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E. F. BRAUCHER.

DUMPING WHEELBARROW.

APPLICATION FILED NOV. 6, 1902.

NO MODEL.

Fig. 1.

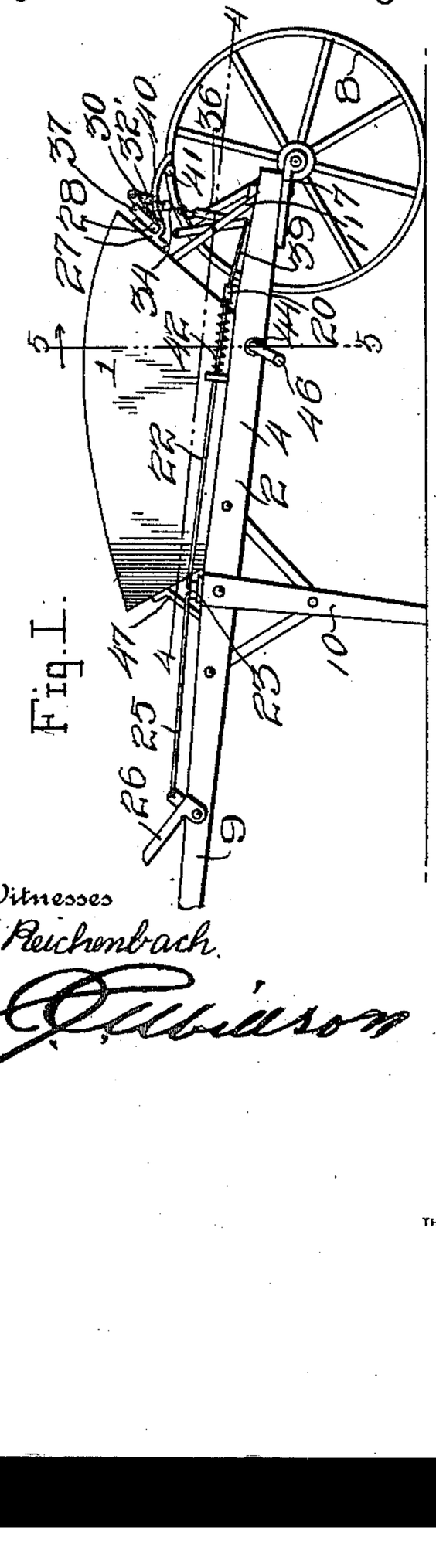


Fig. 2.

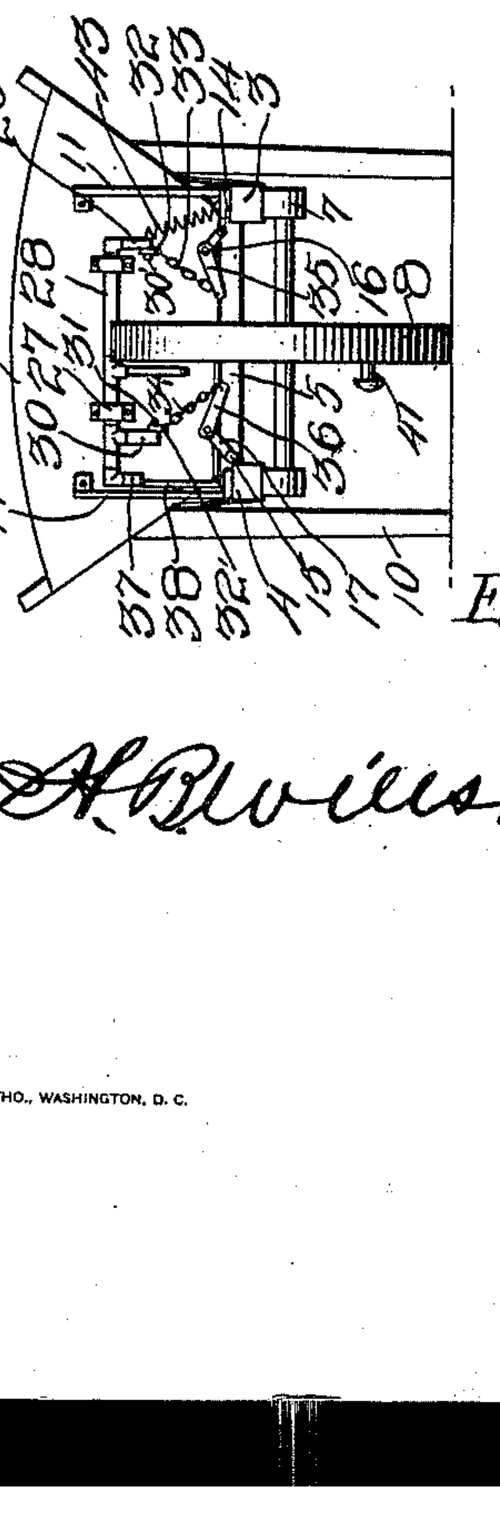


Fig. 3.

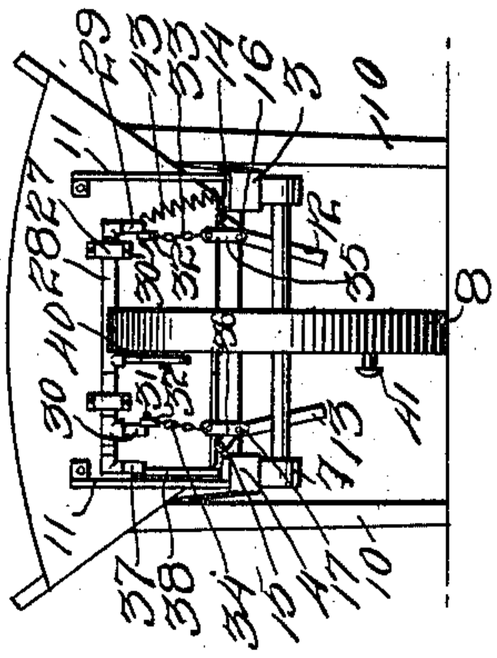


Fig. 4.

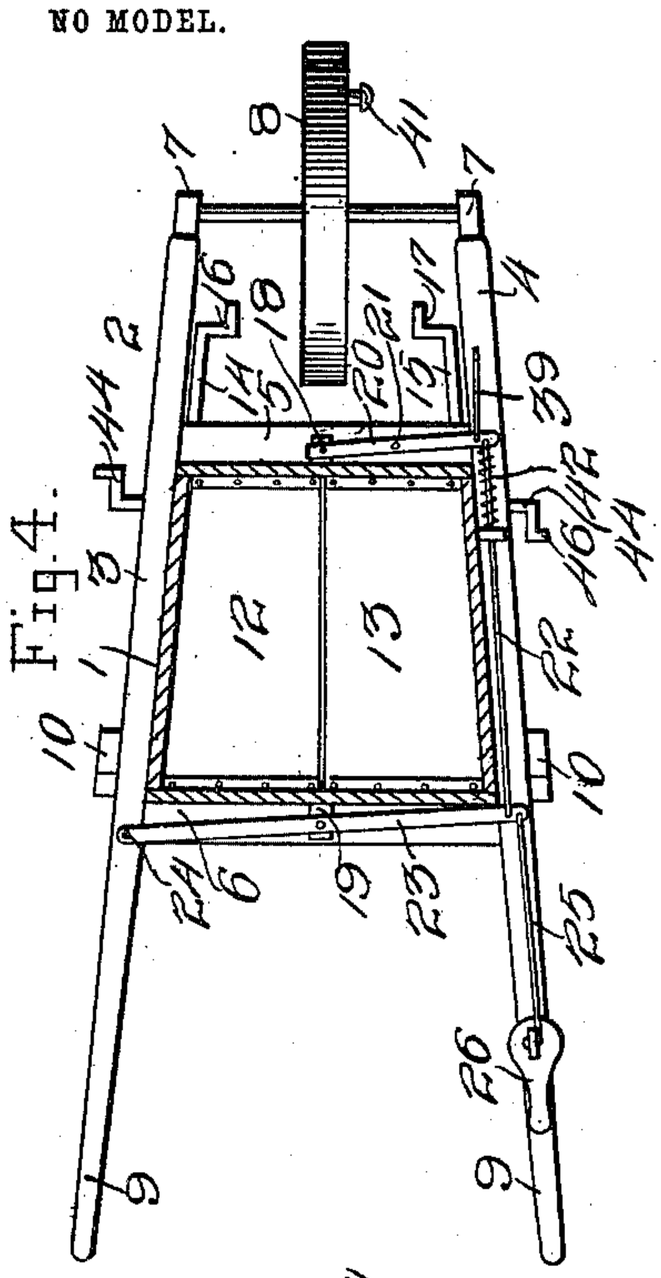
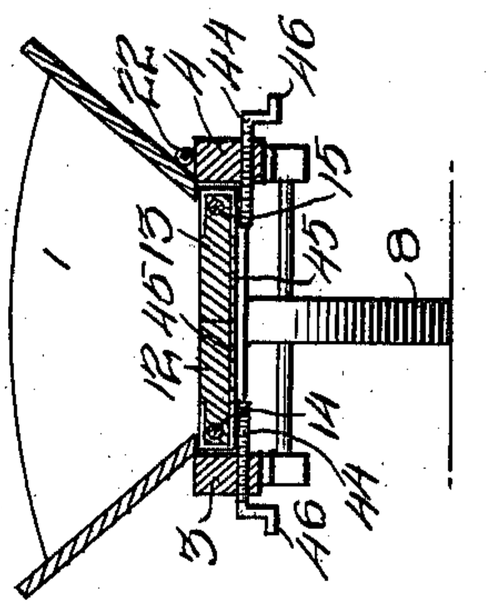


Fig. 5.



Witnesses

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DUMPING-WHEELBARROW.

SPECIFICATION forming part of Letters Patent No. 719,428, dated February 3, 1903.

Application filed November 6, 1902. Serial No. 130,295. (No model.)

To all whom it may concern:

Be it known that I, EDWARD F. BRAUCHER, a citizen of the United States, residing at Meyersdale, in the county of Somerset and State of Pennsylvania, have invented certain new and useful Improvements in Dumping-Wheelbarrows; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to dumping-wheelbarrows, and more particularly to that class of wheelbarrows in which the bottom of the body or hopper is composed of hinged sections which may be dropped at the pleasure of the operator in order to discharge its contents.

The object of my invention is to provide a wheelbarrow of this character which may be readily discharged of its contents by simply operating a hand-lever, to provide means for restoring the hinged sections of the bottom to their normal position after the discharge has been effected, and, further, to provide means for regulating the size of the opening between the hinged section of the bottom of the hopper in order to control the discharge.

With these and other objects in view the invention consists of certain novel features of construction and combination of parts, which will be hereinafter fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a side elevation of my improved wheelbarrow. Fig. 2 is a front end elevation with the bottom of the body or hopper in its normal position. Fig. 3 is a similar view with the bottom of the body lowered. Fig. 4 is a horizontal section on the line 4 4 of Fig. 1. Fig. 5 is a vertical section on the line 5 5 of Fig. 1.

In the drawings, 1 denotes the body or hopper of the wheelbarrow, mounted on the frame 2, consisting of the converging side bars 3 and 4, spaced apart by the front and rear cross-bars 5 and 6. The front ends of the side bars 3 and 4 are provided with bearings 7 to receive the axle of the wheel 8. The side bars 3 and 4 extend to the rear beyond the body and terminate in the handles 9. The frame is supported at the rear upon the legs 10. The body or hopper 1 is secured in any approved manner upon the frame and is braced by the strap-iron braces 11.

The bottom of the body or hopper is composed of two sections 12 and 13, which are secured to the longitudinal pivot-rods 14 and 15, respectively. These rods 14 and 15 are journaled in bearings in the cross-bars 5 and 6 of the frame, their forward ends projecting through the cross-bar 5 and provided with crank-arms 16 and 17, the purpose of which will hereinafter appear. By this construction it will be seen that the bottom-sections 12 and 13 are hinged or pivoted at their outer ends to swing downwardly and outwardly from the center of the hopper. In order to hold the bottom of the body or hopper in its closed or normal position, I provide sliding latches 18 and 19. The latch 18 is pivotally secured to one end of a lever 20, pivoted at its center 21 to the top of the cross-bar 5. To the opposite end of the lever 20 is secured a link 22, which extends rearwardly along the top of the side bar 4 of the frame and is fastened to the free end of a lever 23, pivoted at 24 to the top of the side bar 3. The latch 19 is pivotally secured to the center of lever 23. To the free end of lever 23 is also secured a connecting rod or link 25, which extends rearwardly to the handle 9, where it is fastened to a pivoted hand-lever 26. It will be readily seen that by simply depressing the hand-lever 26 the latches 18 and 19 will be retracted from engagement with the sections or doors 12 and 13, whereupon they will be allowed to drop and the contents of the body of the wheelbarrow discharged.

I will now describe the device for closing or restoring the bottom of the body to its closed or normal position after its contents have been discharged. Journaled in bearings 27, secured to the front end of the body or hopper 1, is a rock-shaft 28, preferably constructed of sections of iron pipe and T and L connections. Projecting radially from the shaft 28 are arms 29 and 30, which are provided with inwardly-projecting extensions 30′ and 31, to which are pivoted links 32 and 32′, to the outer side of which are fastened the chains 33 and 34. The opposite ends of these chains 33 and 34 are secured, respectively, to the free ends of levers 35 and 36, which are in turn secured to the ends of the crank-arms

16 and 17 on the forward ends of the pivoted rods 14 and 15. The end of the rock-shaft 28, adjacent to the side bar 4, is provided with an arm or crank 37, which is adapted to be engaged by one end of a lever 38, pivoted to the brace 11. To the opposite end of the lever 38 is fastened a link 39, the opposite end of which is secured to one arm of the lever 20. It will be seen that upon operating the hand-lever 26 the shaft 28 will be slightly rocked through the medium of the connecting-links, the pivoted lever 38, and the crank-arm 37. This movement brings an arm or hook 40, projecting from the rock-shaft 28, into the path of rotation of a pin or button 41 on the wheel 8. Upon revolving the wheel 8 by moving the wheelbarrow forward the pin 41 will engage the hook-arm 40 and rock the shaft 28 to a greater extent than the depression of the hand-lever 26 would. The rocking of the shaft 28 raises the arms 29 and 30, which movement rotates the pivot-rods 14 and 15 through the medium of the connecting-chains, links, and crank-arms. The rotation of the rods 14 and 15 will swing the doors or sections 12 and 13 of the bottom of the hopper to a closed position, and they will be held closed by the latches 18 and 19. A spring 42, which bears against the one arm of the lever 20, actuates the latches 18 and 19 when the hand-lever 26 is released. A coil-spring 43, one end of which is secured to the frame 2 and the other end to one of the arms of the shaft 28, is adapted to restore the shaft 28 to its normal position—that is, to the position in which the hook-arm 40 is not in the path of rotation of the pin 41 on the wheel 8.

To regulate the size of the opening between the swinging sections 12 and 13, which close the bottom of the body or hopper, I place on each side of the frame screw-rods 44, the inner ends of which project through the side bars 3 and 4 and bear against wear-plates 45, secured to the under side of the bottom-sections 12 and 13. These wear-plates also serve to strengthen the said sections. To facilitate the adjustment of these rods or bolts 44, I provide the outer ends with cranks or handles 46. By rotating these handles the inner ends of the rods or bolts 44 may be made to project as far as desired within the frame 2 to limit the drop or downward swing of the sections 12 and 13.

To prevent the latch 19 from becoming clogged with earth, I secure a metal sheathing 47 to the rear end of the body. This sheathing extends downwardly and covers the said latch, as seen in Fig. 1. If desired, I may also protect the latch 18 at the forward end of the body in the same manner.

To effect the discharge of the contents of the body of the wheelbarrow, the hand-lever 26 is depressed. This movement retracts the latches 18 and 19, and the sections 12 and 13 of the bottom drop by gravity. The depression of the lever 26 also rocks the shaft 28 sufficiently to bring the hook-arm 40 into the path of rotation of the pin 41 on the wheel 8. By moving the wheelbarrow forward when the parts are in this position the pin 41 will raise the arm 40, and hence rock the shaft 28, which movement will cause the pivot-rods 14 and 15, to which the sections 12 and 13 of the bottom are secured, to be rotated, and hence the bottom of the hopper will be closed.

From the foregoing description, taken in connection with the accompanying drawings, the preferred construction, mode of operation, and the advantages of my invention will be readily understood.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

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

1. In a dumping-wheelbarrow, the combination with a frame and hopper, of pivoted, gravity-opening doors closing the bottom of the hopper, latches for holding the doors closed, a lever for retracting the latches, door-closing mechanism adapted to be thrown into action by said lever, and a device on the supporting-wheel of the barrow for operating said door-closing mechanism, substantially as described.

2. A wheelbarrow having a gravity-opening dumping-bottom, a latch for holding the bottom closed, manually-operable mechanism for retracting said latch to allow the bottom to open, and means adapted to be thrown into action by said retracting mechanism for automatically closing the bottom, substantially as described.

3. A dumping-wheelbarrow having a gravity-opening dumping-bottom, latch mechanism for holding the bottom in closed position, operating mechanism for retracting the latch mechanism to allow the bottom to open, and means adapted to be operated by the supporting-wheel of the barrow for automatically closing the bottom, substantially as described.

4. In a dumping-wheelbarrow, the combination of a hopper provided with pivoted gravity-opening doors, pivoted levers at the front and rear of the hopper provided with latches for holding the doors closed, an operating-lever, connections between the same and said pivoted levers for moving the same to retract the latches, and mechanism set in action by the movement of the wheelbarrow after the dumping of the load for automatically closing the doors, substantially as described.

5. In a dumping-wheelbarrow, a hopper having a gravity-opening dumping-bottom, in combination with latch mechanism for holding the bottom closed, and allowing it to open, and means set in action by the running motion of the wheelbarrow for automatically closing said bottom, substantially as described.

6. In a dumping-wheelbarrow, the combination with a hopper, provided with a gravity-opening dumping-bottom, of latch mechanism for holding the bottom closed and permitting it to open, and means adapted to be operated by the supporting-wheel of the wheelbarrow for closing said bottom, substantially as described.

7. In a wheelbarrow, the combination with a hopper, having a downwardly-tilting bottom, and means for holding the same closed and allowing it to open, of a rock-shaft provided with a projection, connections between the same and the tilting bottom for closing the latter when said projection is moved in one direction and a contact-piece on the supporting-wheel of the barrow for engaging and operating said projection, substantially as described.

8. In a wheelbarrow, the combination with a hopper provided with a downwardly-tilting bottom, and means for holding the same closed and allowing it to open, of a rock-shaft, connections between said shaft and the bottom for automatically closing the latter when the shaft is moved in one direction, a crank-arm projecting from said shaft, and a contact-piece on the wheel of the barrow adapted to engage said crank-arm for moving the same and actuating the shaft to close the bottom, substantially as described.

9. In a dumping-wheelbarrow, the combination with the hopper and supporting-wheel, the latter provided with a contact-piece, of a tilting bottom for the hopper, a rock-shaft having two arms, one of which is adapted to be engaged by the contact-piece on the supporting-wheel to move said rock-shaft in one direction and the other to be operated to throw the first-named arm into the path of movement of said contact-piece, connections between the rock-shaft and the bottom, whereby when the contact-arm is moved in one direction, the bottom is closed, and when the bottom drops, said contact-arm is adjusted out of the path of movement of the contact-piece, an operating-lever, and means controlled by the lever for engaging the other arm of the rock-shaft to tilt the same and throw the contact-arm into the path of movement of the contact-piece on the supporting-wheel, substantially as described.

10. In a dumping-wheelbarrow, the combination with a supporting-wheel provided with a contact-piece, and a hopper having a dumping-bottom adapted to open by gravity, of latch-levers arranged at front and rear of the hopper and provided with latches to engage said bottom and hold it closed, a link connecting said levers, an operating-lever for moving said latch-levers to retract the latches, a rock-shaft connected with the door for swinging the same closed, and provided with two projecting arms, one of which is adapted to be engaged by the contact-piece on the wheel to move said shaft in the direction to close the bottom, and means adapted to be operated by the operating device for engaging the other arm of the shaft and moving the first-named arm into position to be engaged by said contact-piece, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

EDWARD F. BRAUCHER.

Witnesses:
WM. B. COOK,
HARRY W. EICHER.