

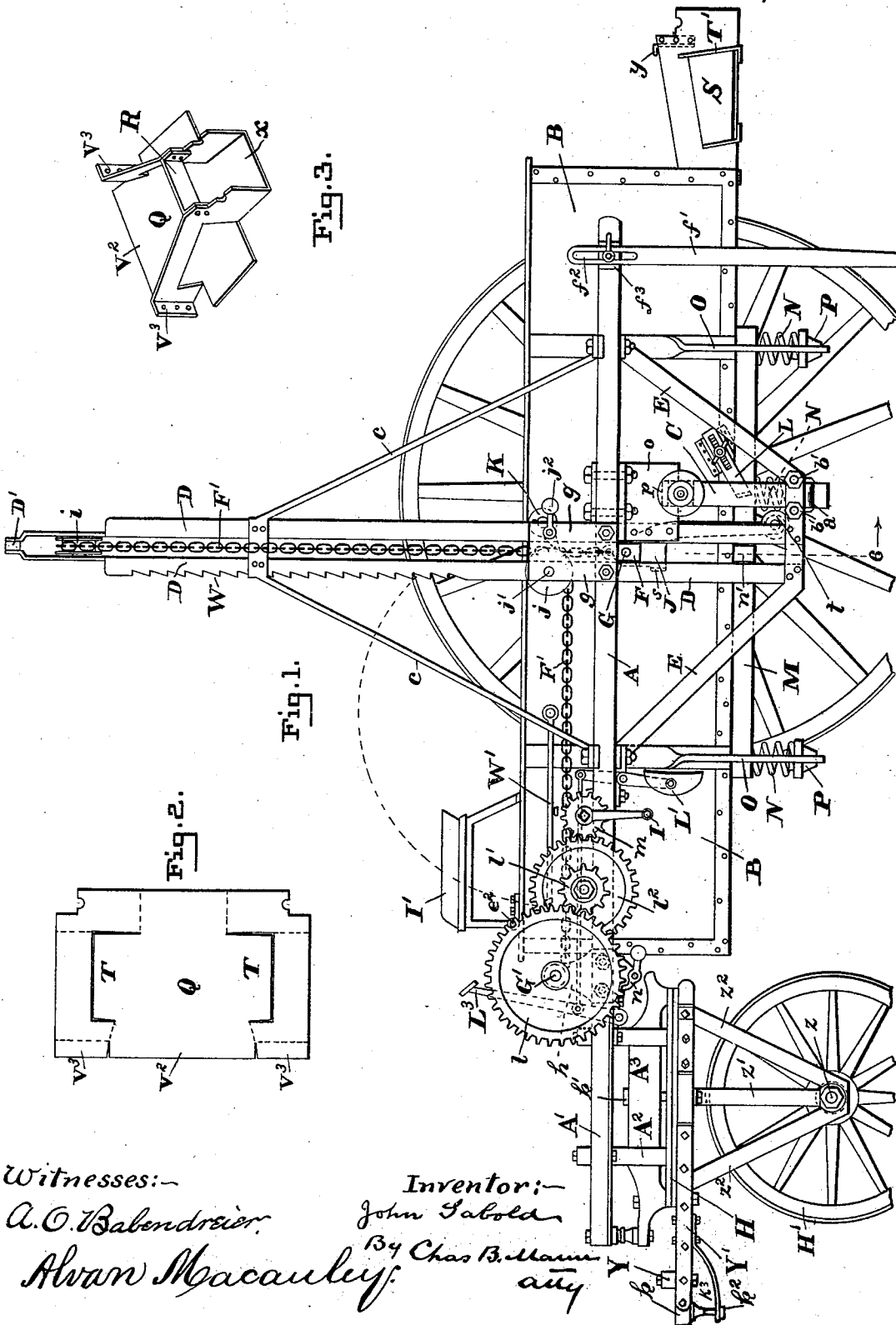
(No Model.)

3 Sheets—Sheet 1.

J. SABOLD.
DUMPING WAGON.

No. 509,184.

Patented Nov. 21, 1893.



Witnesses:—

A. C. Balendrier.

Alvan Macaulay.

Inventor:—

John Sabold.

By Chas. B. Mann
att'y

(No Model.)

3 Sheets—Sheet 2.

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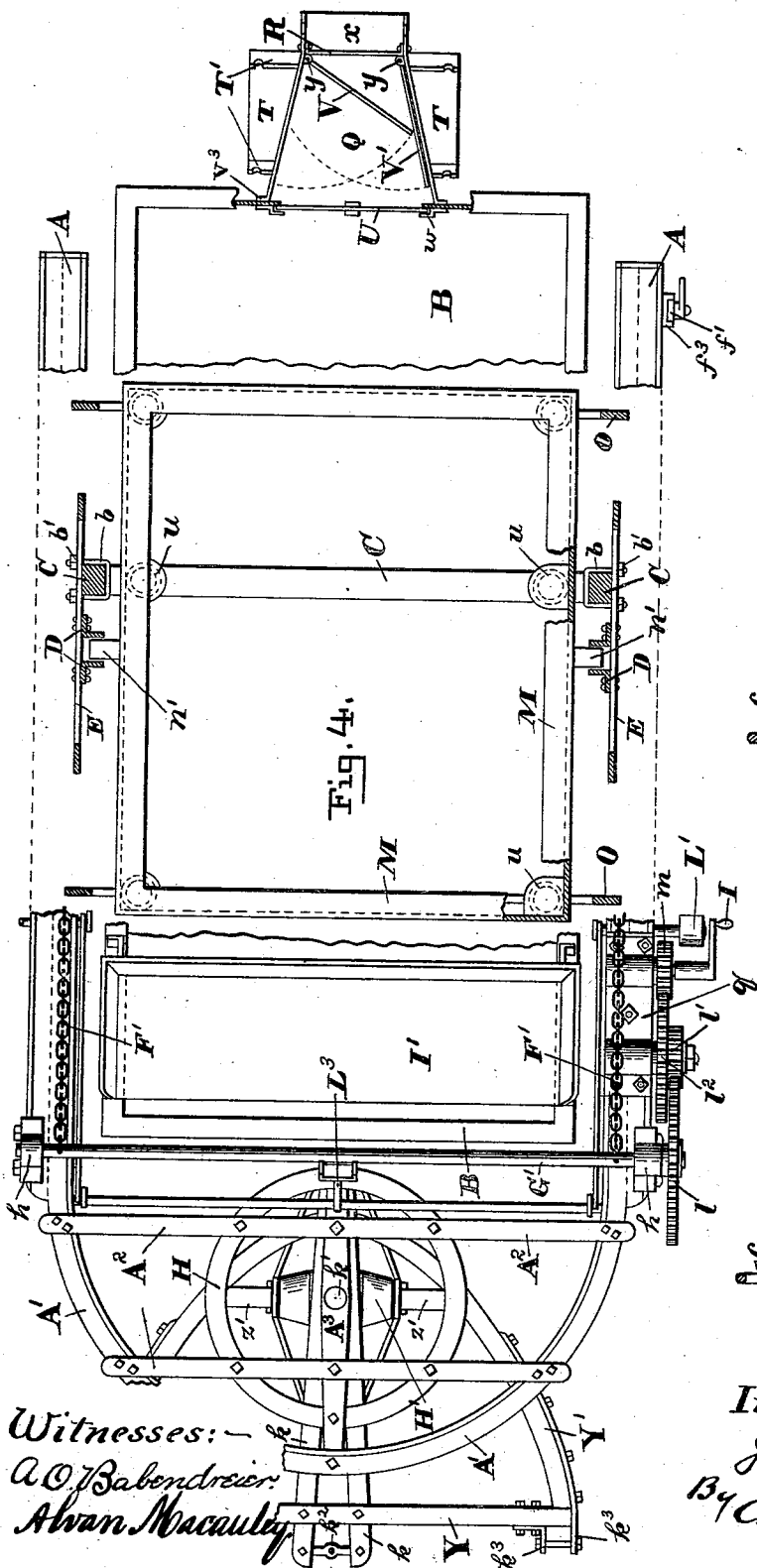


Fig. 4.

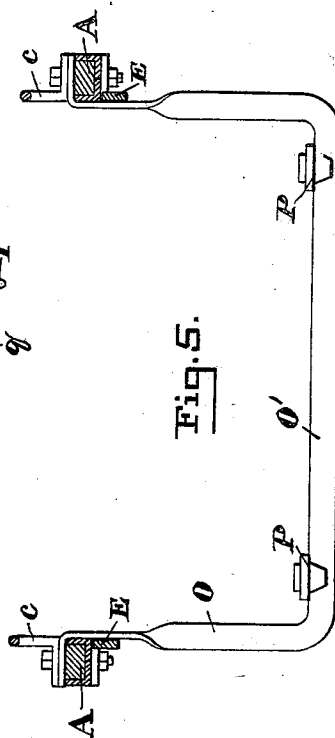


Fig. 5.

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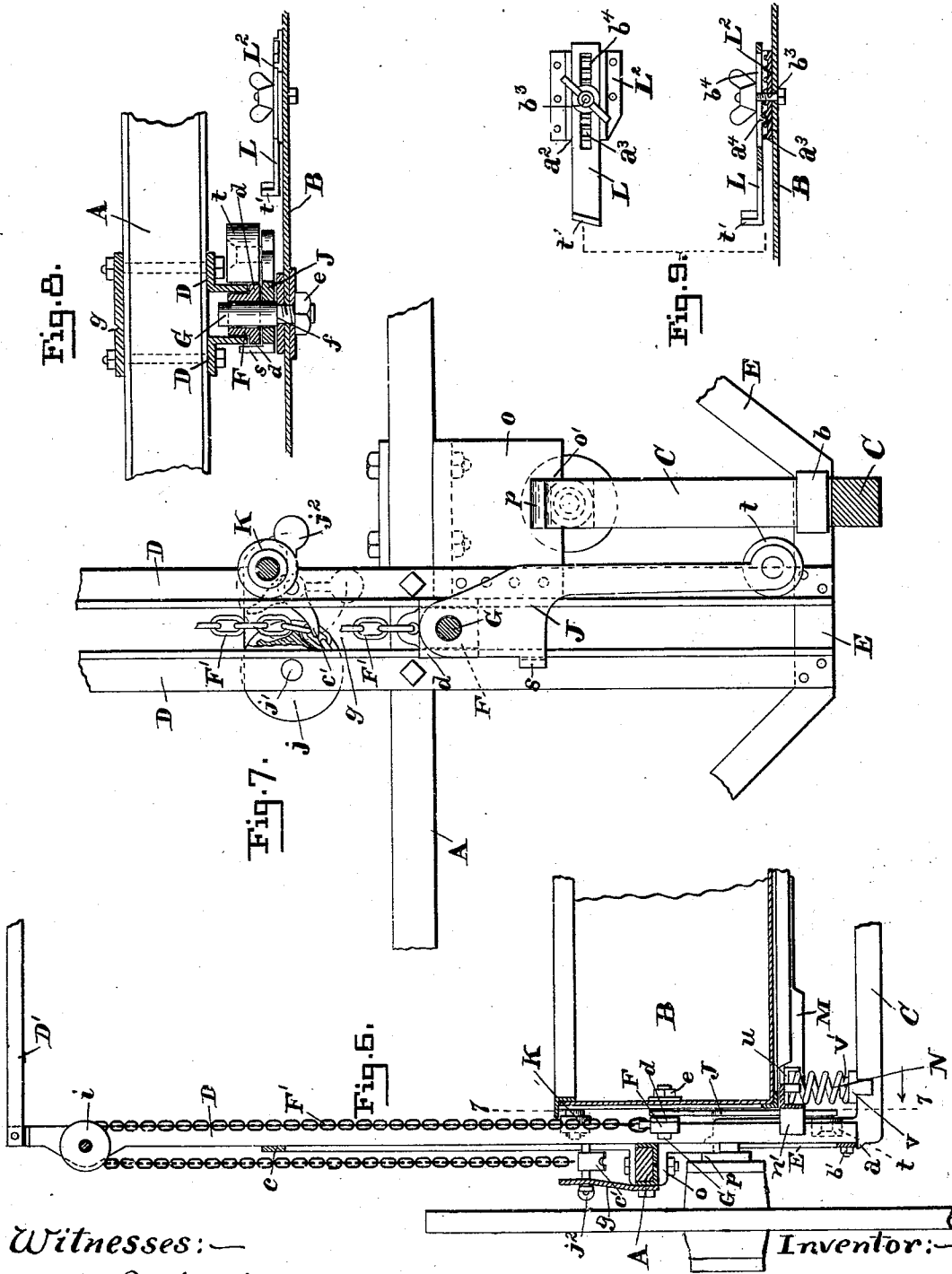
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3 Sheets—Sheet 3.

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DUMPING WAGON.

No. 509,184.

Patented Nov. 21, 1893.



Witnesses:—

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Alvan Macaulay.

Inventor:—

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UNITED STATES PATENT OFFICE.

JOHN SABOLD, OF BOYERTOWN, PENNSYLVANIA.

DUMPING-WAGON.

SPECIFICATION forming part of Letters Patent No. 509,184, dated November 21, 1893.

Application filed March 22, 1893. Serial No. 467,177. (No model.)

To all whom it may concern:

Be it known that I, JOHN SABOLD, a citizen of the United States, residing at Boyertown, in the county of Berks and State of Pennsylvania, have invented certain new and useful Improvements in Dumping-Vehicles, of which the following is a specification.

This invention relates to an improvement in dumping vehicles and the object is to provide a construction in this class of vehicles which will meet all the requirements of such a device as to convenience in both loading and unloading, and which will be strong and durable in all its parts, and may be readily operated through suitable mechanism.

The accompanying drawings illustrate the invention.

Figure 1 shows a side view of a wagon embodying my invention,—the wheel on the near side being removed. Fig. 2 shows the blank out of which the three-way end-chute is made. Fig. 3 shows a perspective view of this end-chute, as formed from the said blank. Fig. 4 shows a top view of the wagon with a part broken away showing a top view of the spring-supported frame. Fig. 5 shows a front view of one of the hangers, O. Fig. 6 shows a vertical section on line 6—6 of Fig. 1 looking in the direction of the arrow. Fig. 7 shows an enlarged sectional view taken on line 7—7 of Fig. 6 and looking in the direction of the arrow. Fig. 8 shows an enlarged section of the parts where the body is pivoted. Fig. 9 shows two views of the adjustable stop-plate.

The letter, A, designates the main side bars of the vehicle, which extend beyond the front end of the body, B, and are connected by a cross-piece, A', bent to form a semi-circular end for the frame. The body, B, is made of sheet metal and has position between the said side-bars, and a crank-axle, C, is employed so that the said body may have a low position near the ground. This will greatly facilitate loading the vehicle as the shoveling process may be carried on with less exertion than is required when the body is above the axes of the wheels.

Two vertical standards, D, of angle iron are bolted to the inner side of each side-bar, A, and extend some distance below the same,—their lower ends being bolted to a stay-bar,

E, which finds a rest on a lug, *a*, formed on the outer side of the depending part of the crank-axle, C. This stay-bar is secured to the axle by a clip, *b*, and nuts, *b'*, and its ends incline upward and are bolted to the side bars, A. A cross-bar, D', connects the top ends of the standards on one side of the vehicle with those on the other, above the pulleys, *i*, and serves to steady and maintain a definite distance between them. An angular-shaped chair, *o*, is bolted to the under side of each side bar and is riveted to one of the standards, D, and in its lower edge has a notch, *o'*, to fit over the axle which it engages between shoulders, *p*, formed thereon. The standards, D, above the said side-bars, are braced by stay-rods, *c*, the upper ends of which are bolted to them and the lower ends to the side-bars.

A vertical slide-way is formed at each side of the vehicle between the vertical standards, D, and a guide-box, F, engages the said slide-way and has two flanges, *d*, which take over the inwardly-extending flanges of the standards, D. This guide-box fits loose on the end of a trunnion or pivot-bolt, G, which has a threaded end extending through the side of the vehicle body and receives a nut, *e*; this nut is tightened to clamp the trunnion or pivot-bolt rigidly to the vehicle body, B,—the said bolt having a shoulder, *f*, which bears against the outer side of said body.

Two lifting chains, F', one at each side of the vehicle are employed for lifting the body, B, and each has one end attached to a guide-box, F, and the other end carried to the top of the standards where it passes over a pulley, *i*, and is thence carried down again and under a pocket-wheel, *j*, mounted on a shaft, *j'*, above the side bar, A, and having one of its bearings in the front standard, D, and the other in a plate, *g*, bolted to the outside of the side bar and extending above the same. From the pocket wheel, *j*, on each side of the vehicle, the chain is carried forward and its end fastened to a cross-shaft, G', mounted in bearings, *h*, on top of the side bars, A, and in front of the vehicle body. A cog-wheel, *l*, fast on the winding shaft, G', meshes with a smaller cog-wheel, *l'*, which with a larger cog-wheel, *l''*, are mounted and turn together on a stud

fastened to a bearing-plate, q , on one of the side-bars, A; this latter wheel, l^2 , in turn meshes with a smaller cog-wheel, m , on a shaft journaled in the bearing plate, q , and carrying a crank-handle, I. A ratchet pawl, n , pivoted below the winding shaft and to an arm depending from one of the bearings, h , engages the first-named cog-wheel, l . It will be seen that upon turning the crank I, the guide-boxes, F, will be drawn upward in the slide-ways formed by the two standards and thereby the vehicle body, B, elevated. When the said body has been brought to the desired height, its load may be dumped by tilting the body backward,—its trunnions or pivot-bolts, G, turning in the said guide-boxes.

A ratchet pawl, c' , at each side of the vehicle, like the pocket-wheel, j , has one journal in the rear standard, D, and the other in the vertical plate, g , and is opposite the said pocket-wheel, j ; this pawl is to engage the lifting chain, F', as it passes around the pocket wheel so that in the event of a break in the gearing for lifting the vehicle body, the latter will, when elevated, be held suspended and prevented from falling by means of the pawls mentioned. Each pawl has a weighted arm j^2 to keep it in engagement with the chain. By throwing the pawl to the position shown by broken lines in Fig. 7, the weighted arm keeps the point of the pawl disengaged from the chain and allows the vehicle body to descend.

A vertically-adjustable bar, f' , is attached near the rear end of one of the side-bars, A, and has a longitudinal slot, f^2 , at its upper end through which passes a bolt for clamping it in a slide-way, f^3 , fastened to the said side bar. The lower end of this brace bar is to rest on the ground when the vehicle body is in an elevated position, as when discharging its load, to prevent the backward-tilting of the standards and thereby cause an upward pull at the front ends of the side bars, A.

A friction roller, K, is pivoted to each side of the vehicle body, B, above and to the rear of the pivot-bolt, G, and bears against the inwardly-extending flange or web of the rear standard, D. This roller allows the body to move up and down freely and yet prevents it from tilting forward.

A plate, J, hangs loosely from the pivot-bolt, G, between the guide-box, F, and vehicle body, B, at each side of the vehicle. This depending plate has a lateral lip, s , to take over the web of the front standard and at its lower end a friction roller, t , to engage the web of the rear standard, the same as the friction roller, K, does; the said lip, s , and roller, t , allow the plate to move up and down but prevent it from tilting either forward or backward.

A stop-plate, L, having a lateral projection, t' , at one end, is fastened against the side of the body below and back of the pivot-bolt, G, and is preferably arranged adjustable thereon. The said stop-plate, L, limits the

backward-tilting movement of the body when discharging the load, by having its lateral projection, t' , strike the lower end of the plate, J. A block, L^2 , having on its outer side a slide-way, a^2 , and a toothed rack, a^3 , in the said slide-way is bolted against the body. The stop-plate, L, has position in said slide-way and is provided with a lug, a^4 , to engage the rack teeth therein. A bolt, b^3 , having a thumb-nut, passes through a longitudinal slot, b^4 , in the stop-plate, and also through the block, L^2 , to allow for the adjustment of the stop-plate.

The body, B, rests on a rectangular frame, M, composed of angle-iron and said frame is supported by spiral springs, N, there being six of these in the present instance, one at each corner and one at each side intermediate of the corners:—the frame has six horizontal plates, u , one at each corner and sides; each plate, u , bears on a spring and is provided with lugs to confine the same. The two side springs rest on seats, v , which set astride of the axle and the seats are provided with lugs, v' , to center the springs. Two hangers, O, are fastened at their upper ends to the side-bars, A, then extend down and the horizontal part, O', extends crosswise from one side of the vehicle to the other; the corner springs, N, rest on seats, P, which straddle the horizontal part of these hangers.

The spring-supported frame, M, has a lateral stud, n' , projecting from each side and into the slide-way formed by the two standards, D; these studs prevent the frame, M, from shifting forward or backward without interfering with its up and down movement.

A three-way chute is provided at the rear end of the body, and is made from a rectangular piece of sheet-metal, see Fig. 2, cut and then folded as in Fig. 3, to form a bottom, Q, for the chute, and sides, Q', which are connected by a cross-bar, R, at the upper end. Each side has an opening, S, and the metal removed to form the said opening remains in the plane of the chute-bottom, and the horizontal extensions, T, thus formed constitute the bottoms of two lateral chutes. The vertical sides, T', therefor, made of separate pieces, are fastened to said extensions and the vertical sides of the middle or main chute. This three-way chute is fastened to the vehicle body, B, by means of a bottom flange, v^2 , and side flanges, v^3 . This end of the vehicle body at the chute has an opening which is closed by a gate, U, fitting in vertical slide-ways, w . The main or center chute leads straight away from the body and its sides converge to a contracted end-spout, x , whose sides are straight. Two doors or valves, V, V', are hinged in the chute,—one door being hinged at each junction of these straight sides with the converging sides of the chute. See Fig. 4. The said hinges, y , may be formed in any suitable manner.

When the contents of the vehicle body are to be delivered from the center or end spout,

2, both of the side doors or valves, V, V', remain closed so that such contents may pass straight out through the center or main chute. If it is desired to deliver the contents from one of the side chute-openings,—as for instance when delivering coal in a narrow street where the vehicle cannot stand crosswise of the street without obstructing travel,—then the vehicle may be drawn to a position alongside the curb and one of the side doors, V, turned crosswise on its hinge with its free end resting against the door, V', on the other side, as in Fig. 4. This oblique position, it will be seen, closes the center or main chute and opens one side chute, so that the contents of the vehicle body will strike the oblique door or valve, V, and thereby be directed into the open side chute.

The seat, I', is attached by a hinge, e², on its forward legs, so as to admit of tilting the seat forward and thus get it out of the way when filling or loading the body.

A suitable brake is applied, L', being the brake block and L³, the brake lever.

A ratchet rack, W, is formed in the front side of each forward standard, D, and long pawls, W', pivoted to the front part of the body, B, are adapted to engage the said racks, and thereby prevent the body from tilting if it is desired to hold the said body in an elevated horizontal position, to admit of loading or unloading it when hauling merchandise or any goods which require to be loaded from or unloaded to a platform and which merchandise or goods are not to be dumped.

Two cross pieces, A², extend from one side bar, A, to the other between the end piece, A', and the vehicle body, B. A center bar, A³, connects the two said cross pieces with the end piece, A', and with them form on their under sides bearing points for a fifth wheel, H, one plate of which is fastened thereto and the other to a frame-work carrying a caster wheel, H'; this frame-work consists of the tongue-hounds, k, through which and the center bar, A³, the king-bolt, k', passes. A splinter bar, Y, extends crosswise of the hounds and its ends are connected by curved bars, Y', to the rear ends of the hounds. The axle, z, on which the caster wheel, H', turns is connected by braces, z', one at each side of the wheel, with the curved bars, Y', and two similar braces, z², extend upward one in front and the other back of the axle and connect it with the hounds, k, already referred to. A suitable T-bolt, k², is provided below the hounds to receive a double tree if desired, and at the ends of the splinter bar suitable ears, k³, are provided to receive the thills of a pair of shafts for a single horse.

The construction of the vehicle here shown is that of a three-wheeled wagon, the front or caster-wheel turning on the king-bolt at the front part of the frame; it is obvious however, that any suitable truck could be swiveled in place of the caster-wheel or that neither need be used but instead the side bars, A, ex-

tended to form shafts and thereby convert the vehicle into a cart.

It is evident that various parts of the wagon mechanism here shown may be varied or changed in construction without departing from my invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a dumping vehicle, the combination of rigid side-bars; a crank-axle; a body between the side-bars with its bottom below the axes of the wheels; vertical standards supported by the said side-bars and extending above and below the same and forming slide-ways; slide-pieces on the body engaging said slide-ways; and mechanism for elevating the vehicle body, carried by the vehicle and connected with the said slide-pieces.

2. In a dumping vehicle, the combination of the rigid side-bars; a crank-axle; stay-bars fastened to the said side-bars and to the axle; vertical standards secured to the side-bars and to the stay-bars, and forming slide-ways; slide-pieces on the vehicle body and fitting said slide-ways; and mechanism for elevating the body, carried by the vehicle and connected with the said slide-pieces.

3. In a dumping vehicle, the combination of rigid side-bars; a crank-axle; a body between the side-bars with its bottom below the axes of the wheels; and provided with trunnions; vertical standards supported by the said side-bars and extending above and below the same and forming slide-ways; guide-boxes on the body engaging the said trunnions and slide-ways; pulleys at the upper ends of the slide-ways; pulleys between those just mentioned and the rigid side-bars; a winding shaft; gearing connected with the shaft; and chains connected with the guide-box on the body and passing upward over the upper pulleys and downward and under the lower pulleys and connected with the winding shaft.

4. In a dumping vehicle, the combination of rigid side-bars; standards, D, supported thereby and forming vertical slide-ways; boxes fitting said slide-ways and having lateral flanges which take on the outer sides of the said standards; a body between the standards and having trunnions or pivot-bolts in the said boxes; and mechanism for elevating the said body, and connected with the said boxes.

5. In a dumping vehicle, the combination of rigid side-bars; vertical standards supported thereby and forming slide-ways; boxes fitting said slide-ways; pivot-bolts bearing in said boxes; a plate pendent from each of said pivot-bolts and having a lateral lip, s, to slide along one of the standards and also provided with a roller bearing against one of the standards; a body, B, between the standards and attached to the pivot-bolts,—said body also having a roller, K, to engage one of the vertical standards; a stop-plate on the body to encounter the lower end of said pendent plate;

and mechanism for elevating the body and connected with the slide-boxes.

6. In a dumping vehicle, the combination of two rigid side-bars, A; a crank-axle; hangers, O, attached to the rigid side-bars; a horizontal frame between the vertical parts of the crank-axle; spiral springs supporting the said frame and resting on the crank-axle and the hangers; and a body resting on the spring-supported frame.

7. In a dumping vehicle, a body having a three-way discharge chute comprising a center or main chute leading straight away from the end of the body, and a lateral chute leading out from the two opposite sides of the main chute.

8. In a dumping vehicle the combination of a body; a three-way discharge chute comprising a center or main chute leading straight away from the end of the vehicle-body; a lateral chute leading out of the two opposite sides of the main-chute, and two gates each hinged at the opposite sides of the main-chute respectively and closing the lateral chutes.

9. In a dumping vehicle, the combination of side standards having a slide-way and ratchet-racks; a body having trunnions which travel up the slide-way when the body is elevated; and pawls pivoted to the front of the body and arranged to engage the said racks, for the purpose described.

10. In a dumping vehicle, the combination of side-standards, D, forming vertical slide-ways; a body between the side-standards and having trunnions or pivots which project into said slide-ways; mechanism for elevating and lowering the vehicle body; a plate, J, at each side of the body and mounted on the said trunnions or pivots and loosely engaging the

side-standards so as to move up and down with the body but not tilt; and a stop-plate, L, on the side of the body to limit the backward tilting movement, as set forth.

11. In a dumping vehicle the combination of rigid side bars; vertical standards supported by the side bars; a body between the standards and provided with trunnions; pulleys at the upper ends of the standards; pulleys between those just mentioned and the rigid side bars; a winding shaft; chains connected with the trunnions on the body and passing upward over the upper pulleys and then downward and under the lower pulleys and connected with the winding shaft; and pawls to engage to said chains to prevent the body when it is elevated from falling in case the winding mechanism should break, as set forth.

12. In a vehicle the combination of two side-bars, A; a crank-axle; a stay-bar at each side of the vehicle, attached to the depending part of the crank-axle and connecting it with the said side-bar; standards connected with the side-bars and stay bars; and a spring-supported body between the said standards.

13. In a vehicle the combination of two parallel side-bars connected at their front ends; a crank-axle supporting said side-bars; a spring-supported body above the crank-axle and between the side-bars; a frame-work swiveled below the connected front ends of the side-bars; and a caster-wheel attached to the said frame-work.

In testimony whereof I affix my signature in the presence of two witnesses.

JOHN SABOLD.

Witnesses:

I. F. YOST,

L. P. G. FEGLEY.