

March 11, 1941.

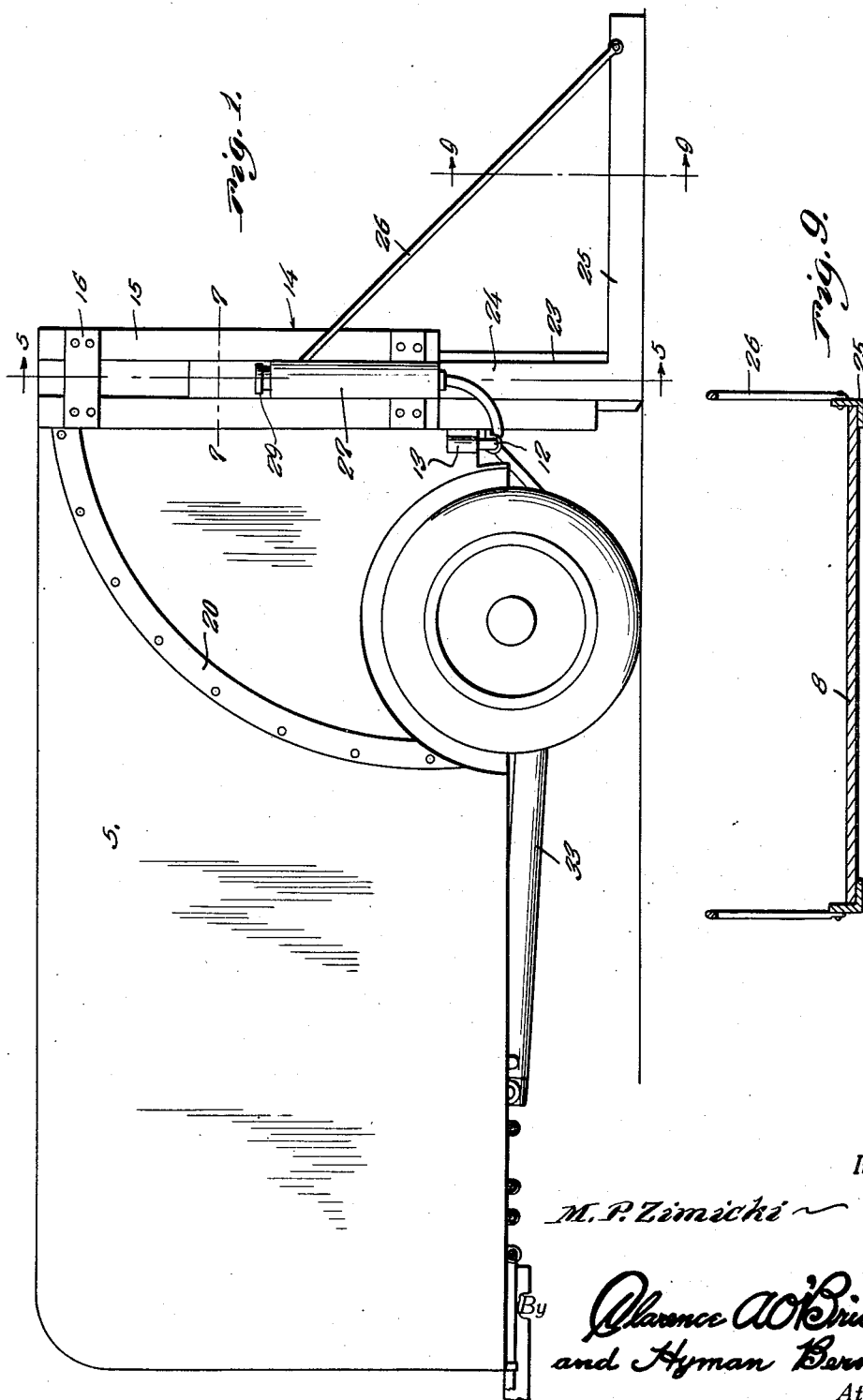
M. P. ZIMICKI

2,234,513

COMBINED ENDGATE AND LOADING ELEVATOR FOR TRUCKS

Filed Dec. 26, 1939

4 Sheets-Sheet 1



Inventor

M. P. Zimicki

By

Clarence A. O'Brien
and Hyman Berman

Attorneys

March 11, 1941.

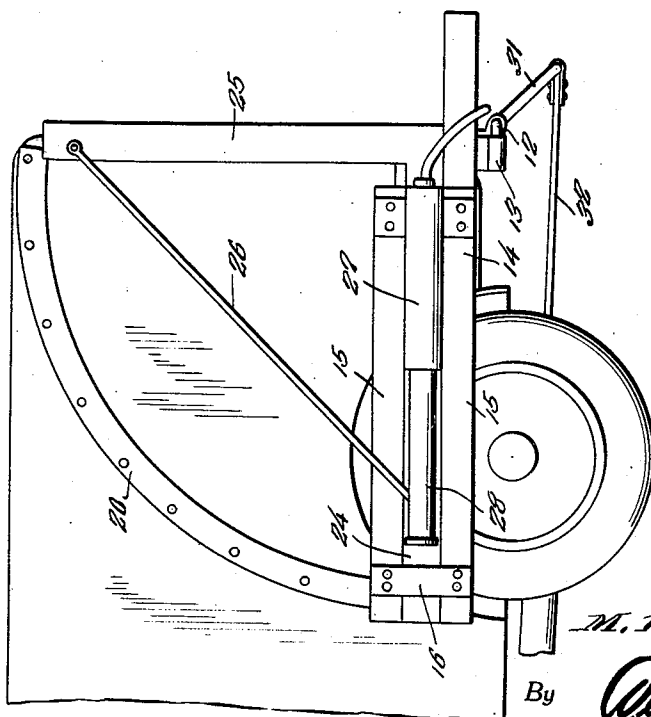
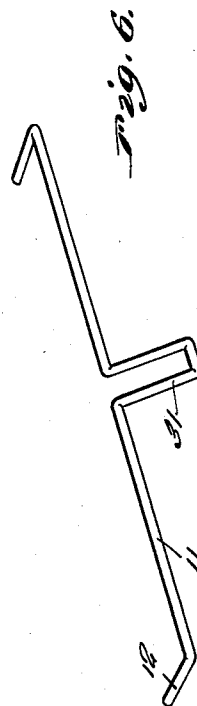
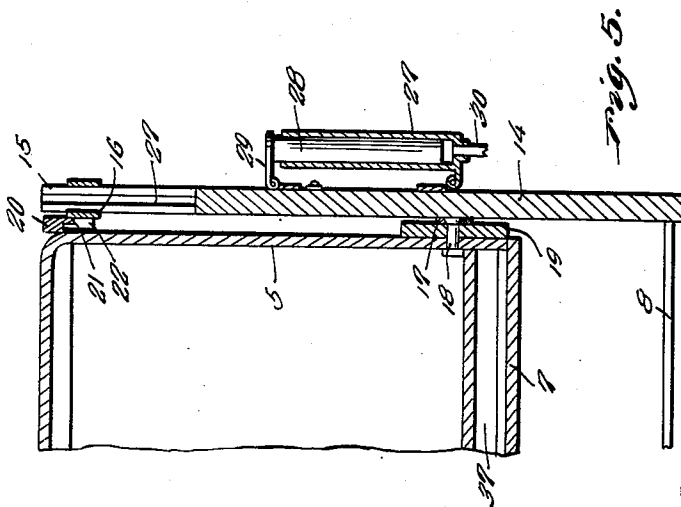
M. P. ZIMICKI

2,234,513

COMBINED ENDGATE AND LOADING ELEVATOR FOR TRUCKS

Filed Dec. 26, 1939

4 Sheets-Sheet 2



Inventor

M. P. Zimicki

By

Clarence A. O'Brien
and Hyman Berman
Attorneys

March 11, 1941.

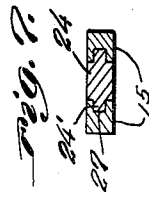
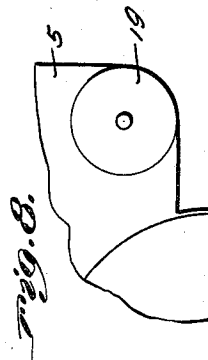
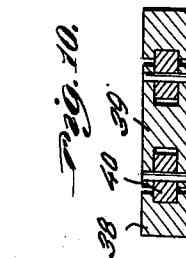
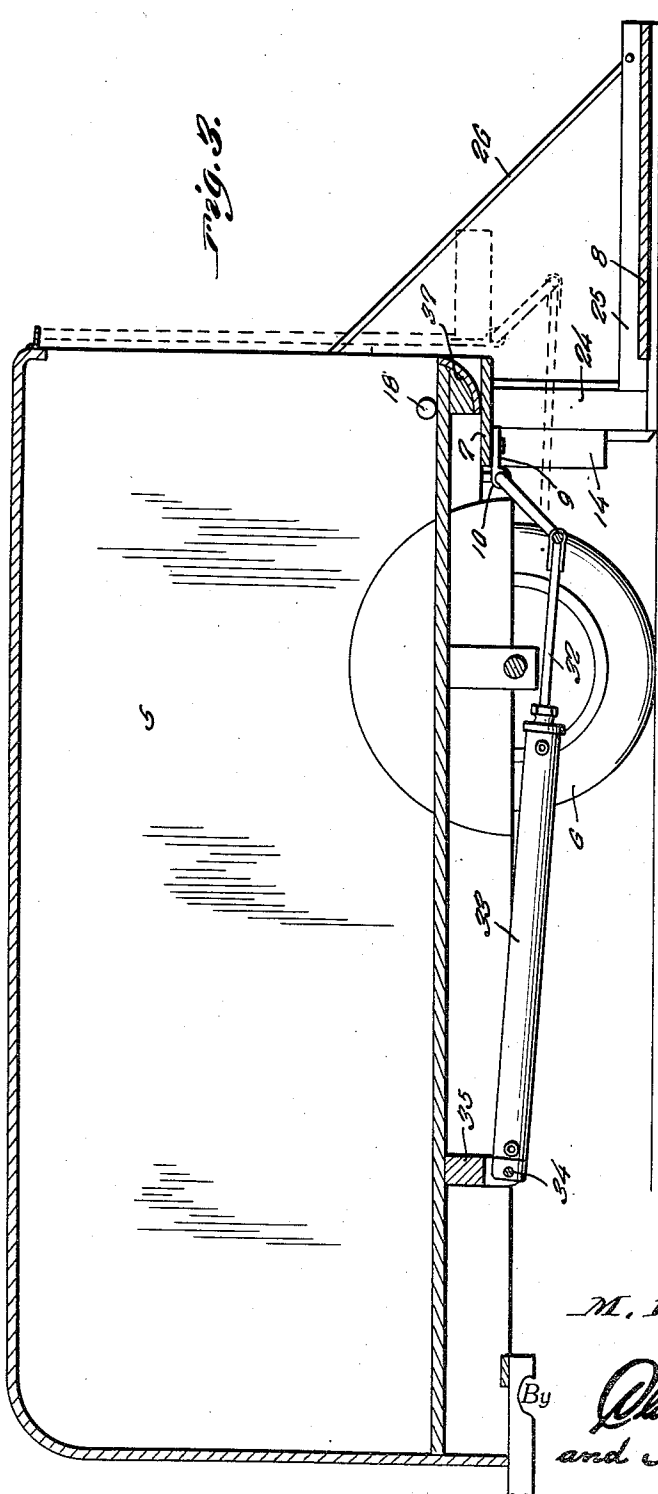
M. P. ZIMICKI

2,234,513

COMBINED ENDGATE AND LOADING ELEVATOR FOR TRUCKS

Filed Dec. 26, 1939

4 Sheets-Sheet 3



Inventor

M. P. Zimicki

By *Clarence A. O'Brien*
and Hyman Berman
Attorneys

March 11, 1941.

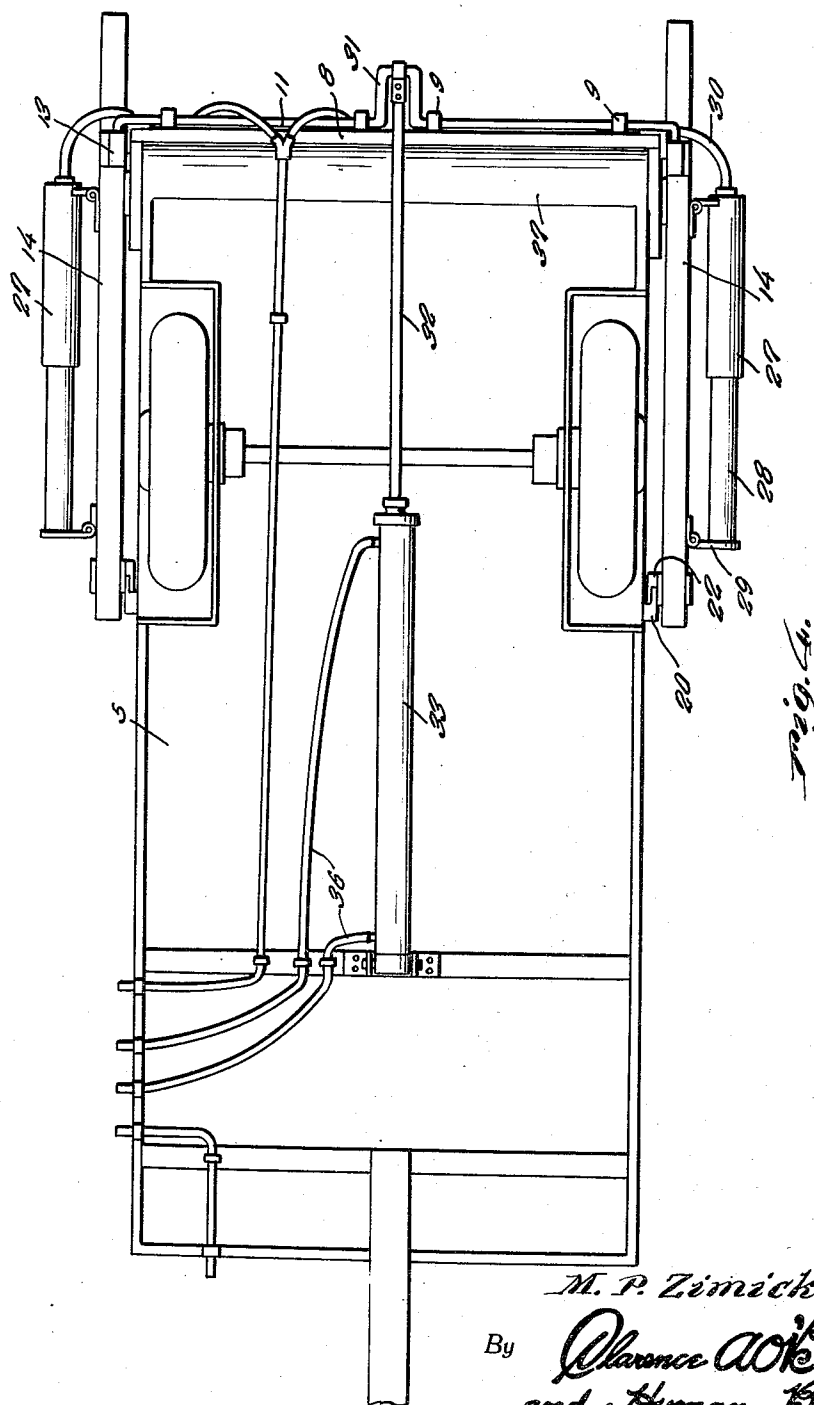
M. P. ZIMICKI

2,234,513

COMBINED ENDGATE AND LOADING ELEVATOR FOR TRUCKS

Filed Dec. 26, 1939

4 Sheets-Sheet 4



Inventor

M. P. Zimicki

By

Clarence A. O'Brien
and Hyman Berman

Attorneys

UNITED STATES PATENT OFFICE

2,234,513

COMBINED ENDGATE AND LOADING
ELEVATOR FOR TRUCKS

Marche P. Zimicki, Strawn, Tex.

Application December 26, 1939, Serial No. 311,017

6 Claims. (Cl. 214-75)

The present invention relates to trucks and similar commercial vehicles and has for its primary object to provide a combined endgate and loading elevator swingably mounted at the end of the truck for closing the rear thereof and embodying means for raising and lowering the endgate when the latter is in its open position whereby to hoist articles from the road level into a convenient position for loading the same into the truck.

An important object of the present invention is to provide hydraulic means for swinging the endgate into its open or closed position and also employing separate hydraulic means for raising and lowering the endgate when the latter is in a horizontal position whereby to lift heavy merchandise from the roadway into position for placing the same in the truck body.

A still further object is to provide an apparatus of this character of simple and practical construction, which is strong and durable, efficient and reliable in performance, relatively inexpensive to manufacture and otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof wherein like numerals refer to like parts throughout and in which—

Figure 1 is a side elevational view showing the endgate in open position and in use as an elevator.

Figure 2 is a fragmentary side elevational view showing the endgate in closed position.

Figure 3 is a longitudinal sectional view showing the elevator in its lowermost position.

Figure 4 is a bottom plan view.

Figure 5 is a vertical sectional view taken substantially on a line 5-5 of Figure 1.

Figure 6 is a perspective view of the link connecting the bottom section of the endgate with the swingably mounted frame.

Figure 7 is a fragmentary sectional view taken substantially on a line 7-7 of Figure 1.

Figure 8 is a fragmentary detail of the spacing washer for the swingably mounted elevator frame.

Figure 9 is a sectional view taken substantially on a line 9-9 of Figure 1, and

Figure 10 is a sectional view of a modified form of guide for the elevator.

Referring now to the drawings in detail, wherein for the purpose I have illustrated a preferred embodiment of the invention, the numeral 5 designates a truck body mounted on the wheel 6, the body being open at its rear end to permit the loading and unloading of merchandise into the body. The rear end of the body is adapted

to be closed by an endgate composed of a lower section 7 and an upper section 8.

To the outer surface of the lower section 7 is secured a plurality of brackets 9, each of the brackets including an eye 10 within which is secured the intermediate portion of a rod 11, shown in detail in Figure 6 of the drawings, the rod extending transversely at the end of the truck body and having its opposite end portions bent forwardly as shown at 12 and secured in brackets 13 attached to the frames 14-14 positioned at the opposite sides of the truck body 5. Each of the frames 14 are of identical construction and accordingly, a detailed description of one will suffice for both.

Each of the frames include a pair of spaced parallel members 15-15 secured in spaced relation by cross-plates 16. A cross-plate 17 is also secured inwardly of the members 15 to which a pin 18 is secured at one end, the pin extending through the side wall of the truck body 5 and provides a pivotal mounting for the frame. A spacing disk 19 is interposed between the plate 17 and the adjacent side of the truck body as shown in Figure 5 of the drawings. The pin 18 is positioned adjacent one end of the frame 14 and is journaled in the body adjacent its rear lower edge as shown in Figure 3 of the drawings. The other end of the frame is adapted to swing in an arc from the horizontal position shown in Figure 2 of the drawings to the vertical position as shown in Figure 1. An arcuate guide plate 20 is secured to the adjacent side of the truck body, the inner edge of the plate 20 having a guide flange 21 spaced from the adjacent surface of the body and under which a lug 22 is adapted to travel, the lug being secured to one of the cross-plates 16.

Slidably mounted between the members 15 of the frame is an L-shaped member 23 including the right-angularly disposed end portions 24 and 25, the portion 24 having tongues 24' formed on its edge portion slidably mounted in grooves 27 formed on the opposed edges of the members 15 of the frame. The portion 25 is formed of angle iron, as shown in Figure 9 of the drawings, the portions 25 at the opposite sides of the truck being secured to the side edges of the upper section 8 of the endgate to form the platform of the elevator when the endgate is in its open position as shown in Figure 1 of the drawings.

Braces 26 connect the outer end of the portion 25 of the elevator to the frame member 14.

To one of the cross members 16 is secured one end of a cylinder 27, the opposite end of the cylinder being open and within which is workably fitted a piston 28, one end of the piston projecting outwardly of the cylinder and is attached to the end portion 24 of the L-shaped mem-

ber 23 by means of a bracket 29. A pipe or hose 30 is attached to the closed end of the cylinder and extends to a suitable source of pressure supply, such as a compressed air tank or a hydraulic pump, not shown.

To the intermediate portion of the rod 11 is a crank 31 to which is attached one end of a piston rod 32 projecting from one end of a cylinder 33, the other end of the cylinder being pivotally mounted as at 34 to a crossframe 35 of the truck body. Hose or pipes 36-38 are connected to each end of the cylinder 33, the hose being connected to a suitable source of pressure for oppositely actuating the piston within the cylinder and to which the rod 32 is attached.

The bottom edge of the open end of the truck body 5 is provided with an arcuate guide 37 extending under the body to guide the lower section 7 of the endgate into and out of its closed position during the swinging movement of the frame members 14.

In the operation of the device, when pressure is admitted to the front end of the cylinder 33 the piston rod 32 will act on the crank 31 of the rod 11 to swing the crank from the position shown in the full lines in Figure 3 of the drawings, to the position shown by the dotted line whereby the lower section 7 of the endgate will be moved into its closed position and simultaneously the frames 14 will be swung from the vertical position shown in Figure 1 of the drawings to the horizontal position shown in Figure 2 to also move the upper section 8 of the endgate into its closed position. When it is desired to open the endgate section, pressure is admitted into the rear end of the cylinder 33 and a reverse operation of the parts will occur.

The release of pressure in the cylinders 27 carried by the frame members 14 will permit the members 23 and the upper section of the endgate 8 to gravitate downwardly when the frame members 14 have been moved into their vertical positions, as shown in Figure 1 of the drawings, the admission of air or fluid under pressure into the cylinders 27 will cause an upward movement of the elevator composed of the members 23 and the section 8 of the endgate.

In Figure 10 I have illustrated a modified form of construction for the frame 14 in which the spaced parallel members are indicated at 39, having the grooves in the opposed edges thereof and the L-shaped member is shown at 39, and to the edges of which are journaled rollers 40 for operating in the grooves of the member 39.

It is believed the details of construction, operation and advantages of the device will be readily understood from the foregoing without further detailed explanation.

Having thus described the invention, what I claim is:

1. A combined vehicle endgate and elevator comprising a pair of guide members pivotally mounted at opposite sides of the vehicle, a pair of L-shaped members having one end slidably mounted in each of the guide members, the other ends of said L-shaped members providing a support for the side edges of the endgate, a crank shaft connecting the guide members for uniform movement, actuating means for the crank shaft for opening and closing the endgate against the rear end of the vehicle and means for raising

and lowering said L-shaped members when the endgate is in its open position.

2. A combined vehicle endgate and elevator comprising a pair of guide members pivotally mounted at opposite sides of the vehicle, a pair of L-shaped members having one end slidably mounted in each of the guide members, the other ends of said L-shaped members providing a support for the side edges of the endgate, a crankshaft connecting the guide members for uniform movement, hydraulic means connected to the crank shaft for swingably actuating the guide members for opening and closing the endgate against the rear end of the vehicle and hydraulic means for raising and lowering said L-shaped members when the endgate is in its open position.

3. A combined vehicle endgate and elevator comprising a pair of members pivotally mounted at opposite sides of the vehicle, a pair of L-shaped members having one end slidably mounted in each of the first named members, the other ends of said L-shaped members providing a support for the side edges of the endgate, a rod connecting the first named members for simultaneous movement, a fluid pressure actuated piston rod connected to said first named rod for swingably actuating the first named members for opening and closing the endgate against the rear end of the vehicle and fluid pressure actuating means engaging said second named members for raising and lowering said second named members when the endgate is in its open position.

4. A combined endgate and elevator for vehicles comprising an endgate member having a right angularly extending slide at its inner end, a guide for the slide pivoted to the vehicle for swinging movement from a horizontal to a vertical position, a rock transversely extending shaft connected to the guide and having a crank, means for actuating the crank for vertically swinging the guide and means for actuating the slide when the guide is in either its vertical or horizontal position.

5. A combined endgate and elevator for vehicles comprising a guide member pivoted at one end to the vehicle and swingable from a horizontal to a vertical position, a slide having the endgate attached thereto, said slide being slidably mounted in the guide, a transversely extending crankshaft connected to the guide, hydraulic means attached to the crankshaft for swinging the member to open and close the endgate and hydraulic means for horizontally raising and lowering the endgate when the endgate is open.

6. A combined endgate and elevator for vehicles comprising a pair of pivoted guide members at opposite sides of the vehicle and swingable from a horizontal to a vertical position, slides having the endgate attached thereto and mounted in said guide for sliding movement, means connecting the members for uniform swinging movement and including a transversely extending crankshaft having its ends attached to the respective members, means connected to the crankshaft for swingably actuating the guide members to open and close the endgate and means for horizontally raising and lowering the endgate when the latter is in its open position.

MARCHE P. ZIMICKI.