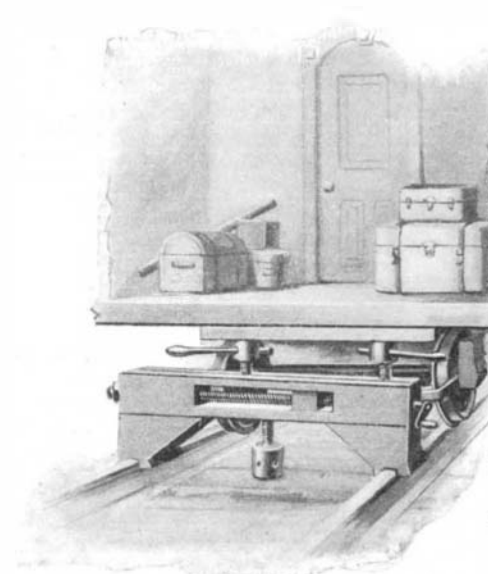
Patent Department

CAR REPLACER.

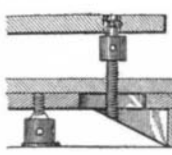
Street railways, owing to limits imposed by narrow and crooked streets, are apt to contain many sudden and sharp curves, and it is a very common occurrence for cars to jump off the tracks at such points, particularly in the case of a curve located at the bottom of a steep grade. These accidents are of such frequent occurrence and result in so many delays, that a large demand has arisen for a simple device which can be readily applied and operated to quickly replace a car thus derailed. We illustrate herewith a device of this character invented by Mr. Christian A. Fischer, of 415½ DeMers Avenue, Grand Forks, North Dakota. This car replacer is applicable as well to replacing railway cars, and our engraving shows it lifting the wheels of a baggage car back in place on the track. It will be observed that the device is comprised of a frame which extends across the track and is provided at each end with sockets adapted to fit onto the rails. The frame is formed with a longitudinally-disposed guideway in which a carriage is adapted to slide. Lying parallel with this carriage and engaged by a nut thereon is a screw which may be operated by a crank at one end of the car replacer to draw the carriage to one side or the other. Two upright screw jacks are threaded into the carriage and carry at their upper ends a cross bar. They are secured to this bar by pins which fit into annular grooves in the upper ends of the screw jack. When the device is in use, the cross bar is placed under the car body and the screw jacks are operated to raise the car until the wheels clear the rails. It will be noticed the outer side must be lifted higher than the other, owing to the fact that the flange of the outer wheel must clear the top of the rail. When the car is lifted to proper height the feed screw is operated to move the car laterally until the wheels lie directly over the rails and then the jacks are operated to lower them on to the tracks. In order to strengthen the device a screw jack may be used under the center of the frame as a brace.

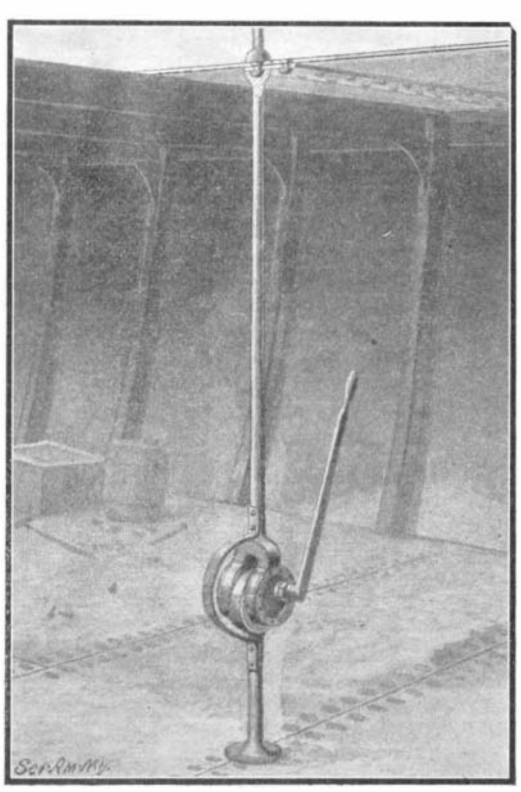


CAR REPLACER.

NEW RIVETER AND BRACE.

The pneumatic riveter has been found almost indispensable in all iron and steel construction work; but, nevertheless, it is not without certain objectionable features, such as the necessity of keeping the device constantly connected by hose and pipe lines with an air compressor. It is the purpose of the invention illustrated herewith to overcome this objection, by the use of an entirely mechanical riveter, one which is not operated by pneumatic pressure. Such a device, it will be seen, is entirely free from incumbering hose lines, so that it can be readily carried to any part of the work, and it does away with the expense of air-compressing machinery. Our illustration shows, in full, the device applied as a brace for a riveter which is only partly shown; but it should be understood that the riveter has the same construction as the brace, and a separate description and illustration of the same would be superfluous. The device, it will be observed, comprises three eccentrics, mounted and keyed to a single shaft, the outer eccentrics being set oppositely to the inner one. The straps which extend around the outer eccentrics are joined by a yoke attached to the lower end of a staff which at the upper end is provided with a cup to receive the head of the rivet. The strap of the inner eccentric is secured to the upper end of a similar staff which, at its lower end, is formed with a standard. A stiff, flat spring is riveted at one end to the upper staff, and at the other end to the lower staff, and serves to hold the device from buckling at the eccentrics, though permitting a limited amount of movement while the eccentrics are being operated. In operation, when the eccentrics are turned, the two staffs will be moved apart by a very powerful movement, sufficient, in the case of the riveting brace to hold the rivet in place and in the case of the riveter to flatten out the end of the rivet. This simple yet powerful device has already been put into operation, a model having been used with great success on the battleship "Connecticut," now building at the Brooklyn Navy Yard. Mr. Jacob L. Pearson, of 194 Sands Street, Brooklyn, N. Y., is the inventor of this improved device.





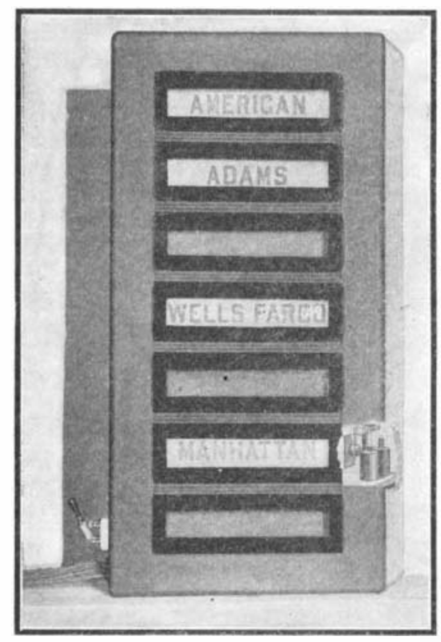
NEW RIVETER AND BRACE.

EXPRESS CALL FOR LARGE OFFICE BUILDINGS.

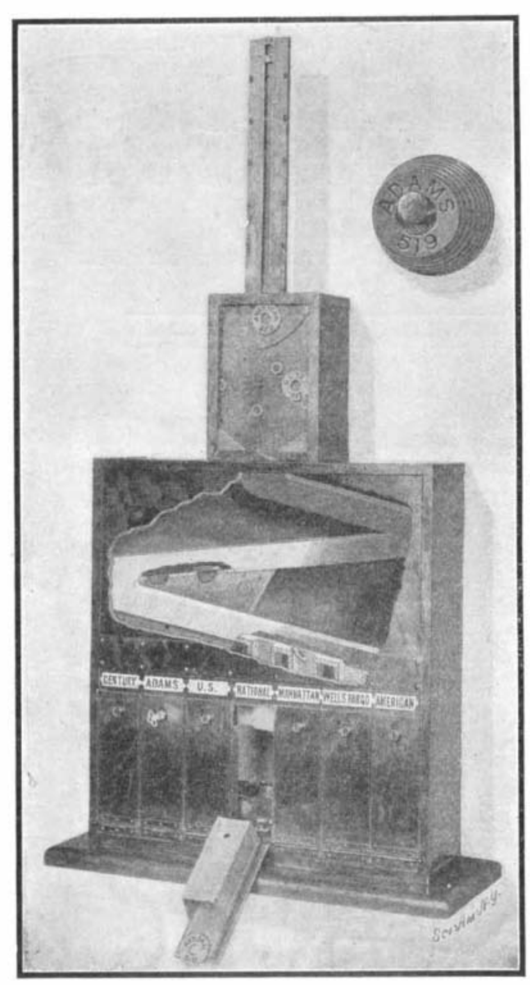
A very primitive system of express calls prevails in most of our modern skyscrapers. It is the custom for the tenants to inform the freight elevator boy when they desire to express any articles. That irresponsible individual must be trusted to set the street signal and inform the expressmen who stop in response to the signal at what rooms they are wanted. However, the elevator boy has other duties to attend to, and is too apt to delay and often entirely forget to set the signal; but even with the signals promptly set, the chances are that by the time an expressman arrives, the elevator boy will have confused the calls, and have forgotten at which of the hundreds of rooms in the building this particular expressman is wanted. The expressman must then waste valuable time in searching through the building for the express matter.

A remedy for these conditions has recently been found in an automatic call system, which we illustrate herewith. This system has been installed in a sixteen-story building in this city, and has given general satisfaction, both to the occupants of the building and to the express companies. Briefly stated, the system comprises a chute extending from the top to the bottom of the freight elevator shaft, with slot openings at each floor. Each room is provided with a set of flat steel rings or checks, on which the number of the room is inscribed, also the names of the various express companies. When it is desired to make a shipment by a certain express company, the check bearing that company's name is dropped into the chute, through which it falls to a distributer on the ground floor, and is thereby directed to a box bearing that company's name. When a check enters its box, it makes an electric contact, thereby setting a street signal bearing the name of the express company desired. A call driver for that company, on noting the signal set, enters the building and unlocks the box bearing his company's name. On opening this box a second electric contact is made, and the street signal is swung back to a blank. By glancing at the room numbers on the checks in the box, the expressman can tell at a glance where he is wanted, and can make his calls without the slightest delay, in each case returning the checks to the rooms where they belong.

In our illustration the front of the distributing box is broken away to show details. It will be observed that two inclined channels are located in this box, and that openings of progressively greater width are formed in the bottoms of the channels. The checks also vary in diameter, to correspond with the openings in the channels, and as they slide down the channels, they will drop into their respective openings, each passing over the preceding narrower openings, until one of proper width to receive it is reached. From the distributer channels the checks drop into their respective boxes. The bottom of each box is formed of a plate having a limited vertical movement. Beneath the box is a spring-pressed button, which may occupy three positions, but is normally held at the middle position by the weight of the bottom plate. When a check falls in the box, the added weight further depresses the button. This movement is utilized to throw a switch completing the circuit to the street signal. The street signal comprises a number of hollow boxes of square cross section, which are revolubly mounted at their ends in brackets. Each box is provided with two opposite faces of ground glass on which, in black letters, the name of the express company is printed. The other two faces are opaque, and are left blank. At one end of each box a cord is secured, with its two ends respectively passing over pulleys to the iron cores of two solenoids. When the circuit to the signal box is completed, one of these solenoids is energized, its core drawn down, and the box turned so that the printed faces are presented to view through openings in the street signal case. In order that the sign may be visible at night, an electric lamp is placed within the hollow box. This lamp is connected with two metal segments, which on rotation of the box are brought into contact with the terminals of the lighting circuit, thus lighting the lamp. When the expressman opens the check box, the spring-pressed button above referred to, is relieved of the weight of the checks and of the movable plate as well, and is thus permitted to rise to its highest position, which movement is utilized to energize the second solenoid of the signal, and throw it back to blank. Directly above the distributer box in our illustration, we have shown a buffer box, which serves to break the fall of the checks and prevent them from injuring the distributer box.



STREET EXPRESS SIGNAL.



DISTRIBUTER FOR THE EXPRESS CHECKS.