connection with the drain, and without fear of explosion. At the bottom of the Smoke Chamber, Fig. G, will be found a small receptacle, Fig. I, for containing water, which will catch and extinguish any sparks, or incandescent material, that may be emitted by the Rocket during combustion; also fresh Rockets may be inserted, by simply removing the brass cap, Fig. J, at the top of the cylinder.

TO TEST UNDER LOW PRESSURE.

Before using the machine, remove the cap J from top of cylinder, and pour in water, until it can just be seen in the lower part of gauge R.

After stopping all ventilating pipes, connect the outlet K with the drain, by means of a length of hose, and, leaving both stop cocks (Figs. S & F) open, proceed to work the bellows. This will create a pressure on the water in the annular channel O, and cause the water to rise in the gauge glass R. The stop cock F must then be closed, and if the column of water in the gauge glass be maintained, it proves the drain is sound, but if the column of water falls, the drain is unsound. In such case, and to locate the leakage, remove the cap J, insert a lighted smoke rocket, replace the cap J, and work bellows.

TO TEST UNDER HIGH PRESSURE.

Simply shut off the small stop cock S and proceed as before. When the bellows are worked, the pressure will be indicated on the pressure gauge T, and on obtaining the desired pressure, quickly close the stop cock F, and if the pointer in the pressure gauge maintains its position the drain is sound, but if it falls towards zero the drain is unsound. The bellows will give a pressure of 4 lbs., equal to a column of water 8 feet high. If a higher pressure is required, an ordinary cyclist's inflator may be attached to the valve fitted in the cap J, but 8 lbs., equal to a column of water 16 feet high, should be the maximum.