Scientific American.

people ran toward the place from all directions. The

bably cost the company about \$12,000.

was injured.

pletely 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 pro-

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

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 un-

coupled to a coupled position, when the block

bears upon the link, and acts to hold the lat-

May 26, 1888.

AN IMPROVED CABLE GRIP.

A device more especially designed for use as a cable switch engine was completely knocked out, her front grip in connection with the handling of miners' cars, resting on the pilot of the other, all wheels on the and which is simple and effective, containing no right side being about four feet from the ground. Her springs, has been patented by Mr. William J. E. Carr, tender went crashing through the end of a freight car of Leavenworth, Kansas, and is illustrated herewith, and was likewise left in a dizzy position. The freight Fig. 2 showing a side elevation and Fig. 3 a sectional engine was less unfortunate. Though moved com-



end elevation. On the casing is permanently formed a ter in horizontal position. The guide rod has at its stationary lower jaw, A, in which the cable is clamped lower end a horizontal toe, preferably detachable, limby the movable upper jaw, B, both jaws being proiting the upward movement of the guide rod as the toe vided with soft metal dies to prevent the wear of the comes in contact with the under face of the drawhead, cable. The movable jaw has an upwardly extending and a short distance above such toe there is a longiplate sliding in a recess in the casing, on the upper tudinal slot in the rear of the guide rod. A lever is edge of which plate operates a cam, E, provided with pivoted in the rear of the drawhead, bearing at its uptrunnions, D, which form its fulcrum, and an operatper end against a bifurcated sliding block, between the ing handle, as shown in the perspective view. On the inner faces of which is a slightly projecting tongue handle, near the cam, is a lug adapted to engage the upper inclined edge of the arm, C, of a bell crank when the latter is in raised posilever pivoted on the front plate of the casing, the other tion, as shown at the right hand arm of the lever engaging a pin projecting from the in the picture, thus retaining the jaw plate through an aperture in the front plate of the coupling pin above the link opencasing. The trunnions of the cam are supported in ing. As the link enters the drawvertically adjustable bearings, movable up and down head it strikes against the forward by set screws, whereby the wear of the jaw upon the ends of the bifurcated sliding block, cable can be taken up at any time. To secure the grip these ends then extending forward upon the cable, the operator moves the handle toward on each side of the guide rod, forca vertical position, when the cam presses the movable ing the block backward and withjaw downward, and the pin projecting from the jaw drawing its central tongue from the plate through the front of the casing moves the bell slot in the guide rod, allowing the latter and the coupling pin to drop crank lever thereby. By turning the handle downward, the pressure of the cam lever is released, and the pin down to the position shown at the acting on the wedge-shaped top end of the other arm left hand in the picture. At the of the bell crank lever operates it to raise the jaw plate lower end of the lever pivoted in and move the jaw upward out of contact with the the rear of the drawhead is arcable. The soft metal dies in the jaws can easily be ranged a weight, designed to keep replaced by new ones when worn out. the upper end of the lever at all times in contact with the rear face

COLLISION OF LOCOMOTIVES-BEATRICE, NEBRASKA.

We are indebted to Mr. Charles A. Atkins, of Bea trice, 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, gium. The diameter of bore is 234 feet.

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 slacked but little. The crash of the collision was heard for blocks, and



ting the passage of the guide rod of the coupling pin.

The raising of the coupling pin and the parts con-

THE largest cannon in the world is in Ghent, Bel-

of the sliding block, and this weight

ways from the sides or the top of the car.

AN IMPROVED BAILROAD 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 beyeled, 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 adapted to enter the slot in the rear of the guide rod moves the switch rod outward, by means of its lever,



SAMPSON'S CAR COUPLING.

is preferably in link form, projecting at nearly a right so that the beveled end of the partly curved switch rail is disconnected from the main track rail, and angle from the lever, the aperture thus formed permitthe beveled end of the straight switch rail is thrown in contact with the inside of the outer side track nected with it may be done in any of the well known 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.



