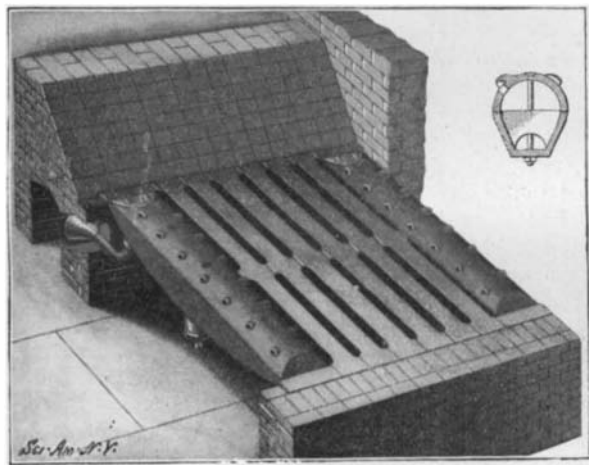




A NEW TYPE OF HOLLOW GRATE-BAR.

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

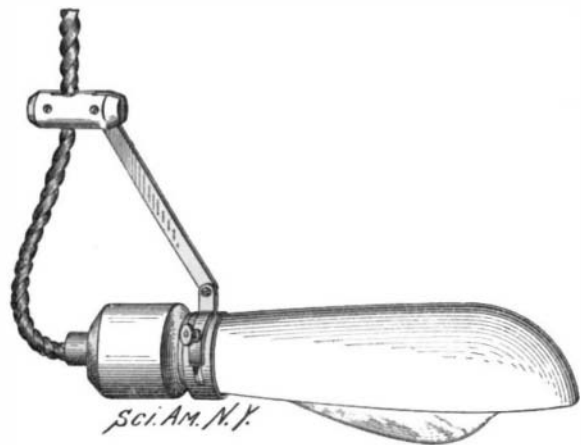


A NEW TYPE OF HOLLOW GRATE-BAR.

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lower sides to permit ashes to pass down to the lower or central portion of the grate-bar, where such ashes may be withdrawn through an opening there provided.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.

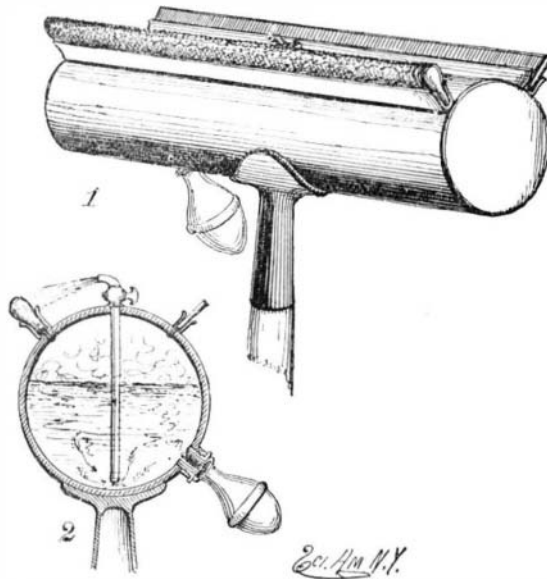
INCANDESCENT-LAMP SUPPORT.—A very convenient incandescent-lamp support has recently been invented, by



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.

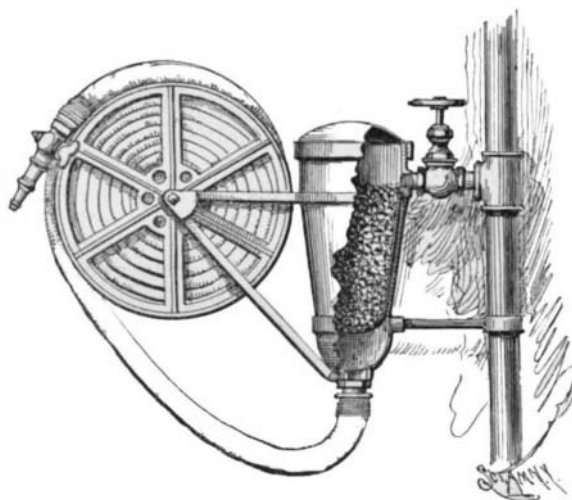
CLEANER FOR WINDOWS.—We show herewith an improved window cleaner of the "fountain" type, which has just been patented by a Colorado inventor. An important feature of the invention lies in the provision of independent washing and drying surfaces. From our view of the cleaner shown in section, it will 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-

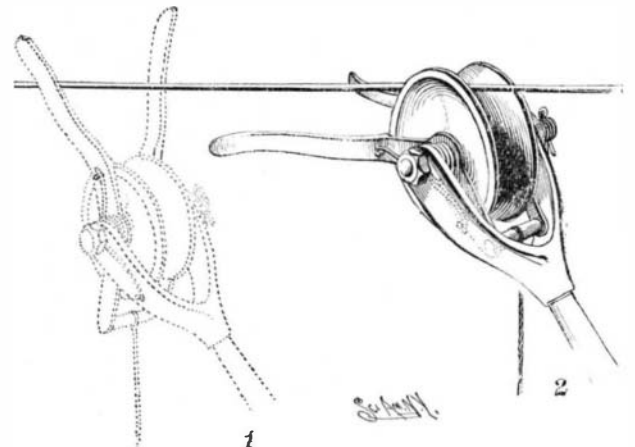


NEW TYPE OF FIRE EXTINGUISHER.

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 alkalis and acids.

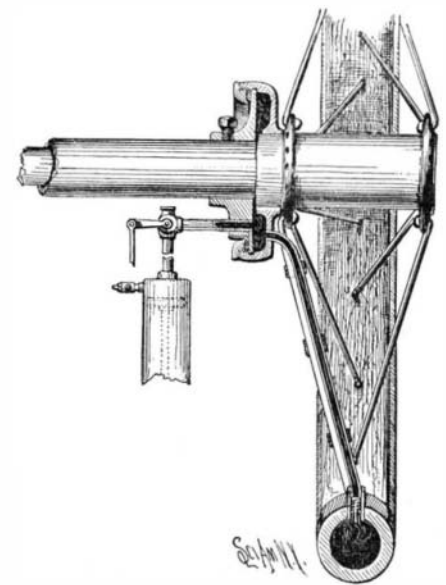
TROLLEY-POLE GUIDE.—It is so common an occurrence for a trolley-car to "slip its trolley," that the very phrase has become a stock slang expression. The trying delays, particularly at night, occasioned by the efforts of the conductor to guide the trolley back onto the wire have been experienced by us 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'Aquila, pastor of the Italian Roman Catholic church of Our Lady of Mount Carmel in Newark, N. J., has received a patent upon a

Legal Notes.

life-saving gas burner on which he has been experimenting for two years. It is designed to cut off the flow of gas automatically when the flame is blown out or accidentally extinguished. The flow of gas is cut off by the contraction of a curved strip of metal acting upon a valve.

Hugh Mann, brother of D. D. Mann, vice-president of the Canadian Northern Railway, was accidentally killed while superintending the operation of his track-laying machine just beyond Erwood, N. W. T. The massive machine got out of order, and, while endeavoring to set it right, he lost his footing and was crushed. Mr. Mann was taken to the station at Erwood, where he died. For years he had been perfecting this mechanism, which was his invention. Several times he had narrow escapes from death.

Ezra T. Gilliland, a well-known inventor who for many years was a co-worker with Thomas A. Edison, and who was responsible for many of the features of the Bell telephone, died on May 13 at his home at Pelham Manor, N. Y. He was 56 years of age, and at one time was a director of the Bell Company. Up to the time of his death he was an active worker in the electrical field, and maintained a very complete laboratory in the upper part of his handsome home, where he had seven skilled men employed on electrical work.

The Northern Pacific Railroad Company has been looking into the matter of fuel briquettes, and some tests have been made with a fuel of this character invented by Dr. R. J. Schrimper, of St. Paul, Minn. According to Dr. Schrimper's formula, soft-coal refuse largely enters into the composition of these cubes. It is said that they can be made at a cost of \$1.25 per ton. The trial resulted in demonstrating the fact that the use of the briquettes showed an economy of forty per cent. It is said that one ton of the latter will go further than a ton of soft coal by about between twenty-five and fifty per cent.

Edward Atkinson, of Boston, Mass., the anti-imperialist and sociologist, has recently turned his mind in a more practical direction, and has been for some time giving his attention to the manufacture of fuel from mud. He has recently made a quantity of briquettes, the base of which is said to be mud, which Mr. Atkinson claims is as good as Irish peat. Samples of the fuel were burned and gave a very desirable flame, strong and clear, and calorimetric tests made by Prof. Norton, of Harvard, showed it developed about two-thirds as much heat as its weight in coal. Mr. Atkinson says that he will continue his experiments in the direction of making a machine for the pressing of the mud into the desired shape.

Irving M. Scott, the vice-president of the Union Iron Works, of San Francisco, Cal., who died recently in his 65th year, started in a very humble way, and finally worked himself to a position of unusual prominence, the shipbuilding feats of his company having been the means of making his name a familiar one in industrial circles all over the world. He found employment when a very young man in a machine shop in Baltimore, Md., receiving three dollars per week, but at the age of twenty-two he was not only an expert machinist, but a fine draftsman. He was sent to the Pacific coast at this time in charge of a steam engine, and while there accepted a position in the Union Works, which were then the property of Peter Donohue. It was not a great while before he was the principal member of the firm. It was with great difficulty that he secured for his company the contract for the construction of the protected cruiser "Charleston," and this work was so successfully carried out that other contracts were readily obtained. His name was among those presented at the convention which nominated Roosevelt for the Vice-Presidency.

By the use of a pneumatic device as a substitute for the spring on the arm of a trolley car, it has been found that the trolley wheel is held in much closer contact with the wire, and that a greater efficiency is secured and a higher speed accordingly maintained. The device is the invention of C. V. Greenamy, the mechanical engineer of the Pacific Electric Company, and has been in successful use on that line, where high speeds are the rule. It is said that the wheel is in close contact with the wire constantly, thereby saving much power which is ordinarily lost through the formation of arcs in the circuit by imperfect contact. In this manner much of the energy which is intended to be utilized in the form of power is lost in light and heat. Another feature of the device is that when, occasionally, the trolley wheel does slip from the wire, as is often unavoidable, this pneumatic pressure is at once released, and the pole falls almost to the roof of the car, leaving no possibility of damaging the overhead work of the line. When the conductor has again secured control of the pole by grasping the cord which hangs from it, the power is thrown into action by the turning of a lever in the motorman's end of the car.

THE BRISLIN-CARNEGIE INFRINGEMENT SUIT ON APPEAL.—Some time ago we digested in these columns the decision in the suit of *Brislin vs. Carnegie* for infringement of letters patent 345,953, granted to Brislin and Vinnac, for "A Feeding Mechanism for Rolling Mills," and infringement of letters patent 352,748, issued to Hanley and Richey for "A Feed Table for Rolling Mills." It will be remembered that the Circuit Court of the United States for the Western District of Pennsylvania held that the first claim of the first patent had been infringed, and that the second patent had not been infringed. The case has now come up on appeal. The decision of the Circuit Court is reversed, a result that means much for the steel industry of this country.

In the process of rolling iron it is necessary to elevate the iron so that it will pass through between the upper and middle rolls when a three-high mill is used. In the case of a two-high mill it is necessary to pass the iron over the top of the upper mill in the process of rolling. When moving the iron from one groove to the other, and from one set of rolls to another, the iron must be moved sidewise bodily. In heavy rolling, the labor of elevating the heated iron and of moving it laterally for the several passes required in the process of rolling is arduous, and the difficulty of this manipulation causes much loss of time as well as of heat. Consequently, it is more difficult to roll the iron; indeed, the stiffening of the iron as it cools, which is occasioned largely by this loss of time, often results in the breaking of the mechanism connected therewith. It was the purpose of the Brislin invention not only to effect the vertical lifting of the iron, but also to move it laterally in the process of rolling. Broadly speaking, the invention consists in a lifting mechanism and laterally-moving mechanism combined with rolls of a rolling mill for the vertical lifting and lateral movements of the heated iron in the operation of rolling it. The first claim of the patent, which alone was in contention on appeal, reads as follows:

"1. The combination, in a rolling mill, of rolls, a carriage, a roller frame therefor for feeding to the rolls and pivoted at its outer end means for laterally shifting said carriage and roller frame, and devices for inclining said roller frame on its pivot, so as to vary the feed of the latter to the rolls, substantially as set forth."

The history of the prior art was carefully considered by the Circuit Court, and likewise by the Circuit Court of Appeals. Both conceded that hand feeding to the rolls was at one time general, and that various devices for lifting billets and bars, by hooks attached to pulleys for heavy work, were in use before mechanical rolling was practised. The court, however, did not find that the invention of the patent in suit made the first advance from manual rolling to complete mechanical rolling. "It no doubt made an advance in mechanical rolling, which is quite a different thing from an advance to mechanical rolling." The French patent to Sauvage, May 27, 1858, which had been cited as an anticipation by defendants in the prior suit, and which had been rejected as such by the Circuit Court, was carefully considered on appeal. It was considered by the Circuit Court that the device of Sauvage's patent, so far as a single stand of high rolls is concerned, presents all the advantages of complete mechanical rolling. All that it lacked were means of laterally shifting the table. The suggestion of the moving of such a table on a carriage or truck laterally, so as to bring it successively in front of stands of rolls placed side by side, did not, to the Circuit Court of Appeals, seem to involve patentable invention. Indeed, it distinctly stated that the mounting of such a table upon the truck moved upon rails in front of the rollers would violate a patent monopoly were it granted. "The traveling crane comes within its functional principle."

A patent granted to Alleyne in Great Britain on April 4, 1861, describes a rolling mill of several stands of two-high rolls, combined with both laterally-moving mechanism and vertically-moving or lifting mechanism, the lifting mechanism differing from that of the patent in suit only in that the table is raised bodily and horizontally, instead of the free end next the rollers only being raised on the fulcrum of the pivoted farther end.

The next development of the art of complete mechanical rolling is illustrated by the feed roller tables of the Fritz and Wellman types, which are practically the alleged infringing devices. In the Fritz apparatus the feed rollers are positively driven by a shafting and operating gear, and their rotation is reversible. Fritz also devised a turning and lifting mechanism, by which the piece to be rolled could be turned upon the moving table, so as to be rolled both sidewise and edgewise. "So far as there was necessity for only one stand of rolls, complete mechanical rolling could be

accomplished by the Fritz device. The roller table, to be sure, was lifted vertically and horizontally, but the function of such movable table and the positively-driven rollers was the same as that of the pivoted table and rollers of the patent in suit." The tables of the Fritz invention were raised and lowered by hydraulic cylinders. There was no lateral movement of these tables, which being of the width of the rolls were sufficient to serve the several passes of the single stand of rolls.

Wellman followed the general prior teaching of the art. He employed a table pivotally supported at its outer end on a stationary foundation. This construction, of course, leaves the inner end free to be raised or lowered simultaneously by hydraulic cylinders placed on one side of the rolls. The Wellman tables do not travel laterally, for the simple reason that there is no necessity to transfer the rolled product from one stand to another.

The most pertinent reference cited in anticipation of the Brislin patent is that granted to Saylor, June 30, 1885. In the device of that patent may be found feed tables equipped with positively-driven feed rollers, which are raised and lowered vertically and horizontally. These tables are mounted upon carriages run upon tracks parallel to the axis of the rolls, and are operated on both sides of the rolls. The Court below took the position that the combination described in the first claim of the patent in suit, inasmuch as it provides for the lateral movement of a feed roller table pivoted at its outer end, involves such an invention as to entitle it to the monopoly of the patent. The Circuit Court of Appeals held that this decision is too sweeping, that Brislin cannot claim all lateral movement of a feed roller table capable of vertical lifting, because more than one previous patent has described a device for accomplishing this result.

WHAT CONSTITUTES PUBLIC PRIOR USE OF A DESIGN.—The case of *Young vs. the Clipper Manufacturing Company* (121 Fed. Rep. 560) admirably exemplifies what constitutes public use of a design. The suit in question depended upon the alleged infringement of a design patent granted to R. McIntosh, assignor to the plaintiff "for a clip or fastener" of resilient wire to hold together sheets of paper, documents, and other articles by slipping over and clamping their edges. The defense set up that the design was in public use for more than two years before the application, which was filed June 24, 1897.

The inventor made some of the clips in May, 1895, and gave one to a printer, who had an engraving company prepare an engraving of the clip for letter-heads. The qualities of the clip were set forth both on the letterhead and on envelopes. Some of the clips were placed upon the edges of letters and tags sent by the inventor in correspondence concerning them, before June 24, 1895.

The court held that since a design is patentable for its appearance, exhibition constitutes a public use within the meaning of the statute and the patent was therefore declared void.

THE EFFECT OF AN INVALID PATENT ON A CONTRACT TO PAY ROYALTIES.—The case of the *Willcox & Gibbs Sewing Machine Company vs. Sherborne* (123 Fed. Rep., 875) brings out an interesting state of facts which probably occurs not infrequently. In an action to recover royalties from a licensee under a patent, the defendant pleaded as a defense that the contract had terminated because the patent was invalid. The Court held that a judgment for plaintiff is conclusive between the parties on this issue, and cannot be raised by defendant and again litigated in a second action to recover royalties subsequently accruing. A decree dismissing a bill for infringement of a patent, filed by a licensee thereunder, where the defenses pleaded were the invalidity of the patent and non-infringement, and the decree is not based specifically on either, will not be construed as an adjudication of the invalidity of the patent, which will be conclusive to relieve the complainant from liability for further royalties under the license contract.

The owner of a patent, in selling the patented article, may reserve to himself, as an ungranted part of his monopoly, the right to fix the price at which it may be sold by jobbers, or dealers purchasing from them; and a dealer who buys with knowledge of such reservation is bound thereby, and may be treated as an infringer if he sells in violation thereof.

Prior adjudications sustaining a patent, but which were entered by consent as the result of settlements between the parties, and in which the questions of the validity and scope of the patent were not considered by the court, are not sufficient as the basis for the granting of a preliminary injunction in a subsequent suit against another alleged infringer.