



when tearing along, the harness is so arranged that the turning of a swivel-bar at the end of the engine-pole dividing the two horses, will free the animal in front, and he can be unhooked and helped to his feet again in a trice.

The hose also is subjected to a most severe testing before being used. At a fire, the water is forced through the hose at a heavy pressure of a hundred and ten pounds to the square inch. For a hose to burst under this strain at a raging fire would be a great disaster. Consequently, every length is tested up to the severe strain of three hundred pounds to

the square inch, so that it is as certain as anything mortal can be to stand firm in actual work. The hose is now made of strong, india-rubber-lined canvas, which is light and flexible, as well as tough and tenacious, and has quite superseded the old hose, made of pieces of leather and riveted together by metal fastenings. The hose for the

suction-pipe, communicating with the water supply, is usually stiffened by spiral wire, and is still very flexible.

A fire-engine, therefore, has to do two things: it has to draw large quantities of water from a suitable source of supply; and it has to throw that water, steadily and continuously, and sometimes to a great height, on to the fire. This is accomplished by means of force-pumps in the engine, and an air-chamber. The pumps draw the water through the suction-tube from the water pipes under the street, or other suitable source of supply, and force the precious fluid into a strong