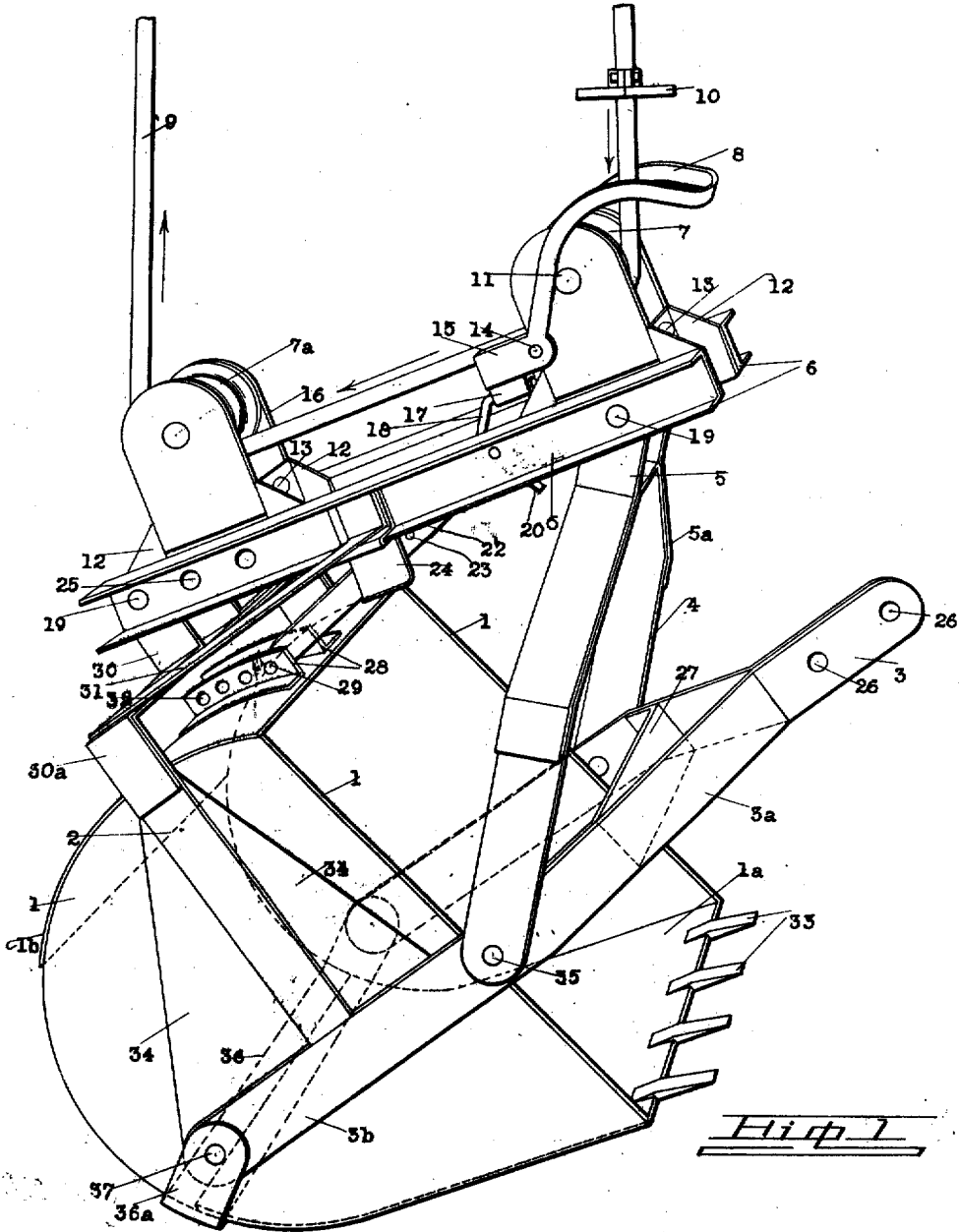


J. F. HEWITT.
SCRAPER BUCKET.
APPLICATION FILED FEB. 21, 1911.

1,006,848.

Patented Oct. 24, 1911.

3 SHEETS-SHEET 1.



WITNESSES:

A. J. Mutter
W. L. Chapman

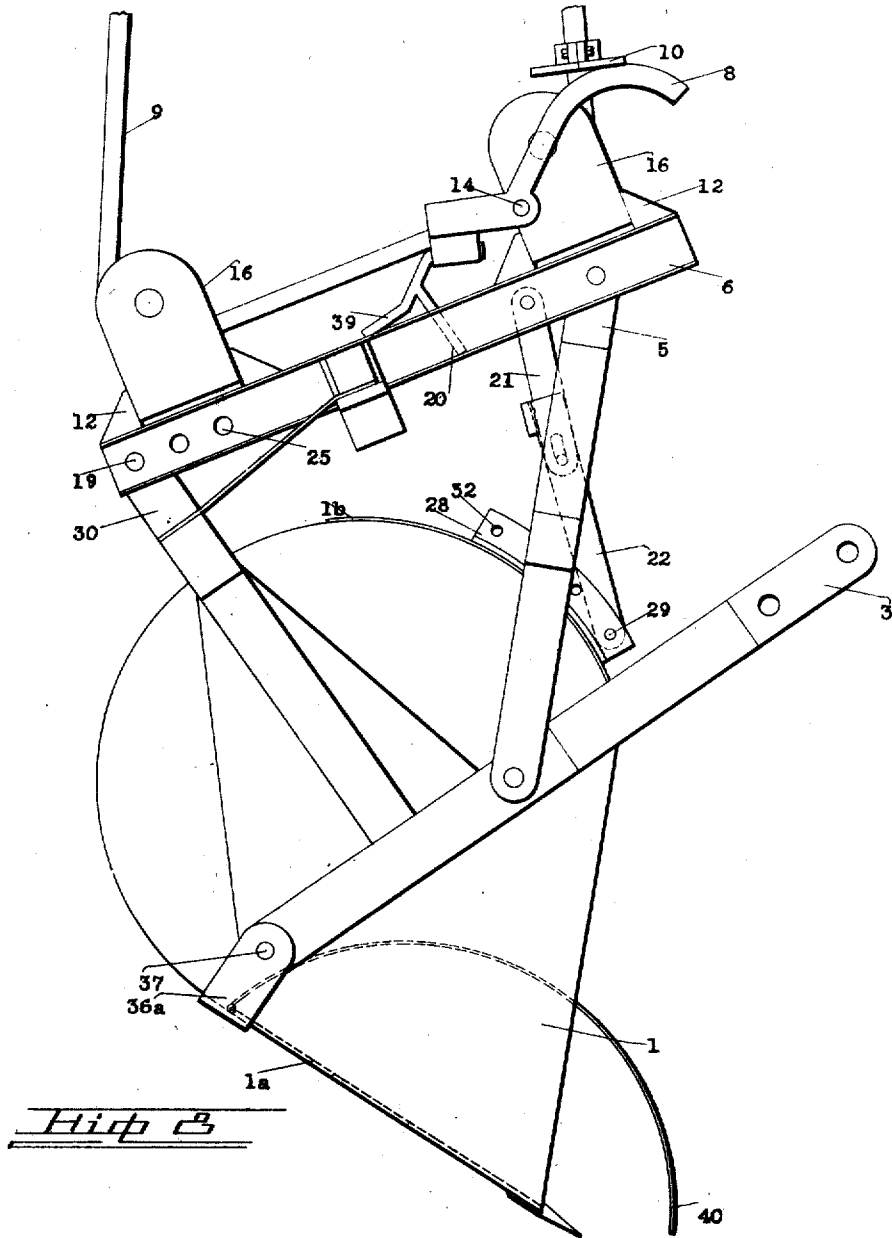
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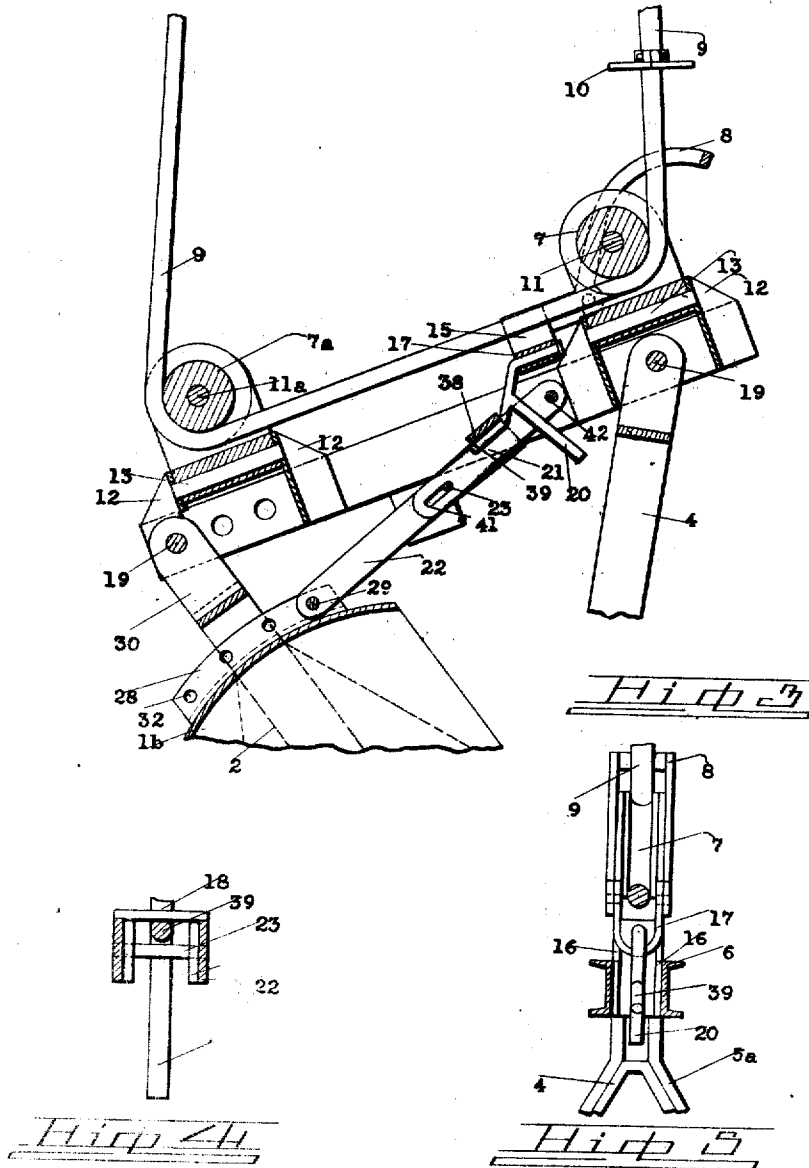
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UNITED STATES PATENT OFFICE

JOHN F. HEWITT, OF PORTLAND, OREGON.

SCRAPER-BUCKET.

1,006,848.

Specification of Letters Patent.

Patented Oct. 24, 1911.

Application filed February 21, 1911. Serial No. 610,083.

To all whom it may concern:

Be it known that I, JOHN F. HEWITT, a citizen of the United States, residing at Portland, in the county of Multnomah and State of Oregon, have invented certain new and useful Improvements in Scraper-Buckets, of which the following is a specification.

This invention relates to improvements in scraper buckets, and has for its object to provide a bucket which, when supported from its carriage, will carry its mouth at a sufficient elevation to prevent escape of its contents; and which, at the same time, when tripped will swing over to a distance that will compel its evacuation.

A further object is to secure an instantaneous movement of the bucket, when tripped, and also a further swing on its axis of rotation, than can be had in the buckets now in use.

A further object is to provide a bucket which will drop onto the ground in such position that it will right itself automatically and which is provided with an automatic cleansing mechanism.

I accomplish these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective elevation, showing the bucket in its normal position. Fig. 2 is an elevation showing the bucket after being tripped. Fig. 3 is a detail sectional elevation of the tripping device. Fig. 4 is a transverse sectional view of the double link connection. Fig. 5 is a transverse sectional view of the tripping mechanism.

In each of the views similar reference characters indicate similar parts of the construction.

In the drawing 1 is the body of the bucket upon which is secured the pull bail 3. This bail consists of two members united at the front, each expanding diagonally, as at 3^a, to its respective side of the bucket and in which is secured the lateral brace 27; thence the portion 3^b extends to its pivotal support 37, toward the rear and well toward the bottom of the bucket, and upon which also is secured the reinforcing member 36 across the rear of the bucket, which is provided with the forwardly projecting arms 36^a.

Near the median point of the part 3^b is secured the bail 2 which rises over the body of the bucket and from its central point the riser 30 extends for engagement with the

rear end of the channel iron 6, of the carriage, to which also is secured the brace 31.

To the pull bail, at each side near the front edge of the bucket, is secured the transverse member 4 of a forward bail. Reinforcements 5 and 5^a are secured upon this member, which converge together and rise between the members of the channel iron 6 of the carriage, where they are secured upon the pivot 19. Aperture 26 is formed in the pull bail to facilitate engagement therewith.

The bucket is formed of sheet metal of the proper weight, and is provided with the fixed straight bottom 1^a, which extends back to the beginning of the rounded back portion, and has formed upon its front edge the teeth 33. The curved upper portion also is provided with a fixed covering 1^b made sufficiently strong to sustain any strain upon the bucket, and to the top of which is secured the tripping mechanism.

At the rear edge of the floor 1^a is hingedly secured the back 40 of the bucket, bent to conform to the side members and made to fit snugly between them. When the bucket is tripped, its forward motion will throw the hinged back forward, causing it to scrape the sides clean, and breaking any accumulation which may have packed on the floor 1^a. Contact with the earth, in the succeeding forward pull of the bucket, at once restores the back to its normal position in the bucket, without inconvenience or loss of time.

The carriage consists of the channel irons 6, secured together upon the brackets 12. The front and back transverse bails being secured to their respective ends of the carriage, by the members 5 and 30. Apertures 25 are formed in the channel irons for the back and forth adjustment of the rear bail, whereby the angle of the carriage with reference to the horizon, may be varied.

To the brackets 12 are secured the blocks 16, mounted to rotate laterally upon the rods or bearings 13, when the bucket is at rest and the cable is slackened. Within these blocks are mounted the pulley wheels 7 and 7^a upon the shafts 11 and 11^a respectively, by means of which the carriage is mounted on the cable 9, connected with a hoist.

At the rear side of the block 16 is mounted, upon the pivot 14, a trigger having the rearward projection 15, in the lower side of

which is formed the box or bearing 17, to receive the journal of the tripper 39. This journal is mounted in line with shaft 13, so that when the pulley blocks rock on their bearings the tripper also will rock in its bearing, so as to maintain the alinement of its members, for a purpose hereinafter described.

Longitudinally across the top of the bucket at its central portion, is secured a pair of angle irons 28, provided with apertures 32 to receive the pin 29. Upon the pin 29 is pivotally secured the lower end of the member 22 of the double link connection, the member 21 thereof being pivoted at its upper end at 42, to the channel iron 6. These members 21 and 22 are formed of double angle irons, the bottom being omitted, and are rectangular in cross section, as shown in Fig. 4, the end of the former fitting within that of the latter. A transverse pin 23 is fixedly secured in member 21 and is free to move lengthwise in the slot 41 of the member 22. A bar 38 is provided across the upper side at the end of member 22, the purpose of which will appear later.

The body 18 of the tripper adjacent the journal 17 is bent obliquely downward till it comes approximately to the center line of the double link 21—22 when it is again bent to stand in line therewith, when the bucket is in loaded or normal position, the end 39 thereof standing against the bar 38.

The bucket having been loaded and conveyed to the proper point to deposit its contents, the cable is set in motion in the direction of the arrow, when the stop 10 thereon contacting with the trigger 8, rocks it upon its shaft 14 carrying upward the end 39 of the tripper, causing the link 21—22 to buckle upward, thereby removing the support which sustained the bucket in its normal position. It is therefore, then free to rock forward on its pivot 37 in response to its weight and that of its contents, which is heaviest to the front of the pivot. The slot 41 permits a wide swing of the bucket and the weight of the hinged back 40 renders the emptying rapid and complete.

An independent mechanism may be provided for operating the trigger 8, if desired, so that it may be entirely under the control of the operator.

When the bucket reaches the ground again, it always strikes upon the teeth 33 and its weight being at the rear from that point, it settles backward rotating on its pivot, and carrying the member 22 of the double link up within the guide way 24, and as it does so the cap 38 swings over the end 39 of the tripper, bringing it to its original position. To guarantee the latching of the bucket in each instance, there is dropped from the portion 18 of the tripper

the depending member 20 between the channel irons 6 in such position that it will always strike between the side members of the portion 21 of the double link, the end 39 will necessarily, therefore, come in line with the cap 38 of the member 22.

As the double link swings to position, it is so formed that the pin 23 drops slightly below the line established by the pivots 29 and 42. It will therefore, resist all the strain applied upon the teeth 33, and will not permit the bucket to be discharged prematurely. In no case can the bucket be tripped until the pin 23 is raised above the line of the pivots 29 and 42, which is done only by operating the trigger 8.

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

1. A scraper bucket comprising side members,—a fixed bottom piece secured transversely at the front thereof,—a movable bottom member hingedly connected to said fixed bottom piece, mounted to vibrate longitudinally of the bucket,—and means to arrest said movable member at the rear edge of the side members.

2. In combination with a carriage, a scraper bucket having parallel side members,—a fixed bottom piece at the front thereof,—a movable bottom hingedly connected at the rear edge of the fixed member and mounted to swing longitudinally between the side members,—pivotal bearings secured to the side members for connection with the carriage,—and means upon the carriage for operating the bucket upon its bearings.

3. The combination in a scraper mechanism, of a carriage with a scraper bucket,—a pull-bail embracing the front of said bucket and pivotally secured thereto at a point to the rear of and below its center,—a carrying bail uniting the front of the pull-bail with the front of the carriage and a similar bail uniting the rear of the carriage with an intermediate portion of the pull-bail,—a double link pivotally connecting the front of the bucket with the carriage,—means upon the carriage for operating said link for dumping the bucket,—and means for controlling the angle of rotation of the bucket on its pivotal support.

4. In a scraper mechanism a carriage,—a movable cable for supporting the carriage,—a bucket pivotally supported from the carriage,—a tripping mechanism comprising a double link connecting the bucket and carriage,—and means upon the cable for operating the tripping mechanism.

5. In a scraper mechanism, a carriage,—a bucket pivotally secured thereto,—a double link pivotally connecting the bucket and carriage,—a tripper comprising a double lever, one end of which has a guide

member adapted to keep it in line for engagement with the double link,—and means for operating the other end of the lever for tripping the bucket.

- 5 6. A scraper mechanism comprising a carriage,—pulley blocks secured to the upper side thereof and a bucket pivotally secured to the lower side,—a double link pivotally connecting the bucket and carriage,—
10 a tripper engaging the double link and having a guide arm depending through the members thereof, which tripper is journaled

to a lever mounted on a pulley block, the journal thereof being in line with the mounting of the pulley, whereby it will maintain 15 its alinement and by means of which the double link is operated.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN F. HEWITT.

Witnesses:

NORRIS W. YOUNG,

EDWIN E. HECKBERT.