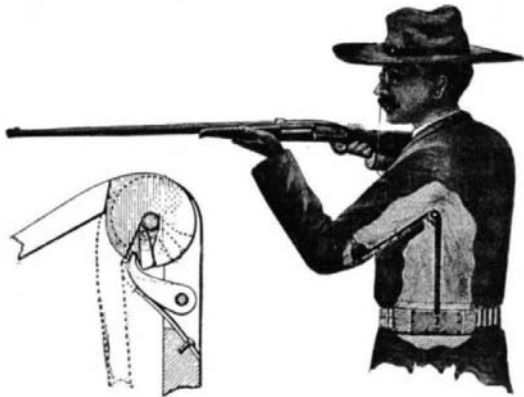




**ARM REST FOR RIFLEMEN.**

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-

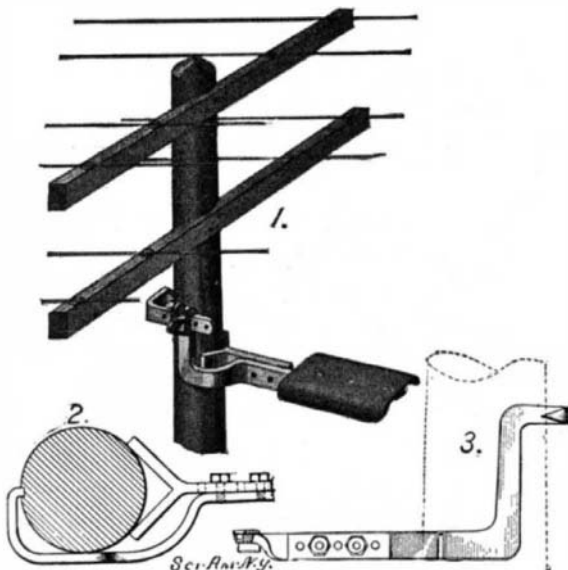


**ARM REST FOR RIFLEMEN.**

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

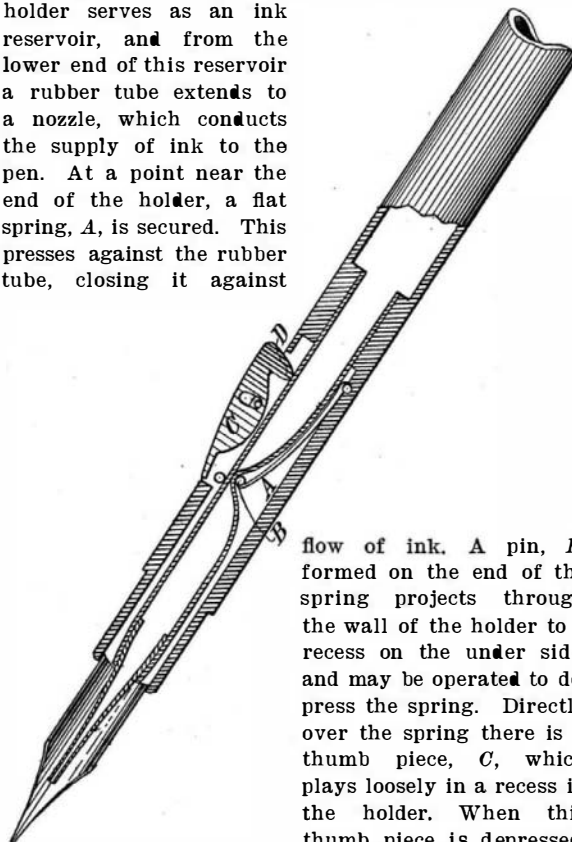


**LINEMAN'S SUPPORT.**

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

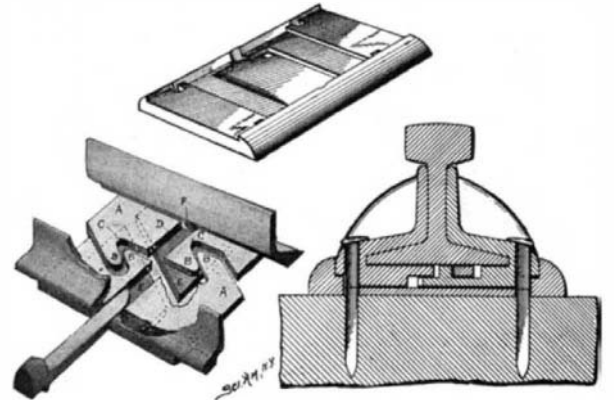
**AN INK-CONTROLLED FOUNTAIN DRAWING AND WRITING PEN.**

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.

**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.

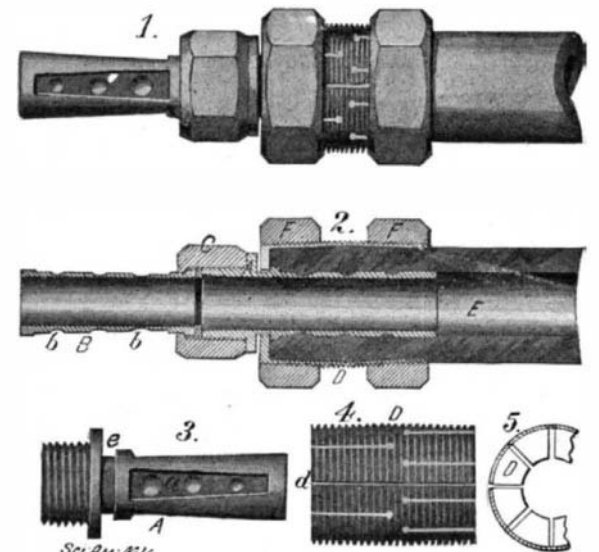


**RAIL-JOINT CONNECTION.**

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.**