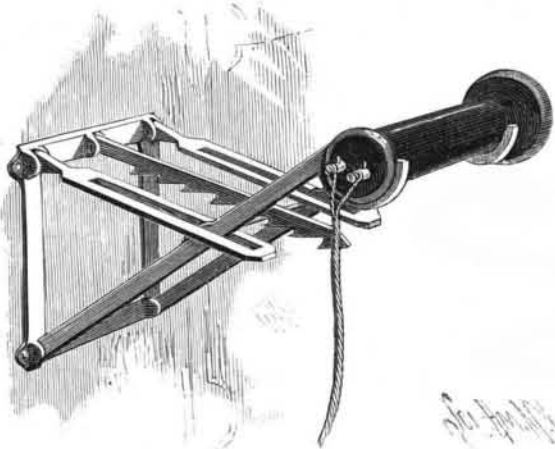


AN ADJUSTABLE SUPPORT FOR A RECEIVING TELEPHONE.

A device by which an attendant will be enabled to receive a message at a telephone, and at the same time have the free use of both hands for writing or for holding a book or manuscript, is shown herewith, and has been patented by Mr. Augustus L. Hott, of No. 183 West Sixth Street, Cincinnati, Ohio. It consists of a pair of arms pivoted to a back frame, and connected



HOTT'S TELEPHONE HOLDER.

by a rod adapted to engage a ratchet bar pivoted to the upper part of the back frame, the free ends of the arms having curved portions suitable for holding a telephone receiver. There are also slotted bars pivotally connected with the back frame to limit the swing of the arms carrying the receiver, which may be adjusted, by the ratchet bar, to any desired height to accommodate different users. When the device is not in use, the arms may be folded close against the back frame.

AN IMPROVED LIFE PRESERVER.

A life preserver which may be quickly applied to the person, which will not impede the progress of a swim-



MORGAN'S LIFE PRESERVER.

mer, and which is designed to support in the water one who is unable to swim, is shown herewith, and has been patented by Mr. Charles B. Morgan, of Telluride, Col. It is preferably formed of rubber, in sections made in the form of oblong bags, adapted to extend vertically each side of the breast and back, the opposite front and rear bags being united by an integral bag extending over the shoulders, and the interiors of the sections being united by an incased tube at the back. The preserver is held in place on the wearer by bands adapted to encompass the body and by a fastening uniting the sections at the throat. It is provided with two distinct means of inflation, an air pump and a mouthpiece, either of which may be operated while in the water by turning and floating upon the back, the arms being free, as no portion of the inflated sections passes beneath or over them. The air pump shown in Fig. 1 is preferably located over or above the right breast, and consists of a bellows-like device with suitable valves, by which air may be drawn in and forced into the bags, the bellows, when not in use, being secured by a strap and buckle in close contact with the preserver. By means of a tube and mouth-piece on the other side, an extra means of inflation is afforded, this vent being thoroughly closed when the mouth-piece is screwed down to a seat.

THE amount of curvature in one mile of ocean surface is 2'04 inches.

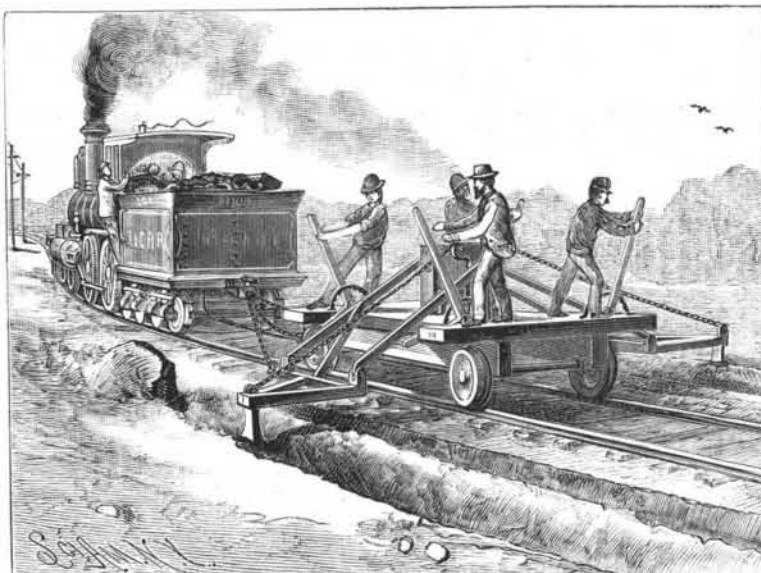
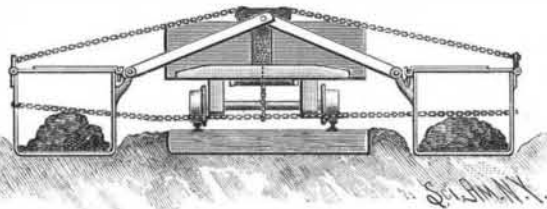
A FIRE EXTINGUISHER FOR CAR STOVES.

A device which is designed to extinguish the fire in a car stove, when the latter is subjected to any powerful shock or jar, as in cases of collision, derailment, etc., is shown in the accompanying illustration, and has been patented by Mr. George A. Ogle, of No. 3 South Charles Street, Baltimore, Md. Two or more tubes extend outwardly from the fire pot, having telescopically united sections on their outer ends, and their interior being lined with asbestos packing, to protect from the heat and from excessive rattling receptacles placed in the tubes, which receptacles contain chemicals by which ammoniacal vapor or carbonic acid gas is produced when the receptacles are broken, such gas being heavier than air and flowing down over the fire. Connected with these lateral tubes are vertical tubes, each having a socket near its upper end in which rests a heavy metallic ball, which will not be displaced unless the car is subjected to a heavy jar, when the ball drops upon the receptacle in the lateral tube, the latter being made of any fragile material, such as glass, which will be broken by the fall of the ball, or by the collapsing of the telescopic end-sections of the lateral tube, when these sections are subjected to a strain such as that resulting from the telescoping of a car or other radical displacement from its normal position.

AN IMPROVED RAILWAY PLOW AND EXCAVATOR.

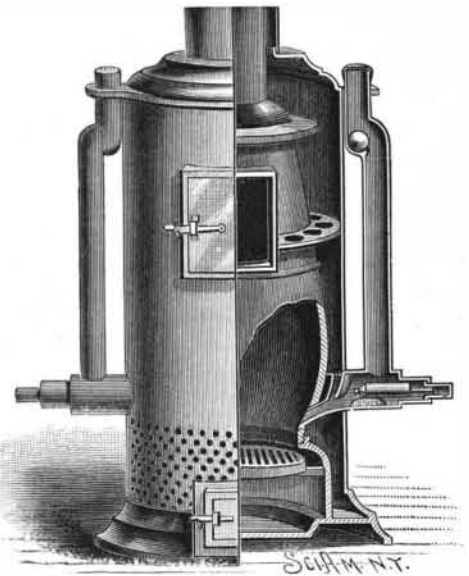
A plow especially designed for use in ditching and excavating at the side of a railway track, and which is so constructed that the plows can be readily raised and lowered, or tilted upon the truck in convenient position for transportation, is shown in the accompanying illustration. The truck is made with a strong frame, carrying a central beam, attached to the ends of which by heavy pins or bolts are bars reaching to opposite sides of the truck, two on each side, these bars having pivoted at their outer ends, on either side, a rod or plate which serves as a plow beam. One plow is secured to the under surface of the beam, and the other plow is carried by an arm extending therefrom, and also connected with the plow beam by a diagonal brace, the inner plow being located slightly in advance of the outer one. The plows are arranged to throw the furrows toward each other, for convenient removal of the earth by the excavator, and they are held at the desired angle with the bars on which the plow beam is pivoted by a brace rod which engages with a stud on the bars. The plows are raised and lowered by two front and two rear levers, each attached to a shaft having a short arm which reaches outward and bears upon the under surface of the side arms to which the plow beam is pivoted, so that when the levers are turned these short arms will lift the plow-carrying arms and their plows. Each lever has a catch adapted for engagement in a notched crest, whereby the plows may be held at any desired elevation from the ground. Instead of using this arm upon the lever shaft to elevate the plows, an eccentric may be employed, with gearing to multiply the power. The truck and plows are drawn along the track by horse power, or by a locomotive, by the side chains attached to the plow bars; but when it is desired to tilt the plows over upon the truck, for convenience of transportation, the power is applied to a central chain, which passes back under the frame of the truck, where it is connected to side chains which pass up over pulleys journaled in a central crosshead, and pass thence out to the outer ends of the arms carrying the plows.

In the excavator especially adapted for use in con-



NEARING'S IMPROVED RAILWAY PLOW AND EXCAVATOR.

nection with this plow, and for similar work, the side arms carry hinged scrapers, to which are attached elevating chains passing through the truck. These machines are designed for loading and transporting bal-



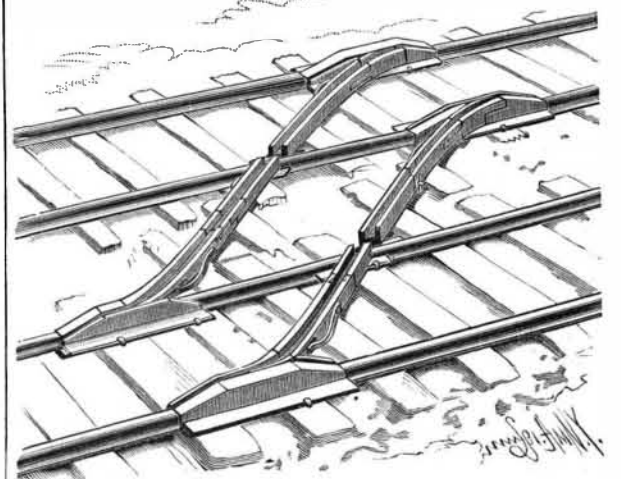
OGLE'S SAFETY ATTACHMENT FOR CAR STOVES.

last as well as for ditching work, but the plow, when operated by a locomotive, will furnish work for at least a dozen excavators.

These inventions have been patented by Mr. Frank Nearing, of Browntown, Wis.

AN IMPROVED PORTABLE RAILWAY SWITCH.

A portable switch for use on street and other railways, which is simple in construction, and the parts for which can be conveniently carried on a car and easily arranged in position for use at any point, is shown in the accompanying illustration, and has been patented by Mr. Otto S. Fertig, of No. 40 King Street, New York City. Switch blocks, that are preferably cast entire, are placed on each rail of the two tracks to be connected by the switch, each switch block being formed with a wide guarded cam rail adapted to rest upon the head of the main rail, and with approaches inclined upward from and tapering off finely at either end, so that a car wheel approaching in either direction



FERTIG'S PORTABLE RAILWAY SWITCH.

on the main rail will be easily elevated to the top of the cam rail. The switch rail sections, which are to lead from each switch block to the head of the adjacent rail to form the complete switch, are each pivoted to a switch block by a pin passed through the rail section and the base plate of the switch block; and when the switch is not in use, its rail section can be folded upon the attached switch block, and the entire switch can be compactly stored away in a car for use when required. A curved hinged splice of each rail section is adapted to swing laterally into a recess formed in the top of the cam rail, and the curved splice has on its rear end a downward extension, formed with a lug projecting from its end, the lug being received and pivoted in a slot of the switch rail by the pin by which the latter is pivoted to fold upon the switch block. A spring pivoted to the side of the body of the switch rail bears upon the lug to keep it closed to cars going on the switch, but permits it to be opened by the wheel flange of a car going in the opposite direction. When it is desired to use two or more rail sections between adjacent rails, the invention provides special forms of rail joints to hold the sections against lateral and longitudinal separation.

SAVANTS have discovered that the hair of the prong-horned antelope, like that of man, is made to stand erect by sudden fright. Investigation in this line might take in the hedgehog and the ridge-pole cat.