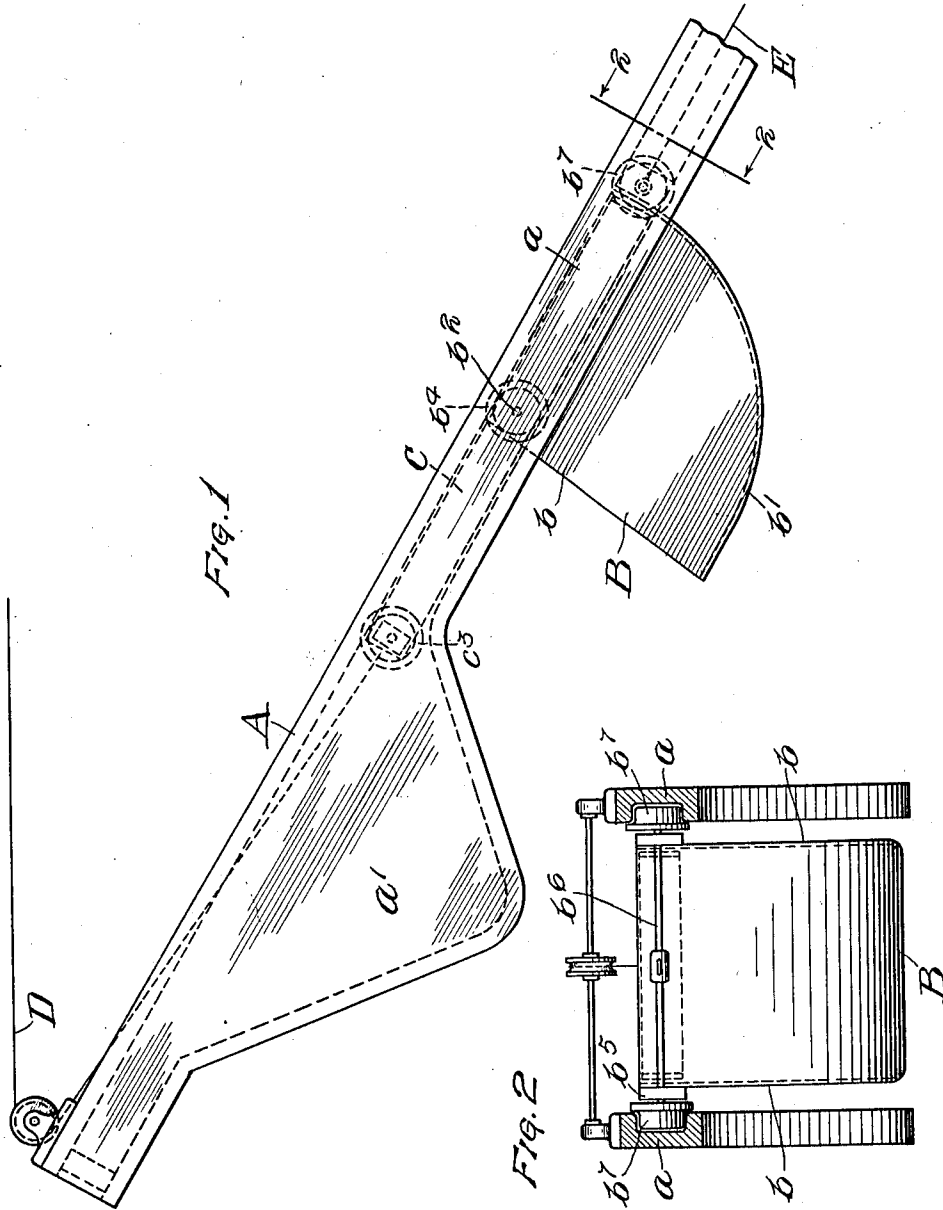


H. J. BENTSON.
 CLEAN-OUT FOR EXCAVATOR BUCKETS.
 APPLICATION FILED FEB. 23, 1909.

1,020,958.

Patented Mar. 26, 1912.
 3 SHEETS—SHEET 1.



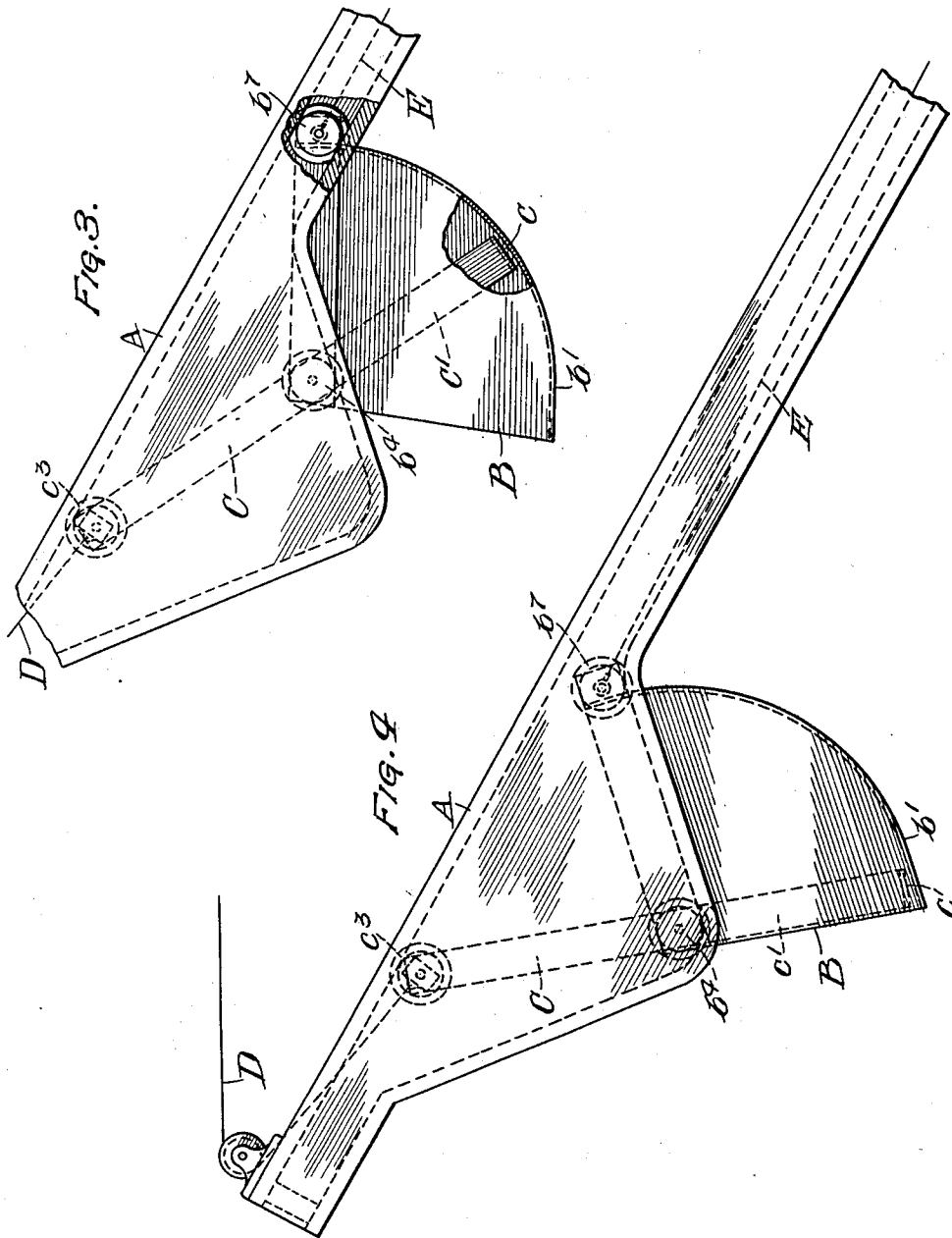
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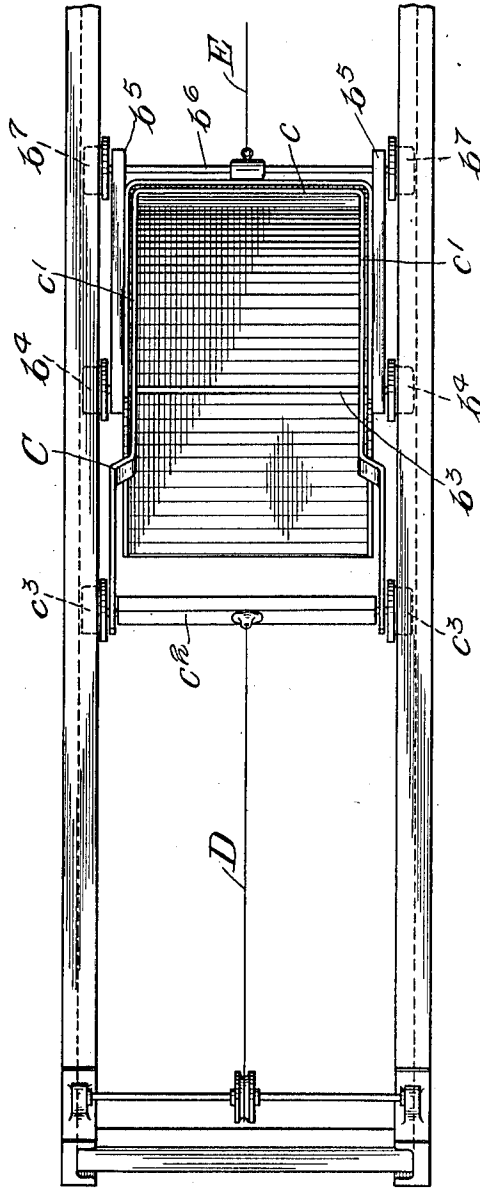
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Fig. 5



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CLEAN-OUT FOR EXCAVATOR-BUCKETS.

1,020,958.

Specification of Letters Patent.

Patented Mar. 26, 1912.

Application filed February 23, 1909. Serial No. 479,323.

To all whom it may concern:

Be it known that I, HANS J. BENTSON, a citizen of the United States of America, and resident of Winthrop Harbor, Lake county, Illinois, have invented a certain new and useful Improvement in Clean-Outs for Excavator-Buckets, of which the following is a specification.

My invention relates to traveling buckets in general, but more particularly to those employed in excavating machines, and especially to those which are operated back and forth on a runway, being caused to automatically upset and dump the load at a certain point in the length of said runway, usually at the outer end thereof.

The object of my invention is to provide an arrangement whereby the bucket, in dumping, will have the interior surface thereof scraped perfectly clean, thereby insuring a complete and prompt discharge each time the bucket is upset to dump the load.

It is also an object to provide a scraper, for the above purpose, which will not interfere with the proper filling or loading of the bucket.

To these and other useful ends, my invention consists in matters hereinafter set forth and claimed.

In the accompanying drawings—Figure 1 is a side elevation of a bucket and runway therefor embodying the principles of my invention, the bucket being shown approaching the dumping position of the runway. Fig. 2 is a cross section on line 2—2 in Fig. 1. Fig. 3 is a view showing the bucket in partial dumping position, the scraper being shown half-way across the bottom of the bucket. Fig. 4 is a view similar to Fig. 1, but showing the bucket in full dumping position. Fig. 5 is a plan of the structure shown in Fig. 1.

As thus illustrated, the runway A comprises two parallel tracks or ways $a-a$ that are widened at a' to form a drop or depression in the runway for upsetting the bucket B when the latter reaches the outer end of the runway. The said bucket has flat sides $b-b$ and a curved bottom b' , the latter being formed on the line of a circle having as its center the point b^2 near the upper ends of the sides. At the point b^2 a rod b^3 is inserted through the sides of the bucket, and provided at its outer ends with

wheels b^4 which travel in the tracks a of the runway. The upper edges of the bucket are provided with side bars b^5 which are connected at their rear ends by a rod b^6 provided at its ends with wheels b^7 that travel in the said tracks.

A bail-shaped member C of strap iron is mounted at its sides on the rod b^3 , inside the bucket, so that the transverse end portion c of the bail will sweep across the inner curved surface of the bottom of the bucket. The sides c' of the bail act as scrapers for the inner surfaces of the sides of the bucket. The outer end portions of the bail are connected by a cross piece c^2 having wheels c^3 at the ends thereof, which wheels also travel in the tracks of the runway. An operating cable D may be secured to the cross piece c^2 , to pull the bucket forward; and a cable E can be secured to the rod b^6 to pull the bucket backward.

When the bucket reaches the portion a' in the runway, the wheels b^4 drop down and cause the scraper C to move into the position shown in Fig. 3, and then into the position shown in Fig. 4, thus completely scraping out the contents of the bucket, leaving the interior thereof clean and free for adhering masses of earth. While the bucket is loading, and while it is moving along the straight portion of the runway, the said scraper occupies the position shown in Fig. 1, and does not interfere with the filling or loading of the bucket. Thus the load is automatically dumped by the upsetting of the bucket, and the interior of the bucket is automatically scraped to free it of the load, which is of advantage when the excavation is being carried on in clay or other wet and sticky soil.

The draft of the cable D is on the frame C, and hence on the clean-out device provided by the inner end of said frame, rather than directly on the bucket. This, I find, insures the desired dumping and cleaning out operations when the bucket reaches the portions a' of the runway.

I do not limit myself to the exact construction shown and described.

What I claim as my invention is:

1. A traveling bucket, a runway, wheels on the bucket engaging the runway, a scraper for the interior of the bucket, pivoted on the sides of the bucket, wheels on one end of said scraper engaging the runway, and means on

said runway for causing the bucket to tilt and the scraper to move across the interior thereof.

2. In an excavator, a traveling bucket, a bail-shaped scraper for the interior thereof, adapted to travel with the bucket, and means for automatically operating said scraper to dump the load, said scraper being pivoted to swing downward in the direction of discharge from said bucket.

3. In an excavator, a traveling bucket, a runway, wheels on the bucket engaging the runway, a scraper for the interior of the bucket, pivoted on the sides of the bucket, wheels on one end of said scraper engaging the runway, and means on said runway for causing the bucket to tilt and the scraper to move across the interior thereof, said scraper being pivoted to swing downward in the direction of discharge from said bucket.

4. The combination, in a machine of the character set forth, of a traveling bucket, an automatic scraper for the inner surface thereof, a runway upon which the bucket travels back and forth, and means on the runway for tilting the bucket and operating the scraper to discharge the load.

5. The combination, in a machine of the character set forth, of a traveling bucket, a scraper for the interior thereof, adapted to travel with the bucket, means for tilting the bucket and thereby causing the scraper to move across the inner surface of the bucket, a runway upon which the bucket travels back and forth, means on the runway for tilting the bucket and operating the scraper to discharge the load, and means connected with the scraper for drawing the bucket forward.

6. The combination, in a machine of the character set forth, of a traveling bucket, a bail-shaped scraper for the interior thereof, means for automatically operating said scraper to dump the load, a runway upon which the bucket travels back and forth, and means on the runway for tilting the bucket and operating the scraper to discharge the load.

7. The combination, in a machine of the character set forth, of an improved scraper for a traveling excavator bucket, adapted to travel with the bucket substantially as shown and described, a runway upon which the bucket travels back and forth, means on the runway for tilting the bucket and operating the scraper to discharge the load, and means connected with the scraper for drawing the bucket forward.

8. In a machine of the character disclosed, a traveling bucket, an automatic scraper for the inner surface thereof, adapted to travel with the bucket, a runway for

the bucket, means connected with the scraper for moving the bucket forward on the runway, and means on the runway for tilting the scraper to discharge the load from said bucket.

9. In a machine of the character disclosed, a traveling bucket, a scraper for the interior thereof, adapted to travel with the bucket, means for tilting the bucket and thereby causing the scraper to move across the inner surface of the bucket, a runway for the bucket, means connected with the scraper for moving the bucket forward on the runway, and means on the runway for tilting the scraper to discharge the load from said bucket.

10. In a machine of the character disclosed, a traveling bucket, a bail-shaped scraper for the interior thereof, means for automatically operating said scraper to dump the load, a runway for the bucket, means for moving the bucket back and forth on the runway, and means on the runway for tilting the scraper to discharge the load from said bucket.

11. In a machine of the character disclosed, the improved scraper for a traveling excavator bucket, adapted to travel with the bucket substantially as shown and described, a runway for the bucket, means connected with the scraper for moving the bucket forward on the runway, and means on the runway for tilting the scraper to discharge the load from said bucket.

12. An excavator bucket provided with a draft connection, and a swinging clean-out for the bucket rigid with said draft connection.

13. A runway, a frame having wheels traveling on said runway, a bucket pivoted to the middle portion of said frame, so that one end thereof projects within the bucket to act as a clean-out therefor, wheels on the bucket traveling on said runway, means attached to the outer end of the frame for drawing the bucket forward, and means for automatically upsetting the bucket.

14. A bucket, a clean-out therefor, a runway, wheels for the bucket traveling on the runway, and separate wheels for the clean-out also traveling on said runway.

15. In a bucket excavator, a bail-shaped pivoted clean-out traveling with the bucket along the runway, in engagement therewith, and automatically operated by the runway to clean out the bucket when the load is dumped.

Signed by me at Chicago, Illinois, this first day of February, 1909.

HANS J. BENTSON.

Witnesses:

CLARENCE E. TAYLOR,
E. H. CLEGG.