Dec. 6, 1927.

1,652,136

T. R. ARDEN

TOY CRANE

Filed July 14, 1925

Fig. 1.

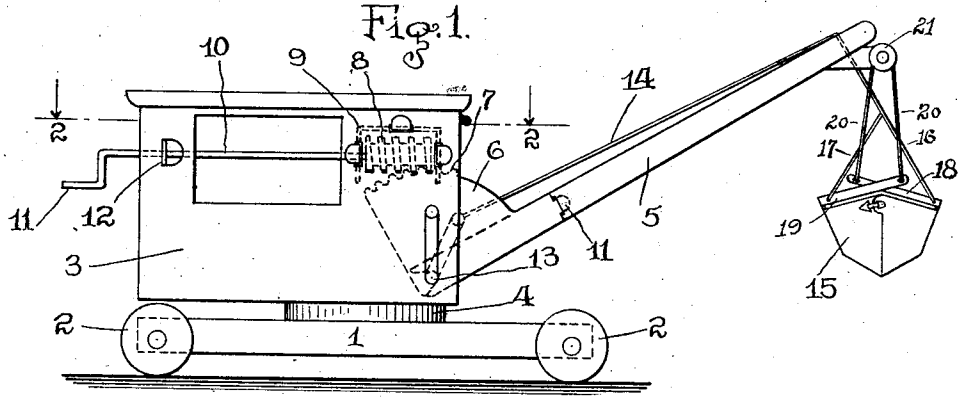


Fig. 2.

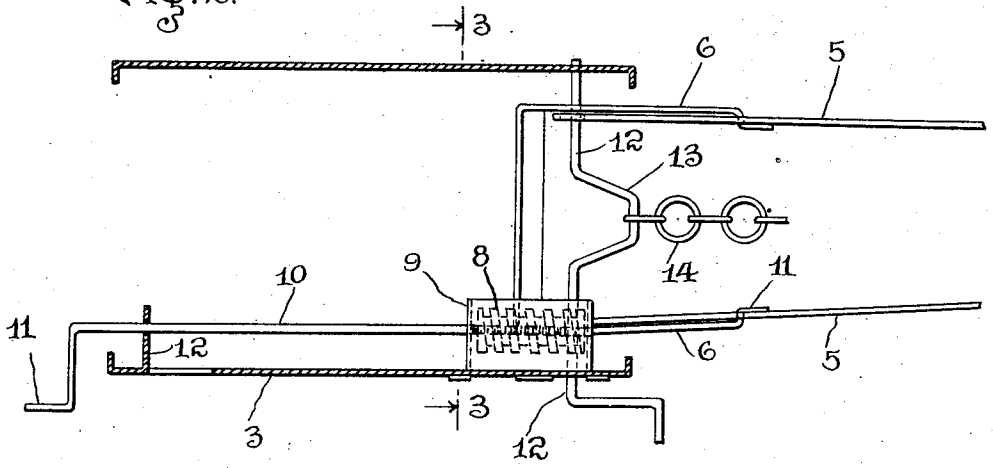
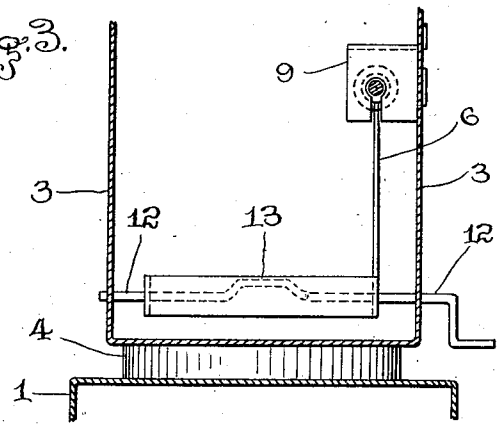


Fig. 3.



INVENTOR

Thomas Raymond Arden

BY

ATTORNEY

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UNITED STATES PATENT OFFICE.

THOMAS RAYMOND ARDEN, OF FOREST HILLS, NEW YORK, ASSIGNOR TO JULIUS CHEIN, OF NEW YORK, N. Y.; ELIZABETH H. CHEIN EXECUTRIX OF SAID JULIUS CHEIN, DECEASED.

TOY CRANE.

Application filed July 14, 1925. Serial No. 43,448.

My invention relates to improvements in toy cranes. An object of my invention is to provide a novel and instructive toy. Another object of my invention is to provide a simple and convenient means of operating the device.

An embodiment of the prepared form of my invention is shown in the accompanying drawings, in which

Figure 1 is an elevation of the device,

Figure 2 is a section of the same on the line 2—2 in Figure 1 with the truck and base removed and

Figure 3 is a detail section on the line 3—3 in Figure 2.

Similar characters of reference refer to similar parts throughout the several views.

My improved device includes a truck 1 having traction wheels 2, 2 and a cab 3 carried on a rotatable base 4.

In the cab 3 is mounted a boom 5 provided at its base with a carrier 6 having a toothed sector 7 engaging a worm gear 8 supported in a frame 9 on the inner wall of the cab 3.

A shaft 10 extends from the worm gear 8 to the rear of the cab 3 and is provided with operating crank 11. A supporting ear 12 may be provided for the shaft 10.

The boom 5 is preferably of sheet metal and is secured to the carrier 6 by means of a lug 11.

A shaft 12 extends through the cab 3 and carries the lower end of the boom 5 and its carrier 6.

A crank section 13 of the shaft 12 carries a chain or cable 14 which extends therefrom over the boom 5 and is secured to a sectional bucket 15 by means of divided strands 16 and 17.

The bucket 15 is of two sections hinged at their adjacent upper edges and having arms 18 and 19 extending inwardly from their outer rims so that when the bucket is supported to the arms 18 and 19 the sections will be brought together and the bucket closed and when supported at their outer edges by the strands 16 and 17 of the cable 14 the sections will be spread and the bucket will be open.

The bucket 15 is normally carried by a cable 20 passing over a pulley 21 at the end of the boom 5 and attached to the free ends of the arms 18 and 19 whereby the bucket is normally closed and may be elevated and lowered with the boom 5.

When it is desired to open the bucket 15 the chain or cable 14 is drawn in by means of the crank shaft 12 whereby the outer edges of the bucket sections are drawn up and the bucket opened.

The boom 5 with the bucket 15 carried thereby is elevated and lowered by the worm gear 8 operated by the shaft 10 and turns with the cab 3 on the swivel base 4.

In operation, the boom is lowered by means of the crank 11 and the bucket is opened by applying tension to the chain 14. The tension on the chain 14 is released and the boom is elevated thus drawing the sections of the bucket together by the cable 20 and the arms 18 and 19 whereby sand or other material on which the bucket rests will be scooped up by the bucket.

The boom may then be elevated to the desired position by the crank 11 acting on the shaft 10, the worm gear 8 and the carrier 6 and may be turned about with the cab 3 on its swivel base 4.

When it is desired to open the bucket 15 and discharge the load, tension is applied to the chain 14 by the crank shaft 12 as above explained and the operation may be repeated as desired.

Having thus described my invention, what I claim is:

1. A toy crane of sheet material comprising a truck, a cab rotatably mounted on said truck, a supporting frame mounted in said cab, a shaft journaled in said frame, a worm wheel fixed on said shaft, a boom, means pivotally connecting said boom to said cab, a sector plate fixed on said boom and extending adjacent to said worm wheel, and teeth on said sector in engagement with said worm wheel.

2. In a toy crane the combination of a cab, a crank shaft journaled in said cab, a boom journaled on said shaft, a bucket supported in fixed relation to said boom and having two parts pivoted together, means connecting said crank shaft and said parts whereby movement of said crank shaft will move the parts of said bucket relative to one another, a frame fixed in said cab, a lug in said cab, a second crank shaft journaled in said lug and said frame, a worm wheel fixed on said second crank shaft, a sector plate

fixed on said boom, and teeth on said plate in engagement with said worm wheel whereby movement of said second crank will move said boom.

3. In a sheet metal toy the combination of a cab having side walls, a shaft journaled in the side walls at the base thereof, a sector plate journaled on said shaft, said plate being adjacent and parallel to one of said side walls, a frame fixed to said last mentioned side wall above and adjacent said plate, teeth on said plate, a crank shaft in said frame, a worm wheel fixed to said crank shaft, said worm wheel being in operative contact with the teeth on said sector whereby movement of said shaft will move said sector plate.

In testimony whereof, I have signed my name to this specification, this 13th day of July, 1925.

THOMAS RAYMOND ARDEN.