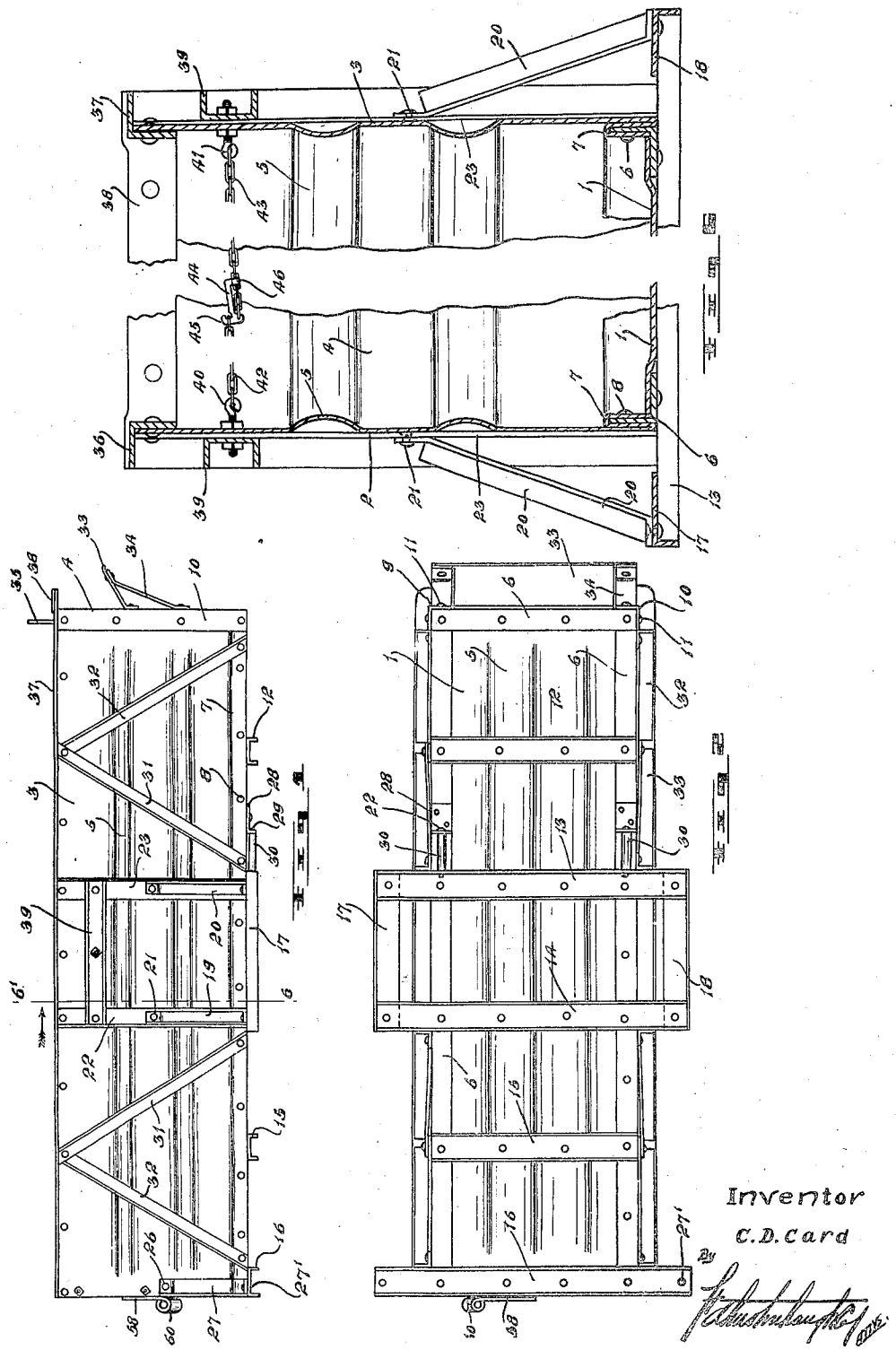
June 17, 1930. C. D. CARD 1,765,204

WAGON BOX

Filed Dec. 17, 1928 3 Sheets-Sheet 1

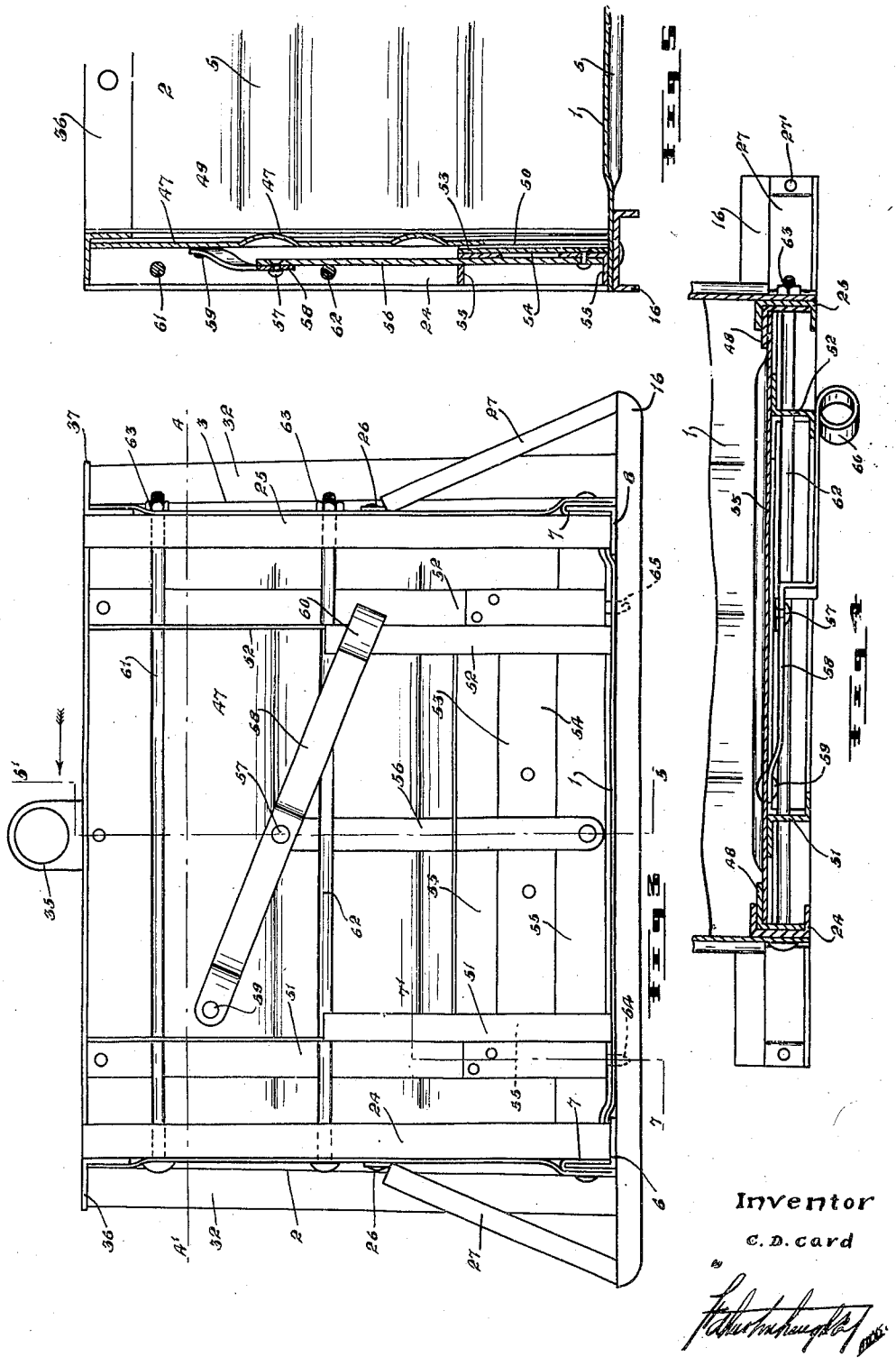


Inventor
C.D.Card
By
Attorney

June 17, 1930. C. D. CARD 1,765,204

WAGON BOX

Filed Dec. 17, 1928 3 Sheets-Sheet 2



Inventor

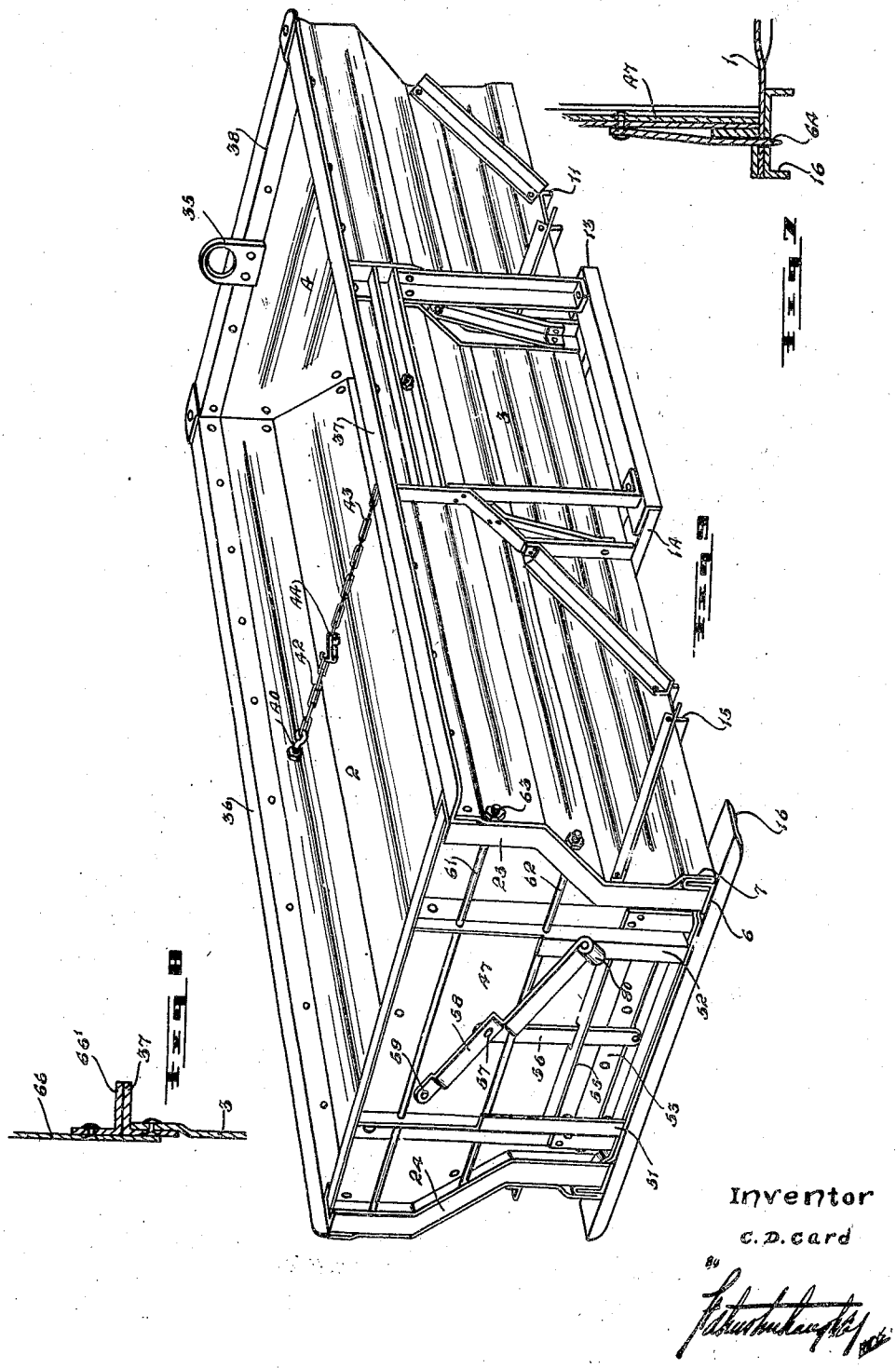
C. D. Card

By

June 17, 1930. C. D. CARD 1,765,204

WAGON BOX

Filed Dec. 17, 1928 3 Sheets-Sheet 3



Inventor
C. D. Card
By

Patented June 17, 1930 1,765,204

UNITED STATES PATENT OFFICE

CLARENCE D. CARD, OF RIVERS, MANITOBA, CANADA

WAGON BOX

Application filed December 17, 1928, Serial No. 326,549, and in Canada March 9, 1928.

The invention relates to improvements in wagon boxes and an object of the invention is to provide an all metal wagon box having the body thereof formed from sheet metal suitably braced, such box being particularly strong and durable, yet relatively light and of such a nature that it can be easily assembled.

A further object is to provide an all metal end gate for the box which can be easily opened or closed as occasion demands.

A still further object is to provide a box with an adjustable tie member crossing the same to prevent the possibility of bulging of the box sides.

With the above more important and other minor objects in view which will become more apparent as the description proceeds, the invention consists essentially in the arrangement and construction of parts hereinafter more particularly described, reference being had to the accompanying drawings, in which:—

Fig. 1 is a side view of the box.

Fig. 2 is an inverted plan view thereof.

Fig. 3 is an enlarged detailed end view of the box showing the end gate.

Fig. 4 is a horizontal sectional view at 4—4′ Figure 3.

Fig. 5 is a vertical sectional view at 5—5′ Figure 3 and looking in the direction of the applied arrow.

Fig. 6 is an enlarged detailed vertical sectional view at 6—6′ Figure 1, the central portion of the box being broken away.

Fig. 7 is a vertical sectional view at 7—7′ Figure 3.

Fig. 8 is a vertical sectional view showing the manner in which the capacity of the box is increased if desired.

Fig. 9 is a perspective view showing a modified form of the box, the device as shown in such figure being customarily called a tank.

In the drawings like characters of reference indicate corresponding parts in the several figures.

I might here remark that as far as I am aware wagon boxes have heretofore been made for the greater part from wood and no attempt has been made to provide an all metal box. A wooden box is short lived and requires constant repair. I believe the box which I have constructed will last a farmer a lifetime as it is particularly strong and durable, yet relatively light so that it can be readily placed on or removed from the wagon.

The box comprises a metallic bottom plate 1, upstanding side plates 2 and 3 and an upstanding front plate 4, the sizes of the various plates being preselected. All of the plates are longitudinally corrugated or ribbed as indicated at 5 to strengthen the same, the ribs preferably extending inwardly of the box rather than outwardly so that they in no way interfere with reinforcing bars and other exterior parts later described.

The bottom plate is secured to the side plates and to the front plate in the following manner. To the edges and front end of the bottom plate, I permanently rivet similar angle bars 6 having their horizontal flanges underlying the bottom plate and their vertical flanges extending upwardly at the sides and end of the said bottom plate and to the inner sides of the side and end plates. The lower edges of the side and end plates are doubly folded to provide inverted substantially U-shaped lengthwise extending channels 7 (see Figure 6) and these channels receive snugly the vertical flanges of the angle bars 6 which are riveted as indicated at 8 to the side and end plates. The side and end plates are connected together at the front end of the box by vertically extending angle bars 9 and 10 riveted as indicated at 11 to said plates.

To the bottom plate and to the lengthwise extending angle bars 6, I permanently rivet also suitably positioned transversely extending channel bars 12, 13, 14, 15 and 16, those 12 and 15 having a length equal to the width of the box and those 13, 14 and 16 having their ends projecting beyond the sides of the box. The bars 13 and 14 are located centrally of the box and have their projecting ends connected by angle bars 17 and 18 riveted to the ends thereof, the rivets also holding the lower ends of brace bars 19 and 20

extending angularly upwardly to the sides of the box and having their upper ends riveted at 21 to vertically disposed reinforcing angle bars 22 and 23 riveted to the sides of the box. A pair of opposing vertically extending channel bars 24 and 25 are located to the inner sides of the ends of the side plates and are securely fastened to the side plates by rivets 26, the rivets also fastening the upper ends of angle braces 27 which have their lower ends permanently riveted at 27′ to the outer ends of the cross bar 16.

The angle bars 6 at the sides of the box carry each a bracket 28 positioned in advance of the cross bar 13 and the brackets and the cross bar support bolts 29 on which rollers 30 are mounted. These rollers are supplied so that when the wagon wheels are cramped, they will strike the rollers instead of the bottom of the box.

The sides of the box are also braced by pairs of upwardly converging brace bars 31 and 32 of angle iron cross section which have their upper ends firmly riveted to the sides of the box and their lower ends riveted to the vertical flanges of the angle bars 6. A metallic foot rest 33 is riveted to the front end of the box and is supported by suitably disposed angle braces 34. A metallic eye 35 is also riveted centrally to the front end of the box for line tying or other purposes.

To the upper edges of the side plates, I rivet lengthwise extending angle bars 36 and 37 and an angle bar 38 is also riveted to the front end plate and has the ends thereof overlying and riveted to the front ends of the bars 36 and 37. The side bars 22 and 23 are connected by cross bars 39 positioned at the outer sides of the box and eye bolts 40 and 41 are passed through the sides of the box and centrally through the bars 39, said bolts having the eyes located at the inner sides of the box. To the eyes I connect lengths of chain 42 and 43 and one of the chain lengths carries a locking lever 44 having a hook 45 and a catch 46 at opposite ends thereof.

The hook is adapted to engage the end link of the chain 42 and to catch the body of the chain 43 in order to fasten the chains together in the manner best shown in Figure 6. Obviously by engaging the hook in one or other of the links of the chain 42, an adjustment can be made so that the sides of the box will be held against bulging under the pressure of the contents thereof, such as grain.

The rear end of the box is closed by a removable end plate 47 which has the edges thereof reinforced by applied angle bars 48 permanently riveted thereto and the body of the plate is transversely ribbed or corrugated as indicated at 49 to strengthen the same. The plate 47 is provided centrally at the lower edge with a substantially rectangular outlet opening 50 and at the ends of the opening, I attach to the plate vertically extending combination reinforcing and guide bars 51 and 52, these guide bars having their lower ends of a Z-shaped cross section and their upper ends of an angle iron cross section.

The lower Z-shaped ends of the bars form with the body of the plate vertically extending channels which receive the ends of a vertically slidable all metal gate 53, the gate being formed from a substantially rectangular plate 54 having the edges thereof reinforced by applied angle irons 55. A bar 56 is attached centrally to the lower side of the gate and passes upwardly through the horizontal flange of the upper angle iron thereof and has the upper end pivotally fastened at 57 to a lever 58, one end of which is pivotally connected at 59 to the plate 47 and the other end of which is offset and terminates in a handle 60. The arrangement of the above parts is such that when the lever is raised, the gate will open and when lowered the gate will close.

The end plate 47 has the ends thereof adapted to slidably enter the channel bars 24 and 25 and after the said plate has been entered, it is fastened by suitably disposed bolts 61 and 62 passing through the ends of the box and the various bars of the plates in the manner best shown in Figures 3 and 4. The bolts are supplied with nuts 63 so that one can readily remove the end plate when desired by withdrawing the bolts and raising the end plate from the channel irons 24 and 25. The end plate is provided at the lower edge adjoining the end of the gate with downwardly extending pins 64 and 65 which enter suitable holes provided in the bottom plate and the cross bar 16 and reinforces the end plate at such points.

If it is desired to increase the capacity of the box as shown in detail in Figures 1 to 7 inclusive, this can be done by providing a substantially rectangular upper extension box 66 which has the metal sides and ends thereof provided at their lower edges with reinforcing angle bars 66′ (see Figure 8). These angle bars are adapted to rest on the angle bars at the top of the box and the sides of the extension box are designed to pass within the lower box in the manner shown in said latter figure.

In Figure 9, I have shown a modification of the box wherein it is more in the form of a tank. In this form, the brace bars are slightly modified as will appear in the perspective view shown but the general assembly is the same and it is not considered that a detailed description of the parts shown in said figure is necessary. The various bars are simply bent to accommodate the selected shape of the box or tank.

What I claim as my invention is:—

An all metal wagon box comprising a rectangular bottom plate, angle bars having their horizontal flanges underlying and permanently riveted to the edges and front end of the plate and their vertical flanges upstanding at the sides and front end of the plate, closure side and front plates lengthwise corrugated and having their lower edges doubly seamed to provide inverted U-shaped channels receiving the upstanding flanges of the angle bars, vertically disposed angle bars connecting the side and end plates at the front corners of the box, vertically disposed channel bars permanently secured to the rear ends of the side plates and applied on the inner sides thereof with the flanges turned inwardly, an end plate having the ends thereof provided with vertical angle bars slidably received within the channel bars, said plate being provided centrally at the lower edge with a rectangular outlet opening, horizontal suitably spaced tie bolts passing through the channel bars and the angle bars of the plate and fastening the sides of the box together, a vertically slidable gate carried by the latter end plate and normally closing the opening, suitably spaced reinforcing cross bars underlying the bottom plate and permanently riveted thereto and reinforcing angle bars permanently secured to the upper edges of the side and front plates.

Signed at Rivers, Manitoba, this 11th day of October, 1928.

CLARENCE D. CARD.