No. 816,579. PATENTED APR. 3, 1906.

# A. HENDERSON.

## DUMPING BUCKET.

APPLICATION FILED JUNE 27, 1905.

Fig. 1.

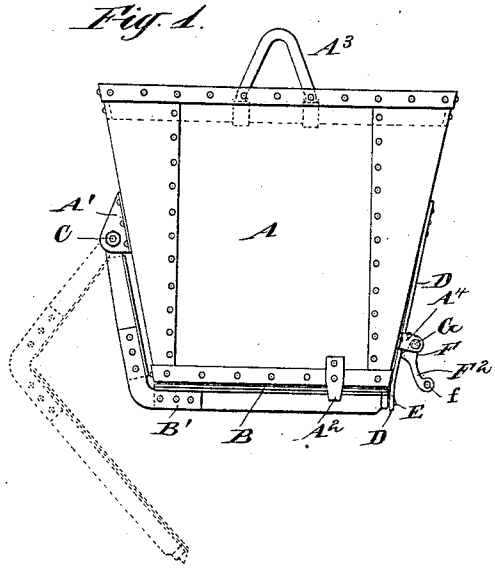



Fig. 2.

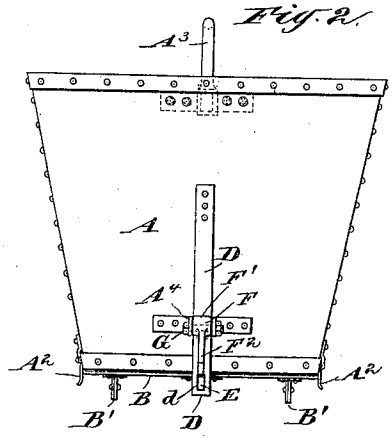



Fig. 4.

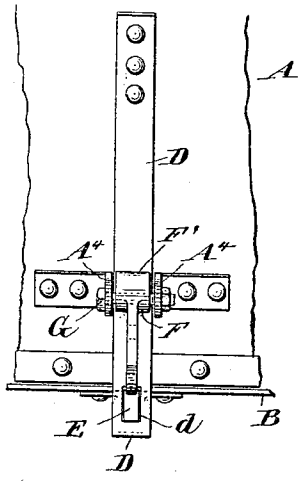



Fig. 3.

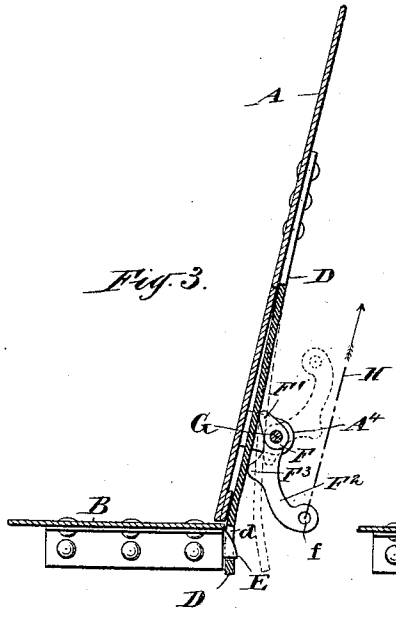



Fig. 6.

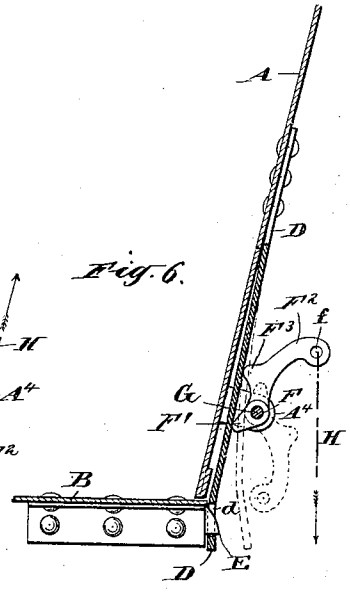
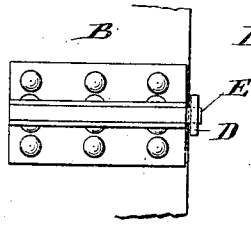



Fig. 5.




Witnesses:
Stephen L. Morgan
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Alexander Henderson,
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Charles R. Seale.

# UNITED STATES PATENT OFFICE.

ALEXANDER HENDERSON, OF JERSEY CITY, NEW JERSEY, ASSIGNOR TO JOHN HENDERSON, OF JERSEY CITY, NEW JERSEY, AND MAX SCHALSCHA, OF HOBOKEN, NEW JERSEY.

## DUMPING-BUCKET.

No. 816,579. Specification of Letters Patent. Patented April 3, 1906.

Application filed June 27, 1905. Serial No. 267,288.

*To all whom it may concern:*

Be it known that I, ALEXANDER HENDERSON, a citizen of the United States, residing in Jersey City, in the county of Hudson and State of New Jersey, have invented a certain new and useful Improvement in Dumping-Buckets, of which the following is a specification.

The invention relates to conveyer-buckets in which the contents is discharged by means of a hinged bottom, and more particularly to the latch or controlling means for engaging, holding, and releasing such bottom.

The object of the invention is to provide a latch which will automatically engage the bottom in the act of closing, hold it reliably in the closed condition, and quickly and easily release it when desired and which shall be simple and strong in construction and may be easily conditioned to operate either by an upward or downward pull on the releasing-cord.

The invention consists in certain novel features and details of construction by which the above objects are attained, to be hereinafter described.

The accompanying drawings form a part of this specification and show an approved form of the invention.

Figure 1 is a side view of a bucket in the closed condition equipped with the improved latch. The dotted lines show the position assumed by the bottom when released. Fig. 2 is a front view. The remaining figures are on a larger scale and show the latch and immediately adjacent portions of the bucket. Fig. 3 is a vertical section, partly in elevation. Fig. 4 is a corresponding front view, and Fig. 5 is a view from below. Fig. 6 is a section and partial elevation corresponding to Fig. 3, but showing the latch arranged to be operated by a downward pull.

Similar letters of reference indicate like parts in all the figures.

The bucket may be of any size and approved shape. It is shown in the drawings in the form of a square truncated pyramid tapering from top to bottom. It is of heavy sheet metal, strongly riveted, and the body A reinforced at the upper and lower margins by bands riveted thereto. The bottom B is of like material and is stiffened by ribs B′ of T-section, extending from front to rear and continued angularly upward to about the mid-height of the rear wall, where they are connected to the body by a transverse rod C, extending through them and also through ears A′, riveted to the rear wall, forming a hinge so located as to permit the bottom to swing clear when released, as indicated by the dotted lines in Fig. 1. $A^2$ $A^2$ are downwardly-projecting lugs on the sides of the body, serving to guide the bottom to place, and $A^3$ is a hoisting-loop secured to a bar extending across the bucket near the top. All these parts may be of any ordinary or approved construction.

On the front of the body is riveted a flat spring D, extending below the lower edge of the body and having a slot *d* in its free lower end, adapted to receive and engage a beveled nose E, fastened to the bottom B and projecting forward of its front edge. The force of the spring acts outwardly in the direction to release the nose and permit the bottom to drop, and it is held by a latch F, rotatably mounted on a bolt G, extending transversely of the spring through lugs $A^4$ $A^4$, provided on the front of the body and receiving and guiding the spring between them. From the body of the latch projects a rounded nose or eccentric cam F′, and opposite thereto is an outwardly-curved arm $F^2$, in which is an eye *f*, adapted to serve as a point of attachment for an operating rope or cord, (not fully shown, but indicated by the strong dotted lines H H in Figs. 3 and 6.)

In all the figures excepting Fig. 6 the latch is arranged to release the bottom by an upward pull on the cord. The latch is set in the position indicated by the full lines, (see Figs. 3 and 4,) in which the cam F′ has forced the spring toward the body of the bucket, holding it reliably by reason of the fact that the nose of the cam has passed the center G, with the arm $F^2$ projecting forwardly and downwardly. In this position the spring tends to force the arm toward the bucket, the movement being resisted by the contact of a projection $F^3$ on the arm with the spring. Thus conditioned the bottom of bucket may be swung upward and secured in the closed position by the engagement of the nose E with the slot *d*, the elasticity of the spring below the cam permitting the required flexion of the spring. The bottom is thus securely

held while the bucket is filled and lowered to the place of delivery and is released by an upward pull on the cord H, forcing the cam F to the opposite side of the center G and permitting the spring to leave the nose E.

In conditioning the bucket to discharge by a downward pull on the cord the bolt G is removed, the latch reversed, (see Fig. 6,) and the bolt again inserted and secured. Thus arranged the action is as before, but the arm $F^2$ projects upwardly and outwardly when the spring is in position to engage the nose, and the latter is released by a downward movement of the arm. In both arrangements the latch while in the locked condition is held in position by the force of the spring acting against the cam $F'$ and projection $F^3$ on opposite sides of the axis, thus insuring against accidental release due to vibrations or shock.

The latch and spring may be conditioned for reëngagement after release either by turning the latch by hand to compress the spring or by a pull on the cord in the direction opposite to the release movement.

The reversibility of the latch permits the bucket to be easily conditioned for service at an elevation or below the level, and the necessity for hooks or other latch-lifting appliances is avoided.

The slot *d* holds the nose E against escape by lateral movements. Strains in such directions on the spring are resisted by the lugs $A^4$ $A^4$, and by confining the spring between the body, lugs, and latch it is always under the control of the latter.

By a reverse movement of the releasing-cord or by hand the latch may be moved again to condition the spring to engage the nose, such engagement taking place automatically when the bottom is swung to the closed position either by hand or by contact of the bottom with the ground when the bucket comes to rest for refilling.

The construction is simple and strong and adapted to withstand without derangement the rough usage to which implements of this class are necessarily subjected in service.

I claim—

1. In a bucket of the character set forth, a body, a hinged bottom, a spring on said body adapted to engage said bottom, an eccentric cam rotatably mounted on an axis transverse to said spring and adapted to force the latter into position to engage said bottom, and means for partially rotating said cam.

2. In a bucket of the character set forth, a body, a hinged bottom, and a nose on said bottom, a spring on said body having a slot in its free end adapted to engage said nose, an eccentric cam rotatably mounted on an axis transverse to said spring and adapted to force said free end into position to engage said slot with said nose, and means for partially rotating said cam.

3. In a bucket of the character set forth, a body having a hinged bottom, a spring secured at the upper end to said body, the free lower end adapted to be moved to engage or release said bottom by movements toward or from said body, lugs on said body receiving said spring between them, a removable bolt extending transversely of said spring through said lugs, a reversible eccentric cam rotatably mounted on said bolt and adapted to induce said movements of said spring, and an arm on said cam for partially rotating the latter, said cam adapted to be mounted on said bolt in one position to induce the releasing movement of said spring by a movement of said arm in one direction, or in the reverse position to induce such releasing movement by a movement of said arm in the opposite direction.

4. In a bucket of the character set forth, a body, a hinged bottom, a nose on said bottom, a spring secured to said body and having a slot in its free end, lugs on said body receiving said spring between them, a bolt extending transversely of said spring and mounted in said lugs, an eccentric cam rotatably mounted on said bolt and adapted by contact with said spring to force said free end into position to engage said slot with said nose, an arm on said cam extending oppositely to the latter relatively to said bolt, and a projection on said arm adapted to contact with said spring, whereby the action of said spring on said cam and projection holds said cam against accidental movement.

In testimony that I claim the invention above set forth I affix my signature in presence of two witnesses.

ALEXANDER HENDERSON.

Witnesses:

MAX. SCHALSCHA,

CHARLES R. SEARLE.