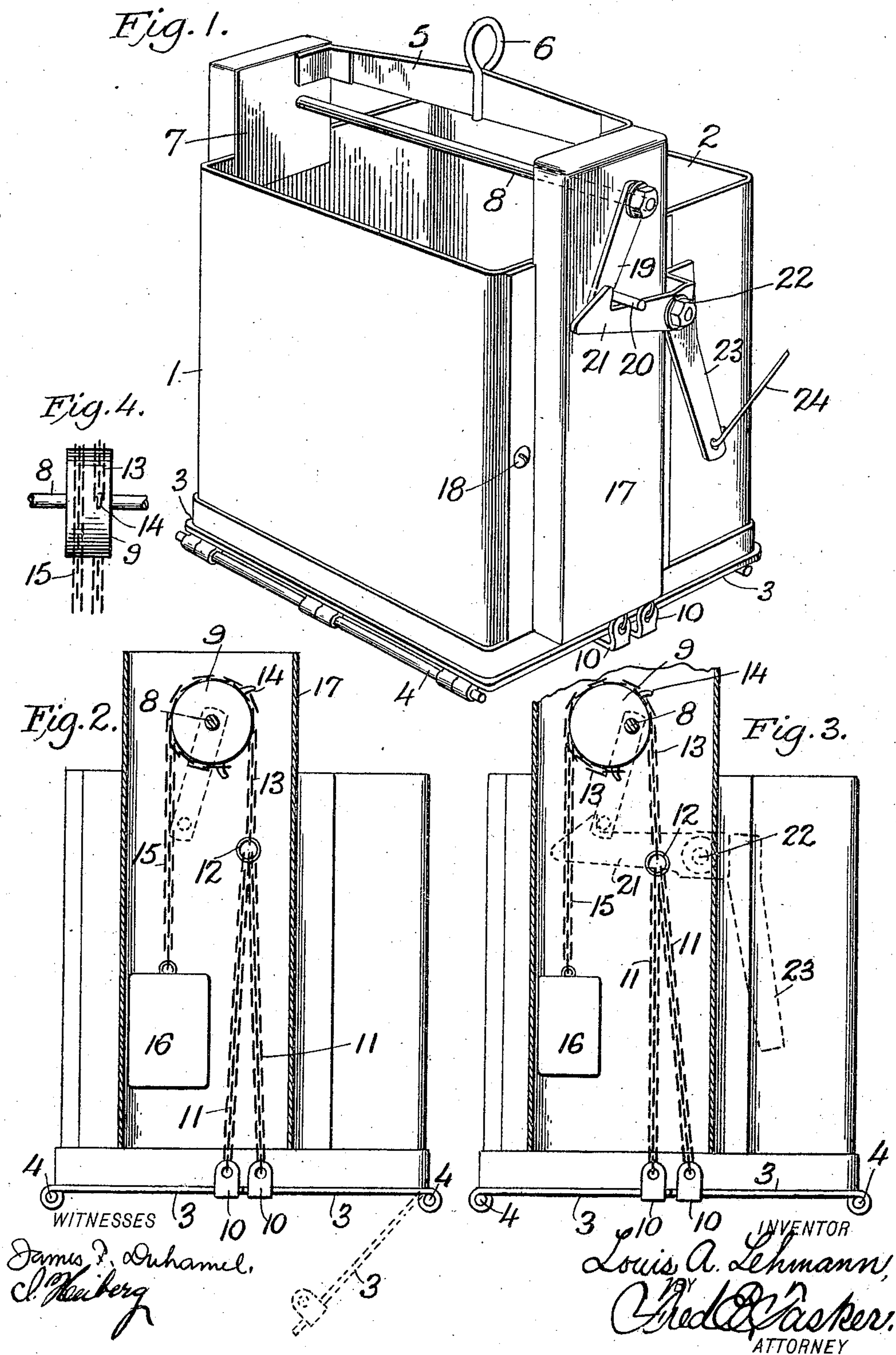


No. 846,800.

PATENTED MAR. 12, 1907.

L. A. LEHMANN.
DUMPING BUCKET.

APPLICATION FILED SEPT. 5, 1906.



UNITED STATES PATENT OFFICE.

LOUIS A. LEHMANN, OF NEW YORK, N. Y.

DUMPING-BUCKET.

No. 846,800.

Specification of Letters Patent.

Patented March 12, 1907.

Application filed September 5, 1906. Serial No. 333,330.

To all whom it may concern:

Be it known that I, LOUIS A. LEHMANN, a citizen of the United States of America, and a resident of the city, county, and State of New York, have invented certain new and useful Improvements in Dumping-Buckets, of which the following is a specification.

This invention relates to a dumping-bucket which may be used for various purposes—as, for instance, in loading and unloading coal, gravel, earth, grain, and other substances and materials—the object being to simplify and improve the mechanism whereby the bottom doors may be automatically closed after the discharge of the contents of the bucket, said discharge taking place likewise automatically, due to the weight of the material thereon at the time of their release or unlocking; and the invention consists, essentially, in a closing-weight, a shaft with pulleys thereon, and connections between the weight, the pulleys, and the doors, so that the weight may have the effect of closing said doors when there is no material resting upon the doors acting to open them; and also the invention consists in numerous details and peculiarities in the construction, arrangement, and combination of parts, substantially as will be hereinafter described and claimed.

In the accompanying drawing, illustrating my invention, Figure 1 is a perspective view of my improved dumping-bucket. Fig. 2 is a sectional side view showing the closing mechanism. Fig. 3 is a similar side elevation showing a modification of the closing mechanism. Fig. 4 is a detail view.

Similar characters of reference denote like parts throughout the different figures of the drawing.

The body 1 of the bucket is made of any desired proportions and shape, large or small, and may be designed for use with any desired substance or material. The top is preferably open at 2, while the bottom is provided with a pair of doors or leaves 3 3, hinged at 4 4 and adapted to constitute the bottom of the bucket when the said doors are closed so as to occupy a horizontal position, as indicated in Figs. 1 and 3, while said doors are also adapted to open downwardly into the position shown in dotted lines in Fig. 2, and still further down, so that the material within the bucket may be discharged when the bucket is to be emptied. The bucket 1 may be provided with any

suitable bail, as 5, to the eye 6 of which a hoisting-rope can be connected. In the use of the bucket after it has been filled to the desired point by shoveling into it through the open upper end 2 the weight of the contents will rest entirely upon the hinged doors 3 and consequently if said doors are opened the contents of the bucket will be emptied.

Suitably journaled in the upper end of the bucket or in upwardly-projecting standard 7 thereon is a horizontal shaft 8. O the ends of this shaft outside the standards 7 7 are pulleys 9 9. There may be a pulley at each end or only at one end, as desired. Furthermore, these pulleys 9 may be concentrically placed on the shaft, as shown in Fig. 2, or eccentrically placed, as shown in Fig. 3, the eccentric arrangement being the preferable form because of the extra advantage gained thereby, as I shall presently show. From each of the doors 3, attached thereto by means of a perforated ear 10, lead upward chains 11, there being one of these chains at each end of each door. The two chains 11 at one side of the bucket have their upper ends suitably united—as, for instance, by means of a ring 12—and this is the case at the other end of the bucket. From the chains 11 or from the rings 12 a chain 13 passes upward to the adjacent pulley 9 and is connected thereto by being engaged with a pin or sprocket 14, projecting therefrom, and then this chain continues over the pulley and downward on the other side, where it is indicated as chain 15, and carries a weight 16. If desired, a convenient form is to use two separate chains 13 and 15 instead of having them as one chain, in which case both will be attached suitably to the pulley 9, as shown in Fig. 4. This arrangement, whichever one is used, is obviously duplicated at both ends of the bucket. The extent of revolution of the pulleys 9 to correspond with the opening of the doors the requisite distance must determine whether or not it will be necessary to have one or two chains operating upon the surface of the pulley for the purpose of enabling the weight to act properly upon the doors. When the pulleys are eccentrically placed, as shown in Fig. 9, a greater leverage is applied to the chains, and likewise to the doors a smaller weight may be used, and the device will be found to be of greater efficiency, and hence I prefer the eccentric arrangement because I deem that better results are obtained thereby. The chains, pulleys, and

weights are preferably covered by removable casings 17, held in place by screws 18 or other suitable devices, these casings being for the purpose of protecting the operating mechanism.

On one end of the shaft 8 is a crank-arm 19, having a horizontally-projecting pin 20. This pin is engaged by a latch 21, supported on a stud 22, projecting from the side of the bucket, and the latch is operated by means of an arm 23, securely fastened to the latch, to which arm is connected a rod, cable, or rope 24; but it will be clearly understood that the arm 23 may be omitted, if desired, and also the rope 24, and the latch 21 may be actuated by any desired means and in any desired way.

When the doors 3 are closed, the latch 21 will be in engagement with the pin 20 on the crank 19, and consequently no matter how much weight may be placed inside the bucket upon the doors said doors will be held locked in a closed position. If, however, the latch 21 be disengaged from the pin 20, the weight on the doors will open them and cause the contents to be discharged. Immediately upon the completion of the discharge of the contents the weights 16, being heavier than the doors 3, will operate through the chains and pulleys to close them into their normal position again.

Many changes in the precise combination and arrangement of the various parts may be made without exceeding the scope of the invention.

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

1. In an automatic-dumping bucket, the combination with a bucket and its doors, of a shaft, pulleys thereon, and means connecting the doors with a weight or weights, said means passing over the pulleys.

2. In an automatic-dumping bucket, the combination with a bucket-frame and the doors, of a pulley-carrying shaft, and means connecting the doors with a weight, said means passing over the pulley-carrying shaft.

3. The combination of the bucket, the doors, a pulley-carrying shaft having an arm, chains passing from the doors around the pulley-carrying shaft, a weight or weights on the chains, and a locking-latch.

4. The combination of the bucket, its hinged doors, a shaft, a crank-arm thereon, pulleys likewise thereon, a latch engaging the crank-arm, and chains running from the doors around the pulleys, and a weight or weights on the end of the chains.

5. The combination of a bucket, its hinged doors, a shaft, means for locking the shaft, and a weight-provided chain or chains for closing the doors, which chain or chains are controlled as to their operation by the shaft.

Signed at New York city this 30th day of August, 1906.

LOUIS A. LEHMANN.

Witnesses:

JOHN H. HAZELTON,
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