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G. HOLMES.

CAGER AND AUTOMATIC SUMP GUARD.

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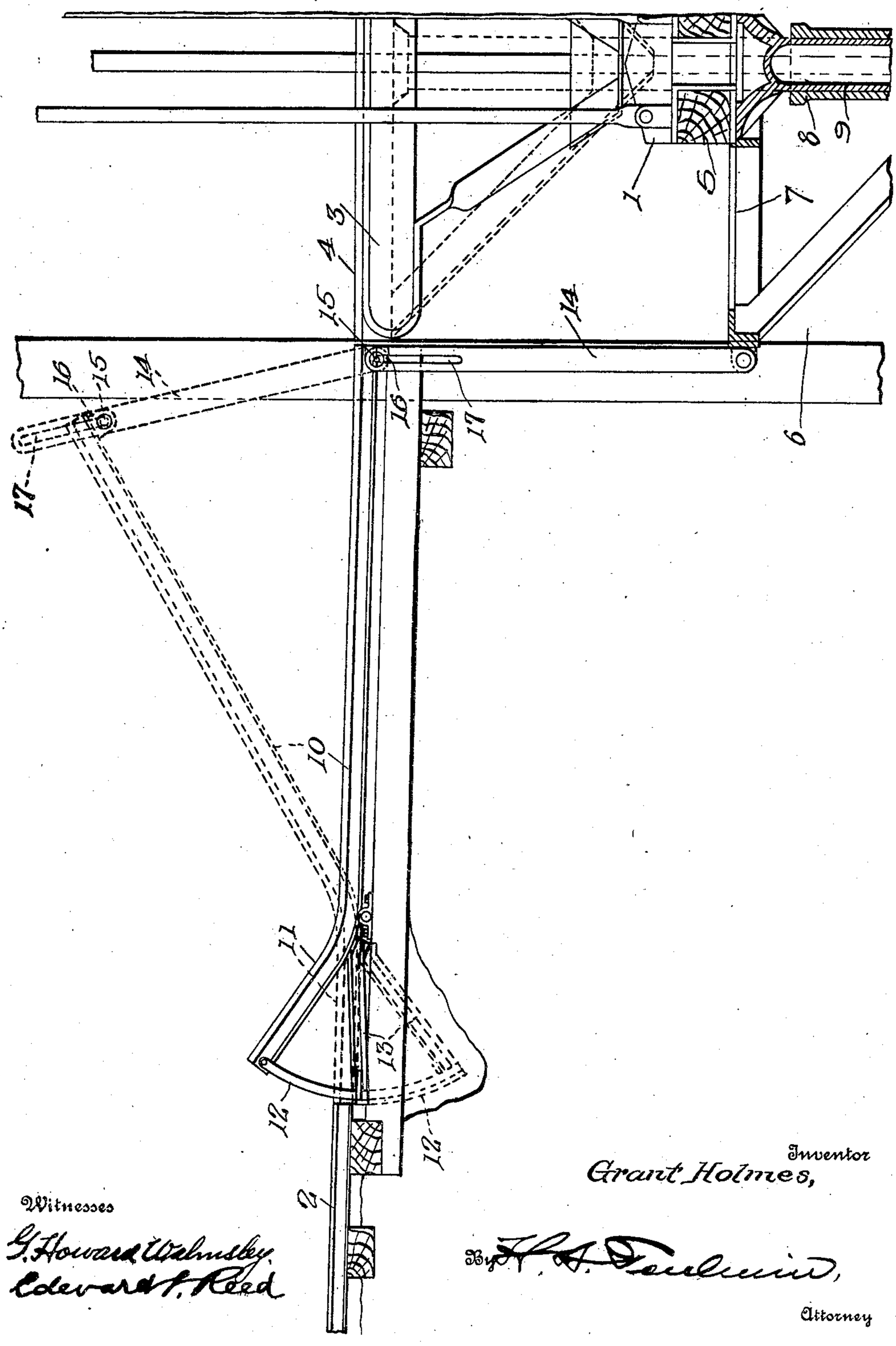

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CAGER AND AUTOMATIC SUMP-GUARD.

No. 889,307. Specification of Letters Patent. Patented June 2, 1908.

Application filed March 16, 1908. Serial No. 421,374.

To all whom it may concern:

Be it known that I, GRANT HOLMES, a citizen of the United States, residing at Danville, in the county of Vermilion and State of Illinois, have invented certain new and useful Improvements in Cagers and Automatic Sump-Guards, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to a cager and automatic sump guard, and is designed more particularly for use in connection with car handling mechanism such as is employed in coal mines and similar places.

The object of the invention is to provide a cager which will receive the loaded car and feed the same to the cage; which will be automatically operated by the rise and fall of the cage within the hoisting shaft; and to provide this cager with a suitable sump guard to control the advance of the cars on the main track.

With these objects in view my invention consists in certain novel features of construction and in certain parts and combinations hereinafter to be described, and then more particularly pointed out in the claims.

The drawing is a side elevation of an apparatus embodying my invention including so much of the cage and its operating mechanism as relates to the operation of the cager.

In these drawings I have illustrated the preferred form of my invention and have shown the same in connection with a hoisting cage 1 and a main track 2, by means of which the loaded cars are conveyed to the point at which they are to be delivered to the hoisting cage. The hoisting cage 1 and its coöperating mechanism may be of any suitable construction, but for purposes of illustration I have here shown the cage as comprising an upper portion or platform 3, upon which are mounted the rails 4 which receive the car, and which is supported upon a base portion 5 to which the hoisting mechanism is connected. This cage is adapted to be raised and lowered in the hoisting shaft 6 in the usual manner and mounted in this shaft beneath the cage is a landing platform adapted to receive the cage as it descends and cushion the descent thereof. This platform preferably consists of a frame 7 adapted to receive the base of the cage and provided with suitable means, such as the hydraulic cylinder 8 and piston 9, for returning the same to its normal position when it has been relieved of the weight of the cage. The cager which I have provided for delivering the cars one at a time from the main track 2 to the hoisting cage consists of a pivoted rail section 10 extending between said track and the hoisting shaft. This pivoted rail section preferably consists of both rails of the track, and, in the preferred form, these rails are pivoted to a suitable support at a point some distance from the forward end thereof, or the end nearest the main track.

The forward portion of the rail section, that is, the portion lying between the pivotal center thereof and the main track 2, is bent at an angle to the body portion of the rail section, as shown at 11, in such a manner that when the main portion occupies its lowermost or substantially horizontal position, the forward portion will be elevated some distance above the main track 2 and will serve as a buffer or guard to prevent the forward movement of the cars on this main track. But to render this guard sump effective, I prefer to provide the ends of the forward portion of the rail section with depending arms 12 which are preferably curved in such a manner that they will, in all positions of the forward portion of the rail section, lie close to the ends of the main track rails and thus effectually prevent the passage of any car from that track while the forward portion of the pivoted rail section is elevated. These depending arms are preferably provided with suitable braces 13, extending from a point near the lower ends thereof to the rail section, whereby the same are rendered of sufficient strength and durability to withstand the impact of the loaded cars. This pivoted rail section is provided with suitable means for moving the same about its pivotal center, which means is preferably actuated by the rise and fall of the hoisting cage. In the present instance the rear ends of the rail section, or the ends adjacent to the hoisting shaft, are connected to the landing platform which rises and falls simultaneously with the rise and fall of the cage, this connection preferably consisting of a bar 14 pivotally connected at its lower end to said landing platform and having its upper end loosely connected to the rail section near the rear ends thereof, preferably by means of a bolt 15 extending through an apertured lug 16 on the rail section and an

elongated slot 17 near the upper end of the bar 14, thus allowing sufficient loose motion to prevent any binding between the parts and to enable the parts to adjust themselves in their proper positions relatively to their coöperating parts.

From the foregoing description, it will be apparent that I have provided a mechanism which will serve to positively deliver the loaded cars to the hoisting cage one at a time; that the delivery of the cars will be positively controlled by the rise and fall of the hoisting cage; and further, that I have provided this cager or delivery mechanism with an automatic sump guard which effectually prevents the passage of the loaded cars from the main track while the cager is in position to deliver a car to the hoisting cage. It will also be apparent that the mechanism is of such simple construction and operation as to enable the same to be built in a strong durable manner and as to render it but little liable to become disarranged or to fail in operation.

I wish it to be understood that I do not desire to be limited to the exact details of construction shown and described, for obvious modifications will occur to a person skilled in the art.

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

1. A device of the character described comprising a rail section pivotally supported at a point between its ends and having the portions thereof lying on opposite sides of its pivotal center extending at an angle one to another, and means for moving said rail section about its pivotal center.

2. In a device of the character described, the combination, with a track and a hoisting cage, of a rail section pivotally supported at a point between the ends thereof and having its opposite end portions extending at an angle one to another, and means actuated by the rise and fall of said cage for moving said rail section about its pivotal center.

3. In a device of the character described, the combination, with a track, a hoisting cage, and a movable landing platform for said hoisting cage, of a rail section pivotally supported at a point between the ends thereof and having its opposite end portions extending at an angle one to the other, and means for connecting said pivotal rail section to said landing platform, whereby said rail section will be moved about its pivotal center by the rise or fall of said landing platform.

4. In a device of the character described, the combination, with a track, a hoisting cage, and a movable landing platform for said hoisting cage, of a rail section pivotally supported at a point between the ends thereof and having its opposite end portions extending at an angle one to the other, and a bar pivotally connected at one end to said landing platform and loosely connected at its opposite end to said rail section, whereby said rail section will be moved about its pivotal center by the rise and fall of said landing platform.

5. In a device of the character described, the combination, with a track, a hoisting cage, and a movable landing platform for said hoisting cage, of a rail section pivotally supported at a point between the ends thereof and having its opposite end portions extending at an angle one to the other, a bar pivotally connected at one end to said landing platform and having a slot at its opposite end, and a bolt carried by said rail section and adapted to engage said slot, whereby the rise and fall of said landing platform will move said rail section about its pivotal center.

6. A device of the character described comprising a rail section pivotally supported at a point between its ends and having the opposite end portions thereof extending at an angle one to the other, means for moving said rail section about its pivotal center, and a sump guard adapted to be moved into or out of its operative position by the movement of said rail section about its pivotal center.

7. A device of the character described comprising a rail section pivotally supported at a point between its ends and having its opposite end portions extending at an angle one to the other, means for moving said rail section about its pivotal center, and a downwardly extending arm secured to one end of said pivoted rail section.

8. In a device of the character described, the combination, with a track, and a hoisting cage, of a rail section pivotally supported at a point between the ends thereof and having its opposite end portions extending at an angle one to the other, means actuated by the rise or fall of said cage for moving said rail section about its pivotal center, and a downwardly extending arm secured to that end of said rail section lying adjacent to said track and forming a buffer when said end of said rail section is in its elevated position.

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

GRANT HOLMES.

Witnesses:
GERTRUDE C. KOCH,
FRANK TINDLEY.