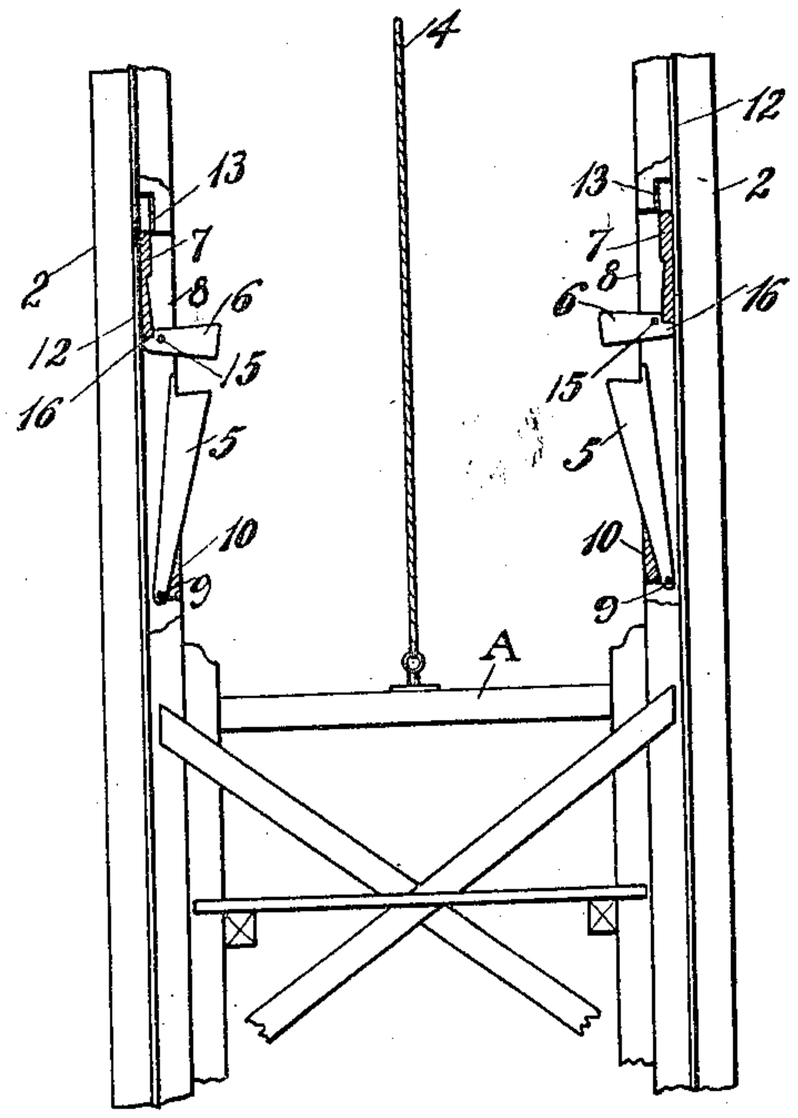
T. C. WRIGHT.

AUTOMATIC CATCH FOR MINING BUCKETS, &c.

APPLICATION FILED OCT. 1, 1908.

922,375. **Patented May 18, 1909.**

Fig. 1.



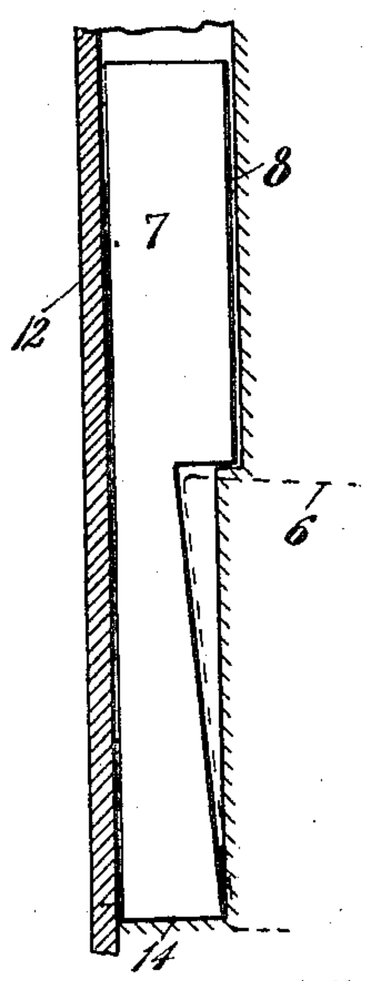


Fig. 5.

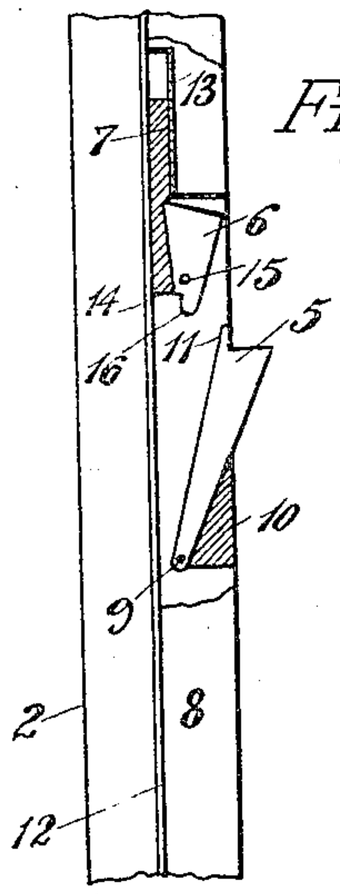


Fig. 2.

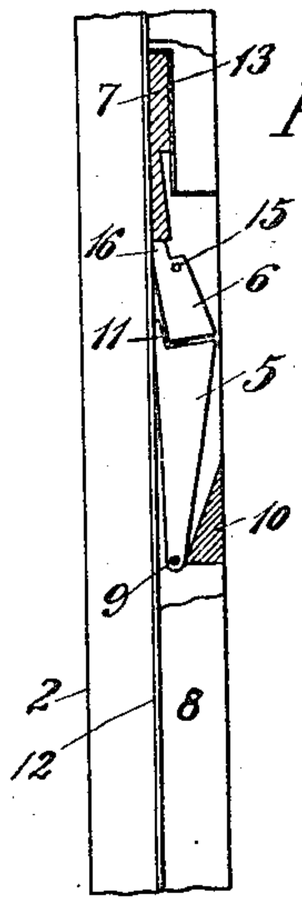


Fig. 3.

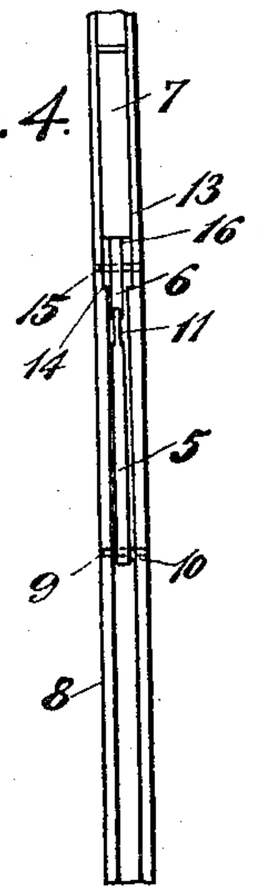


Fig. 4.

WITNESSES

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AUTOMATIC CATCH FOR MINING-BUCKETS, &c.

No. 922,375. Specification of Letters Patent. Patented May 18, 1909.

Application filed October 1, 1908. Serial No. 455,755.

To all whom it may concern:

Be it known that I, THOMAS C. WRIGHT, citizen of the United States, residing at Goldfield, in the county of Esmeralda and State of Nevada, have invented new and useful Improvements in Automatic Catches for Mining-Buckets and the Like, of which the following is a specification.

My invention relates to an attachment for mining shafts and the like, for holding a bucket or cage at any desired point in or above the shaft or well.

The particular object of the invention is to provide an automatic catch by which the cross-head carrying the bucket or cage may be engaged and hung up whenever it is desired temporarily to discontinue the use of a bucket or cage, or to land the bucket at the side, or change buckets, or where it is desired to inspect the hoisting rope, or to use the rope or cable for other purposes.

The invention consists of the parts and the construction and combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a front elevation of the device. Fig. 2 is a partial section showing the stop in readiness to receive the cross-head. Fig. 3 is a partial section with stop and trigger in closed position. Fig. 4 is an edge view. Fig. 5 is a detail of the weight.

While I have shown the invention applied especially in conjunction with a mining shaft and hoist, it is manifest that it can be used in other places, and under other conditions, as in an elevator well in high buildings and the like.

A represents a cross-head sliding on the guides 2 and supporting, for instance, a bucket or cage; the cross-head and bucket being operated by any suitable means, as the rope or cable 4.

The invention resides in applying at any desired point in one or both of the guides 2, the following stop mechanism engageable and disengageable by the cross-head: the catch comprises essentially a pivoted stop member 5 and a releasing dog or trip 6, with suitable means, as a sliding weight 7 or its equivalent, to carry the trip 6 normally outward into the path of the cross-head. I prefer to mount the stop or catch 5, the trip 6 and weight 7 in a channel frame 8 which may be made of metal or any other suitable material and adapted to be inserted in a suitable kerf in one or the other, or both, of the guides 2. Both the stop 5 and trip 6 are weighted or counterbalanced so that they project normally into the path of the cross-head. The stop or catch 5 may be of any suitable size, shape or material. As here shown, it is made triangular and pivoted at its lower end, as at 9, so that its weight normally tends to throw it outward into the path of the cross-head. The outward movement of the stop is limited by suitable means, as the rigid brace or bracket 10.

The trip 6 is so positioned that it may swing upward without interfering with, or acting upon, the catch 5, but when pushed downward it will engage a projection 11 on the stop 5 and carry the stop back within its housing 8, leaving the cross-head free to move down. If the housing 8 is made of metal, its back would be closed in, and the weight 7 retained in place by suitable means, as a cover plate 12 by which the device may be attached to a guide 2.

While the weight 7 may be of any desired form, I have here shown it as comprising a loose member or bar sliding in suitable guides 13, with the downward movement of the weight limited by stops 14 so as to allow the member 6 to move upward freely. The member 6 is pivoted at its rear end at 15, and it is maintained normally in horizontal position by reason of the rear shoulder 16 of the trip striking against the weight 7.

The operation is as follows: As the cross-head to which the bucket or cage is attached is hoisted, it first strikes the catch 5 and pushes it in within its housing 8. Continuing upward, it next strikes the trip 6 and pushes it back into its housing. As soon as the cross-head passes the stop 5, and before releasing the trip 6, the stop 5 falls outward by gravity into the path of the cross-head, and if the rope is then slackened the cross-head will be supported on the stop or catch. This stop will then serve to hang up or support the cross-head and bucket until it is desired to use the same again. The only way to lower the bucket after the cross-head has been engaged by the stop is to hoist up on the cross-head until the trip 6 is allowed to drop and hang free below and in the path of the cross-head. Then by lowering the cross-head the trip 6 is pushed down, and the weight 7 is correspondingly lifted; the trip 6 encountering in its downward movement the projection or trigger 11, which latter is

always housed within the guides. This downward movement of the trip 6 pushes the stop 5 back into its housing and allows the cross-head and cage to move down then without interference. It will thus be observed that while the catch 5 is limited by the obstruction 10 in its downward movement, the trip 6 is free to turn up or down; and in the downward movement of the trip the catch is moved upward and out of the way of the cross-head.

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

1. The combination with a sliding cross-head, of a stop member normally projecting into the path of the cross-head, said stop member freely turnable out of the way of the cross-head when the latter moves in one direction, but normally presenting an obstruction to the movement of the cross-head in an opposite direction, and a pivoted trip operatable by the cross-head and engageable with said catch to push the latter out of the way and allow a free movement of the cross-head in the opposite direction.

2. The combination with a sliding cross-head, of a guide for the cross-head, a pivoted catch in the guide normally projected into the path of the cross-head and limiting the movement of the cross-head in one direction, and a pivoted trip engageable by the cross-head and engaging a trigger on the catch, said catch and trip movable out of the way of the cross-head when the latter moves in one direction, and said trip engaging said trigger to remove the catch out of the way of the cross-head when the latter moves in the opposite direction.

3. The combination with a sliding cross-head, of a guide for the cross-head, a catch carried by the guide and normally projecting into the path of the cross-head, a pivoted trip member disposed in the path of the cross-head and free to swing up or down when engaged by the cross-head in the up and down movement of the latter, means for limiting the downward swinging movement of said catch, and means whereby on the downward movement of the trip the catch is given an upward movement to remove the latter out of the path of the cross-head.

4. The combination with a sliding cross-head and vertical guides therefor, of a pivoted catch normally projecting into the path of the cross-head and adapted to form a stop to the movement of the cross-head in one direction, and a pivoted trip member normally projecting into the path of the cross-head, said trip having a movement upward independent of the catch, and said trip engageable with the catch on the downward movement of the trip to move the catch out of interference with the cross-head.

5. The combination with a sliding cross-head and vertical guides therefor, of a pivoted catch normally projecting into the path of the cross-head and adapted to form a stop to the movement of the cross-head in one direction, a pivoted trip member normally projecting into the path of the cross-head, said trip having a movement upward independent of the catch, and said trip engageable with the catch on the downward movement of the trip to move the catch out of interference with the cross-head, and means for automatically returning said parts into normal operative position when released by the cage.

6. The combination with a sliding cross-head and vertical guides therefor, of a pivoted catch normally projecting into the path of the cross-head and adapted to form a stop to the movement of the cross-head in one direction, a pivoted trip member normally projecting into the path of the cross-head, said trip having a movement upward independent of the catch, and said trip engageable with the catch on the downward movement of the trip to move the catch out of interference with the cross-head, and means for automatically returning said parts into normal operative position when released by the cage.

7. The combination with a sliding cross-head and vertical guides therefor, of a pivoted catch normally projecting into the path of the cross-head and adapted to form a stop to the movement of the cross-head in one direction, a pivoted trip member normally projecting into the path of the cross-head, said trip having a movement upward independent of the catch, and said trip engageable with the catch on the downward movement of the trip to move the catch out of interference with the cross-head, and means for automatically returning said parts into normal operative position when released by the cage, said last-named means including a sliding weight, said weight engageable by the trip when the trip is moved down to engage the catch.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

THOMAS C. WRIGHT.

Witnesses:
JOHN KEMPSEY,
LOUIS LOVARONI.