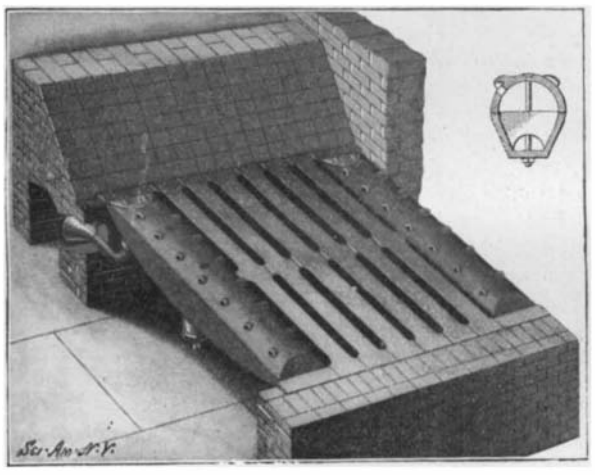
Patent Department

A NEW TYPE OF HOLLOW GRATE-BAR.

We show in the accompanying illustration a new type of hollow grate-bar through which a current of air is passed to accelerate combustion of the fuel. The grate-bar is formed in two parts, as shown in the small detail view. The lower or body section has

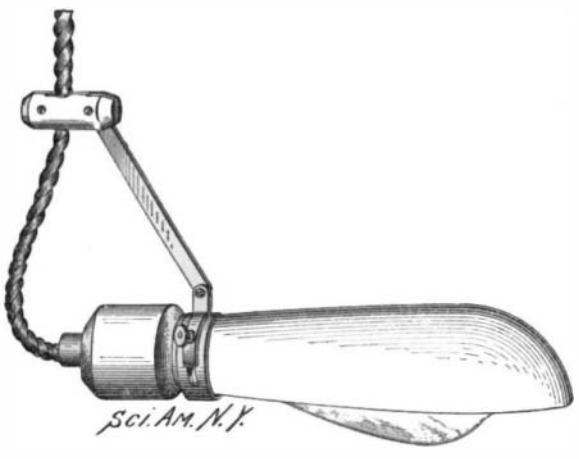


A NEW TYPE OF HOLLOW GRATE-BAR.

the shape of a trough, deepening toward the center, and provided with extensions at the ends for resting on the furnace setting. It is also provided with transversely-disposed bracing ribs having openings at their lower sides to permit ashes to pass down to the lower or central portion of the grate-bar, where such ashes may be withdrawn through an opening there provided. The upper section of the grate-bar is rounded so as to lie above the level of the rest of the grate. This section is formed with a number of orifices covered by shields which prevent entry of the ashes. The two sections are held together by tie-bolts, the center one of which serves also to hold in place a cover on the opening above mentioned. The grate-bar is used in connection with a bridge wall which is formed with a draft tunnel. Pipes from this tunnel admit air into the grate-bars and thus supply oxygen to the fuel through the shielded orifices. Two of these orifices in each grate-bar open toward the bridge wall and the shields also extend in this direction. This causes the draft to pass over the top of the bridge wall and to mingle with the products of combustion at that point, so as to bring about a very effective combustion of the fuel. The grate-bar being formed in two sections, may be readily repaired, since the greatest heat will be on the top section, and if this should become injured it may be removed and a new section applied to the old body, thus bringing about a great saving, as will be apparent. A patent for this invention has been granted to Mr. Theodore J. Pritchard, of Sunshine, La.

ODDITIES IN INVENTION.

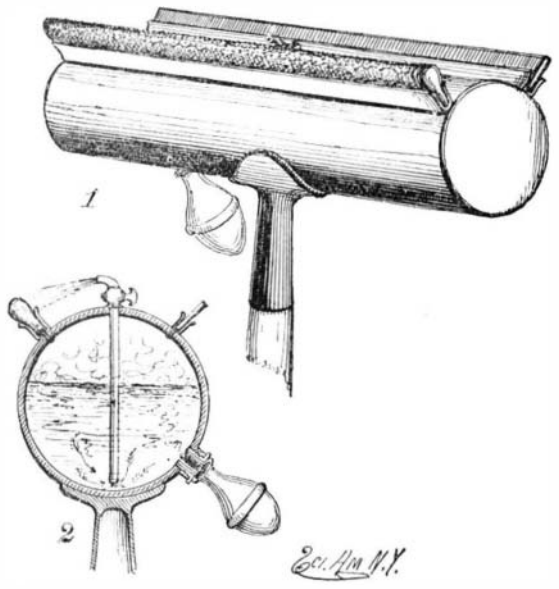
INCANDESCENT-LAMP SUPPORT.—A very convenient incandescent-lamp support has recently been invented, by



INCANDESCENT-LAMP SUPPORT.

which the lamp globe may be adjusted to any desired angle. The lamp shade is provided at the base with a slot in which a slide is secured. On one end of this slide an ear is formed, to which a connecting rod is pivoted. On its opposite end the connecting rod is pivoted to a clamping block, which binds upon the connecting cord of the electric lamp. By raising or lowering this block the lamp may be swung to any angle in the vertical plane. By moving the slide to various positions along the slot in the base of the lampshade, the shade may be adjusted to throw its shadow in any desired direction.

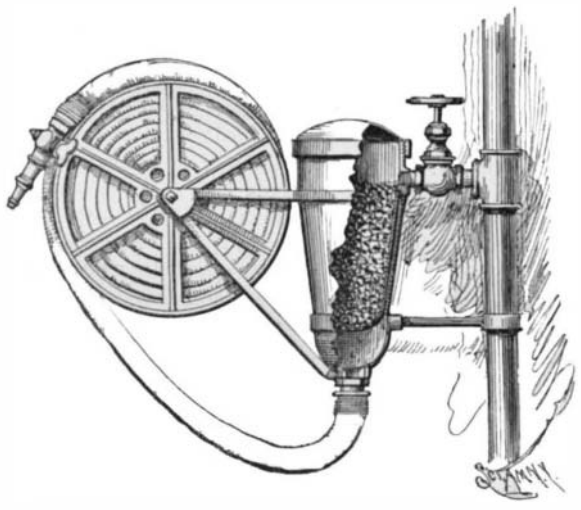
CLEANER FOR WINDOWS.—We show herewith an improved window cleaner of the "fountain" type, which has just been patented by a Colorado inventor. An important feature of the invention lies in the provision of independent washing and drying surfaces. From our view of the cleaner shown in section, it will be observed that a pipe passes down into the reservoir at the center and is provided at the top with a nozzle adapted to spray water onto the washing strip of ab-



WINDOW CLEANER AND DRIER.

sorbent material projecting along one side of the cylinder. The drying strip occupies a similar position on the opposite side, while at the bottom of the cylinder there is an extension into which a bushing is threaded. The bushing is provided with a valve and a compressible bulb. In use the bushing is first removed and the reservoir partly filled with the washing fluid. The bushing is then replaced and air is pumped into the reservoir by operating the bulb. On opening the valve of the spraying nozzle, the fluid will be sprayed out by air pressure onto the washing strip. The window may now be cleaned and then dried by rubbing thoroughly with the drying strip.

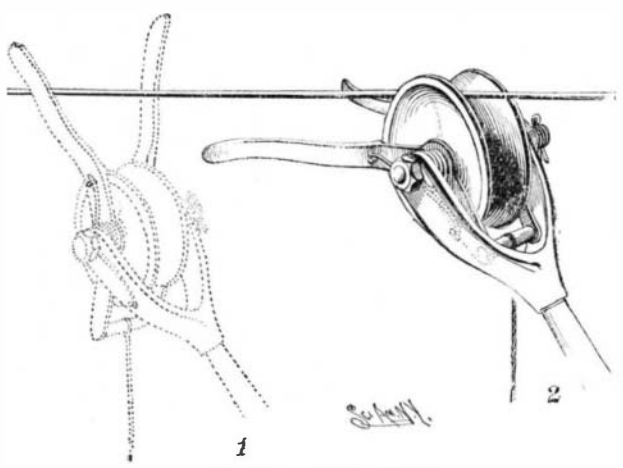
FIRE EXTINGUISHER.—A recent invention provides a means for extinguishing fires, which smothers the fire not only by shutting off the supply of oxygen to the flame as in apparatus heretofore used, but also by absorbing the oxygen, which would otherwise be available, with the products of decomposition of hyposulphite of soda. A receptacle containing the crystals of hyposulphite of soda is connected up with the water-supply pipe as shown in our illustration. In use the water is turned on, and in passing through the receptacle dissolves a portion of the hyposulphite of soda. This, upon coming into contact with the flames, is decomposed in such manner as to liberate sodium sulphite and sulphur. The latter then unites with oxygen to form sulphur dioxide and ultimately, with more oxygen, to form sulphuric acid. The sodium sulphite also unites with oxygen to form sulphate. A large amount of oxygen is thus taken up, which smothers the fire. Since the decomposition of the hyposulphite of soda takes place only when it is heated, it is evi-



NEW TYPE OF FIRE EXTINGUISHER.

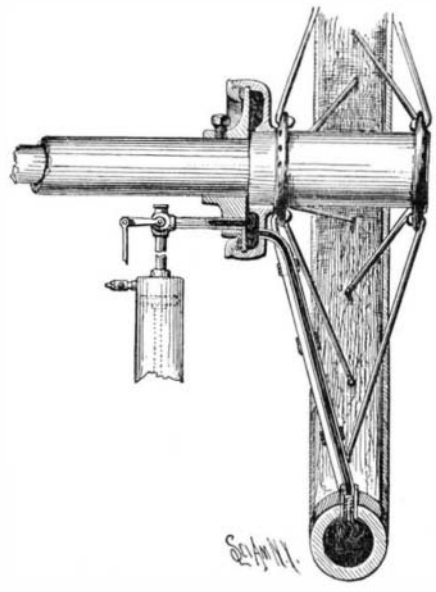
dent that any of the solution which might be spilled on delicate fabrics or other destructible materials which were not afire, would be perfectly harmless, being a neutral solution as regards alkalies and acids.

TROLLEY-POLE GUIDE.—It is so common an occurrence for a trolley-car to "slip its trolley," that the very phrase has become a stock slang expression. The trying delays, particularly at night, occasioned by the efforts of the conductor to guide the trolley back onto the wire have been experienced by us all. We illustrate herewith a Yankee invention calculated to expedite the operation of finding the trolley-wire. The usual cord pull, instead of being fastened to the trolley-pole, is secured at its upper end to a cross-piece connecting the shorter arms of two levers hinged on the pivot-pin of the trolley. The longer arms of these levers are flared out so as to form guides for easily finding the trolley-wire. Normally, the flared arms lie parallel with the trolley-wire, being so held by coil-springs on the trolley-pole to avoid striking the overhead cross-stays during propulsion of the car. When, however, the trolley has slipped from its wire, the cord is pulled, raising the flared arms to the position shown in dotted lines, and thus affording a ready means for guiding the trolley back on to the wire.



TROLLEY-POLE GUIDE.

TIRE-INFLATING DEVICE FOR VEHICLES.—An automobilist will find it very convenient in case of an emergency to have in connection with the wheels of his machine a simple device for inflating his pneumatic tires while the vehicle is in motion. Provision for such an emergency is afforded by the arrangement shown herewith. On the inner end of each hub of the vehicle is an annular casing or cup, which is closed



TIRE-INFLATING DEVICE.

by a stationary head forming an air chamber. A ring is screwed into the annular casing, and serves to hold the head firmly in place, while an interposed packing ring serves to effect an air-tight closure of the chamber. From the casing a tube leads down to the inlet valve of the pneumatic tire. An air-compressing device is connected by pipes to each hub-chamber of the vehicle, entering the same through openings in the respective stationary heads. A two-way valve, such as that shown, is provided whereby the operator of a vehicle may, whenever desired, direct the air from the compressor into the tire, or, in case it is not desired further to inflate the tires, may set the valve to permit escape of the air from the compressor into the atmosphere.

Brief Notes Concerning Patents.

Among the recent deaths announced is that of Thomas Jay Hudson, who for a number of years was principal examiner in the United States Patent Office. Dr. Hudson was also the author of several books of a psychological nature. He died at Detroit, where he had resided.

In some new freight engines constructed for the Central Hudson Railroad Company, there are independent braking systems for the train and engine. With this new arrangement, when it is desired to bring a train to a stop, the engineer will set his engine brake slightly, so as to take up the slack of the train, and it is said that this will prevent the possibility of the train parting, which is an annoyance and a source of danger of no small consideration.

The Rev. Ernest d'Aquilla, pastor of the Italian Roman Catholic church of Our Lady of Mount Carmel in Newark, N. J., has received a patent upon a