(No Model.) 2 Sheets—Sheet 1.

W. E. LUDLOW.

AUTOMATIC TRIP FOR DUMPING BUCKETS.

No. 476,284. Patented June 7, 1892.

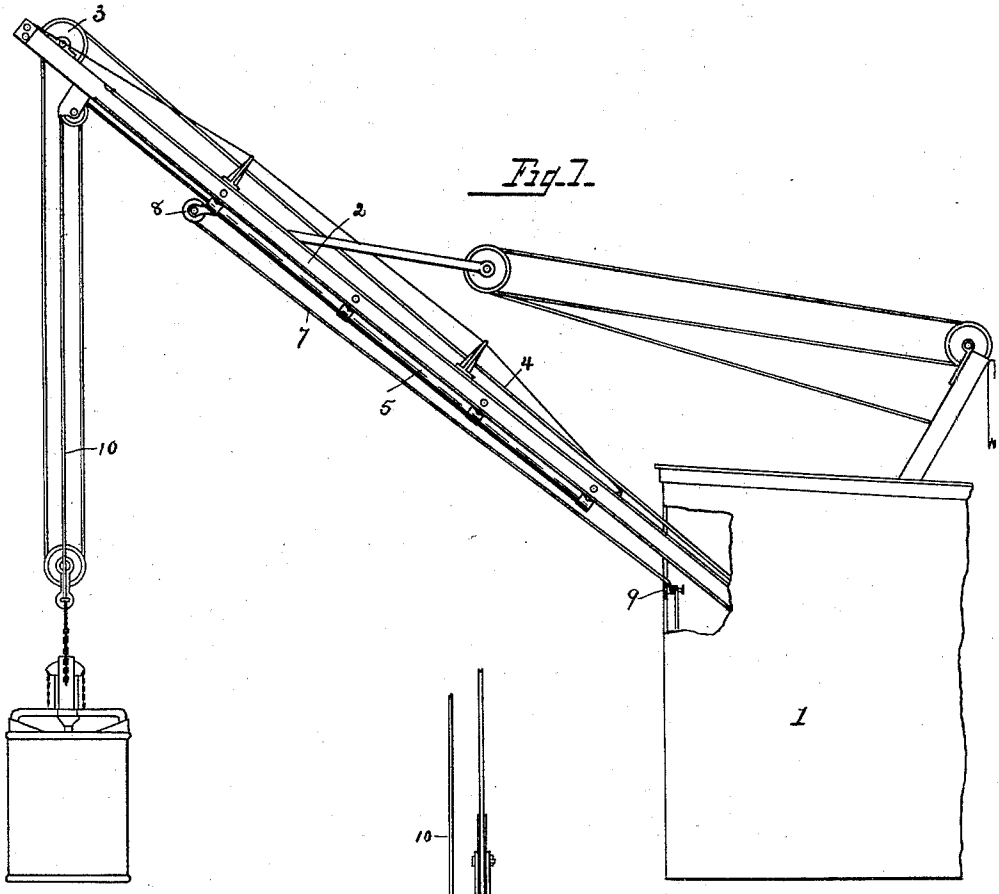

Fig. 1.

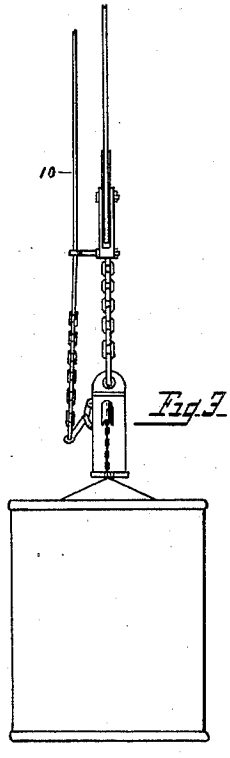

Fig. 3.

WITNESSES.

Carroll J. Webster.

Grace E. Lehaney.

INVENTOR.

William E. Ludlow

By Williams Webster

Atty.

(No Model.) 2 Sheets—Sheet 2.

W. E. LUDLOW.

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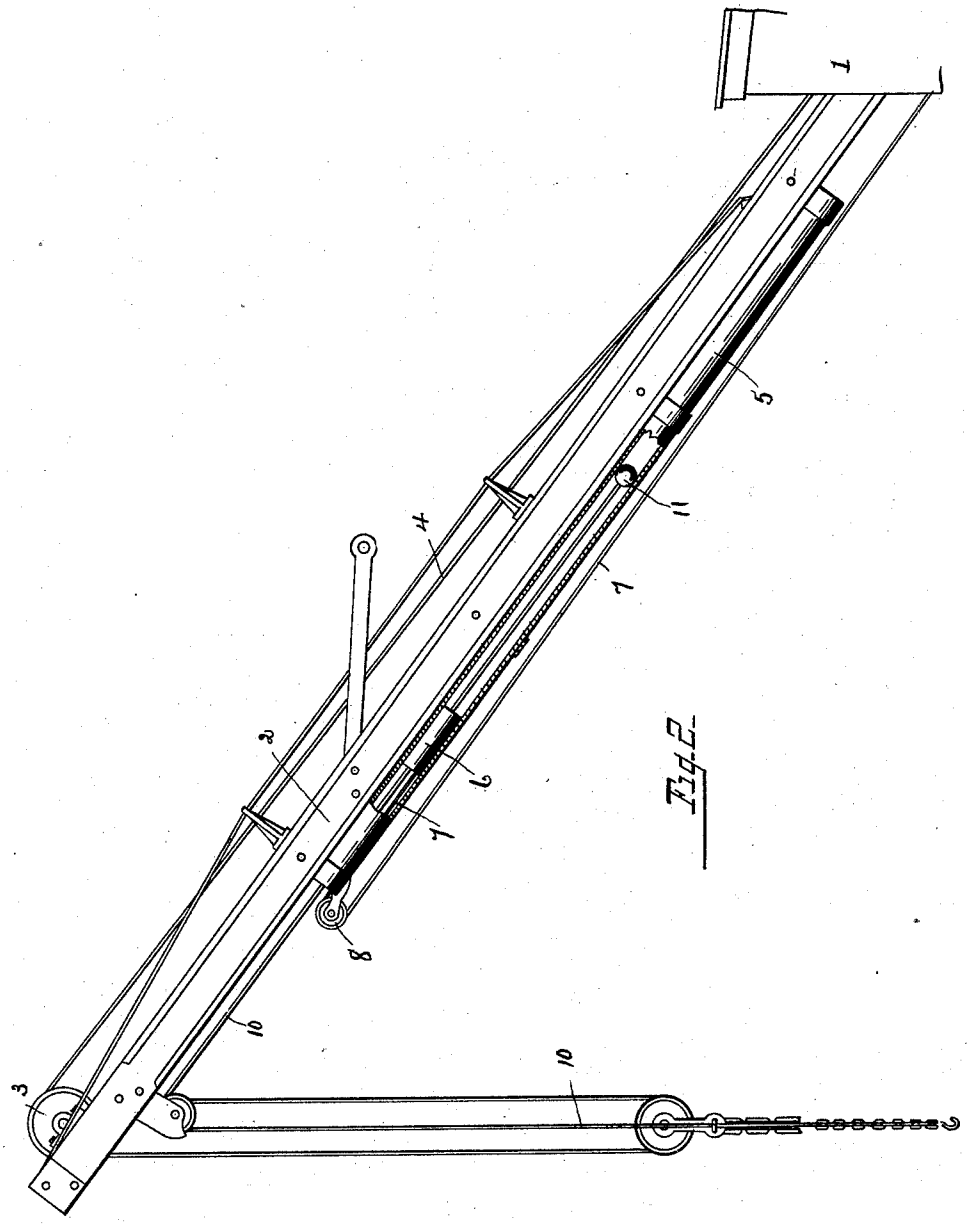

Fig. 2.

WITNESSES.

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UNITED STATES PATENT OFFICE.

WILLIAM E. LUDLOW, OF TOLEDO, ASSIGNOR TO THE LUDLOW MANUFACTURING COMPANY, OF CLEVELAND, OHIO.

AUTOMATIC TRIP FOR DUMPING-BUCKETS.

SPECIFICATION forming part of Letters Patent No. 476,284, dated June 7, 1892.

Application filed January 12, 1892. Serial No. 417,806. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. LUDLOW, of Toledo, county of Lucas, and State of Ohio, have invented certain new and useful Improvements in Automatic Trips for Dumping-Buckets; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form part of this specification.

My invention relates to an automatic trip for dumping-buckets, and has for its object to provide mechanical means for causing the bucket to dump.

A further object is to provide for dumping the bucket automatically at any point desired.

The invention consists, broadly, in providing a flexible connection with the trip of a dumping-bucket that shall act upon the trip at any point desired, with means for taking up the slack of the flexible connection when the bucket is elevated.

In the drawings, Figure 1 is a side elevation of a derrick arm or boom having a dumping-bucket suspended therefrom, with one form of my automatic trip connected with the bucket. Fig. 2, Sheet 2, is a like view with the bucket omitted, the tube being broken away to disclose the adjustable stop-block and the tripping-weight for coaction therewith. Fig. 3, Sheet 1, is an elevation of a dumping-bucket, showing the connection therewith of the flexible-connection tripping mechanism.

1 designates the lower connection of the derrick arm or boom 2, the arm being equipped with the usual sheaves 3, over which the cable 4 is run to raise or lower the bucket. As my automatic trip is equally well adapted to all forms of buckets, as well as derricks, a further description of these parts is deemed unnecessary.

5 designates a tube or casing secured to the derrick-arm, in which there is arranged an adjustable stop-block 6, the inclination of the tube causing the block to have a tendency to gravitate to the bottom. Therefore the block is suspended by a rope 7, run over a sheave 8 and extending to within easy reach of the engineer, and is secured at 9 by simply winding the same around a cleat or pin.

10 designates a rope secured at one end to the trip of the bucket, the opposite end being secured to a tripping weight or ball 11 of sufficient weight to take up the slack of rope 10 when the bucket is elevated and not trip the bucket by a force necessary to raise the same within the tube, the tripping being effected by contact of the ball with the adjustable stop-block 6.

In operation the stop-block 6 is adjusted to allow the bucket to be lowered as far as desired. If loading a vessel, the block would be drawn toward the top of the tube and secured by rope 7. The bucket is now lowered, and the tripping weight or ball 11 contacts with the stop-block 6 at the point desired to trip the bucket. As soon as the vessel-hold is sufficiently full to require the tripping of the bucket at a point higher stop-block 6 is lowered to cause the ball 11 to contact therewith and dump the bucket at a higher point. It will be seen that, the stop-block being suspended, all tendency to jar or impact is avoided, as the block will raise should any undue strain be put thereon.

While I have shown and described a weight or ball 11 to control rope 10, I wish it understood that I may substitute a drum and spring or weight therefor without departing from the spirit of my invention.

What I claim is—

1. The combination, with a boom, of a casing having a stop-block arranged therein, a dumping-bucket having trip mechanism, a tripping-weight within the casing, and a flexible connection uniting the weight and the said trip mechanism.

2. The combination, with a boom, of a casing having an adjustable stop-block arranged therein, a dumping-bucket having trip mechanism, a tripping-weight within the casing, and a flexible connection uniting the weight and the said trip mechanism.

In testimony that I claim the foregoing as my own I hereby affix my signature in presence of two witnesses.

WILLIAM E. LUDLOW.

Witnesses:
WILLIAM WEBSTER,
CARROLL J. WEBSTER.