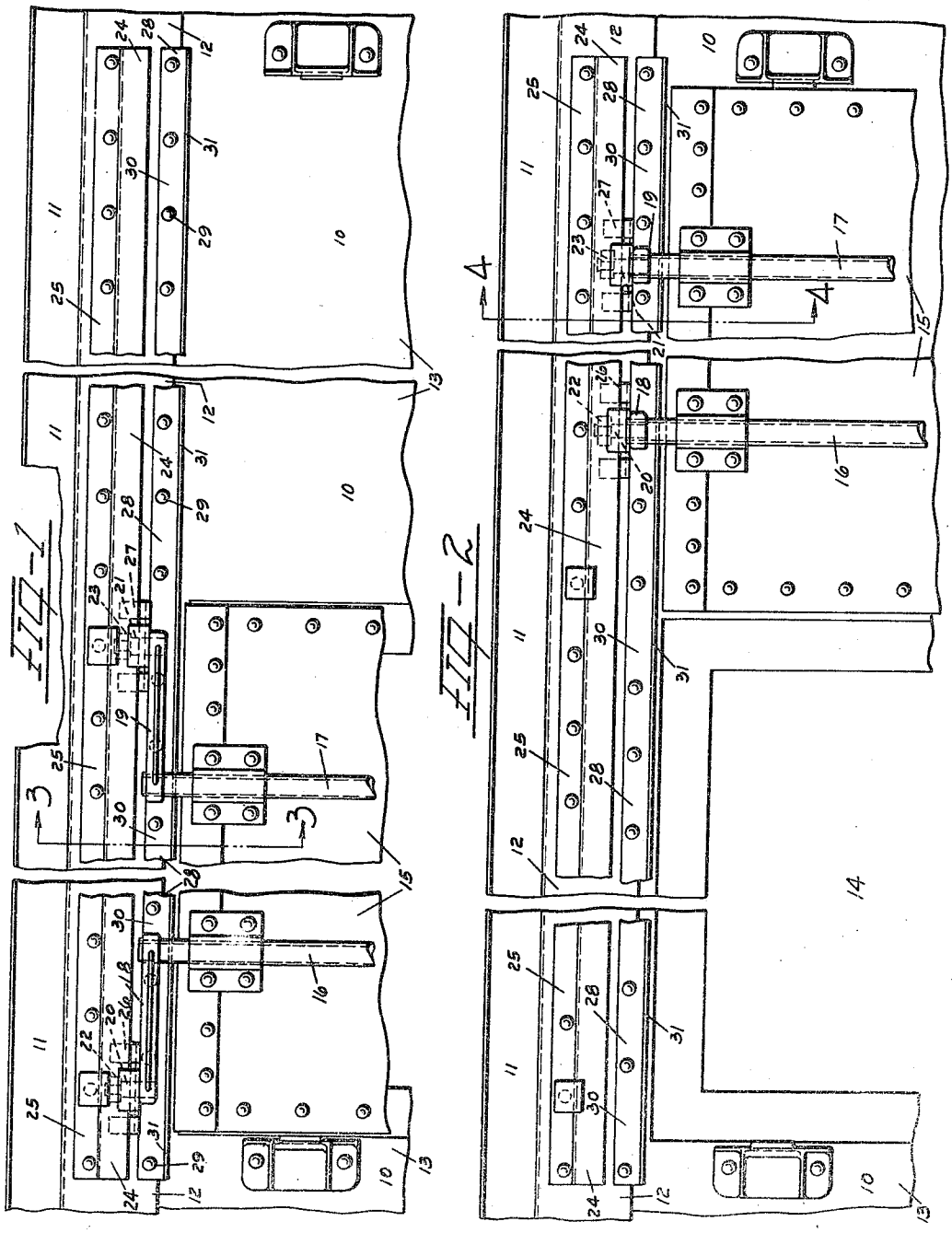
Oct. 9, 1956 G. P. TORBURN 2,765,502

LATERALLY MOVABLE DOORS

Filed Jan. 23, 1953

3 Sheets-Sheet 1



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FIG-4

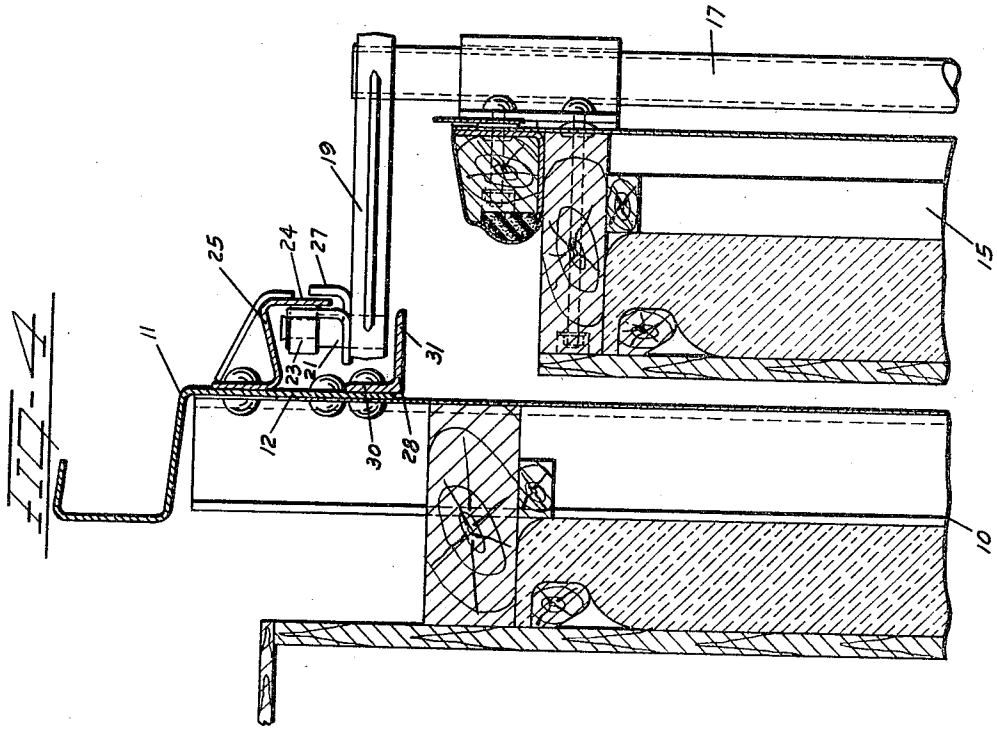
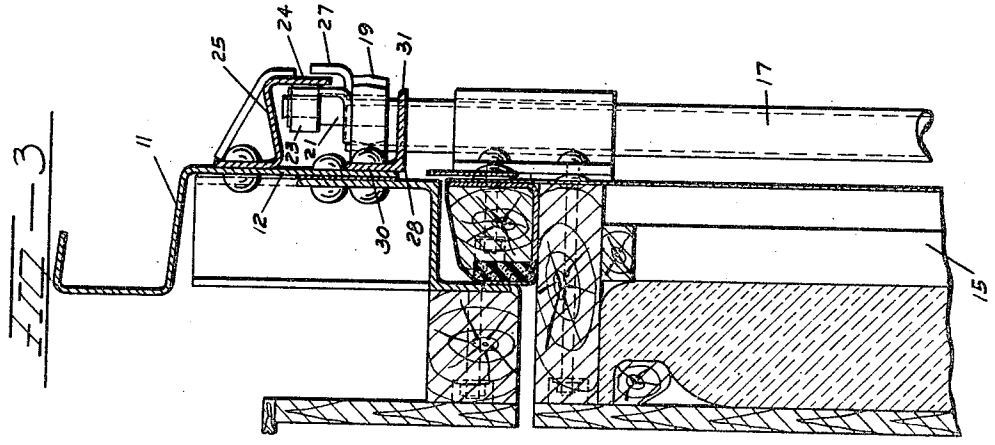


FIG-3



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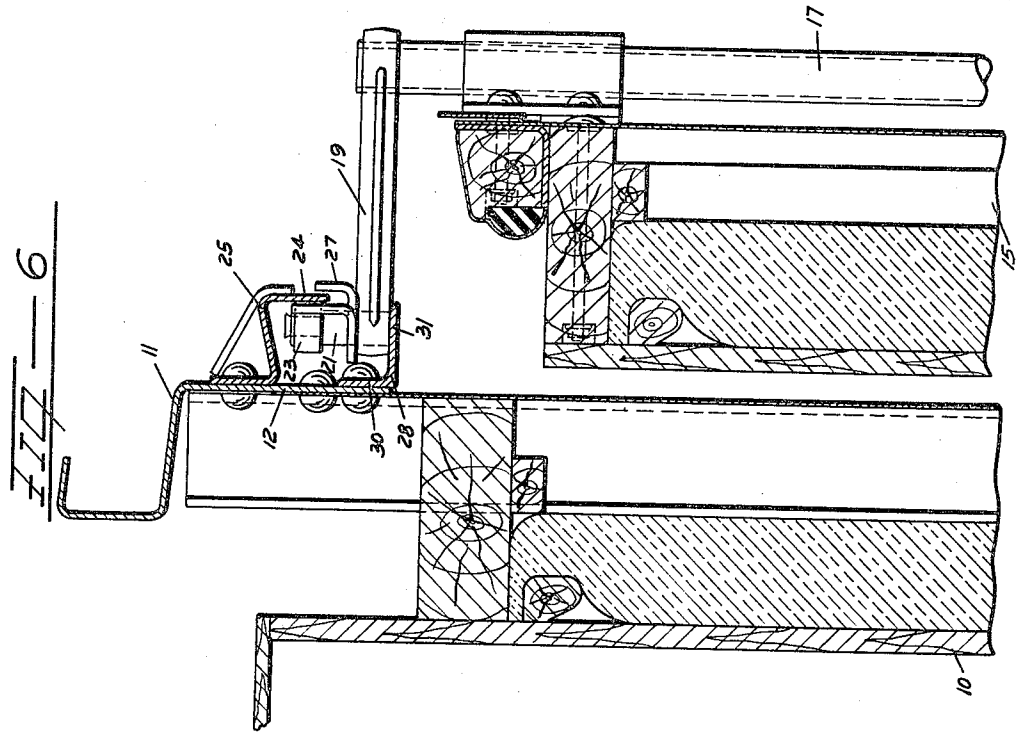
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LATERALLY MOVABLE DOORS

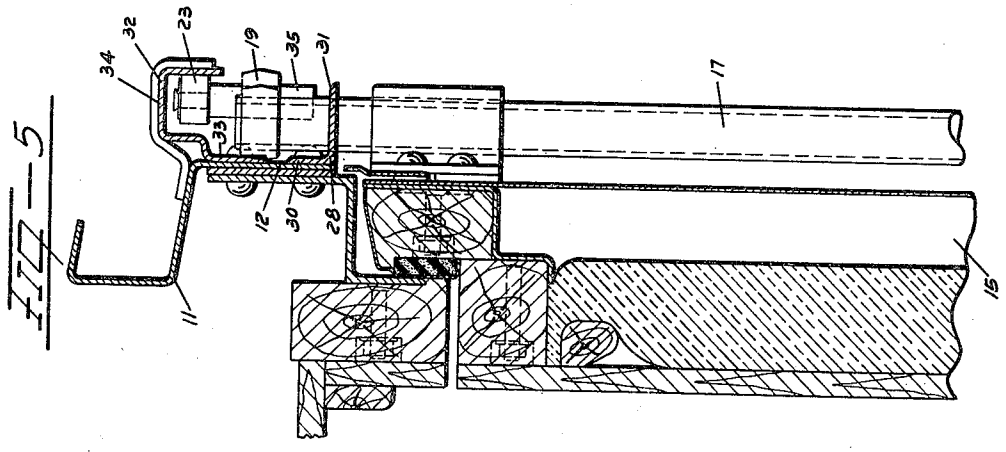
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FIG—6



FIG—5



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LATERALLY MOVABLE DOORS

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Application January 23, 1953, Serial No. 332,821

1 Claim. (Cl. 20—23)

This invention relates to laterally movable doors for railway cars and more particularly to means for preventing such doors from falling off the cars.

It is an object of this invention to provide simple, effective and inexpensive means for preventing the loss of laterally movable doors from railway cars when the doors are open.

A further object is to provide means above the door in railway cars which shall limit the lowering movement of laterally movable doors mounted on the cars and thereby prevent loss of the doors while permitting normal opening and closing movement of the doors.

Other objects of the invention will appear as the description thereof proceeds.

In the drawings forming part of this specification:

Fig. 1 is a fragmentary elevation of a refrigerator car embodying the instant invention, the laterally movable door for the car being closed.

Fig. 2 is a view similar to Fig. 1 showing the door open.

Fig. 3 is a vertical section taken on line 3—3 of Fig. 1.

Fig. 4 is a vertical section taken on line 4—4 of Fig. 2.

Fig. 5 is a view similar to Fig. 3 showing a different embodiment of the invention.

Fig. 6 is a view similar to Fig. 4 showing how the instant invention accomplishes its intended purpose.

Referring first to the embodiment of the invention shown in Figs. 1–4 and 6 of the drawings the numeral **10** designates a portion of a side wall of a refrigerator car. The side wall may be of any desired construction and customarily includes a side plate **11** provided with a depending flange **12** disposed outwardly of the metallic sheathing **13** of the wall. The side wall is formed with a door opening **14** which is adapted to be closed by a laterally movable door **15** of any desired construction.

To impart lateral movement to the door into and out of the door opening and to support the door for sliding upon a track secured to the car below the door opening as shown in the patent to Beauchamp 2,605,515, granted August 5, 1952, to which reference is here made, the door **15** carries two vertical, rotatably mounted pipes **16** and **17** the upper ends of which project above the door and are welded to crank arms **18** and **19**. Spindles **20** and **21** are welded to the opposite ends of the arms, **18** and **19**, and are provided with horizontal rollers **22** and **23** adapted to bear against the inner face of the depending flange **24** of the door retainer **25** which is secured to flange **12** of side plate **11**. Angular members **26** and **27** loosely mounted on the spindles and resting upon the crank arms prevent the door from falling against the car side as it is being moved to open position.

The construction at the lower portion of the pipes and the mechanism for imparting rotation thereto and movement of the door laterally into and out of the door opening shown in the patent to Beauchamp, cited above and incorporated herein, are preferably used upon door **15**.

In order to prevent the spindles **20** and **21** from becoming disengaged from the depending flange **24** of the retainer **25** the instant invention provides an angular member **28** which is secured as by means of rivets **29** to the depending flange **12** of the side plate **11**. The

member **28** extends across the top of the door opening **14** and beyond the rear edge of the door opening for the full travel of the door in opening direction as shown in Fig. 1 of the drawings. The attaching leg **30** of member **28** is vertical while the leg **31** of this member extends outwardly from the lower edge of leg **30** to lie below and in proximity to the crank arms **18** and **19**. Thus, when the door is open and its weight is supported at the ends of the crank arms **18** and **19** at the greatest distance from the car, lowering movement of the door will be arrested by the leg **31** before the spindles **20** and **21** can become disengaged from flange **24** of retainer **25**, as shown in Fig. 6 of the drawings. The leg **31**, however, is spaced a sufficient distance from the crank arms **18** and **19** so as not to interfere with the normal movements of the door.

In the embodiment of the invention illustrated in Fig. 5 a different type of door retainer **32** is shown. This retainer, which is used when the height of door opening is increased, has an attaching flange **33** whereby the retainer is riveted to the flange **12** of the side plate **11** and a downwardly opening channel-shaped portion **34** within which the upper portion of modified spindles, one of which is shown at **35**, and the rollers **22** and **23** are received. Because of the increase in the projection of the pipes **16** and **17** above the door and the resulting increase in the spacing of the crank arms above the leg **31** of the member **28** the leg **31** cannot effectively cooperate with the crank arms to prevent loss of the door. To obtain this desired end, the spindles project downwardly below the crank arms **18** and **19** and terminate in proximity to leg **31**. These spindles, therefore, cooperate with leg **31** to prevent disengagement from the retainer and loss of the door.

It will be apparent that numerous changes and modifications in the details of the invention will be clear to those skilled in the art. It is intended, therefore, that all such changes and modifications be comprehended within this invention which is to be limited only by the scope of the claim appended hereto.

I claim:

In a railway car having a side wall formed with a door opening and provided with a sliding door embodying means including cranks disposed above the door for moving the door laterally into and out of the door opening and a retaining member secured to the side wall above the door opening and extending beyond the door opening for the travel of the door, which retaining member has a depending flange, said cranks comprising arms, spindles secured to and extending above and below said arms, said depending flange of said retaining member having outwardly overlapping relationship with said upwardly extending portions of said spindles, said spindles being free to move downwardly relative to said flange of said retaining member, a flange secured to and extending outwardly from said wall from the door opening substantially to the end of the retaining member, said latter flange lying below said retaining member and said cranks and in proximity to said downwardly extending portions of said spindles when said door is in open position, said latter flange engaging said downwardly extending portions of said spindles upon lowering movement of said door when in open position before said upwardly extending portions of said spindles become disengaged from said flange of said retaining member to prevent loss of said door from said car when said door is in open position.

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