STEAM TRAPS.

The principle of expansion as applied to Steam Traps has been a fruitful source of experiment for many years, but surprisingly few of the instruments put on the market with this principle as their basis of action have stood the test of time. Delicate diaphragms were found soon to take a permanent set; arrangements of two or more tubes of different metal supposed to expand unequally we found to be "unequal" in a sense their inventors never intended, and the vagaries of these imperfect instruments left a

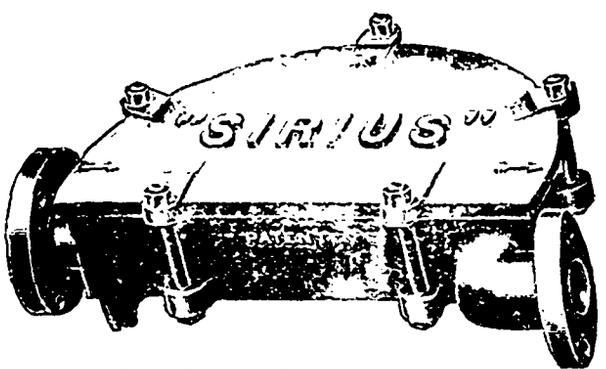

FIG. 1.—The Sirius Patent Steam Trap.

prejudice in many steam users' minds which it has taken the more perfect examples of expansion steam traps long to dispel.

One of the most successful steam traps, which has probably a greater sale in Great Britain than any other either float or expansion trap, is the "Sirius." In this instrument the action depends upon the expansion and contraction of an extremely volatile liquid hermetically sealed in a bent tube. This liquid, being protected by the sealed tube, is not exposed to the liability of deterioration like other expanding agents hitherto employed; and it is probably due chiefly to this factor of durability, combined with compact design and reliable action under a wide range of pressures, that this trap has attained its present wide popularity.

As will be seen from our illustration, Fig. 2, a bent tube T carries at one end the valve S of the trap, the valve seating A being fixed in the iron casing B, and readily removable for examination or repair. When the trap is cold the inlet C is open, and the valve S withdrawn to its greatest extent. The outlet D being also open there is a full bore blow-through as soon as steam is turned on. As the warm water comes in contact with the Tube T, the volatile liquid commences to expand, and gradually, as the heat increases, to carry forward the free end, and approach the valve to its seating. So long as the heat of the escaping water is not above 211° F., the valve keeps sufficiently open to allow the water to pass, but immediately steam appears, and the temperature is consequently raised to 212° F., the valve is firmly bedded on the seating by the expansive power of the liquid in the spring tube, and the valve thus closed is securely held against any pressure up to 200 pounds to the square inch. Immediately condensation commences how-

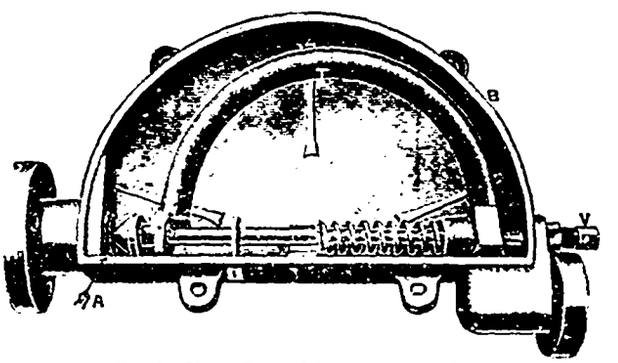

FIG. 2.—Sirius Trap with cover removed.

ever, and the temperature drops as little as 10° F., the tube contracts, the valve opens, and water is discharged. Thus by alternate expansion and contraction all water is discharged and no steam wasted.