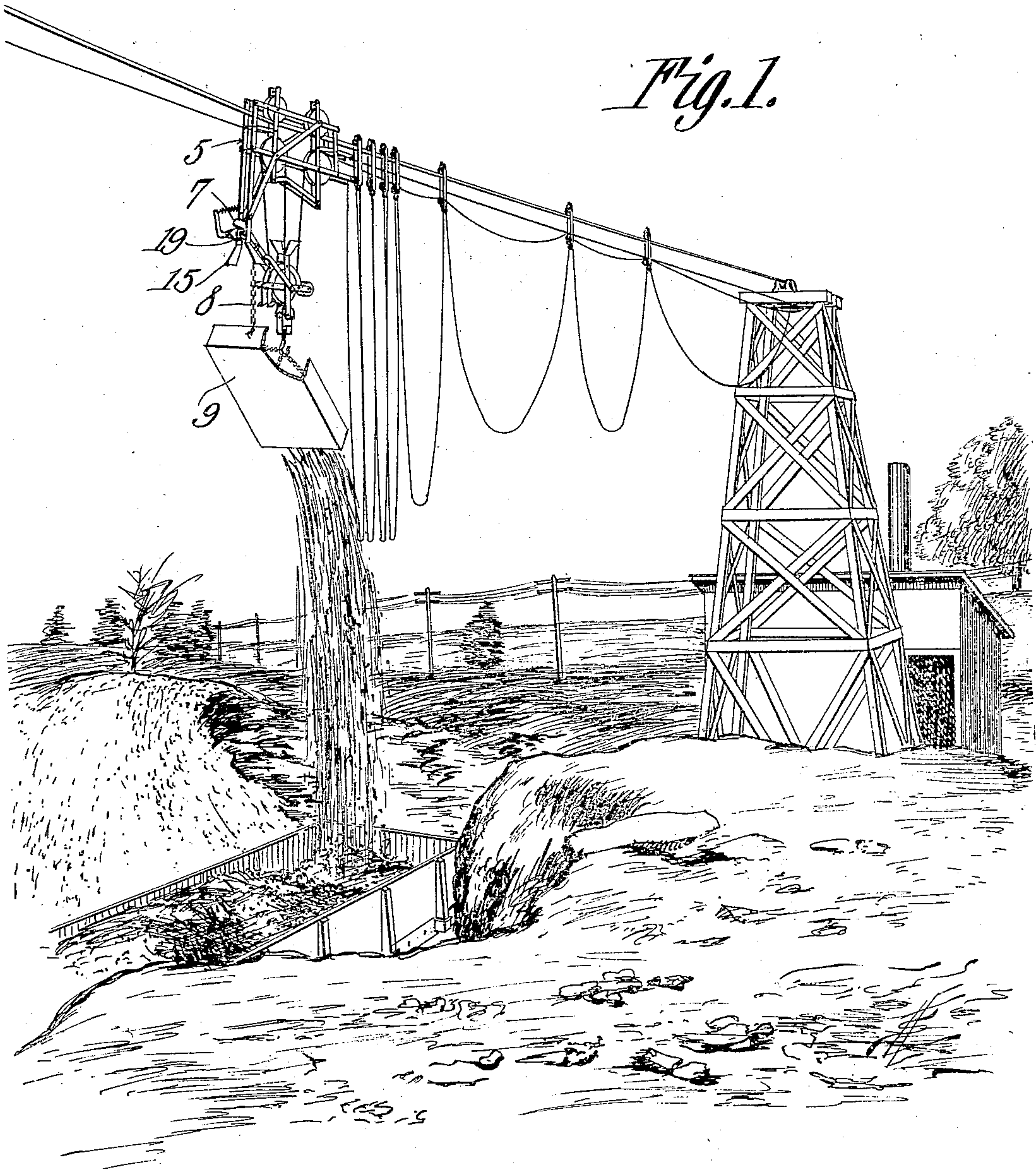


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AUTOMATIC SKIP OR BUCKET DUMPING DEVICE.
APPLICATION FILED NOV. 10, 1908.

930,253.

Patented Aug. 3, 1909.
2 SHEETS—SHEET 1.

Fig. 1.



Inventor

Thomas O. Werner.

Witnesses

E. J. Stewart
M. A. Schmidt

By

C. A. Snow & Co.
Attorneys

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Fig. 2.

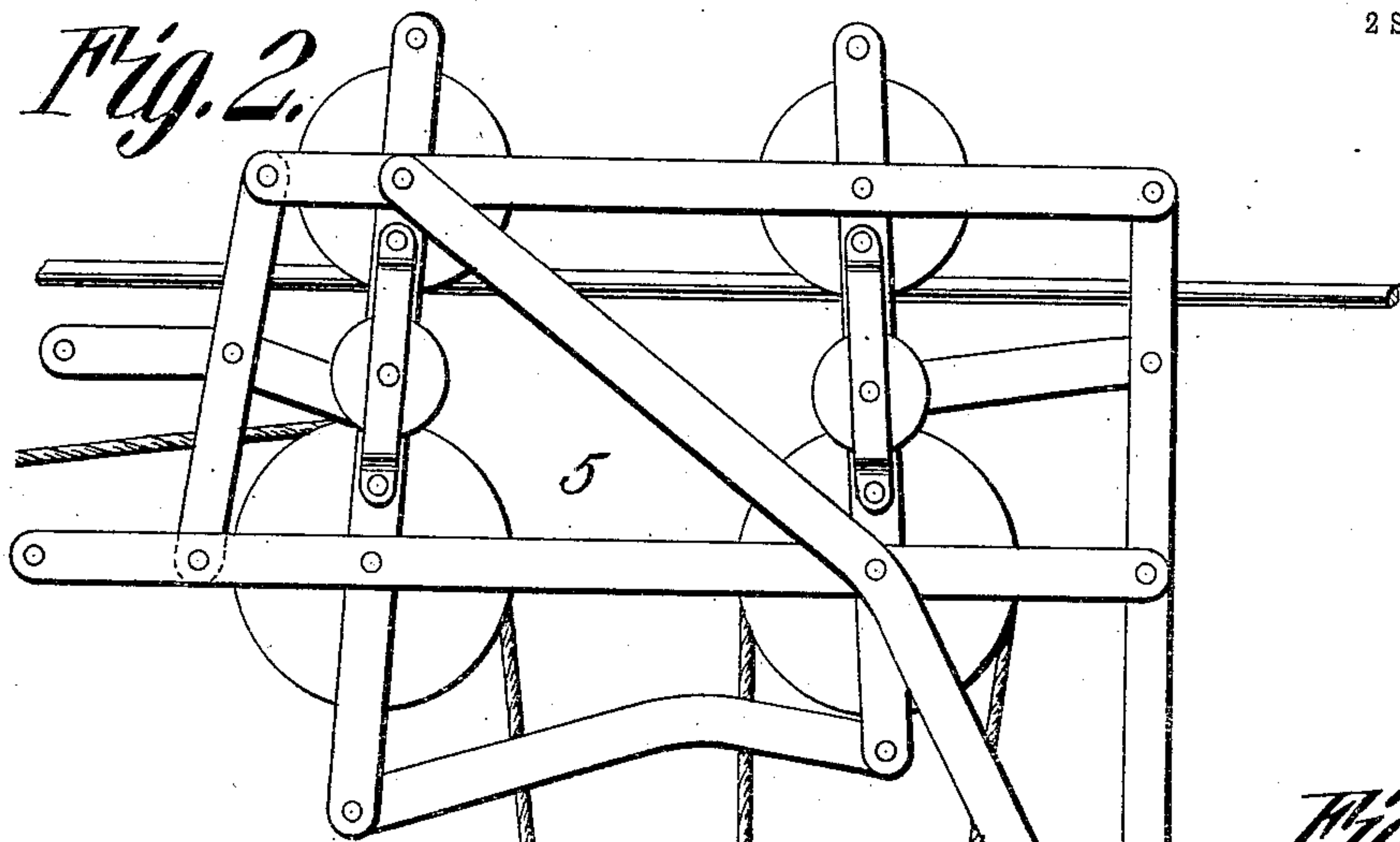


Fig. 3.

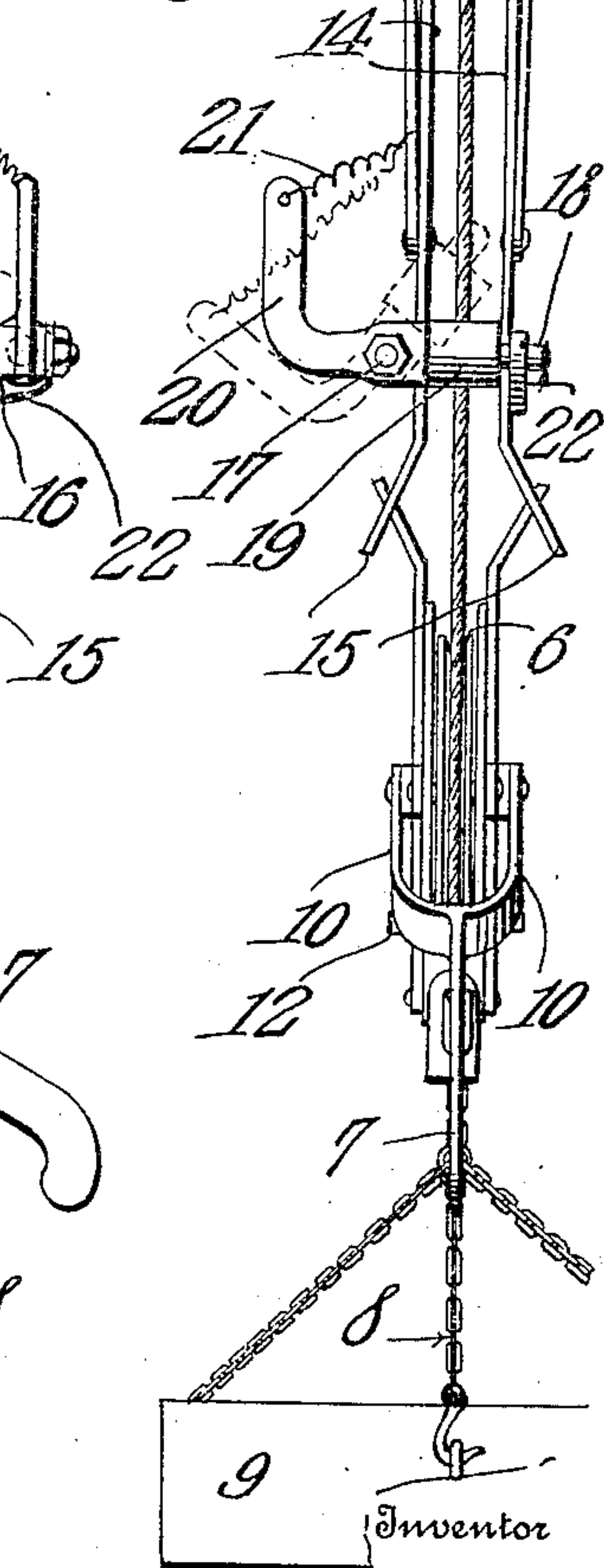
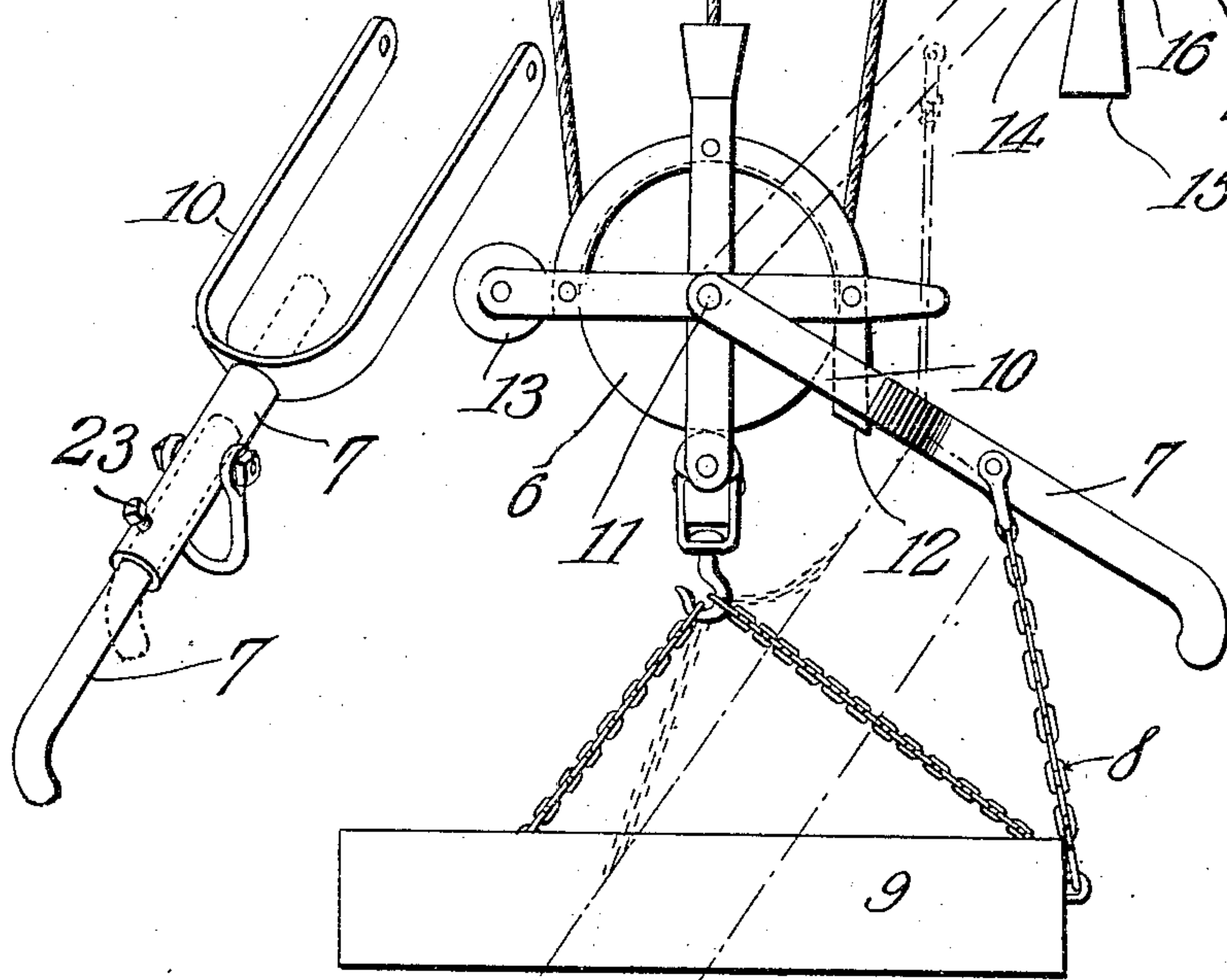


Fig. 4.



Witnesses

E. J. Blunt
M. A. Schmidt

Thomas O. Werner.

By C. A. Snow & Co.
 Attorneys

UNITED STATES PATENT OFFICE.

THOMAS ODENWELDER WERNER, OF BANGOR, PENNSYLVANIA.

AUTOMATIC SKIP OR BUCKET DUMPING DEVICE.

No. 930,253.

Specification of Letters Patent.

Patented Aug. 3, 1909.

Application filed November 10, 1908. Serial No. 461,893.

To all whom it may concern:

Be it known that I, THOMAS O. WERNER, a citizen of the United States, residing at Bangor, in the county of Northampton and State of Pennsylvania, have invented a new and useful Automatic Skip or Bucket Dumping Device, of which the following is a specification.

This invention relates to automatic dumping devices for the skip or bucket of elevated carriers, and has for its object to provide a device of this kind which is simple in structure and efficient in action.

The invention comprises an arm which is pivotally mounted on the fall-block of the rope carriage and is connected to the skip. On the rope carriage is a catch which is tripped by the arm when the skip is elevated, and which holds the arm and causes it to swing upwardly on its pivot upon lowering the skip, which movement of the arm by reason of its connection with the skip, results in the latter being dumped.

In the accompanying drawing: Figure 1 is a perspective view showing the application of the invention. Fig. 2 is a side elevation of the device. Fig. 3 is an end view. Fig. 4 is an elevation showing a modified form of trip arm.

In the drawings 5 denotes an ordinary rope-carriage, and 6 is the fall-block thereof. On the fall-block is pivoted an arm 7 which is connected intermediate its ends by a chain 8 to one end of the skip or bucket 9 carried by the fall-block. The pivoted end of the arm is yoke-shaped, the two branches 10 of the yoke extending on opposite sides of the fall-block and being pivotally connected to the axle 11 thereof. The downward swing of the arm is limited by the engagement of the yoke-branches 10 with one end of the guard-frame 12 of the fall-block. The other end of the guard-frame is provided with a counterweight 13.

Secured to the rope-carriage and depending therefrom is a pair of spaced bars 14 which are flared at their lower ends as indicated at 15. On one of these arms is a bracket 16 to which is pivoted at 17 an angle-lever, one arm 18 of which extends in front of the bars 14 and is fitted with a roller 19. To the other arm 20 of the angle-lever is connected one end of a spring 21, the other end of which is connected to one of the bars 14. This spring serves to hold the angle-lever normally in such a position that its arm 18

extends transversely in front of the bars 14, there being a stop 22 on one of said bars to limit the downward swing of said arm. The arm 18 is in the path of the arm 7 for a purpose to be presently described.

The operation of the parts herein described is as follows:—When the skip is being conveyed to its destination the parts are in the position shown in full lines in Figs. 2 and 3, the arm 7 being in lowered position and resting on the guard-frame of the fall-block as already described, and the arm 18 extending across the bars 14. To dump the skip, it is elevated by the fall-block until the arm 7 strikes the roller 19 of the arm 18 and tilts the same upwardly, as shown by dotted lines in Fig. 3. When the arm 7 clears the roller 19, the arm 18 drops back to its normal position and the free end of the arm 7 is then above the same. The skip is then lowered by the fall-block, and as the free end of the arm 7 is held by the arm 18, it swings upwardly and by reason of its connection with the skip, causes the latter to tilt and dump, as shown in Fig. 1 and by dotted lines in Fig. 2. A further lowering of the skip causes the arm 7 to slip off the roller 19 of the arm 18, whereupon it drops down to its normal position and the skip is righted. The flared ends 15 of the bars 14 serve to line up the arm 7 into proper position to strike and trip the catch, as herein described.

It will be seen from the foregoing that I have provided a dumping device which is entirely automatic in its operation. There are no complicated parts to get out of order, and the invention can be readily applied to any ordinary rope carriage and its fall-block. It may also be applied to a derrick by mounting the catch for the arm 7 on the boom thereof.

The invention can be used to trip a skip, bucket, block of stone, bale of material, etc., by a drop hook, and it may also be used to automatically drop castings, stone, etc., for the purpose of breaking the same. Furthermore, it can be used not only on a cable-way as shown, but also on an inclined cable-way, as well as at any other place where an automatic dump is desired. If the load is not to be dumped automatically, the chain 8 can be disconnected from the skip, it being connected thereto by a hook or other suitable means permitting ready disconnection.

The modified form of arm 7 shown in Fig. 4 of the drawings, comprises telescoping sections which are held at adjustment by a set

screw 23. The object of making the arm telescoping is to enable the same to be shortened up when it is desired not to dump automatically.

5 I claim:—

1. The combination with an elevated carrier and its fall-block, of an arm pivoted to the block, a connection between the arm and the load, and means for tilting the arm on
10 the block to dump the load.

2. The combination with an elevated carrier and its fall-block, of an arm pivoted to the block, a connection between the arm and the load, and means operating by the lower-
15 ing of the block for tilting the arm on the block to dump the load.

3. The combination with an elevated carrier and its fall-block, of an arm pivoted to the block, a connection between the arm and
20 the load, and means for automatically tilting the arm on the block to dump the load when the block is lowered.

4. The combination with an elevated carrier and its fall-block, of an arm pivoted to
25 the block, a connection between the arm and

the load, and a catch on the carrier engageable with the arm to hold the same whereby the arm is caused to swing with respect to the block when the latter is lowered.

5. The combination with an elevated carrier and its fall-block, of an arm pivoted to the block, a connection between the arm and the load, a pair of bars depending from the carrier, and a catch pivoted to one of said bars and extending transversely in front of the same in the path of the aforesaid arm.

6. The combination with an elevated carrier and its fall-block, of an arm pivoted to the block, stops on the block for limiting the downward swing of the arm, a connection between the arm and the load, and means for tilting the arm upwardly to dump the load.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

THOMAS ODENWELDER WERNER.

Witnesses:

C. N. SNYDER,
WM. H. SAVITZ.