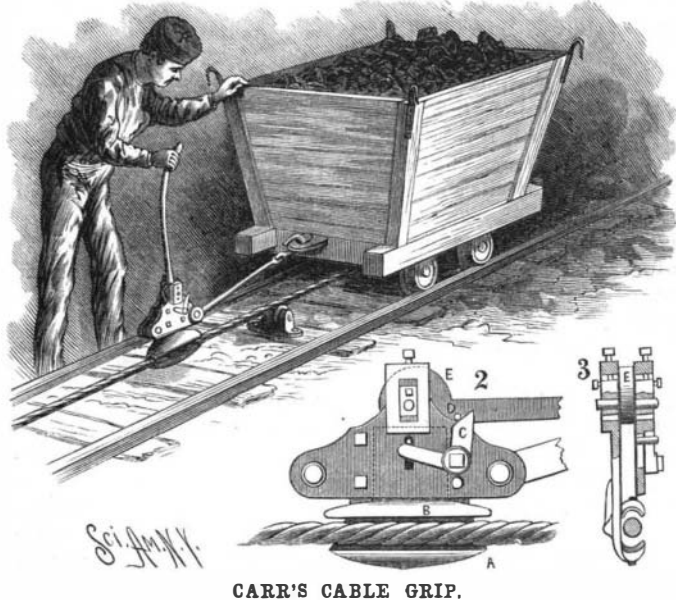


AN IMPROVED CABLE GRIP.

A device more especially designed for use as a cable grip in connection with the handling of miners' cars, and which is simple and effective, containing no springs, has been patented by Mr. William J. E. Carr, of Leavenworth, Kansas, and is illustrated herewith, Fig. 2 showing a side elevation and Fig. 3 a sectional



CARR'S CABLE GRIP.

end elevation. On the casing is permanently formed a stationary lower jaw, A, in which the cable is clamped by the movable upper jaw, B, both jaws being provided with soft metal dies to prevent the wear of the cable. The movable jaw has an upwardly extending plate sliding in a recess in the casing, on the upper edge of which plate operates a cam, E, provided with trunnions, D, which form its fulcrum, and an operating handle, as shown in the perspective view. On the handle, near the cam, is a lug adapted to engage the upper inclined edge of the arm, C, of a bell crank lever pivoted on the front plate of the casing, the other arm of the lever engaging a pin projecting from the jaw plate through an aperture in the front plate of the casing. The trunnions of the cam are supported in vertically adjustable bearings, movable up and down by set screws, whereby the wear of the jaw upon the cable can be taken up at any time. To secure the grip upon the cable, the operator moves the handle toward a vertical position, when the cam presses the movable jaw downward, and the pin projecting from the jaw plate through the front of the casing moves the bell crank lever thereby. By turning the handle downward, the pressure of the cam lever is released, and the pin acting on the wedge-shaped top end of the other arm of the bell crank lever operates it to raise the jaw plate and move the jaw upward out of contact with the cable. The soft metal dies in the jaws can easily be replaced by new ones when worn out.

COLLISION OF LOCOMOTIVES—BEATRICE, NEBRASKA.

We are indebted to Mr. Charles A. Atkins, of Beatrice, Neb., for a photograph showing the position in which the locomotives were left after a collision between two trains which recently occurred at the above place. The *Beatrice Express* says:

Switch engine No. 4, manned by W. A. Waddington, was doing some switching, being at the time of the accident about to take a string of cars out on the main track. Not being aware of the near approach of a train, the switch was left open to allow them to pass out. Train No. 95, a freight which runs between Edgar and St. Joe, at this time came thundering around the curve at the rate of 25 miles an hour, and instead of keeping the main track it very naturally came down on the 4-spot standing on the switch. Waddington saw the train coming, heard the engineer of 95 whistle for down brakes, and started to back up, but soon saw a collision was inevitable and jumped from his cab to the ground. The engine on the regular freight was in charge of Engineer Harry Wyman, and both he and his fireman jumped from the cab after Wyman had reversed his engine. The distance was short, however, and the speed of the oncoming train was slack but little. The crash of the collision was heard for blocks, and

people ran toward the place from all directions. The switch engine was completely knocked out, her front resting on the pilot of the other, all wheels on the right side being about four feet from the ground. Her tender went crashing through the end of a freight car and was likewise left in a dizzy position. The freight engine was less unfortunate. Though moved completely from the track, the bursting in of the front end by No. 4's cylinder head and the smashing of her cow-catcher was about the only damage noticeable. The whole thing will probably cost the company about \$12,000.

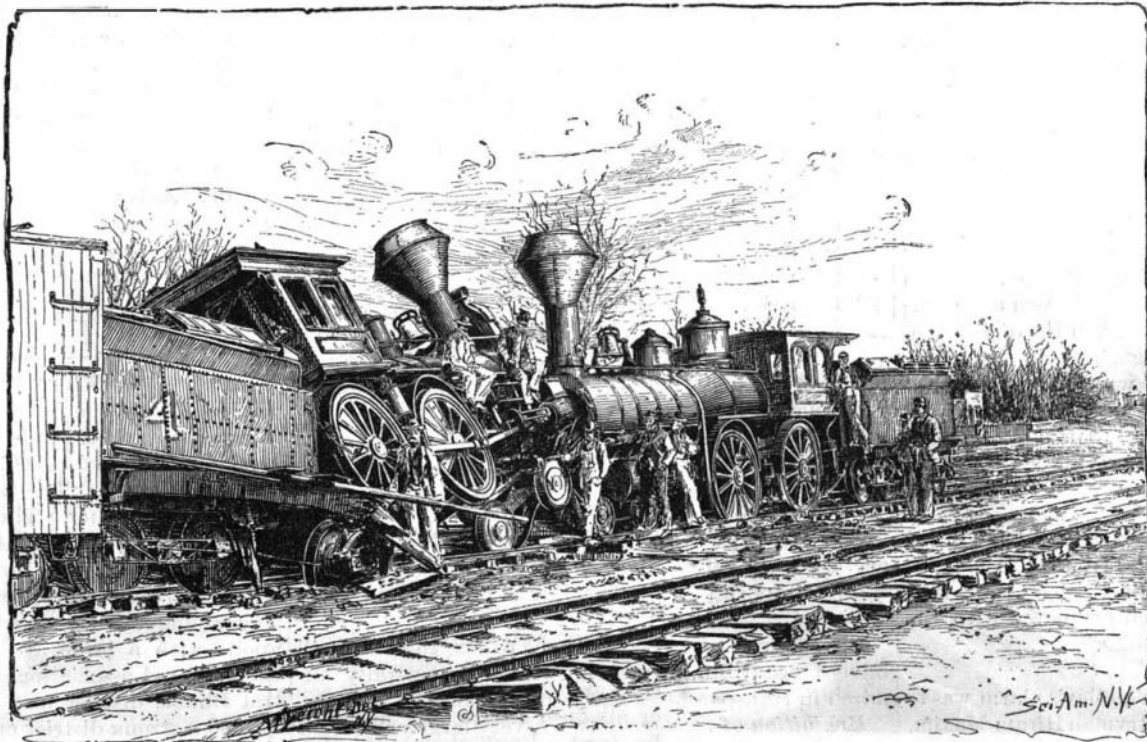
It certainly was the result of gross carelessness on the part of some one. Fortunately no one was injured.

AN IMPROVED CAR COUPLING.

A car coupler having but few parts, and simple and strong in construction, while it may be quickly and easily removed from the drawhead and readily replaced, is illustrated herewith, and has been patented by Mr. Luther B. Sampson, of Rochester, N. H. The coupling pin is attached by a crosshead to a guide rod, both passing through aligning apertures, one in the rear of the other, in the drawhead, the aperture receiving the coupling pin also having a space at the top to receive a weight or block attached to the pin, to carry it from an uncoupled to a coupled position, when the block bears upon the link, and acts to hold the latter in horizontal position. The guide rod has at its

lower end a horizontal toe, preferably detachable, limiting the upward movement of the guide rod as the toe comes in contact with the under face of the drawhead, and a short distance above such toe there is a longitudinal slot in the rear of the guide rod. A lever is pivoted in the rear of the drawhead, bearing at its upper end against a bifurcated sliding block, between the inner faces of which is a slightly projecting tongue adapted to enter the slot in the rear of the guide rod when the latter is in raised position, as shown at the right hand in the picture, thus retaining the coupling pin above the link opening. As the link enters the drawhead it strikes against the forward ends of the bifurcated sliding block, these ends then extending forward on each side of the guide rod, forcing the block backward and withdrawing its central tongue from the slot in the guide rod, allowing the latter and the coupling pin to drop down to the position shown at the left hand in the picture. At the lower end of the lever pivoted in the rear of the drawhead is arranged a weight, designed to keep the upper end of the lever at all times in contact with the rear face of the sliding block, and this weight is preferably in link form, projecting at nearly a right angle from the lever, the aperture thus formed permitting the passage of the guide rod of the coupling pin. The raising of the coupling pin and the parts connected with it may be done in any of the well known ways from the sides or the top of the car.

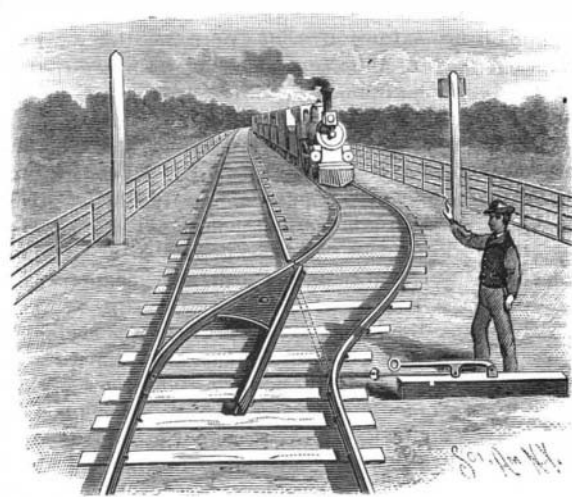
THE largest cannon in the world is in Ghent, Belgium. The diameter of bore is $2\frac{3}{4}$ feet.



COLLISION OF LOCOMOTIVES—BEATRICE, NEBRASKA.

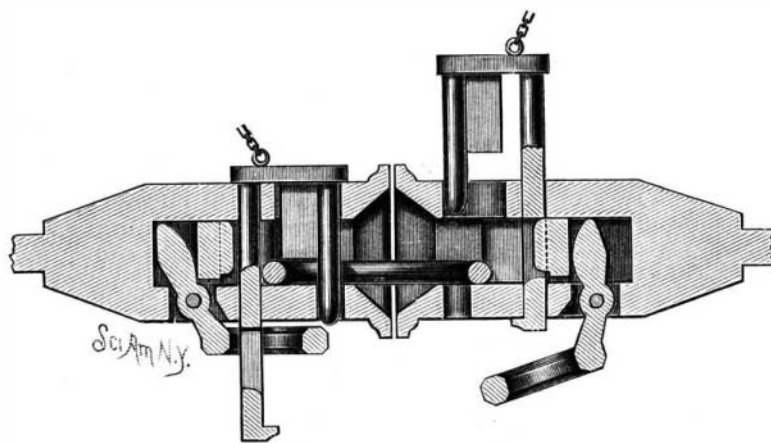
AN IMPROVED RAILROAD SWITCH.

A railroad switch which can be easily changed to connect the main track with a side track, and which is very simple in construction, has been patented by Mr. Henry D. Baldwin, of Shullsburg, Wis., and is illustrated herewith. The switch is placed between the outer main rail and the outer side rail of the side



BALDWIN'S RAILROAD SWITCH.

track, the switch having one straight and one partly curved rail section, both secured on a switch plate held to turn on a pivot secured to one of the ties, two ends of these rail sections being slightly beveled, while their other ends are adapted to connect alternately with the ends of one of the rails of the side track or of the main track. A switch rod is secured to the under side of the switch rails, and connected in the usual way with a lever for shifting the switch. As shown in the illustration, the switch is turned so that a train can pass from a side track on to the main track. When the operator desires to close the switch to the siding, he moves the switch rod outward, by means of its lever,



SAMPSON'S CAR COUPLING.

so that the beveled end of the partly curved switch rail is disconnected from the main track rail, and the beveled end of the straight switch rail is thrown in contact with the inside of the outer side track rail, whereby the inner main track rail is made continuous.

Asbestos to Promote Filtration.

Viscid liquids, such as are obtained in processes of artificial digestion, may be filtered, according to W. Fresenius (*Ztsch. f. Anal. Chem.*), by the aid of finely picked asbestos fiber. Not only is the filtration of such fluids exceedingly slow, but the filtrate often passes turbid even through paper of the closest texture. To filter such a fluid, Fresenius advises to dilute with water, add some recently ignited asbestos, and shake the mixture vigorously. After about twelve hours the suspended matters will have subsided, leaving the supernatant liquid perfectly clear. This is to be siphoned off and the residue to be washed once or twice by decantation, and then passed through a glass funnel, the neck of which contains a pellet of asbestos. If the first part of the filtrate runs off cloudy, it is returned to the funnel until it passes clear.