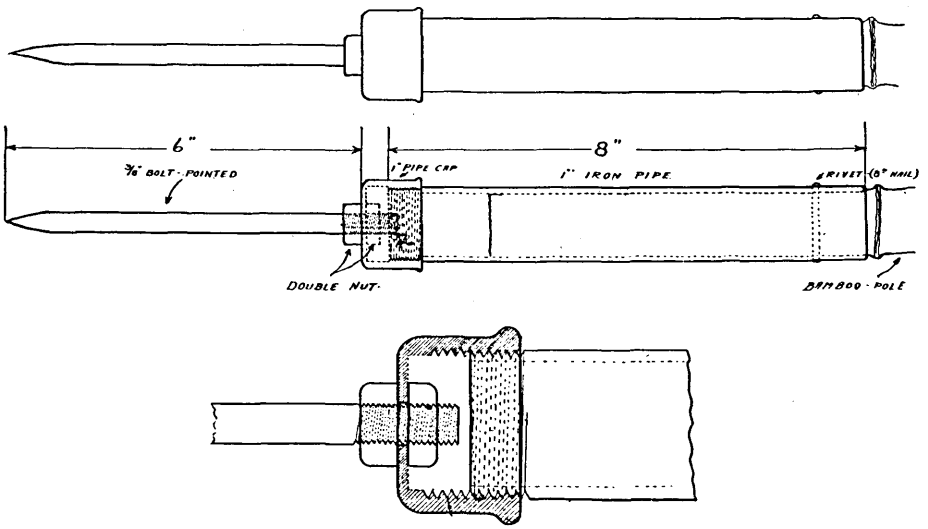
iron pipe 8 inches long, threaded on one end, and a 1-inch iron pipe cap with a hole drilled in the center large enough to take care of a ⅜-inch bolt 7 inches long with two nuts. The bolt is fastened to the cap by using a nut on the inside and a nut on the outside of the cap. The bolt can be heated and forged to a point, or ground down on an emery wheel. A hole is drilled in the pipe large enough for the insertion of an 8-penny nail as a



Flag pole socket.

rivet to hold the pole. The end of the pipe can be heated and swelled large enough to permit of the insertion of the ordinary bamboo pole in the end to a depth of 6 inches, which makes it very rigid.

A Proportioning Machine for Use in Applying Chemicals

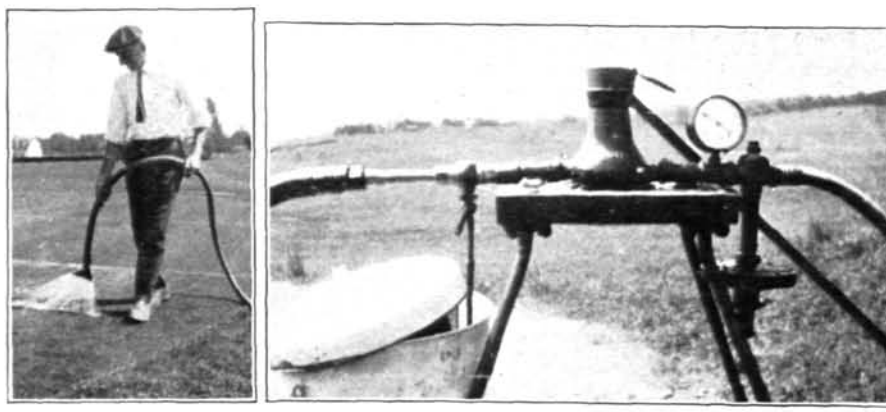
By Hugh I. Wilson, Merion Cricket Club, Haverford, Pa.

There have been great difficulties in applying chemicals on golf courses, owing to the fact that either a hand pump had to be employed or else some larger and expensive spraying machine used. Either method meant a great deal of expense. A proportioning machine is now on the market* which permits the application of carbon disulfid emulsion, as well as other chemicals, in a very simple and easy manner. We have tried the machine out at Merion and have found it extremely simple and successful. A green can be sprayed by one man in 15 minutes if the chemical is soluble in water; otherwise it may require the services of two men, one to stir and the other to use the hose. The machine should certainly be of great value in fighting the Japanese beetle grub in putting greens.

The illustrations on page 34 show the machine in use on a New Jersey golf course. It operates on the principle of a siphon injector.

*The address of the manufacturers will be furnished upon application to the Green Section.

Water going through the nozzle at a high rate of speed and in large volume is directed against the outlet in a manner which will continue to force the liquid against resistance by converting the kinetic energy into a pressure head, and will at the same time draw up, on the principle of an injector, a quantity of solution or emulsion. In order to keep the ratio of water to the solution or emulsion constant, a pressure regulating valve is placed in the line above the equipment, and is made an integral part of the equipment. The quantity of liquid sucked into the mixing chamber is controlled and regulated by an indicating cock. This combination gives a mechanical control. It is claimed that with the machine a perfect emulsion may be obtained automatically. The chemical to be emulsified is sucked directly from the container into the stream of water, by which process the emulsification takes place. It is not necessary to have high pressure, as the apparatus will operate with pressure as low as 15 pounds. A meter is attached to determine the quantity of water being used. The suction pipe is equipped with a screen. A screen is also furnished to be stretched over the container to prevent grass and other foreign material contaminating the solution (this screen is omitted from the container in the illustration).



Applying carbon disulfied emulsion prepared in a proportioning machine. The machine is shown on the reader's right.

The machine is furnished in two sizes. The larger size is shown in the illustration. It is claimed to be capable of applying 700 gallons of liquid per hour through a 1-inch hose 100 feet in length with a pressure of 25 pounds given. With the smaller size 280 gallons per hour have been applied through a ¾-inch hose 100 feet long with a rose nozzle on the end, with a pressure of 15 pounds provided. The smaller size may be carried by hand or in a wheelbarrow and operated by one man without any difficulty. A container is also furnished for the machine (not shown in the illustration), which with the larger machine may fit directly underneath the apparatus; the smaller machine being mounted directly on the container.

Further tests are desirable before the practical worth of the machine can be definitely established, but it at least bids fair to become a valuable adjunct in greenkeeping.