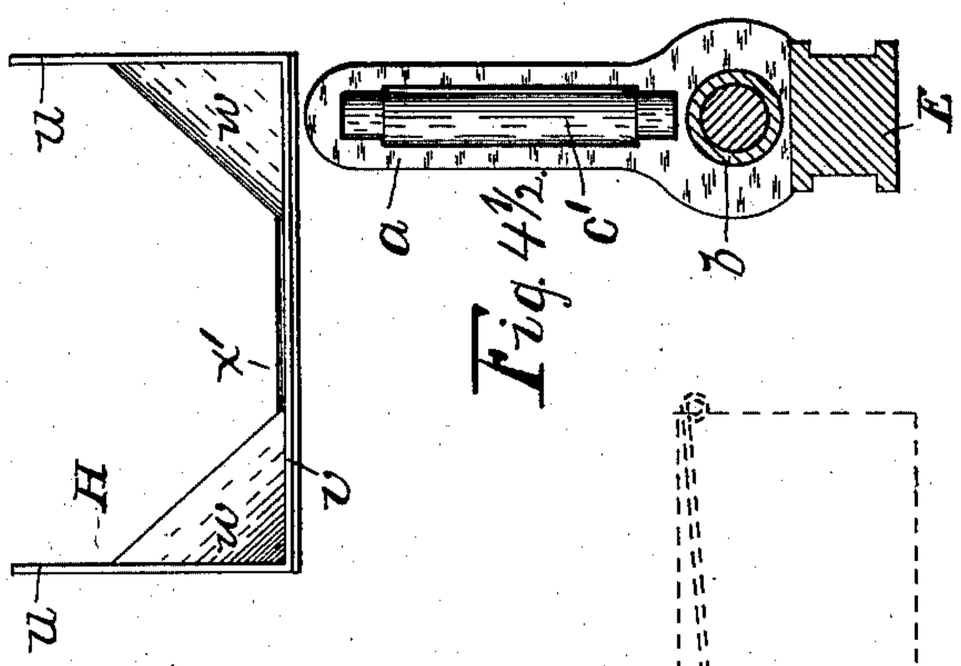
No. 750,442. PATENTED JAN. 26, 1904.

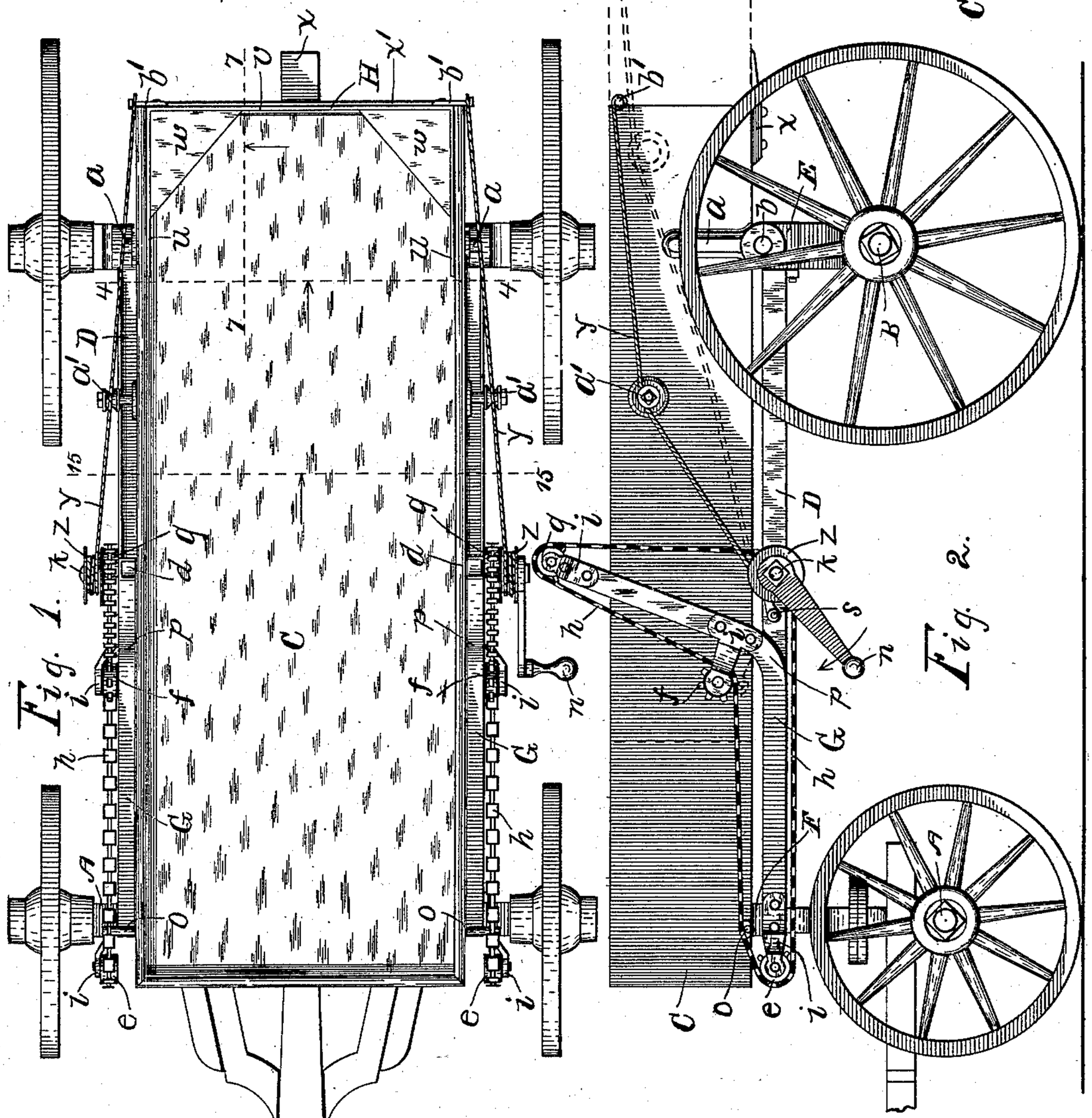
D. S. EVERETT.

DUMPING WAGON.

APPLICATION FILED NOV. 6, 1903.

NO MODEL. 3 SHEETS—SHEET 1.





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NO MODEL. 3 SHEETS—SHEET 2.

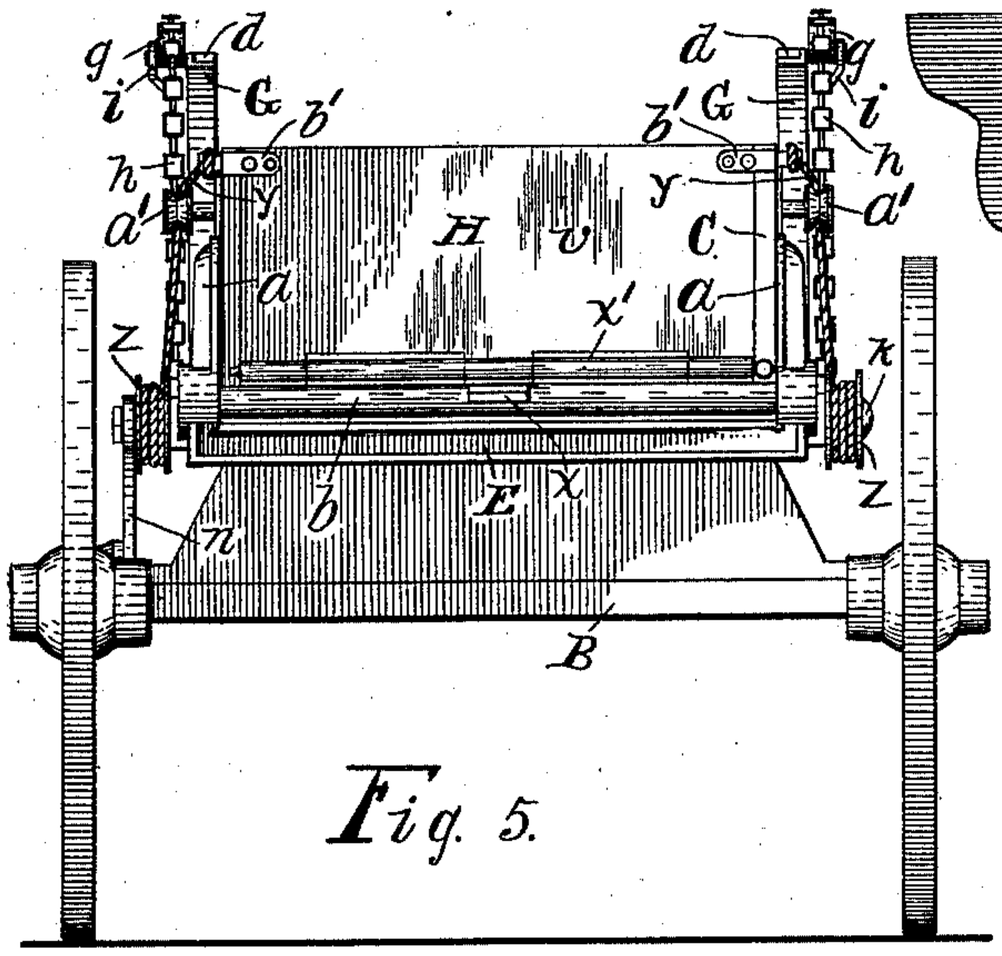


Fig. 5.

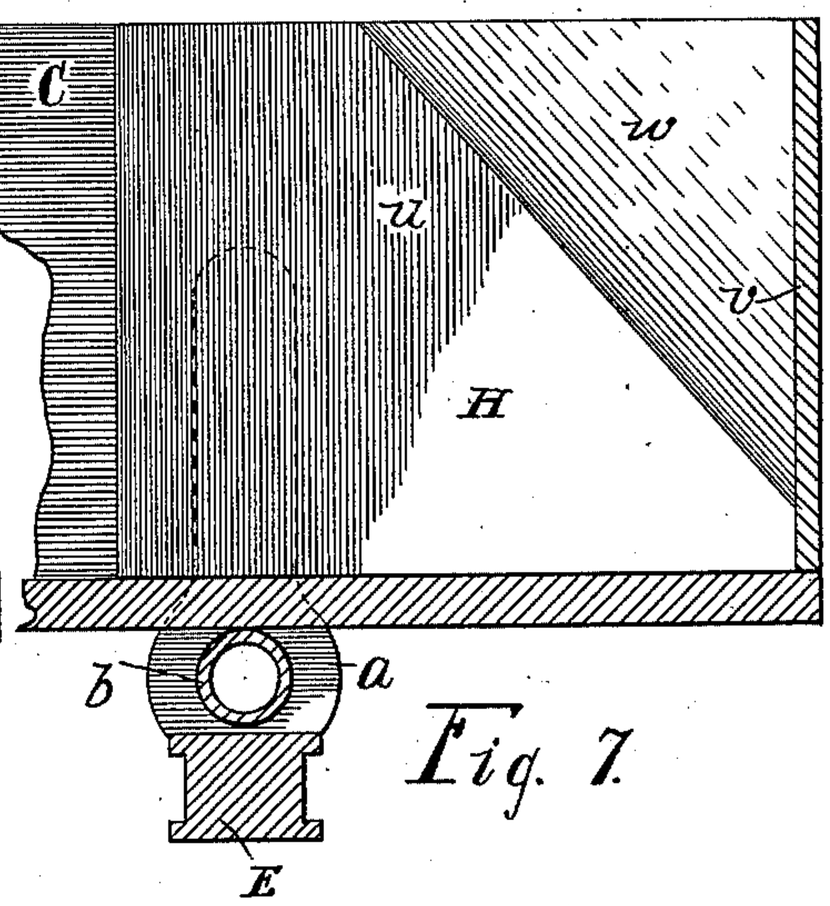


Fig. 7.

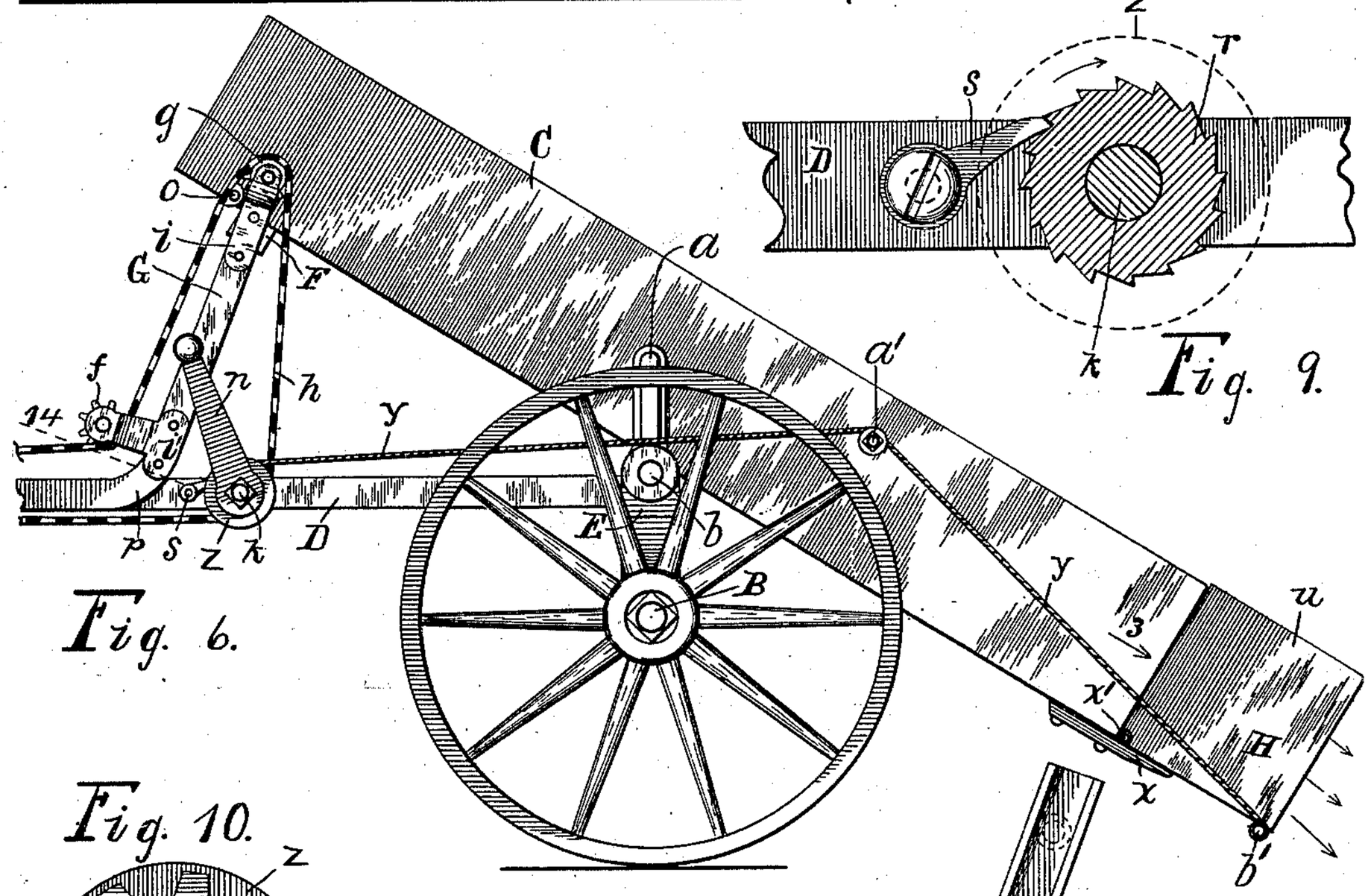
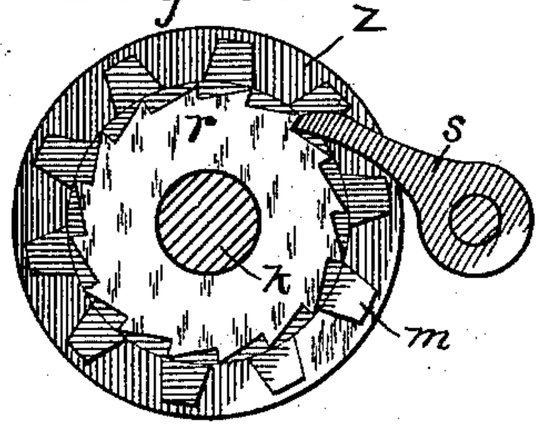


Fig. 6.

Fig. 9.

Fig. 10.



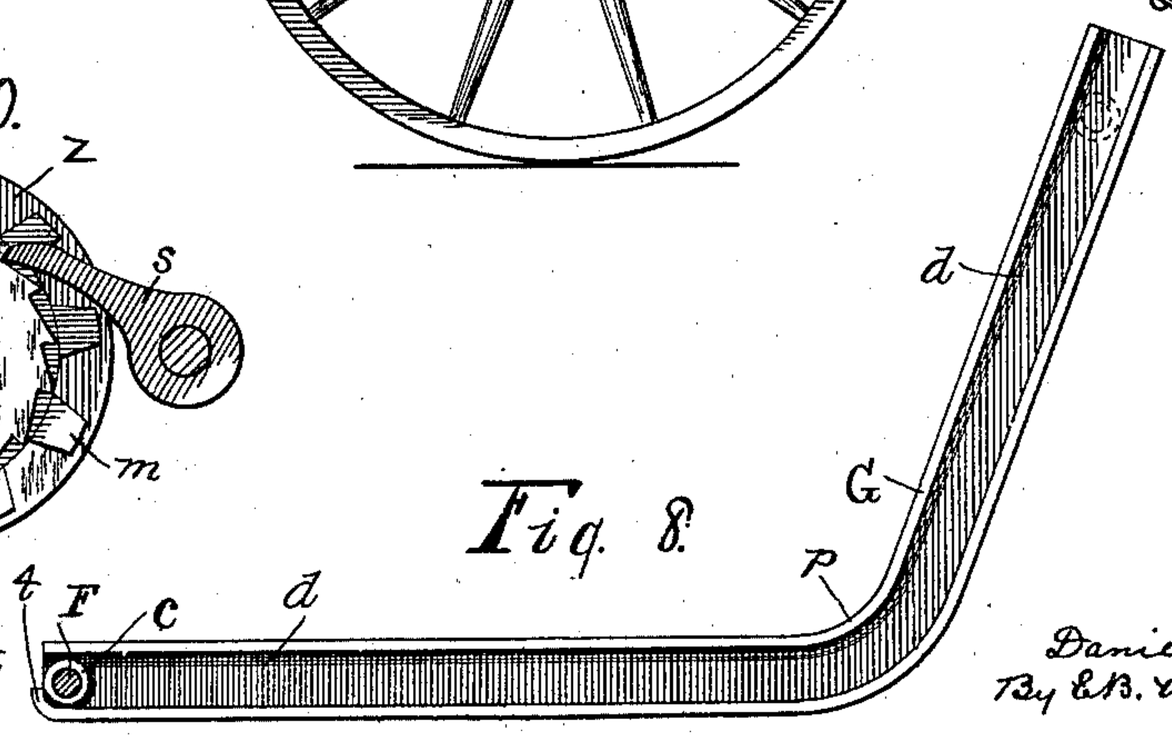


Fig. 8.

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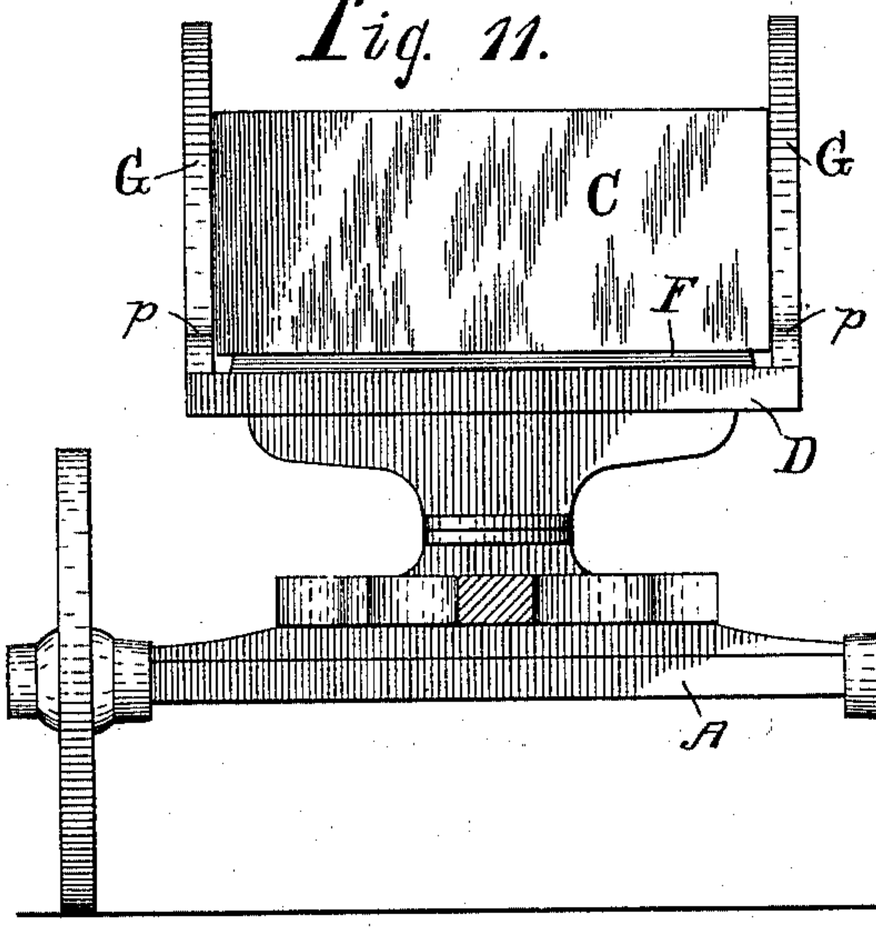
NO MODEL. 3 SHEETS—SHEET 3.

Fig. 11.



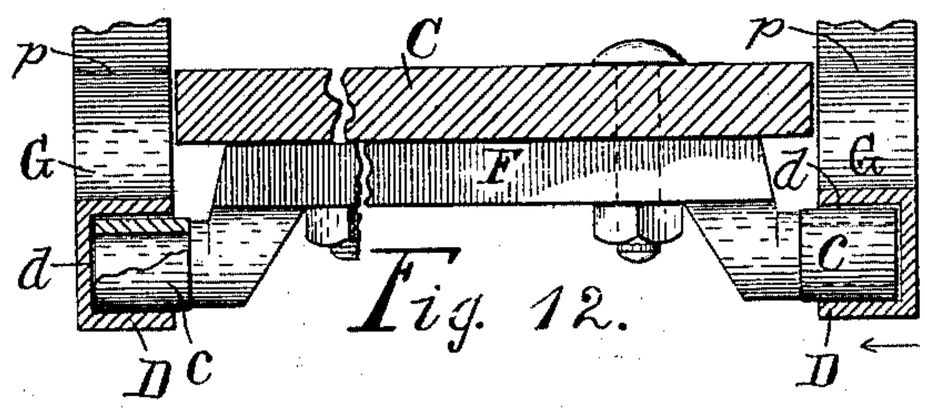


Fig. 12.

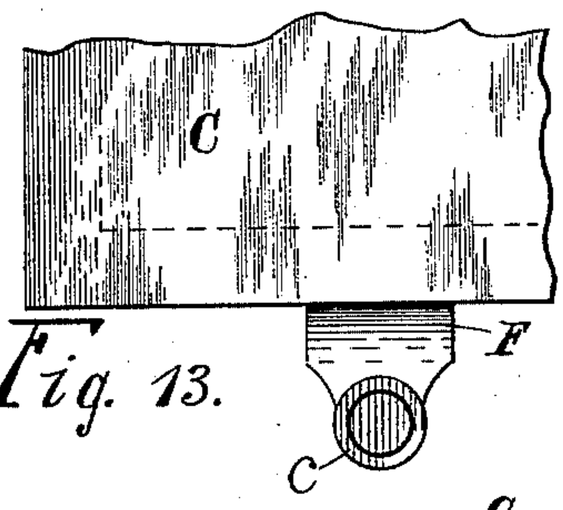


Fig. 13.

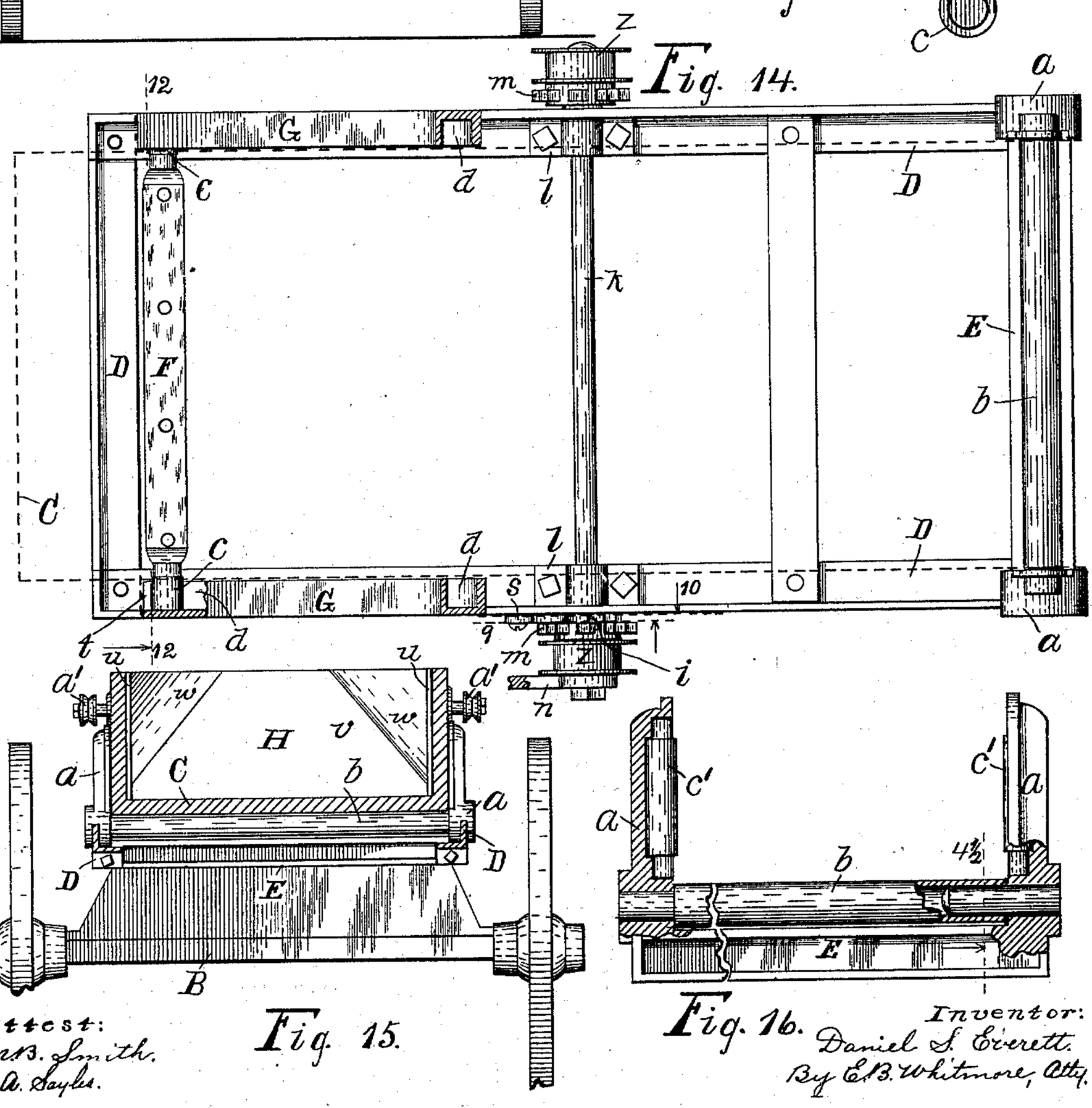


Fig. 14.

Fig. 15.

Fig. 16.

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No. 750,442. Patented January 26, 1904.

UNITED STATES PATENT OFFICE.

DANIEL S. EVERETT, OF MACEDON, NEW YORK.

DUMPING-WAGON.

SPECIFICATION forming part of Letters Patent No. 750,442, dated January 26, 1904.

Application filed November 6, 1903. Serial No. 180,088. (No model.)

To all whom it may concern:

Be it known that I, DANIEL S. EVERETT, of Macedon, in the county of Wayne and State of New York, have invented a new and useful Improvement in Dumping-Wagons, which improvement is fully set forth in the following specification and shown in the accompanying drawings.

My invention is a dumping-wagon intended for use in hauling and quickly and conveniently discharging loads of the coarser merchandise or similar materials, as coal, earth, and the like, and for handling farm products and also for use in doing heavy truckwork, as hauling and readily unloading safes, heavy machinery, steam-boilers, &c. The sides and the bottom of the wagon box or body, which is commonly made of metal sheets, are rigid and without movable joints, and for the purpose of discharging or dumping the load the box is moved longitudinally bodily backward over the rear axle and then tilted, discharging the contents in bulk on the ground or sidewalk in rear of the wagon. Provision is also made in this structure for controlling the box by positive means or action at every point while being tilted to the end that when partly elevated it shall not by accident move back again toward its horizontal position.

The invention is hereinafter fully described, and more particularly pointed out in the appended claims, reference being had in this specification to the accompanying drawings, forming a part thereof.

Figure 1 is a plan of my improved dumping-wagon as ready for use. Fig. 2 is a side elevation of the wagon with the box shown by dotted lines as having been moved longitudinally backward. Fig. 3 is an elevation of the rear end piece seen as indicated by arrow 3 in Fig. 6, showing it in its tilted or open position. Fig. 4 is a vertical transverse section of the wagon-box, taken as on the dotted line 4 4 in Fig. 1, showing an inside elevation of the end piece. Fig. 4½ is an inside elevation of the right-hand stake, showing the vertical roller, the section being as on the dotted line 4½ in Fig. 16. Fig. 5 is a rear end view of the wagon. Fig. 6 is a side elevation of the rear parts of the wagon, showing the box in its rearward and tilted position. Fig. 7 is a vertical longitudinal section of parts at the rear end of the wagon, taken on the dotted line 7 7 in Fig. 1, further showing the construction. Fig. 8 is an elevation of the inner face of the right bent channeled guide for the forward end of the box detached. Fig. 9 is a vertical transverse section of the ratchet and the shaft on the dotted line 9 in Fig. 14. Fig. 10 is an elevation of the ratchet and associated parts at the left end of the operating-shaft seen as indicated by arrow 10 in Fig. 14, the shaft being transversely sectioned on the dotted line at the point of the arrow. Fig. 11 is a front elevation of the wagon with parts omitted, the tongue being transversely sectioned on the dotted line 11 in Fig. 1. Fig. 12 is a vertical transverse section of a part of the wagon-box on the dotted line 12 12 in Fig. 14, parts being broken away, the guides and a forward roller in part being vertically sectioned along the axis of the sill. Fig. 13 is a side elevation of parts at the forward end of the wagon-box seen in the direction indicated by arrow in Fig. 12, parts being omitted. Fig. 14 is a plan of the frame of the wagon with some associated parts, the bent guides being obliquely sectioned on the dotted line 14 in Fig. 6 and a part at the forward end of the frame being broken away and horizontally sectioned across the axis of the associated roller. Fig. 15 is a cross-section of the wagon-box and the frame on the dotted line 15 15 in Fig. 1, further showing the rear parts of the wagon. Fig. 16 is a rear elevation of the bolster and associated parts, parts being broken out and other parts vertically sectioned along the axis of the rear roller. Figs. 4½, 7 to 10, 12, 13, 14, and 16 are drawn to various scales larger than that of the remaining figures.

Referring to the parts shown, A is the front axle of the wagon, B the rear axle, and C the box or body mounted over the axles.

D is a horizontal frame, preferably of angle-iron, supported by the axles below the box C, the rear end of the frame being secured rigidly to the bolster E of the rear axle, which bolster constitutes, practically, an integral part of the frame. The bolster is formed with vertical stakes *a a* at the sides of the box, be-

tween which stakes the box may freely move longitudinally and tilt in the act of dumping or discharging the load. A roller *b*, Figs. 2, 4½, 5, 6, 7, 14, 15, and 16, held horizontally over the bolster with bearings in the stakes *a*, is provided for the box C to rest upon, so that said box may be moved easily backward and forward over the frame. For the heavier work I also provide the stakes *a a* with vertical rollers *c'*, Figs. 4½ and 16, to enable the box to be easily moved, these side rollers being particularly useful at times when the wagon is to be unloaded while standing upon uneven ground with the box leaning to one side.

The forward end of the frame D is provided with upwardly-bent hollow bars or guides G G, Figs. 1, 2, 5, 6, 8, 11, 12, and 14, one at either side of the box C and parallel therewith and between which the box freely moves. The upper ends of the guides ordinarily extend above the sides of the box, and these guides, which are preferably made of channel-iron, have their open sides turned inward, as shown in the figures. The forward end of the box C is held upon a cross bar or sill F, provided at its overhanging ends with rollers *c c*, occupying the channels *d d* of the guides, which channels the rollers traverse when the box is moved horizontally or tilted. The ends of the sill F and of the rollers *c c* nearly touch the bottoms of the channels *d d* of the rigid guides G G, on account of which the latter serve to confine the forward end of the box and prevent sidewise motions of the box. Also the rollers *c c* being always in the channels of the guides serve at all times to control the positions of the box, whether horizontal or inclined, by positive action.

The guides G G are each provided with a set or series of equal sprockets *e f g*, (one overhanging each end and one near the middle,) carrying chains *h h* at the sides of the box, the several sprockets being held by short arms *i*, secured to the guides. A shaft *k*, Figs. 1, 2, 5, 6, 9, 10, and 14, is provided, crossing the frame D and resting in bearings *l l*, secured to the frame, said shaft having overhanging driving-sprockets *m m* for the respective chains *h h*. This shaft is also furnished with a hand-crank *n*, by means of which to revolve the shaft and drive the chains, the sprockets *m m* being, respectively, in the vertical planes of the said two sets of sprockets on the guides G G. These chains are connected with the wagon-box by rigid studs *o o*, Figs. 1, 2, and 6, projecting horizontally from the opposite sides of the box near the forward end, on account of which when the crank is turned one way or the other the box will be caused to move correspondingly. Now it will be understood that if the crank be turned in the direction indicated in Fig. 2 the box C will be carried horizontally backward until the traverse-rollers *c c* reach the bends *p p* in the guides G G, when as the rollers move upwardly along the inclined parts of the guides the box will be tilted and finally brought to the position for dumping the load (shown in Fig. 6) when the rollers reach the highest points in the guides. A reverse motion of the crank will primarily bring the box to its horizontal position and then forward to its full normal position, (shown by full lines in Figs. 1 and 2,) the rollers *c c* encountering stops *t*, Figs. 8 and 14, when the box is fully forward, and it will be observed that all these various motions of the box will be made on roller-bearings, the box resting constantly on the main roller *b* at the rear end and held at the forward end on the minor rollers *c c*. In placing the middle sprockets *f f* care is taken to so relatively locate them with reference to the bends *p p* in the guides G G that the studs *o o* will easily pass the sprockets, while the rollers *c c*, unyieldingly controlled by the guides, move freely along the latter and around the bends. The shaft *k* is also provided with a ratchet *r*, Figs. 9, 10, and 14, near the crank *n*, a pawl *s*, pivoted at the side of the frame D, engaging the teeth of the ratchet, as shown. By means of this ratchet and the pawl the wagon-box will be caught at any point in its tilted positions and so held and prevented from returning undesignedly to a horizontal position should the crank be at any time temporarily unmanned. When the box has been moved back and tilted to discharge its load, as stated, and it is wished to return it to place, the pawl *s* is first temporarily turned back off of the ratchet.

The box C is open the at rear end, and when handling coal or such articles that will roll or flow I employ with it a tilting or vertically-turning rear end piece H, Figs. 1, 3, 4, 5, 6, 7, and 15, which acts in the two capacities of end-board for closing the box and a delivery-spout. This end piece is held to the rear end of the box in some suitable hinge-joint *x'* of common kind and so as to tip backward to open the end of the box when in the act and for the purpose of discharging the load. The end piece comprises three vertical rectangular sides or walls *u u* and *v*, joined at right angles, each in equal depth with the box, the side *v* being transverse of the box and constituting the end-board proper for the box, the sides *u u* being parallel with and normally just within the respective sides of the box, as shown.

w w are angular blocks or bodies in part filling the corners between the respective sides *u u* and the end wall *v*, giving to the end piece when tilted or thrown back, as shown in Figs. 3 and 6, the form or character of a contracted delivering-spout for the box. When tilting, the end piece H is designed to turn backward through ninety degrees of arc, as shown in Figs. 3 and 6, which brings the side *v* in the plane of the bottom board of the box. In this position the end piece constitutes an

open rearward extension or discharging-spout for the box, the part *v* forming a temporary extension of the bottom board and the sides *u u* at the same time constituting rearward extensions of the sides of the box. To arrest the backward motion of the end piece and hold it in position while the load is being discharged through it, any simple means may be employed, as an ordinary stop-chain or a rigid tongue *x*, Figs. 1, 2, 4, 5, and 6, secured to the under surface of the bottom board and extend backward, as shown, and provision is also made for operating the end piece H automatically from the shaft *k* by means of a pair of cords or cables *y y*—one at either side of the box. The shaft is provided at its ends and outside of the sprockets *m m* with reels *z z*, upon which the forward ends of the cords are wound, the cords passing thence backward over high carrying-rollers *a' a'*, held at the sides of the box, with their rear ends attached to pins *b' b'*, secured to the upper part of the side or part *v* of the end piece H. As the shaft is turned to carry back and tilt the box, as stated, the cords will be unreeled from the reels *z z* and allow the end piece to tip backward, as shown. A turning of the crank forward to return the box to its normal place will rewind the cords onto the reels, and so bring the end piece to its upright position and close the rear end of the box.

For handling safes or other large and heavy articles, as machinery and the like, the end-piece H is replaced by a simple hinged end-board of common kind, the reels and the cords being omitted.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A dumping-wagon comprising a box, a frame beneath the box, and a main carrying-roller for the box near the rear axle, there being guides on the frame at the sides of the box, and parts carried by the box to traverse the guides, and means for moving the box longitudinally, the guides being bent to carry the box out of a horizontal position.

2. A dumping-wagon comprising a box, a frame beneath the box, and a main carrying-roller for the box near the rear axle, and guides on the frame at the sides of the box, and parts carried by the box to traverse the guides, a shaft with crank on the frame provided with sprockets, a series of sprockets on each guide coacting with the respective sprockets on the shaft, and chains on the two series or sets of sprockets, connected with the box.

3. A dumping-wagon having a box, and a frame beneath the box for supporting it, a rear end piece for the box adapted to turn on bearings on the box to form an open rearward extension for the box, and means for moving the box backward on its bearings on the frame.

4. A dumping-wagon having a box, and a frame beneath the box for supporting the latter, a rear end piece for the box adapted to turn on bearings on the box to form an open rearward extension for the box, said end piece having inclined parts for reducing the opening at the rear end of the box, and means for moving the box on the frame.

5. A dumping-wagon having a box open at its rear end, an end piece for the box, consisting of three vertical plates or sides joined, the intermediate side being transverse of the box and serving to close the rear open end of the box, and the extreme sides being parallel with and adjacent to the sides of the box, the end piece being held to the box by a hinge-joint and adapted to turn thereon to bring its said intermediate side into the plane of the bottom of the box.

6. A dumping-wagon having a box open at its rear end, and an end piece joined to the box by a hinge-joint to close said open end of the box, and means for tilting the box and for automatically returning the hinged end piece to its normal or closed position after discharging the load.

7. A dumping-wagon having a movable box, a rear bolster having vertical stakes at the sides of the box, and a horizontal carrying-roller for the box held by the bolster beneath the box, and vertical rollers in the stakes to meet the sides of the box, and means for moving the box between the stakes.

In witness whereof I have hereunto set my hand, this 29th day of October, 1903, in the presence of two subscribing witnesses.

DANIEL S. EVERETT.

Witnesses:

ENOS B. WHITMORE,

MINNIE SMITH.