Jan. 6, 1925. 1,521,678

A. GERMEK

DOOR LATCHING DEVICE

Filed March 3, 1924 3 Sheets-Sheet 1

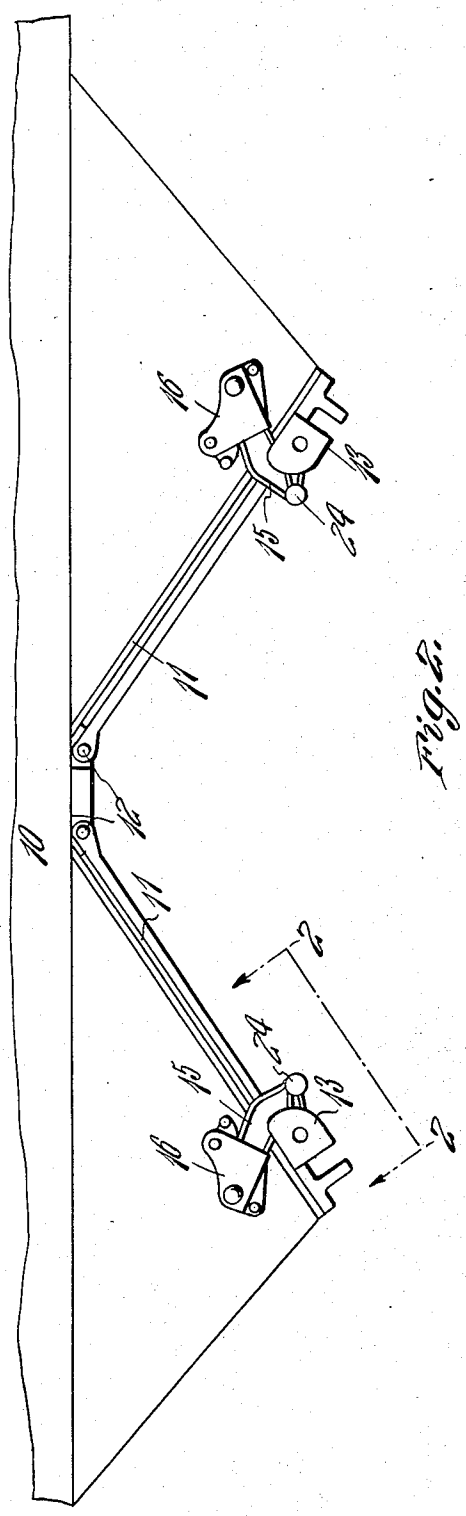


Fig. 1.

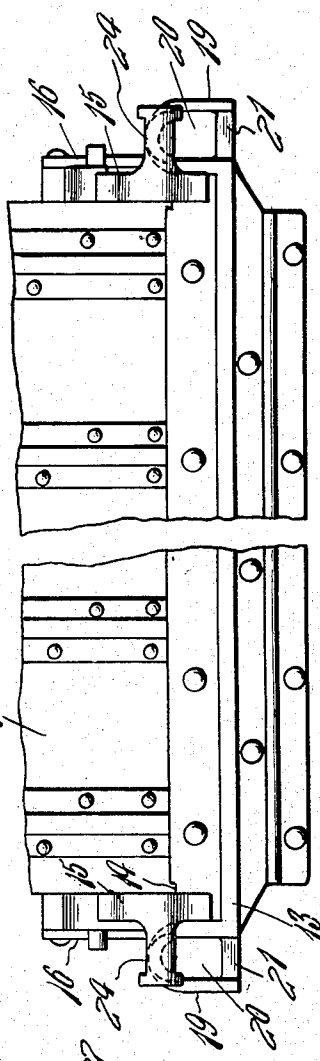


Fig. 2.

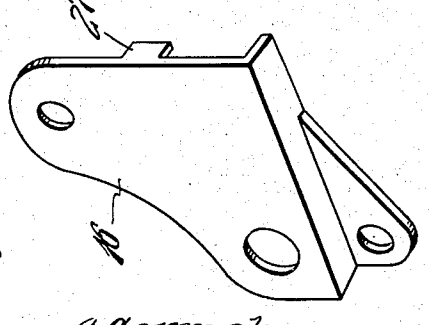


Fig. 3.

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Jan. 6, 1925. 1,521,678

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DOOR LATCHING DEVICE

Filed March 3, 1924 3 Sheets-Sheet 2

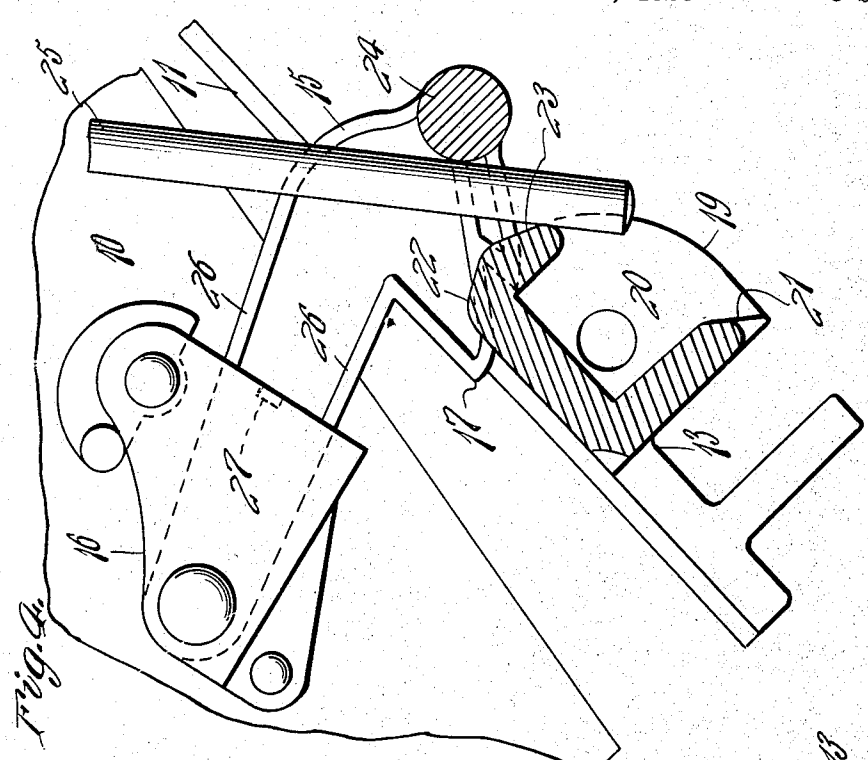


Fig. 4.

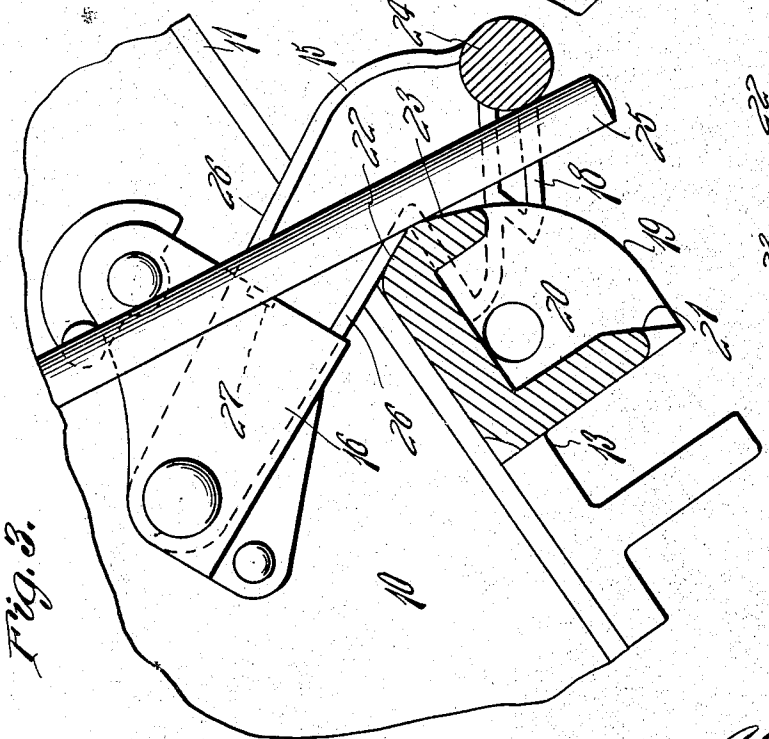


Fig. 3.

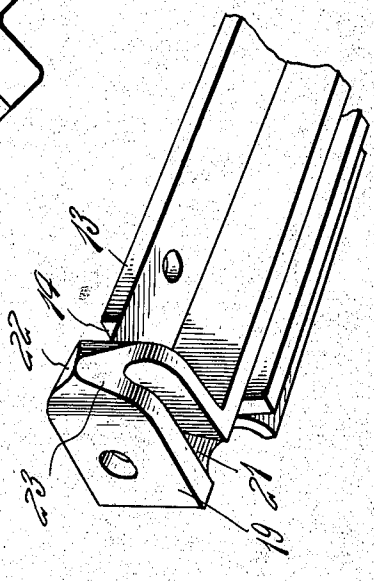


Fig. 5.

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DOOR LATCHING DEVICE

Filed March 3, 1924 3 Sheets-Sheet 3

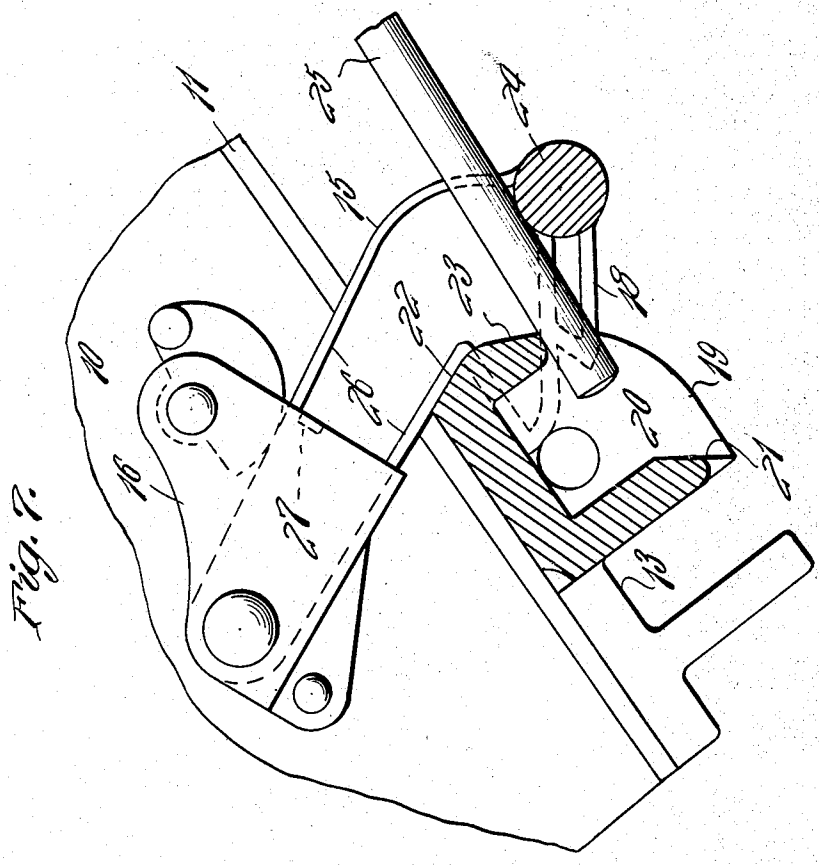


Fig. 1.

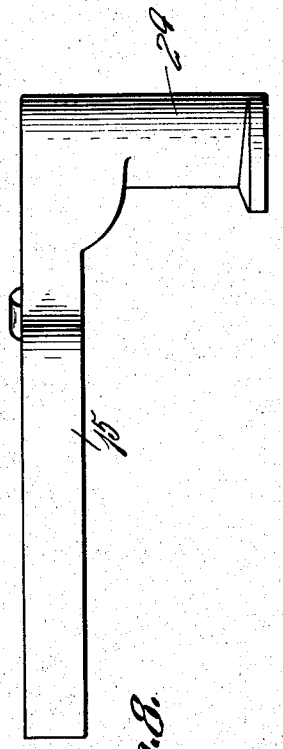


Fig. 8.

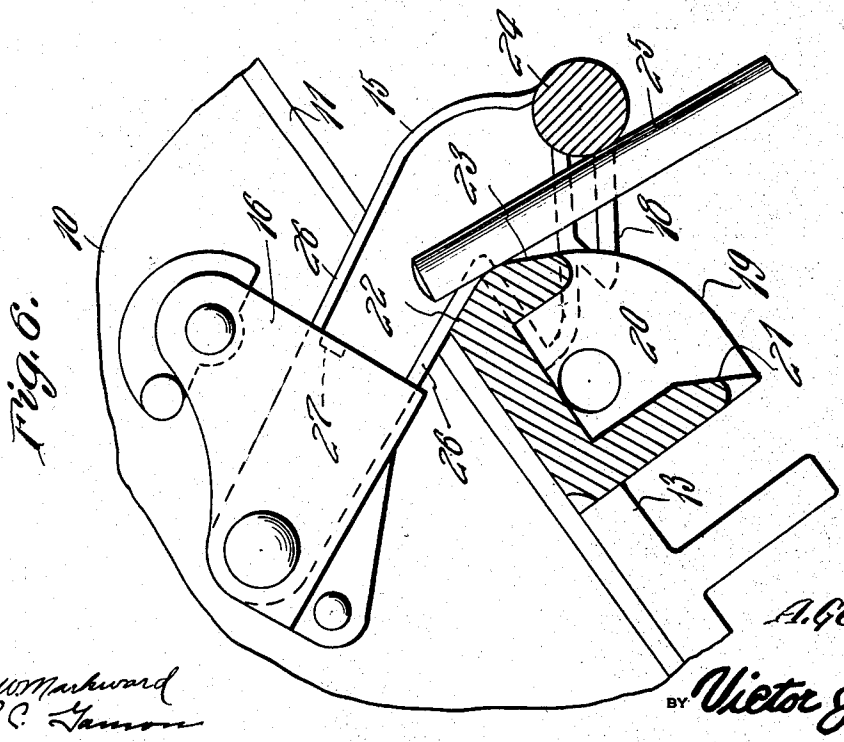


Fig. 6.

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UNITED STATES PATENT OFFICE.

ANDREW GERMEK, OF KINGSTON, PENNSYLVANIA.

DOOR-LATCHING DEVICE.

Application filed March 3, 1924. Serial No. 696,581.

To all whom it may concern:

Be it known that I, ANDREW GERMEK, a citizen of the United States, residing at Kingston, in the county of Luzerne and State of Pennsylvania, have invented new and useful Improvements in Door-Latching Devices, of which the following is a specification.

This invention relates to door latches and has for an object to provide a latch which is especially adapted for use upon drop bottom or hopper cars and similar containers.

Another object of the invention is the provision of a latch by means of which car doors and the like may be held tightly closed to prevent coal dust or other fine material from sifting out between the door and frame, and which in addition, may be easily opened or closed even though a heavy load may be bearing against the door.

Another object of the invention is the provision of a guide plate having means co-operating with the latch to limit pivotal movement of the latter so as to prevent the said latch from springing too far away from the door when the latter is slammed shut and thus insure proper latching of the door before the latter can spring away from the door frame.

With the above and other objects in view, the invention further includes the following novel features and details of construction, to be hereinafter more fully described, illustrated in the accompanying drawings and pointed out in the appended claims.

In the drawings:—

Figure 1 is a fragmentary elevation of a portion of a hopper car with the invention applied.

Figure 2 is a bottom plan showing the door in closed position.

Figure 3 is a vertical sectional view through one end of the keeper bar and showing the position of a pinch bar in releasing the latch, the view being on an enlarged scale.

Figure 4 is a like view showing the use of a pinch bar in closing the door.

Figure 5 is a detail perspective view of one end of the keeper bar.

Figure 6 is a view similar to Figure 3 but illustrating the manner of releasing the latch by inserting a pinch bar from below.

Figure 7 is a view similar to Figure 4 showing the manner of securing the door in closed position by inserting the pinch bar from above.

Figure 8 is an edge view of the latch.

Figure 9 is a detail perspective view of one of the guide plates.

Referring in detail to the drawings, wherein like characters of reference denote corresponding parts, the reference character 10 indicates a portion of the side of a freight car, such as a hopper or gondola car having doors 11 for closing the hopper bottom, the said doors being hingedly mounted as shown at 12.

As is well known, these doors support considerable weight and considerable force is required to release their latching or holding means, especially where (as in the case of the present invention) the doors are capable of being tightly and securely held in closed position.

The latching means of the present invention comprises a keeper bar 13 which extends transversely across and is secured to the outer face of each of the doors 11, the said bar extending beyond the opposite side edges of the door and being provided with an inclined or beveled shoulder 14 which is engaged by a latch 15, one of which is pivotally secured to the hopper at each side of each of the doors 11. If desired, a guide plate 16 may be provided for each of the latches.

The latches 15 are of novel construction and each includes a main bill 17 and a supplemental bill 18, the former engaging over the beveled shoulder 14 when the door is tightly closed and the latter engaging over said shoulder when the door is partly open, both positions of engagement being shown in Figure 1 of the drawings.

The outer extremities of the keeper bar 13 each includes a head 19 which is hollowed out as shown at 20 and formed with a lower wall having an inner inclined face 21. The upper wall of the head 19 is formed with oppositely beveled faces 22 and 23, whose purposes will be presently explained. The latch 15 has extending laterally therefrom a lug 24, which, when the latch is in closed position will be spaced from the head 19.

In opening and closing the latch there is utilized a lever or bar, such as a pinch bar 25 and to release the latch, this bar is positioned as shown in Figure 3, that is, the bar is inserted between the inclined face 23 of

the head 19 and the lug 24. Downward pressure upon the outer end of the bar will cause the same to fulcrum at the meeting edges of the beveled faces 22 and 23 so as to lift the latch bill 17 from engagement with the beveled shoulder 14. If desired the latch may be fully released, or the keeper bar may be engaged with the supplemental bill 18 to temporarily and partially open the door and discharge a portion of the contents of the car, or a further movement of the bar 25 will wholly release the latch and permit the door to fully open.

In latches designed for the purposes above stated, considerable difficulty is experienced by the latch failing to engage the door when the latter is slammed shut. This is due to the fact that in its closing movement, the door strikes the latch and throws it so far away from the door that the latter rebounds or falls away from the door frame before the latch returns to engaging position. The present invention overcomes this difficulty by providing the latch with a marginal flange 26 along each edge thereof. This flange is adapted to engage a lug 27 which extends inwardly from the guide plate 16. When the door is in open position, downward pivotal movement of the latch will be limited either by the edge of the latch engaging the bottom of the guide plate or by the upper flange 26 engaging the lug 27. Thus the bill 18 will be in position to be engaged by the keeper bar as the door moves to a closed position. The engagement of the keeper bar with the bill 18 will cause an upward pivotal movement of the latch, the movement being limited by the engagement of the lower marginal flange 26 with the lug 27, so that before the door can rebound too far away from the car the bill 18 of the latch will engage the keeper bar so that the door will be held for final closing action through the use of the pinch bar 25.

The parts are so proportioned that in order to securely and tightly close the door, engagement of the main bill of the latch with the keeper bar is difficult or practically impossible without the use of a bar such as the pinch bar 25. The supplemental bill of the latch may be engaged with the keeper bar by hand and the pinch bar thereafter inserted within the head 19 and engaged between the top or upper wall of the head and the lug 24 so as to provide sufficient leverage to force the door tightly inward and at the same time force the latch downward as soon as the latch bar passes the outer end of the main bill 17 of the latch. The latter will thus be securely and easily held in closed position.

The invention is susceptible of various changes in its form, proportions and minor details of construction and the right is herein reserved to make such changes as properly fall within the scope of the appended claims.

Having described the invention what is claimed is:—

1. A car door securing device comprising a keeper bar carried by and extending beyond the edge of said door, a pivotally mounted latch adapted to engage the keeper bar, a latch engaging shoulder provided upon the keeper bar, a lug extending laterally from the latch and a bar engaging portion formed on the keeper bar, said portion comprising a hollow head, a lower inclined inner bottom wall for said head and an upper outer reversely inclined wall also included in said head.

2. In a car door securing device, a pivotally mounted latch, a keeper bar for engagement by the latch, a guide plate secured over the latch, a lug extending from said plate and stops carried by the latch for engagement with the lug to limit pivotal movement of said latch.

3. In a car door securing device, a pivotally mounted latch, a keeper bar for engagement by the latch, a guide plate positioned over the latch and adapted to be secured to and spaced from the car, spaced marginal flanges upon the latch and a lug extending inwardly from the guide plate for engagement by the flanges to limit pivotal movement of the latch.

In testimony whereof I affix my signature.

ANDREW GERMEK.