963,503.

T. E. BOND.

DUMPING COAL WAGON.

APPLICATION FILED AUG. 11, 1909.

Patented July 5, 1910.

3 SHEETS—SHEET 1.

Fig. 1.

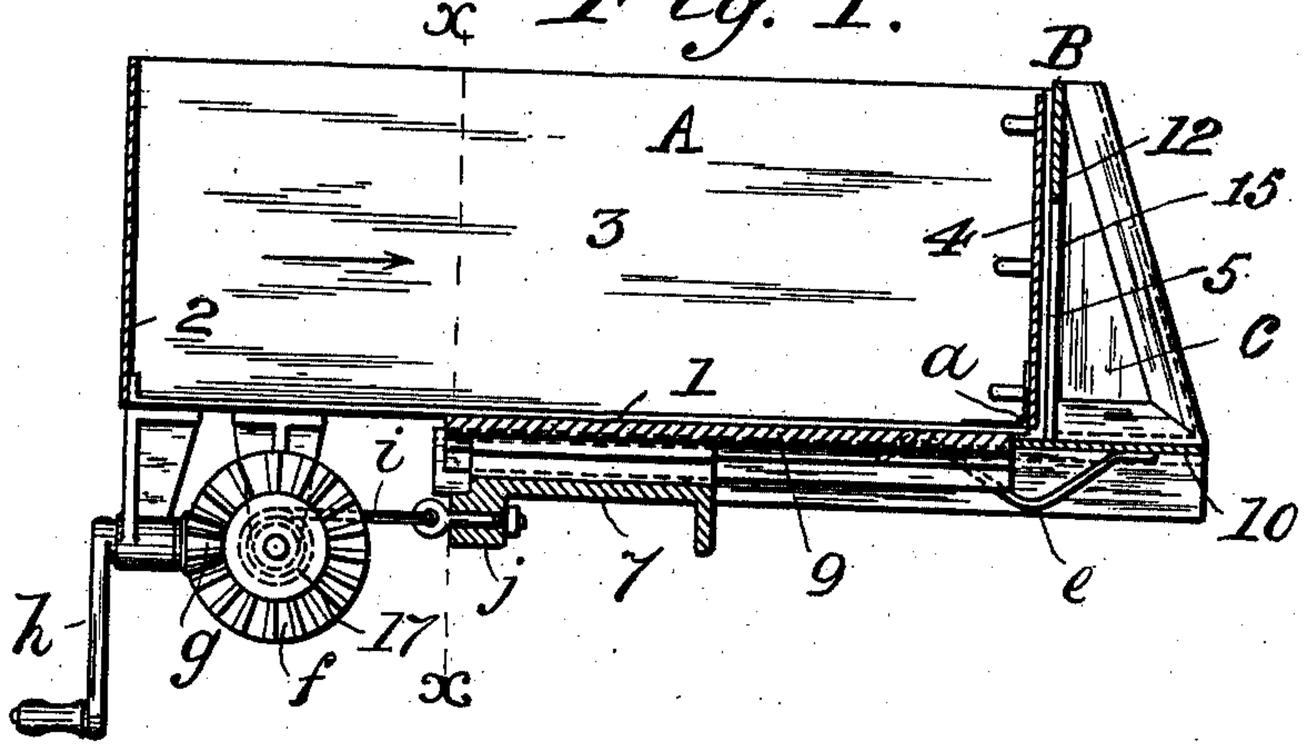


Fig. 2.

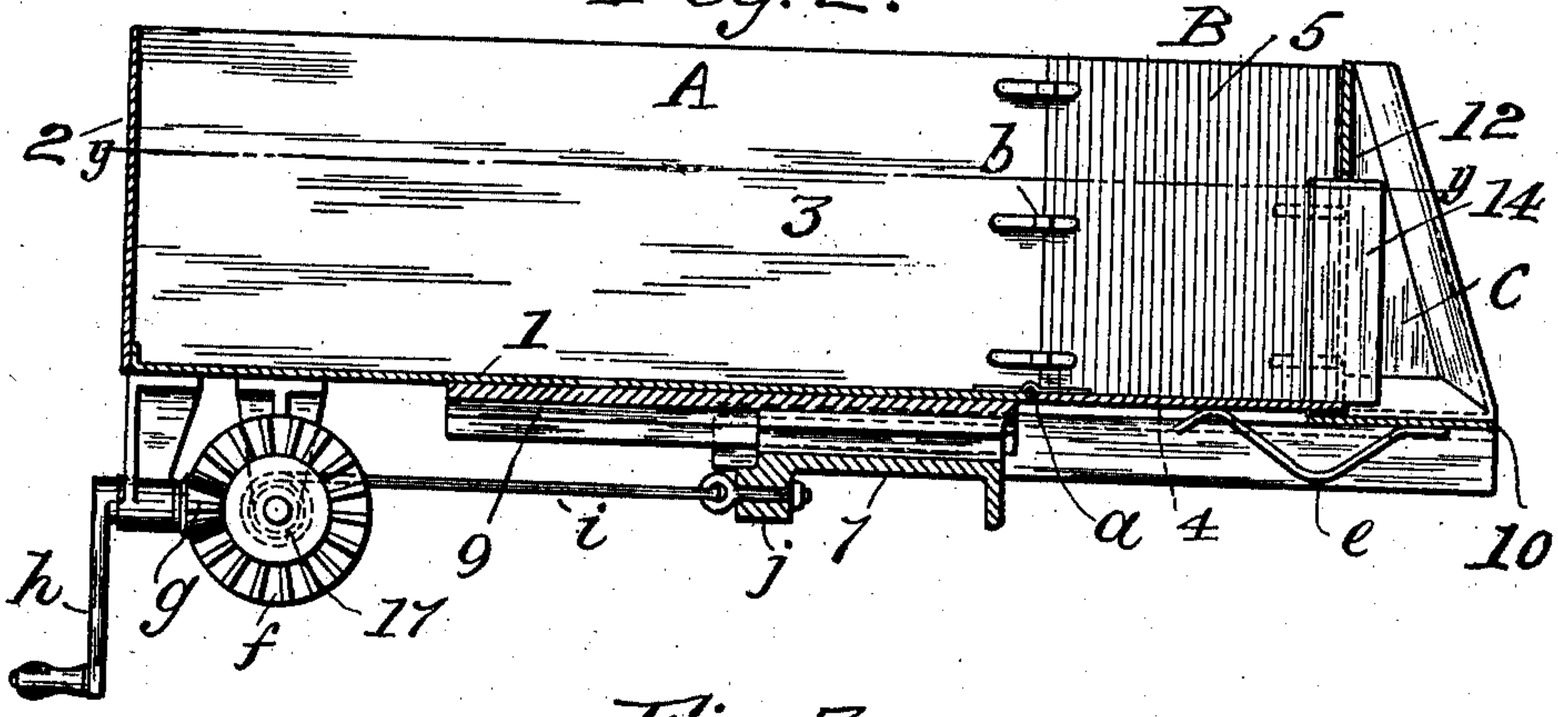
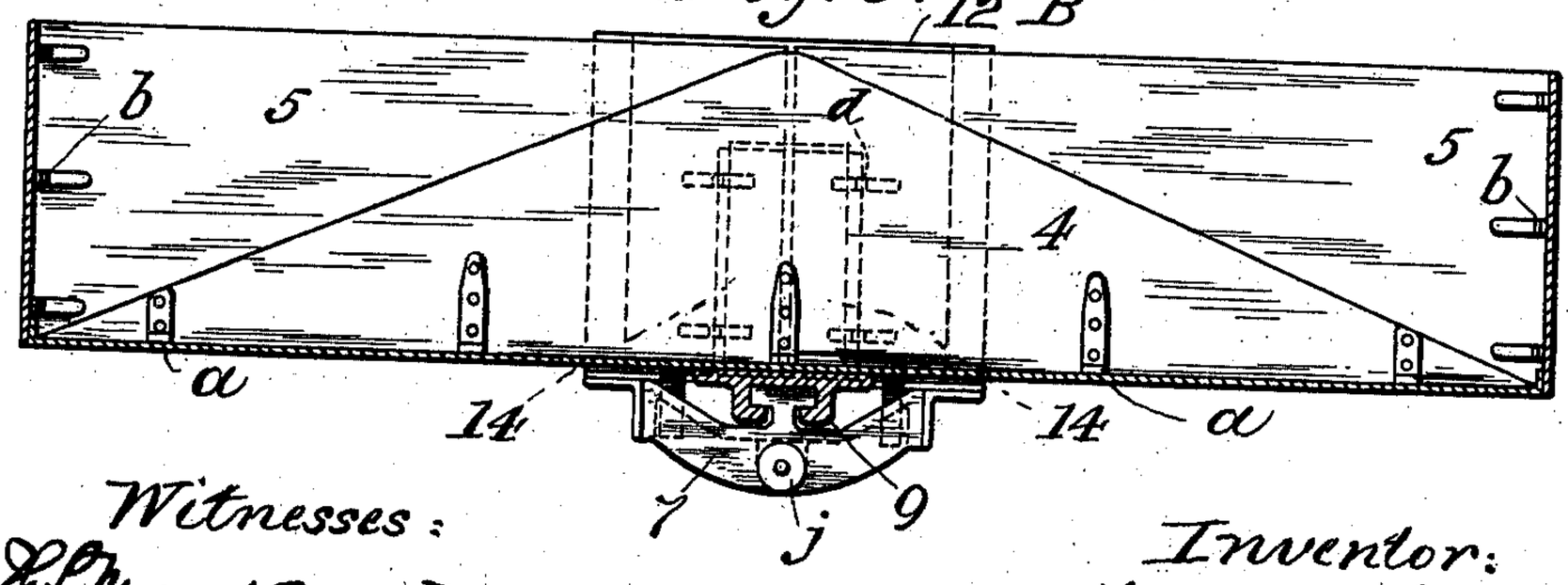


Fig. 3.



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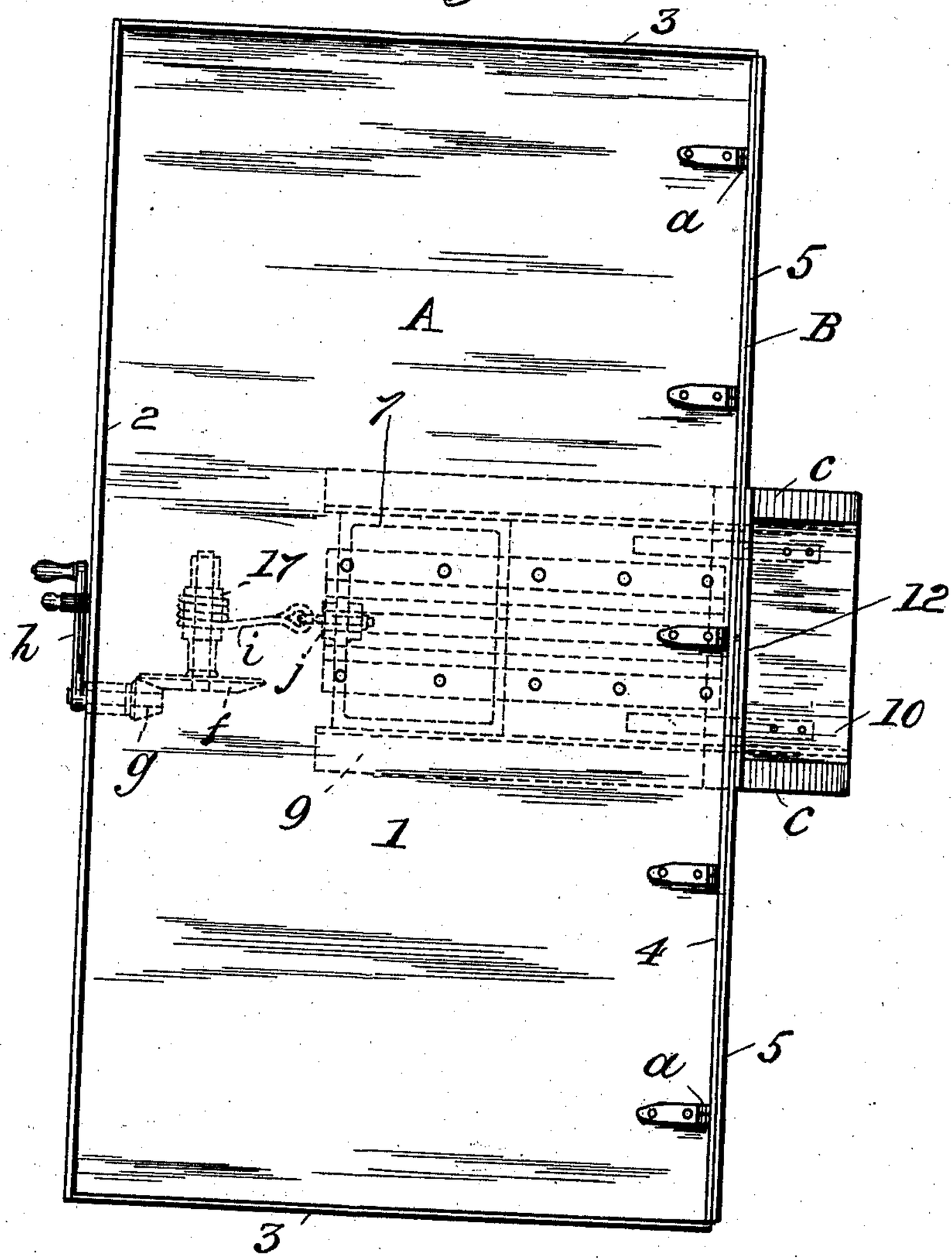
3 SHEETS—SHEET 2.

Fig. 4.



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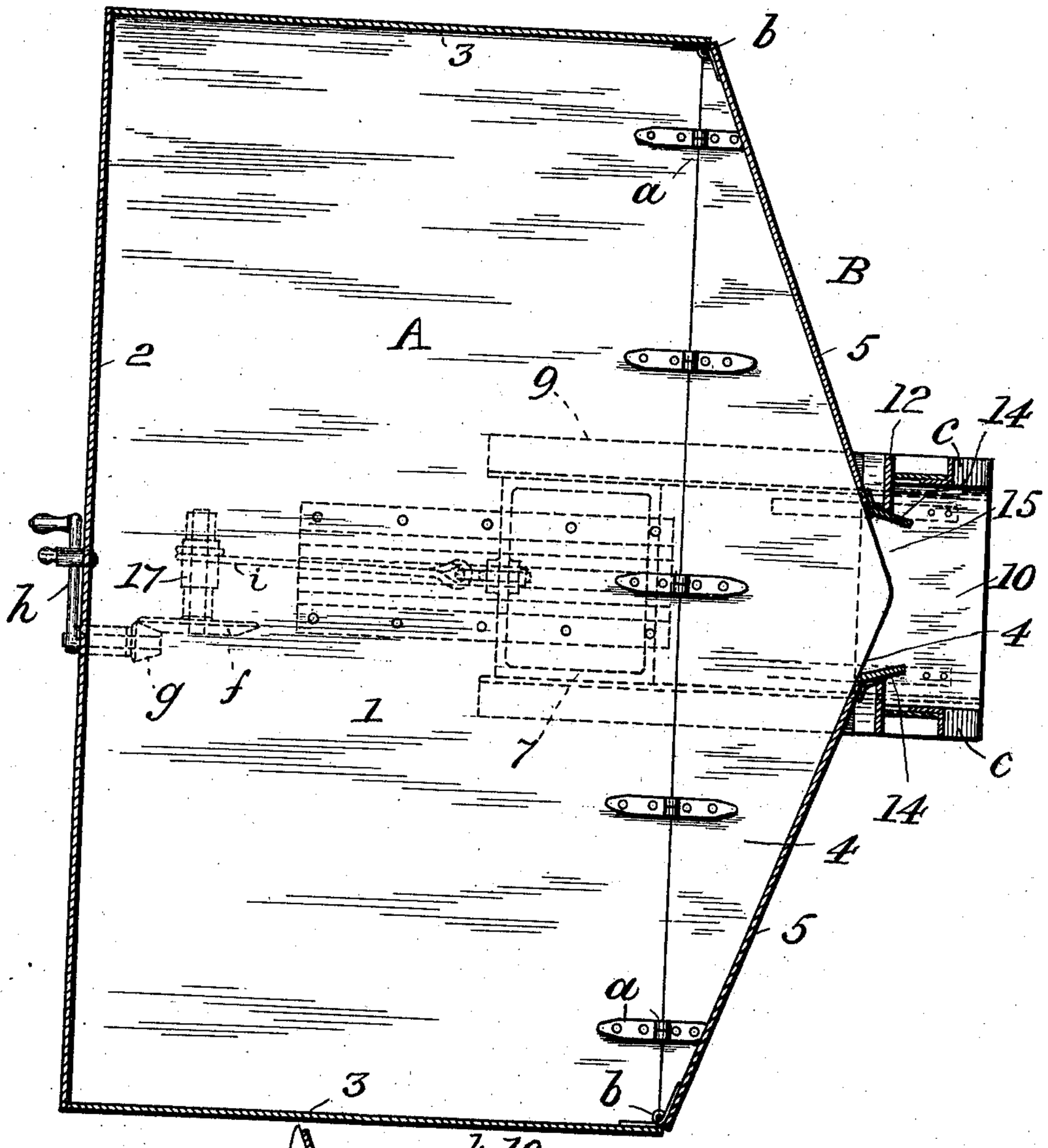
3 SHEETS—SHEET 3.

Fig. 5.



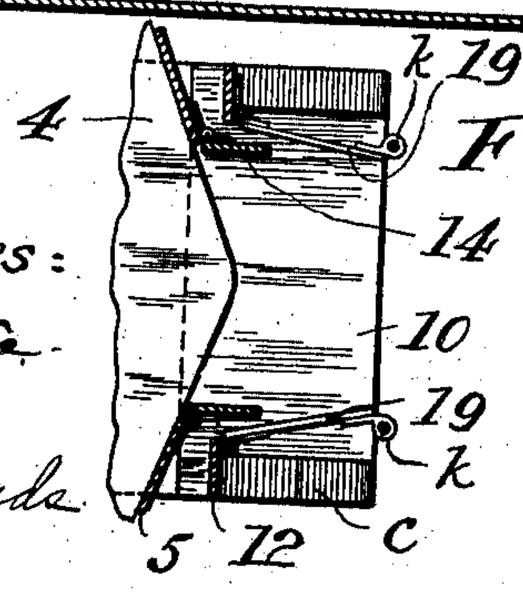


Fig. 6.

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UNITED STATES PATENT OFFICE.

THOMAS E. BOND, OF BALTIMORE, MARYLAND.

DUMPING COAL-WAGON.

963,503. Specification of Letters Patent. **Patented July 5, 1910.**

Application filed August 11, 1909. Serial No. 512,287.

To all whom it may concern:

Be it known that I, THOMAS E. BOND, a citizen of the United States, and resident of the city of Baltimore and State of Maryland, have invented certain Improvements in Dumping Coal-Wagons, of which the following is a specification.

This invention relates to certain improvements in dumping coal wagons which are designed to admit of the discharge of their contents from the side of the body, as will hereinafter fully appear.

In the further description of the said invention which follows, reference is made to the accompanying drawings forming a part hereof, and in which,—

Figure 1 is a transverse central section of the body of the improved dumping wagon, illustrating the same as it appears when the body is closed. Fig. 2 is a similar view except that the side of the body is shown as open to admit of the discharge of its contents. Fig. 3 is a section of the body taken on the dotted line *x*—*x*, in Fig. 1, and looking in the direction indicated by the arrow in that figure. Fig. 4 is a plan view of the body. Fig. 5 is a section of the body taken on the dotted line *y*—*y* in Fig. 2. Fig. 6 is an enlarged sectional view of a portion of Fig. 5 illustrating the addition thereto of certain hinged plates or supplemental doors hereinafter described.

Referring now to Figs. 1 to 5, inclusive of the drawings, A is the body of the wagon embracing the bottom 1, the fixed side 2 and the ends 3. The remaining side B of the wagon is formed as follows: 4 is a triangular plate hinged to the bottom 1 at *a*, and adapted to be erected as shown in Figs. 1, 3 and 4, or allowed to fall to a horizontal position as illustrated in Figs. 2 and 5.

5, 5 are doors hinged at *b* (see Fig. 3) to the ends 3 of the body. These doors open outward, and when closed, meet at the center of the body as shown particularly in Fig. 3, and rest against the triangular plate 4 as indicated in Figs. 1, 3 and 4.

7 is a carrier of any approved construction arranged to slide transversely of and beneath the bottom 1 of the body and in a supporting guide 9 which is secured to the said bottom. Upon a horizontal plate 10 forming the outer portion of the carrier 7, and having a movement in common with it, is erected a plate 12, supported in its upright position by the triangular braces *c;* and in the plate 12 and beginning at its lower edge, is a rectangular opening 15 for a purpose hereinafter described. This opening is best shown in Fig. 5.

The adjoining ends of the hinged doors 5 are cut out to produce a discharge opening *d* shown in dotted lines in Fig. 3, and at the lateral edges of this opening are hinged supplemental doors 14 (see Fig. 5) which when closed preserve the continuity of the main doors 5, and under certain conditions, when opened enter the opening 15, as shown in Fig. 5.

From the foregoing description, it will be understood that the dumping side B of the body of the wagon when closed, consists of the erect triangular plate 4, the doors 5 which are folded against the said plate, and the outer plate 12 which is in contact with the said doors and serves to retain the supplemental doors 14 in a closed condition.

It will be understood from the foregoing that when the doors 5 are opened as shown in Fig. 5 the supplemental doors 14 pass partly through the rectangular opening 15 in the plate 12 as before stated, and form what might be termed a chute; and as the opening 15 in the plate 12 is narrower than the distance between the hinges of the two doors 14, as shown in Fig. 5, it follows that should the plate 12 be drawn toward the body of the wagon through the medium of the carrier 7 and any suitable appliances for actuating the same, the edges of the said plate bearing on the inclined surfaces of the said doors will serve to close them.

It will also be understood that should the body A be tilted so as to bring the discharge side of the body lower than the other, and the carrier 7 with the standing plate 12 be unrestrained, or moved outward by mechanical appliances, the contents of the wagon pressing against the triangular plate 4 and through it against the main doors 5, will cause the unfolding of the various movable parts of the body, and the opening of the supplemental doors 14 and thereby cause the said supplemental doors to assume the positions best illustrated in Fig. 5 and disclose a delivery opening.

It will be seen that the supplemental doors 14 have an important function of enlarging the discharge opening formed by the opening or unfolding of the doors 5 to a greater extent than would be the case should the said supplemental doors not be employed;

and also that the said supplemental doors are closed by the plate 12 through which they extend, at the beginning of the retractive movement of the carrier 7 which results finally in the upending of the triangular plate 4, and the closing upon it of the main doors 5.

It is evident that pressure in a horizontal direction against the outer edge of the triangular plate 4 when the same is in a horizontal position will not cause the plate to rise, it is therefore desirable to effect a slight resistance to the completion of the fall of the said plate, and many simple devices to effect this result can be devised. I have, however, shown in Figs. 1 and 2 a spring *e* one end of which is fastened to the plate 10, while its free end bears against the underside of the triangular plate. As soon as the weight of the coal is removed from the plate 4 that device is lifted slightly by the action of the spring *e*, and when the plate has taken an inclined position, the folding doors 5 bearing against its edge with a pressure from the inwardly moving carrier 7, will cause it to be entirely raised.

It is evident that the outward and inward movements of the carrier and its plate 12 may be produced by means of various appliances, and while I do not limit my invention to its use, I have shown a winding drum which is rotated by means of the beveled gear wheels *f* and *g*, and the crank handle *h*, together with a wire rope *i* which connects the drum 17 with a lug *j* on the bottom of the carrier.

As the invention relates entirely to the construction of the body of the wagon, I have not shown or described any mechanism for lifting and tilting the body, it being understood that any of the commonly known devices for the purpose may be used.

Referring to Fig. 6, which illustrates a modified construction of certain parts of the body, 19, 19 are plates hinged to the plate 12 at the edges of the opening 15, which may be folded inward or upon the doors 14 which are thereby closed and locked to prevent the supplemental doors 14 opening until the body A of the wagon is sufficiently tilted to admit of the dumping of its contents. With this construction the plate 12 is not depended upon to close the supplemental doors 14, and the edges of the said plates are shown as not in contact with them. The perforated lugs *k* on the free ends of the plate 19 when brought together are coupled by an ordinary pin (not shown) which holds the plates together, until the contents of the wagon are to be dumped when the pin is removed.

I claim as my invention,—

1. In a dumping wagon the bottom of its body, at one side thereof, provided with a hinged plate adapted to open downwardly, and a pair of doors hinged to the sides of the body arranged to fold over the hinged plate and erect the same, combined with a carrier situated under the said hinged plate, a vertical plate having a discharge opening therein secured to the carrier and adapted to be brought into contact with the said hinged doors to fold them and mechanical appliances to actuate the said carrier, substantially as specified.

2. In a dumping wagon, the bottom of its body, at one side thereof, provided with a hinged plate adapted to open downwardly, and a pair of doors hinged to the sides of the body arranged to fold over the hinged plate, the said doors being cut away to produce an additional opening or one of increased size as the doors are unfolded, combined with supplemental doors hinged to the edges of the main doors where the same are cut away, a carrier situated beneath the body of the wagon, a vertical plate forming a part of the carrier, the said vertical plate having an opening therein through which the said supplemental doors can extend, and mechanical appliances to actuate the said carrier, substantially as specified.

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