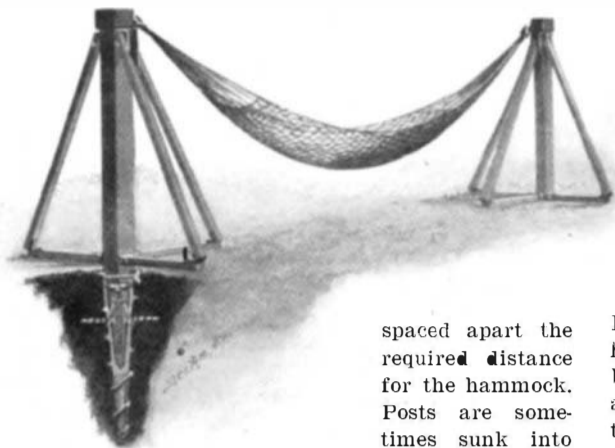




**SUPPORT FOR HAMMOCKS.**

The hanging of a hammock is often quite a problem, because of the lack of suitable supports at the desired location. Only occasionally can two trees be found

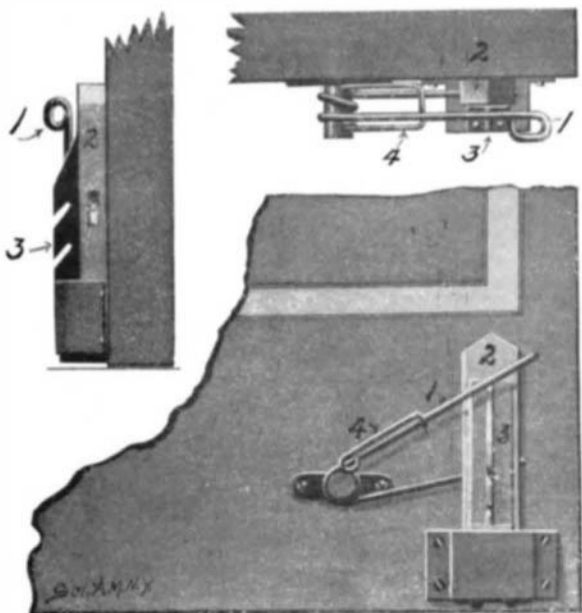


**SUPPORT FOR HAMMOCKS.**

spaced apart the required distance for the hammock. Posts are sometimes sunk into the ground to serve as supports, but the constant swinging of the hammock is apt to work them loose in time. In the accompanying engraving we illustrate a new hammock support patented by Mr. M. A. Dickinson, of West Swanzy, N. H., so designed as to hold its position firmly at all times. This permits one to hang his hammock at any place he wants to, without regard to the location of trees or other fixed supports. Also, if desired, one end of the hammock may be supported by a tree and the other end by one of the new supports. The latter comprises a socket piece formed with a coarse thread which adapts it to be screwed into the ground, offering considerable resistance to displacement. A post is seated in this socket piece and secured by a bolt. A bracket is fastened to the top of the post, and another to the lower end. Three struts are connected to the upper bracket, and their outer ends are hinged to spreaders carried by the lower bracket and lying along the ground. The struts are permitted a certain amount of play in the upper bracket and may be clamped to such position as to adjust the device to irregular ground. A substantial support is thus given to the post. If one wishes to remove the posts this may be readily done without disturbing the sockets. This is of advantage in cases where the hammock is supported on a lawn, for the posts may be readily removed to permit mowing the grass and afterward as readily set up again.

**A SIMPLE DOOR CHECK.**

The purpose of the simple device illustrated in the accompanying engraving is to hold a door at any desired opening, or to permit it to close slowly without slamming. The door check consists of a rubber cushion applied to the door in such a way that it bears on the floor under control of the spring. This spring is shown at 1 in the engraving, and the rubber cushion is attached to the block, 2, which is mounted to slide in a box fastened to the door. The lower arm of the spring 1 passes through an opening in the block 2, so that when the upper arm is depressed the rubber cushion is forced down onto the floor. To hold the cushion in this position a locking device, 3, is provided, which consists of a rack with inclined teeth,



**A SIMPLE DOOR CHECK.**

adapted to engage the upper arm of the spring. An auxiliary spring, 4, is provided which passes under the arm, 1, and is fastened to the stud that carries the main spring. This auxiliary spring serves to lift the cushion from the floor when the spring arm is released from its rack. The device is set by pressing down the spring arm with the foot. The pressure on the floor or carpet depends upon which one of the rack hooks is engaged. Thus the device may be regulated either to hold the door firmly open, or to permit it to gradually close. When the door is closed, the device may be forced tightly into engagement with the door sill, thus forming an auxiliary lock. A patent on this novel door check has been granted to Mr. Charles McGinnis, El Paso, Texas.

**Brief Notes Concerning Patents.**

Train markers of bunting have been the rule for a great many years, but there is now possibility that these will be entirely supplanted by markers of metal, which are said to be much more satisfactory from several standpoints. Such a flag has been invented by Conductor J. Landers, of the Canadian Pacific Railroad, and after having been given a test in actual use, is being adopted by the company and will be placed on all trains. Such a signal can be seen and read a much greater distance than the bunting ones, for the reason that it is always in the best position for the trainmen to see. As the trains grew in length, with the use of heavier and more powerful engines, the trouble of making out the signals became a serious matter with the railroad men, but with the metal signal there is little or no difficulty. It has been recently announced that the same scheme is about to be adopted on the Southern Pacific line; and for the purpose of encouraging the employes of the company to exercise their ingenuity, the general manager has offered a prize of fifty dollars for a device that will answer the requirements and prove acceptable to the company. Besides the prize, the company will assume the costs of having the device properly patented, and will give the inventor the right to make use of it wherever he can find a market, but the company reserves the right to make use of it on the trains of its own line for all time. In this connection a standard with two flags has been invented for use on engines. The marker here is always green or white, and the color displayed can easily be changed by swinging one of the metal flags all the way around. Means are provided in the standard for locking the flags in place, to prevent their being tampered with.

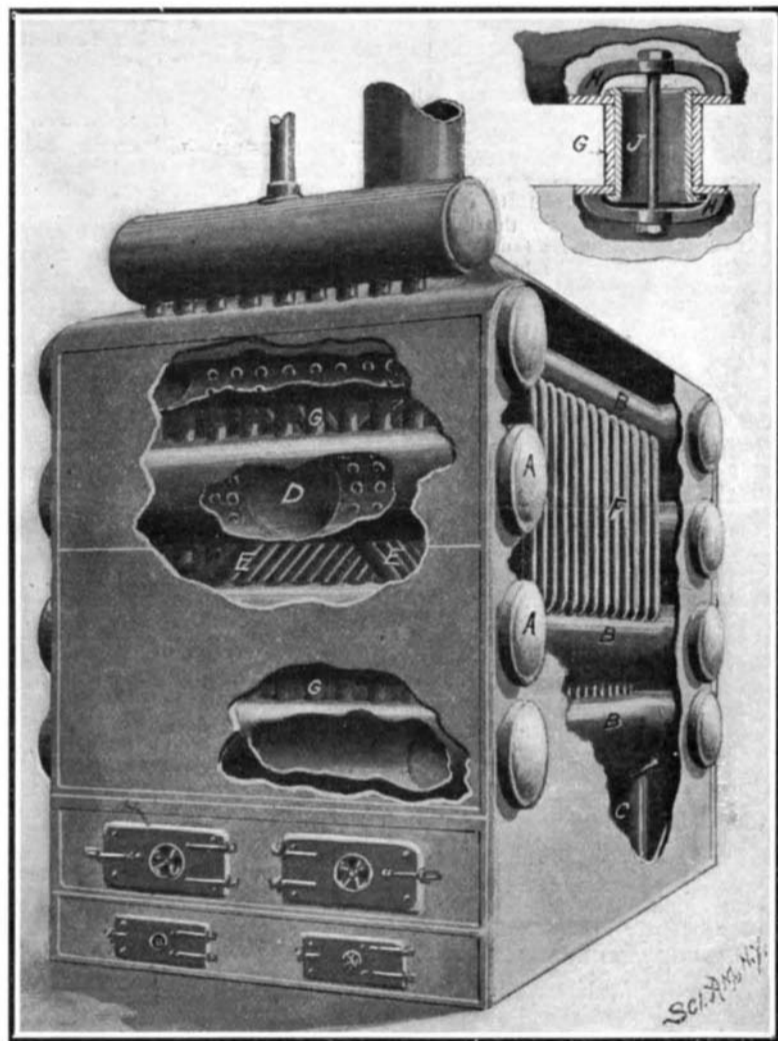
So simple a matter as the sanding of the tracks of a railway company has given the management of railway companies a great deal of annoyance. All sorts of devices for accomplishing this purpose have been suggested and tried, but nothing has been arrived at which is said to do the work in a manner entirely satisfactory. It would seem an easy thing to devise some attachment of this character, but not so. A box secured to some convenient part of the car to hold the material, and supplied with an outlet controlled by some simple form of valve, might be supposed to fill the bill, but this is open to many objections, the principal one of which is that in this arrangement the sand cakes and refuses to flow at the critical moment. An entirely new idea in this direction is being experimented with by the Schenectady Railway Company. This consists of a brick composed of sand and rosin secured to the running gear of the car, and at such times as it is desired to sand the tracks, the brick is forced up against the wheel, and a sufficient quantity is thereby pulverized and scattered along the rails. When the brick has been worn away, it is replaced by another.

In order to promote and continue the valuable work accomplished by Prof. Flinders Petrie in his excavations in Egypt, it is intended to establish a British School of Archaeology in Egypt upon a permanent basis. It is not considered that a central building such as exists in Athens or Rome is necessary, as it is realized that the most suitable place for training the students is upon the spot where the excavations are being carried out every year. An influential committee has been organized to supervise the task of establishing the school, and the sum required annually is approxi-

mately \$7,500. The school will constitute a ramification of the general development of research work in the expansion of the University of London. The scope of the object is to promote the continuance of Prof. Petrie's work, and to train the students in historical research.

**IMPROVED WATER-TUBE BOILER.**

Several months ago we published a description of a water-tube boiler invented by Mr. J. M. Colman, of Everett, Wash., Box 277. This boiler has since been greatly improved by the inventor, and the accompanying engraving shows the present construction, which has just been patented by Mr. Colman. The object of the new form is to reduce the cost of manufacture and to increase the effectiveness in operation. The boiler is formed with the usual headers, A, and inclined side tubes, B. It will be observed that the headers are arranged in vertical alinement instead of forming an inclined row, as in the previous construction. In addition to the side tubes, a series of small tubes extends across from header to header. The weight of the boiler is carried by four tubes, C, which stand at the sides of the grate. These legs communicate with the side tubes, B, and form water-protected supports for the boiler. There are only three tubes, B, at each side of the boiler, a space being allowed between the top side tube and the one directly below, which is sufficient to receive an additional side tube, if de-



**IMPROVED WATER-TUBE BOILER.**

sired. But instead of that, the inventor has provided a central tube, D, and connected it with the adjacent side tubes by means of small tubes, E, extending diagonally across the boiler. Thus a greater heating surface is secured. The upper side tubes are connected by a series of tubes, F, while a series of shorter tubes connects each side tube or header and the one immediately above it. Special attention is directed to the strengthening device for these short tubes, which is shown in the detail view. A ferrule, G, is mounted upon the outside of each tube, J, and the large tubes or headers are effectively held apart by the ferrule. A rod or bolt passes through each short tube, J, and, by means of spiders, H, and a tightening nut this bolt is adapted to securely hold the upper and lower tubes together. It will be seen that an adequate connection is secured among the several large tubes and headers of the boiler, and that a great amount of heating surface is provided. The steam formed in the various tubes is not impeded in any way, but naturally collects in the upper header, whence it passes up to the steam dome. An important feature of the device is the provision of manholes in the ends of the headers, side tubes, and steam dome. This provides for the ready inspection and cleaning of the various parts of the device. Provision is also made for firing from either end or from both at the same time, so that the firing end can be changed at will to suit convenience or for blowing out soot from all sides.