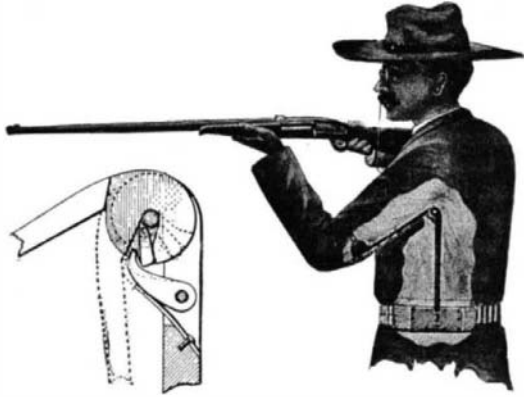




ARM REST FOR RIFLEMEN.

A recent invention provides a support for riflemen to insure steadier aim and greater accuracy. The supporter is strapped to the person and comes automatic-

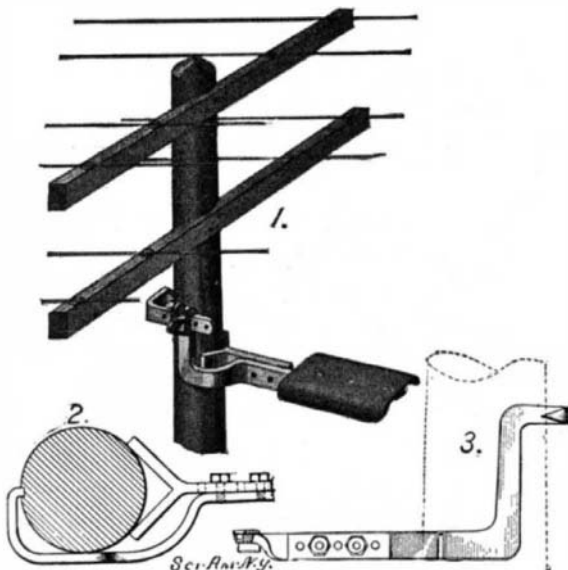


ARM REST FOR RIFLEMEN.

ally into position when the arm is raised. At the same time it allows perfect freedom of movement laterally. As pictured in the accompanying engravings, the device comprises a post journaled at its lower end in bearings attached to a strap which is fastened around the waist of the user. The upper end of the post, which comes well up to the armpit, is forked to receive the heel of a bar pivoted therein. The outer end of the bar carries a curved plate and forms a rest for the rifleman's arm to which it is strapped. When the rifleman raises his arm the bar is swung upward with it and then held in extended position by a spring-pressed pawl pivoted to the post and engaging a notch in the heel of the bar. In one face of the heel a depression is formed to receive a fly, loosely pivoted therein. The outer end of the fly is tapered to a point which extends slightly beyond the periphery of the heel. To return the support to folded position it is merely necessary to raise the arm a little further until the pawl passes out of the notch and over the end of the fly, so that on lowering the arm, the pawl will first push the fly forward and then ride on its tapered edge over the notch, permitting the bar to swing down. As the post is mounted to turn in bearings upon the waist strap, it is evident that the rifleman may freely swing his arm laterally, whether the support be extended or folded. The arm rest may be adjusted to any desired angle by changing the position of the notch in the heel. At an angle of 90 degrees it would make an excellent support for pistol shooting. Mr. William S. Dunham, of Sharpsville, Pa., has secured a patent on this novel arm rest.

LINEMAN'S SUPPORT.

A very simple support for the use of linemen while at work on poles has been provided by the recent invention of Mr. Robert G. Johnson, of Clearmont, Mo. As shown in the accompanying illustration, the device comprises a main bar which, at one end, carries a seat and at the other an upwardly-extending arm. This arm at its outer end is curved to encircle a pole, and terminates in a sharp projection adapted to sink into the wood at the rear of the pole. The forward side of the pole is engaged by the branches of a Y-shaped member, which is secured with two bolts to the main bar. The Y-shaped member is provided with a number of bolt holes, through any pair of which the bolts may be passed to adjust the device to different sizes of poles. The use of the device will be evident from the

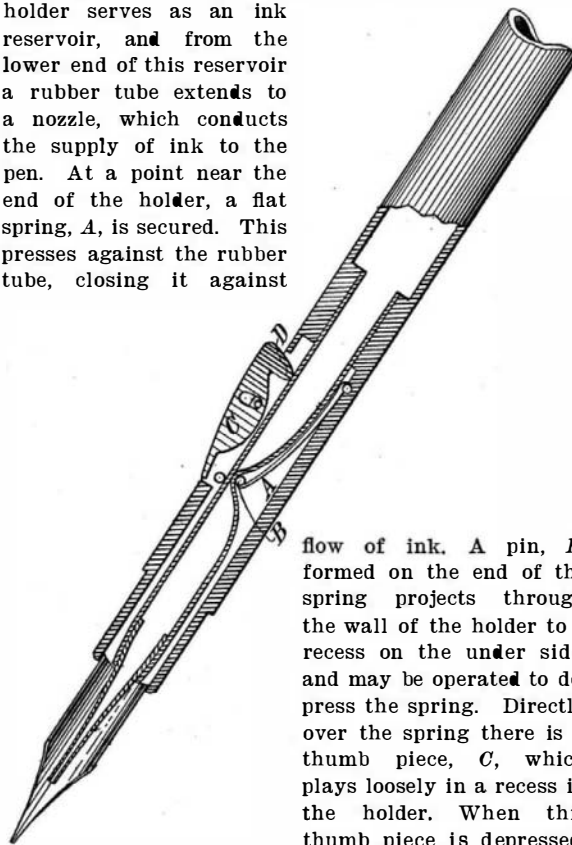


LINEMAN'S SUPPORT.

drawing. The lineman tilts the seat end of the support upward, places the sharpened projection against the rear of the pole, and then brings the Y member into contact with the opposite side. Owing to the fact that the points of contact on opposite sides of the pole are not in horizontal alignment, it will be evident that any weight placed on the seat of the device will cause the support to turn on the Y member as a fulcrum and sink the sharpened projection deeper into the wood. Thus, a secure support is provided for the lineman. If the pole is of small diameter, it may be necessary to adjust the Y member further forward on the main bar, else the seat will be tipped to an inconvenient or unsafe angle. The inventor has also designed an improved form, which we illustrate in Fig. 1. This is provided with an adjustable hook, which is held with a single thumbscrew. This can evidently be more easily adjusted than the bolted Y member. It will be seen that the scaffold is comparatively inexpensive to construct, and while amply strong is so light that it may be readily carried by the user. It is also applicable to many other purposes than its use by linemen, such as that of carpenters in connection with pole barns, and also as a support for stagings.

AN INK-CONTROLLED FOUNTAIN DRAWING AND WRITING PEN.

A new type of fountain pen has recently been introduced by Mr. Louis Winter, of 900 Centre Avenue, Reading, Pa. This pen differs very materially from the usual type of fountain pen, which depends upon gravity to produce a flow of the ink. As shown in the accompanying illustration, the hollow handle of the pen-holder serves as an ink reservoir, and from the lower end of this reservoir a rubber tube extends to a nozzle, which conducts the supply of ink to the pen. At a point near the end of the holder, a flat spring, A, is secured. This presses against the rubber tube, closing it against



flow of ink. A pin, B, formed on the end of the spring projects through the wall of the holder to a recess on the under side, and may be operated to depress the spring. Directly over the spring there is a thumb piece, C, which plays loosely in a recess in the holder. When this thumb piece is depressed, the rubber tube is first closed by the projection, D, at a point above the spring closure, and then as the forward end of the thumb piece continues to descend, the ink imprisoned between these two closures is squeezed past the spring into the nozzle. The thumb piece is in such position that it may be conveniently operated by the writer as desired. Since the reservoir is air-tight, a partial vacuum is produced therein every time the thumb piece is operated; and after the writing is done, the pin, B, is operated to depress the spring, A, when this vacuum will cause the ink to be sucked up from the pen, leaving the nozzle and pen clean and dry while not in use. Any kind of a pen may be fitted into this holder, and the life of the pen will be longer than ordinary, because only one side is inked and no ink remains on the pen after use to corrode it. In the drawing pen the nozzle leads down between the bows to near the points. As the ink may be sucked up after use, there will be little danger of the drawing ink gumming and clogging the pen.

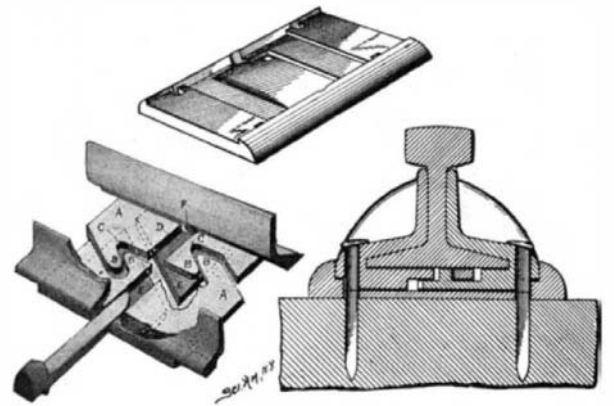
AN INK-CONTROLLED FOUNTAIN DRAWING AND WRITING PEN.

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RAIL-JOINT CONNECTION.

In the accompanying engraving we illustrate a novel form of rail-joint connection invented by Mr. Joseph Graff, of Calmar, Iowa. The purpose of this construction is to provide a very secure clamping device which will, at the same time, permit longitudinal expansion and contraction of the rails due to changes of temperature. Two similar clamping plates are used which are locked together by a key, and both key and clamping plates are then held in a shoe which prevents the key from slipping out and provides a substantial base for the rail joint. Each clamping plate is formed to fit over the base flanges and against the webs of the

two meeting rails. It is also provided with a flange, A, adapted to extend under the rails. The inner edge of this flange is formed with tongues, B, and notches, C, diagonally disposed, and a central slot, D. A plate, E, formed integrally with this flange provides a bottom for one of the notches and for the central slot. The arrangement is such that the flanges of a pair of clamping plates, embracing opposite sides of two meeting rails, will interlock. This engagement is effected by moving the clamping plates toward each other along the rails until the slots, D, are brought into alinement.

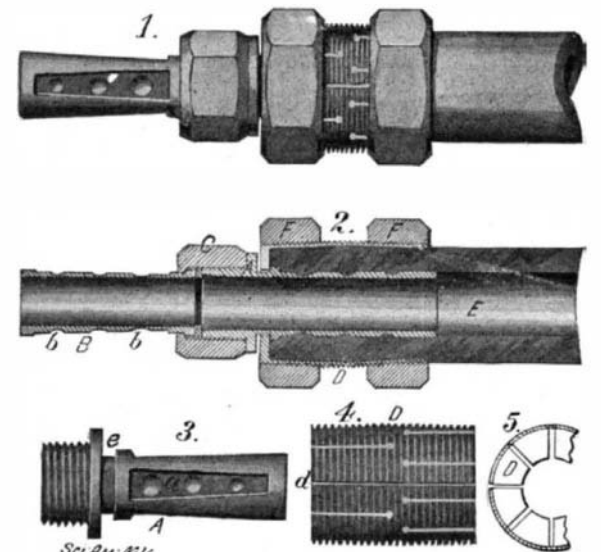


RAIL-JOINT CONNECTION.

To prevent the plates from spreading apart, a flat bar or key is inserted through the slots, D. The shoe is formed with side flanges adapted to engage the outer edges of the clamping plates. Recesses are formed in the face of the shoe to receive the flanges, A, and plate, E. The parts are secured to the ties by spikes driven therein, and passing through the clamping plates and the shoe. The corners of the base flanges of the rails are cut off, forming V-shaped notches at the meeting ends, into which lugs, F, on the clamping plates project. These serve to prevent creeping of the rails.

HOSE COUPLING.

Pictured in the accompanying engraving is a hose coupling, which can be readily operated to lock both the exterior and the interior of the hose against disengagement. The construction will be best understood by reference to Fig. 2, which is a cross section of the device. Two tubular coupling members, A and B, are employed, which are adapted to fit into the interior of the hose. Four flattened faces, a, are formed on the outer surface of each member. These faces are inclined toward the inner ends of the two members, and each face is formed with depressions, b. The member, A, as shown best in Fig. 3, differs from the member, B, in having at the inner end a wide flange and a threaded shank. This receives the coupling nut, C, which serves to draw the two coupling members together in the usual way. The hose, E, is attached to the coupling member, A, by means of a compressible sleeve, D, and a pair of nuts, F, threaded onto the sleeve. This sleeve, as shown in Figs. 4 and 5, is divided longitudinally at d, which permits the inwardly-projecting flange at the end of the sleeve to be sprung into the depression, e, on the member, A. The sleeve is also provided with saw slots at each end to permit contraction. In use the hose is fitted into the annular space between the sleeve and the coupling member, A. Then the nuts, F, which have a tapered bore, are threaded onto the sleeve, contracting the latter and pressing the hose against the faces, a, and into the depressions, b. The sleeve, D, owing to the slots in the ends, will be compressed more at the ends than at the center, causing the outer surface of the hose to be arched, and, as the sleeve is held to the member, A, by its flange entering the depression, e, it will be evident that the outer surface as well as the inner surface of the hose will be firmly locked in place. Mr. William



HOSE COUPLING.

H. Albee, of 101 Pearl Street, New York city, is the inventor of this hose coupling.

RAILWAY GAGE.

The method now ordinarily used in railway construction for bringing rails to gage is rather crude. Spikes

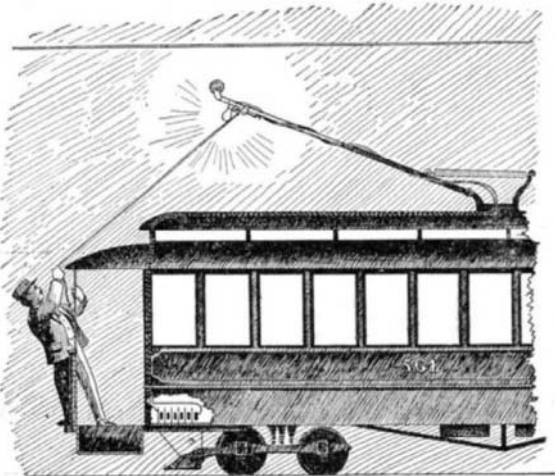


RAILWAY GAGE.

are driven into the ties against the base flanges and crowded either inward or outward to press the rail to proper position. This often results in bending the spikes or in breaking the upper faces of the ties in such manner as to permit water to percolate through to the interior, causing decay of the tie and thus increasing the expense of maintenance. We show herewith a device that greatly simplifies the process of gaging a railway and which avoids the difficulties above noted. The device comprises a drawbar, provided at its outer end with a head, and to the other end the shorter arm of a bell crank lever is pivoted. At the angle of the bell crank lever a claw is hinged. The claw is provided with a head at its outer end. In use, this head and that on the rod are slipped over opposite rails and the bell crank is then operated to draw them together. To prevent the rails from moving in too far, a spreader is provided which comprises a tube or sleeve loosely mounted on the rod. At the end adjacent to the bell crank lever a yoke is attached to the sleeve, and this yoke, at its outer end, is formed with an abutment. An abutment is also carried on the other end of the sleeve, and these are adapted to press against the inner faces of opposite rails. The yoked member serves not only to span the bell crank lever joint, but also to brace the gage laterally and insure its lying squarely across the track. A patent on this railway gage has been granted to Mr. Robert M. Jenkins, of Carney, Ala.

ODDITIES IN INVENTION.

TROLLEY LIGHT.—Evidently the trolley problem has not been solved yet; for the United States Patent Office is still crowded with applications for patents on trolley guards, and the like. But a Western inventor has apparently given up the idea that trolley wheels can be made to stick to the wire, and has endeavored instead merely to alleviate the trouble by providing an electric light near the end of the pole to assist the conductor in replacing the trolley at night. The electric lamp is lighted by a battery located in the body of the car. A switch is interposed in the circuit near the lamp, and to one end of this switch the trolley rope

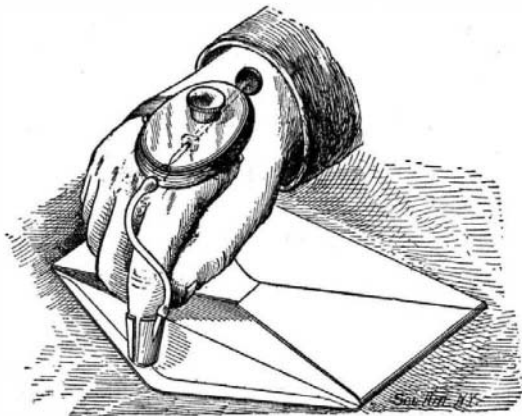


TROLLEY LAMP.

is attached. Normally this switch is held open by a spring; but when the conductor pulls the rope to draw down and replace the trolley, the switch is closed, lighting the lamp, and thereby facilitating the work of placing the wheel in proper contact with the wire. Connected in series with the trolley lamp, are a num-

ber of lamps in the car which serve to illumine the same while the trolley is being replaced.

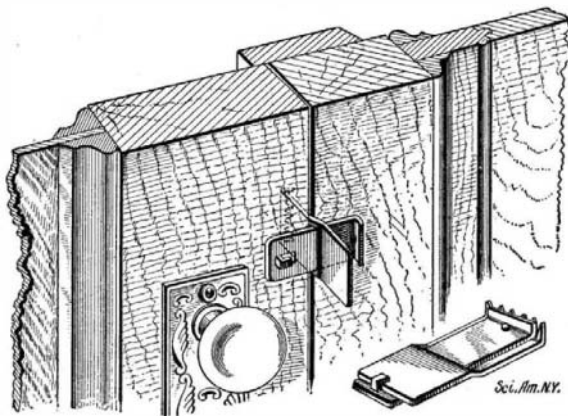
DEVICE FOR MOISTENING GUMMED SURFACES.—The evils of moistening stamps and envelope flaps, particularly in large quantities, with the tongue are too well known to require description here. The accompanying engraving illustrates a rather clever device for avoiding this disagreeable and unsanitary practice. Strapped to the back of the hand is a water reservoir, from



DEVICE FOR MOISTENING GUMMED SURFACES.

which a tube leads down to a thimble on the first finger. The flow of water in the tube is controlled by a needle valve operated by a thumbscrew at the upper end of the reservoir. The water is taken up by a suitable absorbent material on the thimble. Capillary attraction, as well as the force of the water falling through the tube, insures a steady feed to the thimble, which serves as an ever-moist finger for moistening the gummed surfaces.

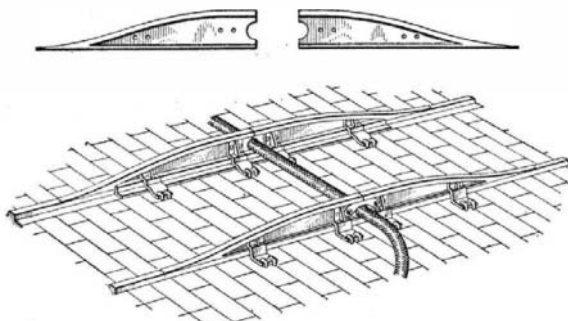
A POCKET DOOR-LATCH.—A simple little pocket device has recently been invented, which may be applied to a door to secure it in closed position. The device consists of a bolt and a jaw member. The latter is formed with teeth at one end adapted to be sunk into the door jamb. The other or projecting end is formed



A POCKET DOOR-LATCH.

with a slot to receive the bolt, which may be operated in the usual way to bolt the door shut. Our illustration shows how the device may be folded so that it can be readily carried in the pocket. This little latch will be found very useful for traveling men, who are often obliged to spend the night in suspicious and even dangerous lodgings.

FIRE-HOSE PROTECTION FOR CAR TRACKS.—The stoppage of street cars in time of fire, due to stretching the fire hose across the car tracks, is a matter of great annoyance, if not expense, to the passengers. This is sometimes avoided by elevating the hose sufficiently to permit cars to pass under it. A simpler arrangement is to elevate the track over the hose, as indicated herewith. An auxiliary track is provided, consisting of two pairs of abutting rails, in which openings are



FIRE-HOSE PROTECTION FOR CAR TRACKS.

formed at the abutting ends to receive the hose. The rails when joined form an arch leading from the main track over the fire hose. Simple means are provided for clamping this auxiliary track in position.

Edward Dodd McCracken, who died at Leonia, N. J., on December 13, aged sixty-six years, was a genius of a rare type. His father was a paper maker, and the son was associated with him in that business for some time, during which period he was responsible for a great many improvements in paper-making machinery.

When a young man he succeeded in getting the British government interested in the construction of paper mills at Kingston, Jamaica, for the manufacture of paper from wood fiber. Returning to the United States, he gave his attention to electrical matters, and at once took a foremost place among the workers in this field, winning medals and commendation from the American Institute Fair, S. F. B. Morse, and the British government. In 1884 he was awarded a patent on paper insulation for electrical wires, and engaged in the manufacture of it, which developed into a very extensive business. For a long time this wire was used exclusively in the conduits carrying wires under the city streets.

THE NEW TRADE MARK LAW.*

Some weeks ago we published in the SCIENTIFIC AMERICAN an article by Mr. A. P. Greeley upon the new trade mark act, which since that time has become a law and will go into effect on April 1, 1905.

The various advantages of the new act were pretty well set forth in this article by Mr. Greeley, who has been so intimately identified with the enactment of the new law.

He has recently published a brochure on the new act, which sets forth the brief history of the legislation, leading to the enactment of the new law, with a statement of the various bills which have been presented to Congress during the past few years, but which failed of passage. The advantages derived from registration have now become so great, that it is evident manufacturers will make exclusive use of the new privileges under the act. The largely increased damages which it is possible to obtain for infringement of trade mark under the statute render registration desirable, as it is possible to obtain recovery to the amount of three times the damage done. Furthermore, in case registration is refused and an appeal is taken from the decision of the Examiner, it may then be carried to the Commissioner of Patents, and from there it may be carried to the Court of Appeals for the District of Columbia, a most desirable procedure.

Under the new law it is possible, under certain conditions, to obtain registration for marks of a non-technical character, which would not have been permitted to be registered under the law of 1881. This is a very important feature of the new act.

Under the provisions of the new act it will be possible to register the trade mark actually used, and it will not be required to restrict the application to particular features, so that the question of infringement will be, as under common law, a question whether the alleged infringing mark so far resembles the trade mark used by the registrant as to deceive purchasers.

We quote the following: "But while the new act does not compel registration of unregistered marks, and does not compel re-registration of marks previously registered, the provisions of the new act are such that the owners of unregistered trade marks entitled to registration under the new act will find that the advantages resulting from registration will be so important that they cannot afford to fail to register, and the owners of trade marks registered under the act of 1881 will probably find it worth while to re-register under the new act for the sake of securing the additional remedies against infringers given by the new act; though, unless they consider these additional remedies given by the new act necessary for the protection of their rights against infringers, there is no need to re-register, as the certificates of registration issued to them under the act of 1881 are still effective as record evidence of *prima facie* right to the registered marks and as sufficient evidence to compel the Patent Office to refuse to register the same mark to others."

Mr. Greeley points out another feature of the act, which is also of practical importance, namely, that it will now be possible for trade marks which have been refused registration under the old act to be revived; and as there is no provision of the new law under which an application for registration is held to be abandoned by failure to prosecute, it will be possible to renew the application for the registration of such marks without the payment of a further government fee. It appears that this provision will apply not only to pending applications, but to such as may have been rejected. One of the advantages that will be especially welcomed by the owners of trade marks will be reduction in the government fee for registrations from \$25 to \$10.

In summing up, Mr. Greeley makes the following statements:

"The new act thus, while not compelling registration in the sense of abrogating or lessening the common law right, makes it necessary for the owner of an unregistered mark to register it if he wishes to avoid the possible expense of overcoming the effect which may arise from its registration by another. In this sense the provisions of the new act respecting the publication of applications for opposition would seem to have an effect to make registration practically compulsory."

* Registration of Trade Marks under the New Trade Mark Act, by Arthur P. Greeley. John Byrne & Co., publishers, Washington, D. C. Price, 50 cents.