April 21, 1953 R. R. BRUNING 2,635,688

ENDGATE

Filed Dec. 10, 1951 2 SHEETS—SHEET 1

Fig. 1

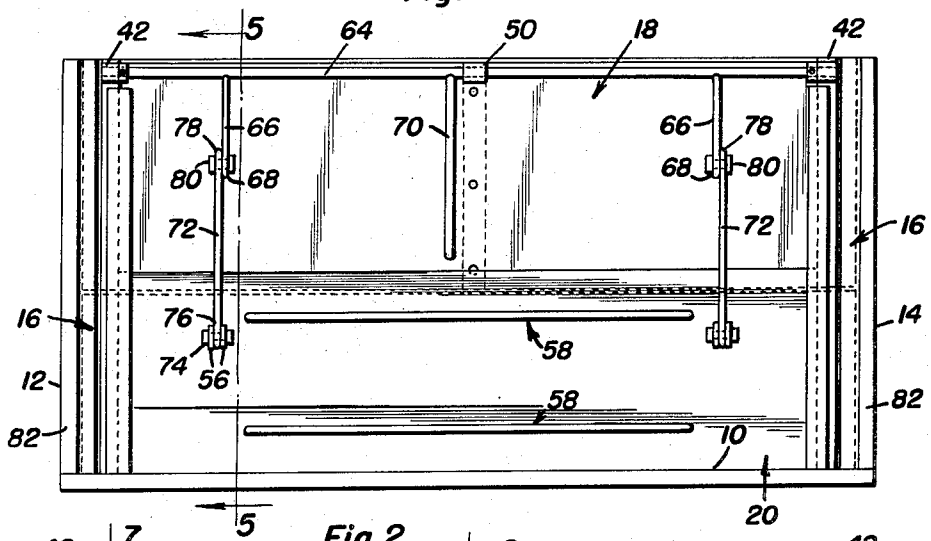


Fig. 2

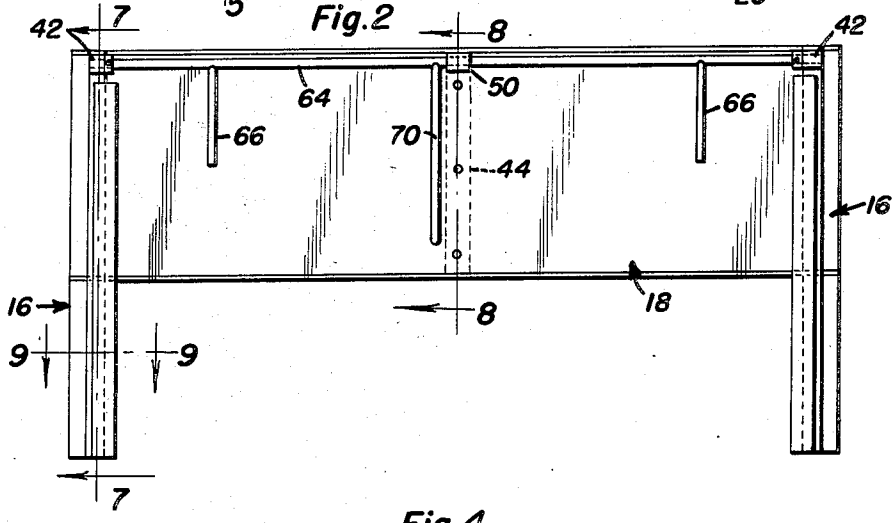
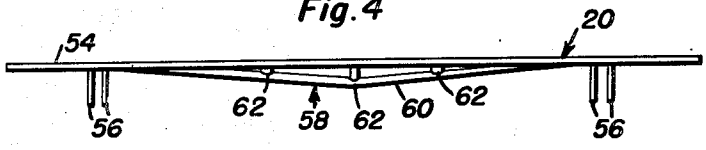


Fig. 4



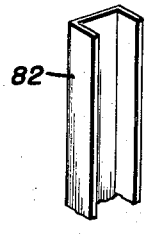


Fig. 10

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Fig.3

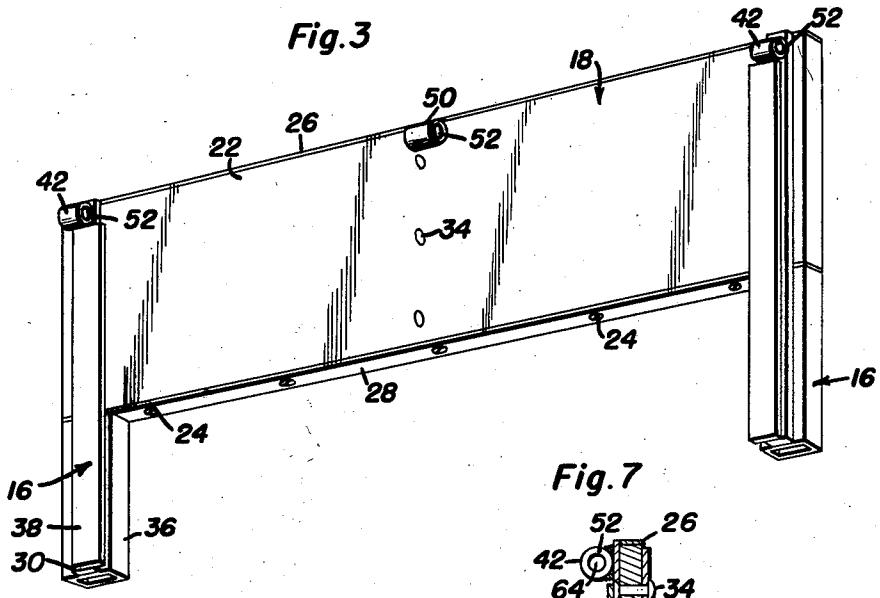


Fig.7

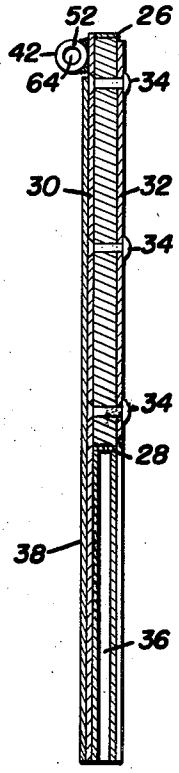


Fig.5

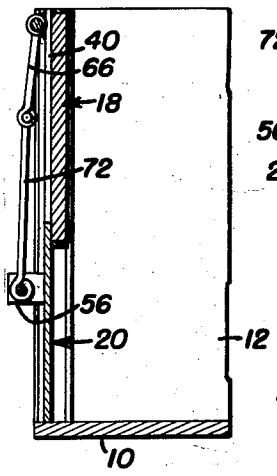


Fig.6

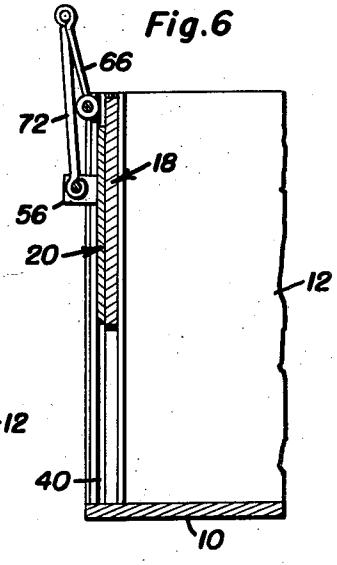


Fig.8

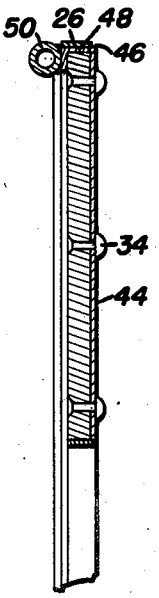
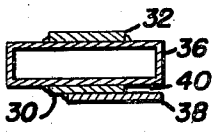


Fig.9



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ENDGATE

Ralph R. Bruning, Ellsworth, Kans.

Application December 10, 1951, Serial No. 260,871

1 Claim. (Cl. 160—224)

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This invention relates generally to gate structures, and more particularly to end gates for use with dump vehicle bodies and the like, which are adapted to convey and conveniently dispense granular materials, particularly grain.

The primary object of this invention is to provide an improved end gate having the lower vertically sliding gate member, whereby the contents of a truck body to which it is attached can be readily removed.

Another object of this invention is to provide an end post structure for an end gate which provides a vertical guideway for a vertically sliding lower gate member.

Another object of this invention is to provide a vertically sliding lower gate member which is reenforced against bowing by the contents of the container to which it is attached.

Another object of this invention is to provide an improved end gate which is durable and efficient in use, and at the same time simple and easy to manufacture.

A further object of this invention is to provide an end gate having improved means for raising and lowering a lower vertically sliding gate member.

These, together with various ancillary features and objects of the invention, which will later become apparent as the following description proceeds, are attained by the present invention, a preferred embodiment of which has been illustrated, by way of example only, in the accompanying drawings, wherein:

Figure 1 is a rear elevational view of a truck body having mounted thereon an end gate which is the subject of this invention;

Figure 2 is a rear elevational view of the end gate shown in Figure 1 with the lower gate member removed;

Figure 3 is a rear perspective view of the end gate with the lower gate member and its associated operating linkage removed;

Figure 4 is a top plan view of the lower gate member and shows the reenforcing means therefor;

Figure 5 is a vertical transverse sectional view taken substantially upon the plane indicated by the section line 5—5 of Figure 1 and showing the lower gate member in its closed position;

Figure 6 is a transverse vertical sectional view similar to that of Figure 5 and showing the lower gate member in its opened position;

Figure 7 is a transverse vertical sectional view taken substantially upon the plane indicated by the section line 7—7 of Figure 2 and shows the construction of the end post;

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Figure 8 is a partial transverse vertical sectional view taken substantially on the plane indicated by the section line 8—8 of Figure 2 and shows the construction of the intermediate basing;

Figure 9 is a horizontal sectional view taken substantially on the plane indicated by the section line 9—9 of Figure 2 and shows the construction of the end post; and

Figure 10 is a partial perspective view showing a vertical extending channel member which is secured to the inner sides of the sides of the truck body in which the end gate structure is received and retained.

Referring now more specifically to the accompanying drawings, wherein like numerals designate similar parts throughout the various views, it will be seen that the embodiment of the invention depicted in the drawings has illustrated the principles of the invention, comprises an improved end gate structure adapted for mounting on a truck body or other similar structure. Referring more specifically to Figure 1, it will be seen that the end gate structure which is the subject of this invention is shown as being mounted on a truck body having a flat bed 10 and side walls 12 and 14. The end gate consists of a pair of spaced end posts 16, a fixed upper gate section 18, a lower movable gate section 20 and means for raising and lowering the lower gate member 20.

Referring now to Figure 3, it will be seen that the end post 16 and the fixed upper gate member 18 are rigidly secured together as a unit. The upper gate member 18 consists of an elongated plate member 22 having secured to its upper and lower edges by a plurality of screws 24 upper and lower flat elongated strips 26 and 28 respectively.

Rigidly bolted to the front and rear faces of the gate member 18 are vertically extended elongated plates 30 and 32. The elongated plates 30 and 32 are secured inwardly of the side edges of the upper gate member 18 by a plurality of bolts 34. The elongated vertical plates 30 and 32 extend along the lower edge of the upper gate member 18 and have welded therebetween a rectangular tubular member 36 in alignment therewith. The outer edges of the tubular member 36 are in alignment with the side edges of the gate member 18, and the inner edges of the tubular members 36 extending inwardly of the inner edges of the elongated vertical plates 30 and 32. Other vertically extending plates 38 are secured to the rear vertically extending plates 30 in spaced parallel relation to the tubular members 36 and the rear surface of the elongated plate 22 to form a pair

of aligned vertically extending guide ways 40.

Secured to the upper ends of the rear plates 30 adjacent their upper ends are a pair of aligned rod receiving brackets 42. Carried by the plate 22 at its center is a transverse vertical extending plate 44 having at its upper end a horizontal flange 46 overlying the upper edge of the plate 22, and a downwardly extending vertical flange 48 countersunk in the rear surface of the plate 22. Rigidly secured to the downturned flange 48 is another rod receiving bracket 50 in alignment with the rod receiving brackets 42 mounted on the end posts 16. The rod receiving brackets 42 and 50 have aligned rod receiving passageways 52 therein.

Referring now to Figure 4, it will be seen that the lower gate member 20 consists of an elongated flat plate 54 having mounted on its rear surface adjacent the side edges thereof pairs of spaced parallel arms 56 normal to the rear surface thereof. Also secured to the rear surface of the plate 54 are a pair of spaced parallel horizontally extending reenforcing truss elements 58. The truss elements 58 include a tension cord member 60 and a plurality of stiffening brace members 62 extending between the cord 60 and the rear surface of the plate 50.

Referring now to Figure 1, it will be seen that the lower gate member 20 is mounted in the guideways 40 and normally resting on the upper surface of the truck bed 10. A horizontally extending rod 64 is mounted in the rod receiving passageways 52 of the brackets 42 and 50 for rotation therein. Rigidly secured to the rod 64 is a pair of first links 66 having at their free ends eyes 68. An operating handle 70 is rigidly secured to the rod 64 adjacent the bracket 50, and lying in the same plane as the first link 66.

Pivotally secured between the pairs of plates 56 on the rear surface of the lower gate member 20 are second links 72. The second links 72 are secured to the plates 56 by bolts 74 passing through eye ends 76 on the second links. The other end of the second links 72 are also provided with eyes 78 which are pivotally secured to the eyes 68 of the first links 66 by bolts 80.

In view of the foregoing, it will be readily seen that when the handle 70 is pivoted towards a horizontal position, the rod 64 will be rotated with the result that the first links 66 will also be

pivotally rotated towards a horizontal position. The upward swinging of the eyes 68 on the first links 66 results in the upward swinging of the eyes 78 on the second links 72 with the result that the lower gate member 20 is moved upwardly. The handle 70 is continued to be rotated until the lower edge of the lower gate member 20 is above the lower edge of the upper gate member 18 as shown in Figure 6.

Attached to the sides 12 and 14 of the truck body are vertically extending channels 82 in which the entire end gate structure is slidably received and retained.

From the foregoing, the construction and operation of the device will be readily understood and further explanation is believed to be unnecessary. However, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the appended claim.

Having described the invention, what is claimed as new is:

An end gate comprising a fixed upper gate member and a movable lower gate member, end posts carried by said upper gate member forming a guideway for said lower gate member, means for moving said lower gate member vertically in said guideway, said end posts including front and rear vertical plate members secured to the front and rear faces of said upper gate member adjacent the edges thereof, tubular members secured between said plate members below said upper gate member, other plate members secured to the rear plate members in parallel spaced relation to said tubular members to form the vertical guideways for said lower gate member.

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