channeled side, a cone shaped thimble bearing against said tapered member and means to cause said cone shaped member to force said tapered member against the shaft, said thimble and means being secured in holes in said strap.

3. The combination of a U-shaped strap with a shaft nested within said strap, gripping means having two sets of serrations extending at an angle to each other, one set of said serrations engaging said shaft and the other set engaging said strap, and adjustable means mounted on the strap and arranged for engaging said gripping means to force it firmly against the shaft, so that one set of serrations thereof will bite into the shaft and the other set of serrations will engage the strap to prevent longitudinal and rotational movement of the strap with respect to the shaft.

In testimony whereof I have hereunto set my hand on this 10th day of June, A. D. 1926

ABRAM FRANK PAUL.