No. 861,785. PATENTED JULY 30, 1907.

J. WILSON.

SAFETY DEVICE FOR MINE SHAFTS.

APPLICATION FILED APR. 6, 1907.

Fig. 1.

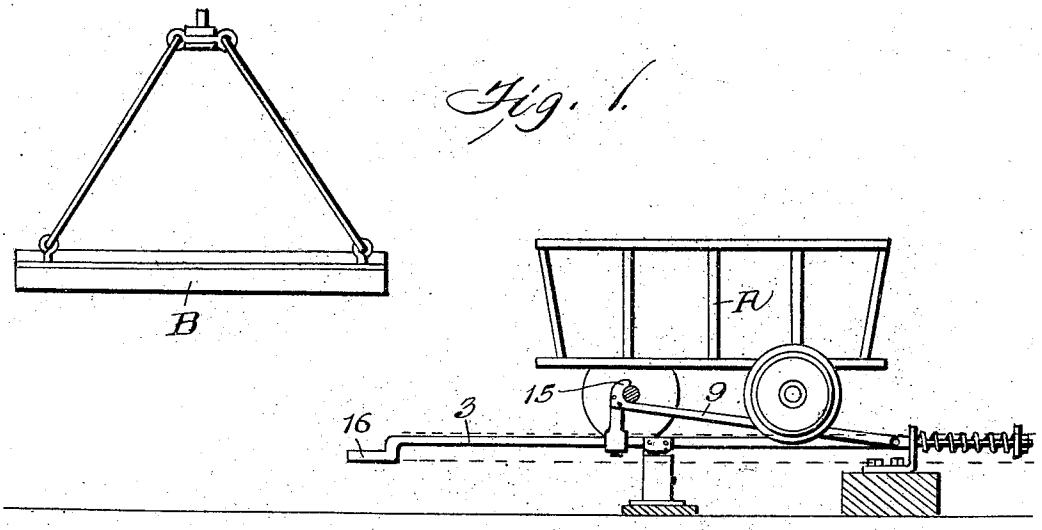


Fig. 2.

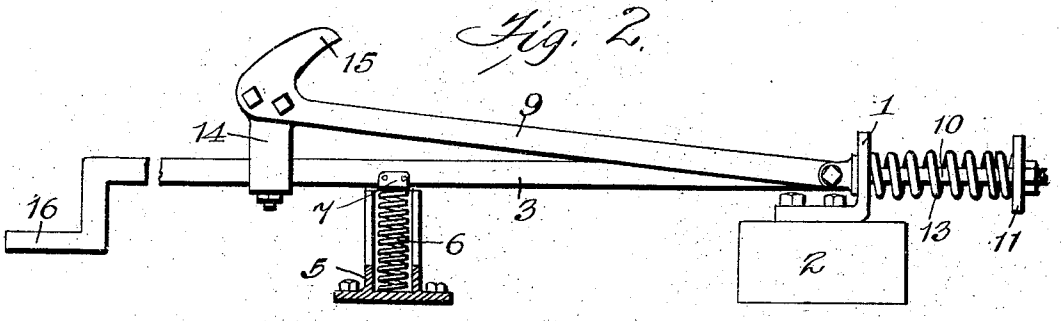


Fig. 3.

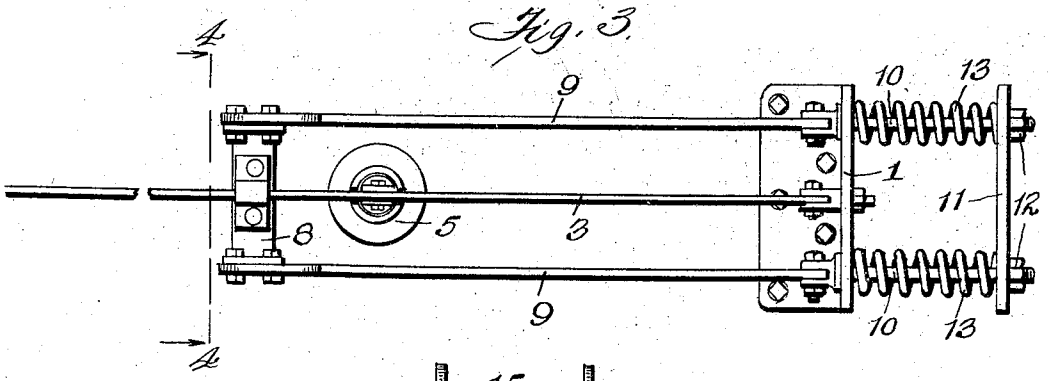
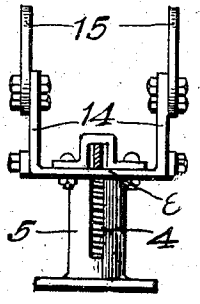


Fig. 4.



WITNESSES:

Chas. K. Davies.

Myron G. Clear.

INVENTOR

James Wilson,

By C. L. Parker
Attorney

UNITED STATES PATENT OFFICE.

JAMES WILSON, OF LIVINGSTON, ILLINOIS.

SAFETY DEVICE FOR MINE-SHAFTS.

No. 861,785. Specification of Letters Patent. Patented July 30, 1907.

Application filed April 6, 1907. Serial No. 366,870.

To all whom it may concern:

Be it known that I, JAMES WILSON, a citizen of the United States, residing at Livingston, in the county of Madison and State of Illinois, have invented certain new and useful Improvements in a Safety Device for Mine-Shafts, of which the following is a specification.

My invention relates to a safety catch for holding mine cars adjacent the mine shaft to prevent them running into the shaft when the cage is not in position to receive them, and the object of my invention is to provide a simple arrangement for securely holding the mine car, means for absorbing the shock caused by the impact of the car against said holding means and means adapted to be operated by the mine cage, when the same is lowered into position to receive the car, for automatically releasing said holding means.

My invention consists in the following features of construction, arrangement and operation as hereinafter described and pointed out in the accompanying drawings, in which;

Figure 1 is an elevation showing the practical application of my invention. Fig. 2 is a side elevation of my improved mechanism. Fig. 3 is a plan view of the same, and Fig. 4 is a sectional view on the line 4—4 of Fig. 3.

In the practical embodiment of my invention I provide a stationary L-shaped plate 1 bolted or otherwise fastened to a suitable support 2 arranged between the rails on which are adapted to run the mine cars A. Pivotally mounted centrally of the plate 1 and arranged to swing in a vertical plane is an operating arm 3, which in its downward movement works within the slots 4 of a socket 5 mounted between the rails and provided therein with a coil spring 6 connected to said operating arm 3 at 7 and normally tending to force said arm upward.

Slidably mounted on the operating arm 3 is a U-shaped frame 8 arranged thereon between the socket 5 and the end of the arm. A pair of locking arms 9 are pivotally mounted on the ends of the extended bolts 10 extending through the plate 1 on either side of the arm 3 and provided on their rear ends with a plate 11 held thereon by means of the bolts 12. Arranged about the shanks of the bolts 10 between the stationary plate 1 and the bearing plate 11 are coil springs 13 tending to force said bearing plate 11 rearward and away from the stationary plate 1. The locking arms 9 are rigidly connected at their forward ends in the extremities of the vertical arms 14 of the frame 8 and are provided with bent hook ends 15 adapted to engage the front axle of a mine car A.

The operation of my device is as follows; the position shown in Fig. 1 being taken as a starting point. The cage B on descending from the position shown in this figure to the position ready to receive the car A, will strike the forward end 16 of the operating arm 3, thus moving said arm downwardly on its pivot, within the socket 5, compressing the spring 6 therein and carrying the locking arms 9 downwardly therewith. The hook ends 15 will thus be released from the axle of the mine car and will allow the car to run upon the cage B. As soon as the cage B is again raised the spring 6 within the socket 5 will operate to push upwardly against the operating arm 3 and will return the same to the normal position ready to catch another car to prevent the same running into the mine shaft.

It will be seen that in the construction there will be a considerable shock and consequently a great strain imposed upon the mechanism when catching a mine car heavily laden with coal. To obviate this strain I provide a sliding connection between the locking arms 9 and the operating arm 3 in order that the said arms 9 may move longitudinally with relation to said arm 3, when the mine car axle is received against the hooks 15, by virtue of the slidable mounting of said arms 9 through the stationary plate 1 together with the springs 10 and the movable bearing plate 11.

Having thus described my invention I claim;

1. In a device of the character described the combination of a stationary plate an operating arm pivotally connected thereto to swing in a vertical plane and adapted to be depressed by a vertically moving body, a frame slidably mounted on said operating arm, locking arms rigidly connected at their forward ends in the extensions of said frame and provided with hook ends adjacent thereto adapted to engage the axle of a car, a shock absorbing device arranged at the rear ends of said locking arms, and means for returning said operating arm to the normal position after its depression, substantially as described.

2. In a device of the character described, the combination of a stationary plate an operating arm pivotally connected thereto to swing in a vertical plane and adapted to be depressed by a vertically moving body, a U-shaped frame slidably mounted on said operating arm, locking arms rigidly connected adjacent their forward ends in the extensions of said frame and provided with hook ends adapted to engage the axle of a car, a shock absorbing device arranged at the rear ends of said locking arms, and a suitably mounted spring for returning said operating arm to the normal position after its depression, substantially as described.

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

JAMES WILSON.

Witnesses:
JOSEPH JASPER,
JESSIE A. LIVINGSTON.