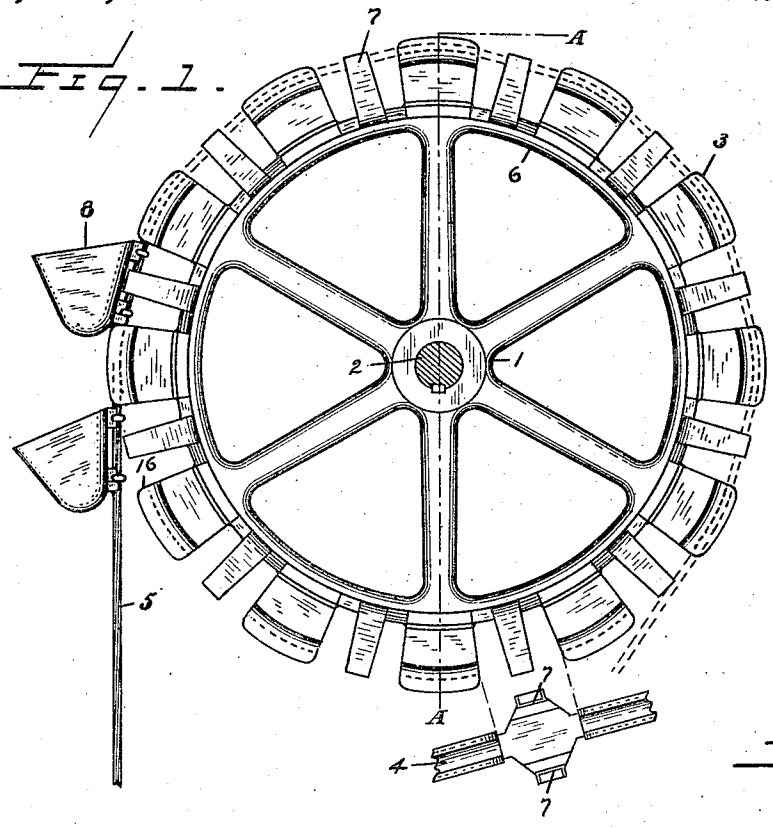
W. W. HUDSON.

BUCKET ELEVATOR.

APPLICATION FILED NOV. 4, 1919. RENEWED FEB. 23, 1922.

1,414,810. **Patented May 2, 1922.**

Fig. 1.



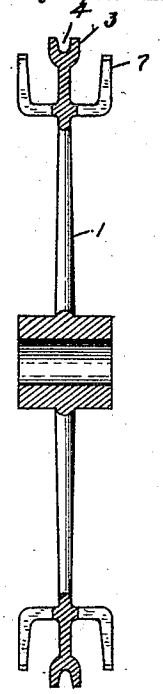
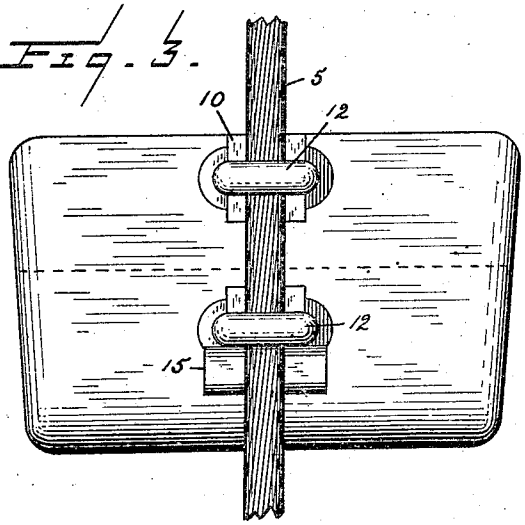


Fig. 2.

Fig. 3.



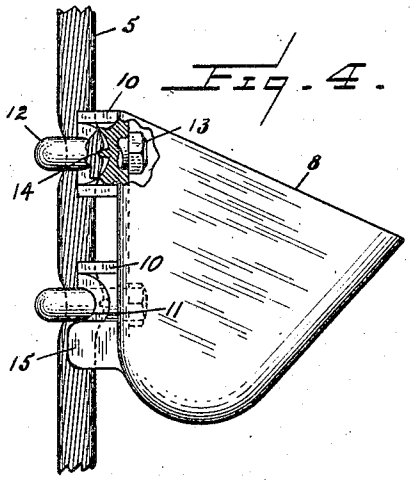


Fig. 4.

Inventor,
W. W. Hudson
By C. J. Fethverstonhaugh.
Atty.

UNITED STATES PATENT OFFICE.

WILLIAM WALTER HUDSON, OF TORONTO, ONTARIO, CANADA.

BUCKET ELEVATOR.

1,414,810. Specification of Letters Patent. Patented May 2, 1922.

Application filed November 4, 1919, Serial No. 335,570. Renewed February 23, 1922. Serial No. 538,774.

To all whom it may concern:

Be it known that I, WILLIAM WALTER HUDSON, a citizen of the United States of America, and resident of 123 Bay Street, in the city of Toronto, county of York, Province of Ontario, Dominion of Canada, have invented certain new and useful Improvements in Bucket Elevators, of which the following is a specification.

The invention relates to improvements in bucket elevators as described in the present specification and shown in the accompanying drawings that form a part of same.

The invention consists essentially of the novel construction and arrangement of parts whereby the head wheel is provided with a plurality of substantially cradle like devices adapted to support the buckets in their upward progress.

The objects of the invention are to relieve the cable of a portion of the strain and thus prevent breakage and slipping of said cable, and generally to provide a bucket elevator which will be inexpensive of construction, simple in operation, durable and efficient.

In the drawings Figure 1 is a side view of a head wheel showing a portion of a cable with buckets attached.

Figure 2 is a sectional view taken on the line A—A of Figure 1.

Figure 3 is a rear elevation of a bucket and a portion of the supporting cable.

Figure 4 is an end view of Figure 3.

Like numerals of reference indicate corresponding parts in the various figures.

Referring to the drawings 1 is the head wheel keyed to the drive shaft 2 and being provided on the periphery thereof, with circumferentially arranged brackets 3, said brackets or shives being spaced a short distance from one another and being provided with longitudinal grooves 4 in which the cable 5 operates.

The bottom of each of the grooves 4 in the brackets 3 is preferably curved slightly to conform to a circle having its centre located slightly below the rim 6 of the wheel so that in operation the cable will have a tendency to ride on the central portion of the bracket and will extend on a tangent to the centre of the adjoining bracket, barely touching the ends of said brackets and thus preventing flattening and subsequent breaking of the cable which would result through the contact of said cable with the sharp corners of a groove cut straight through the bracket.

7 are brackets circumferentially arranged around the periphery of the rim 6, said brackets being arranged in pairs oppositely disposed and projecting outwardly from the extreme outside edges of said rim substantially midway between the brackets 3 and being slightly shorter than the said brackets 3 to form supports on which a bucket 8 is adapted to rest while being carried upwardly on the cable 5.

Each of the buckets 8 is provided on its rear wall with two or more cable clamps located adjacent to the top and bottom respectively of said wall and being in the same vertical plane, each of said clamps consisting of a boss 10 integral with said wall and having its face concaved to form a bed 11 adapted to accommodate the cable 5, and a U shaped bolt 12 adapted to extend over said cable and to be secured within the bucket by means of nuts 13, said bolts being adapted to draw said cable into engagement with the concaved bottom of the bed 11 and to form a permanent set in said cable and thus effectually preclude the possibility of any movement of said bucket.

If desired the bed 11 may be provided with one or more teeth 14 adapted to be forced into the cable upon the tightening of the bolts 12 upon said cable.

Each of the lowermost of the bosses 10 of the cable clamps is provided with an enlarged portion 15 adapted to rest upon the front side 16 of the bracket 3 directly therebelow so that during the upward progress of the bucket the weight will be borne by said bracket 3.

In the operation of this invention as the wheel 1 is rotated the buckets 8 are carried upwardly with the cable 5, and as each bucket reaches a point slightly below the horizontal centre of the wheel the advancing bracket 3 engages the under side of the enlarged portion or boss 15, while the rear wall of the bucket drops inwardly slightly and is supported on the ends of the brackets and thus relieving the cable of the weight of the bucket and preventing any possibility of said cable slipping.

When it is desired to remove a bucket it is simply necessary to remove the nuts 13 and withdraw the bolts 12.

What I claim is:

1. The combination with a head wheel

having shives circumferentially arranged on the rim thereof, a cable operating over said shives and a bucket carried by said cable, of brackets disposed substantially midway between said shives and projecting outwardly from opposite side edges of said rim, said brackets being shorter than said shives and with said shives forming cradles, one of which is adapted to support said bucket during its upward progress around said wheel.

2. In a bucket elevator, in combination, a head wheel, shives peripherally arranged on the rim of said wheel and spaced from one another, a cable operating over said shives, brackets projecting outwardly from opposite side edges of said rim and forming bucket supports midway between said shives, said brackets being slightly shorter than said shives, and a bucket detachably secured on said cable and adapted during upward progress around said wheel to be supported by the front side of the adjacent lower shive and the tops of the preceding pair of said brackets.

3. In a bucket elevator, in combination, a head wheel, shives peripherally arranged on the rim of said wheel and spaced from one another, a cable operating over said shives, brackets projecting outwardly from opposite side edges of said rim and forming bucket supports immediate of said shives, said brackets being slightly shorter than said shives, a bucket detachably secured on said cable and having integral therewith a boss adapted during the upward progress around said wheel to be engaged on the under side thereof by the front side of the adjacent lower shive.

4. In a bucket elevator, in combination, a head wheel, grooved brackets circumferentially arranged on the rim of said wheel, a cable operating in said brackets, a plurality of buckets having bosses grooved to form cable beds, bolts holding said cable to said beds and secured from within said buckets, the lowermost boss of each of said buckets being enlarged and adapted during the upward progress of said buckets around said wheel to be engaged by the adjacent lower bracket, and bucket supporting brackets disposed between the aforesaid brackets.

Signed at the city of Toronto, Province of Ontario, this 29th day of August, 1919.

WILLIAM WALTER HUDSON.

Witnesses:
W. G. HAMMOND,
M. HAMMOND.