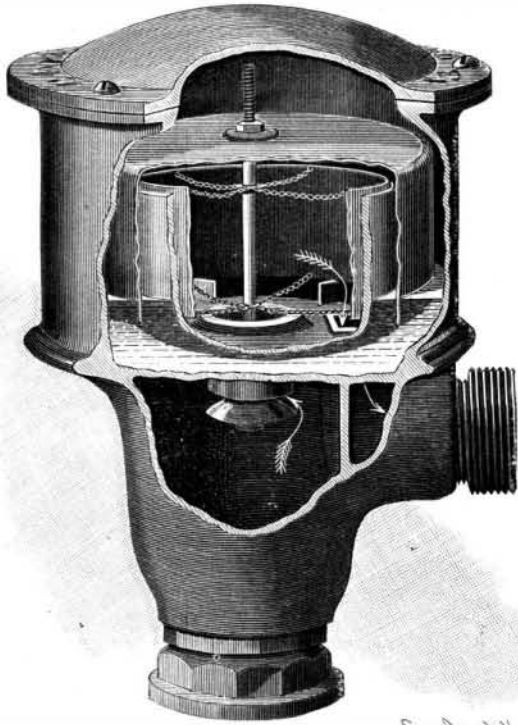


**A NEW GAS-GOVERNOR.**

In the gas mains of our large cities, the pressure in most districts is found to vary, depending upon various natural conditions and upon the size of the mains. The gas-companies, moreover, in order to supply the



THE HAYWARD AUTOMATIC GAS-GOVERNOR.

consumers at the ends of their lines, are compelled to force the gas through the street mains at a much higher pressure than is required for best service and most light. The higher the pressure in the mains, the smaller will be the light-value of the gas and the greater the waste. Since every meter relentlessly measures each foot of gas that passes through it, it is very natural that various governors should have been invented to regulate the gas supply in accordance with the specific requirements of any location, and thus avoid the expense caused by an unnecessary pressure.

Much difficulty has been experienced with the governors in use, owing to the fact that their valve-stems become coated with foreign matter and clogged within the bearings through which they are journaled. The Hayward automatic gas governor, manufactured by the Connelly Iron Sponge and Governor Company, of 3 Wooster Street, New York, avoids these difficulties by various peculiarities of construction.

Referring to our illustration, it will be observed that the governor comprises a casing containing a float, a

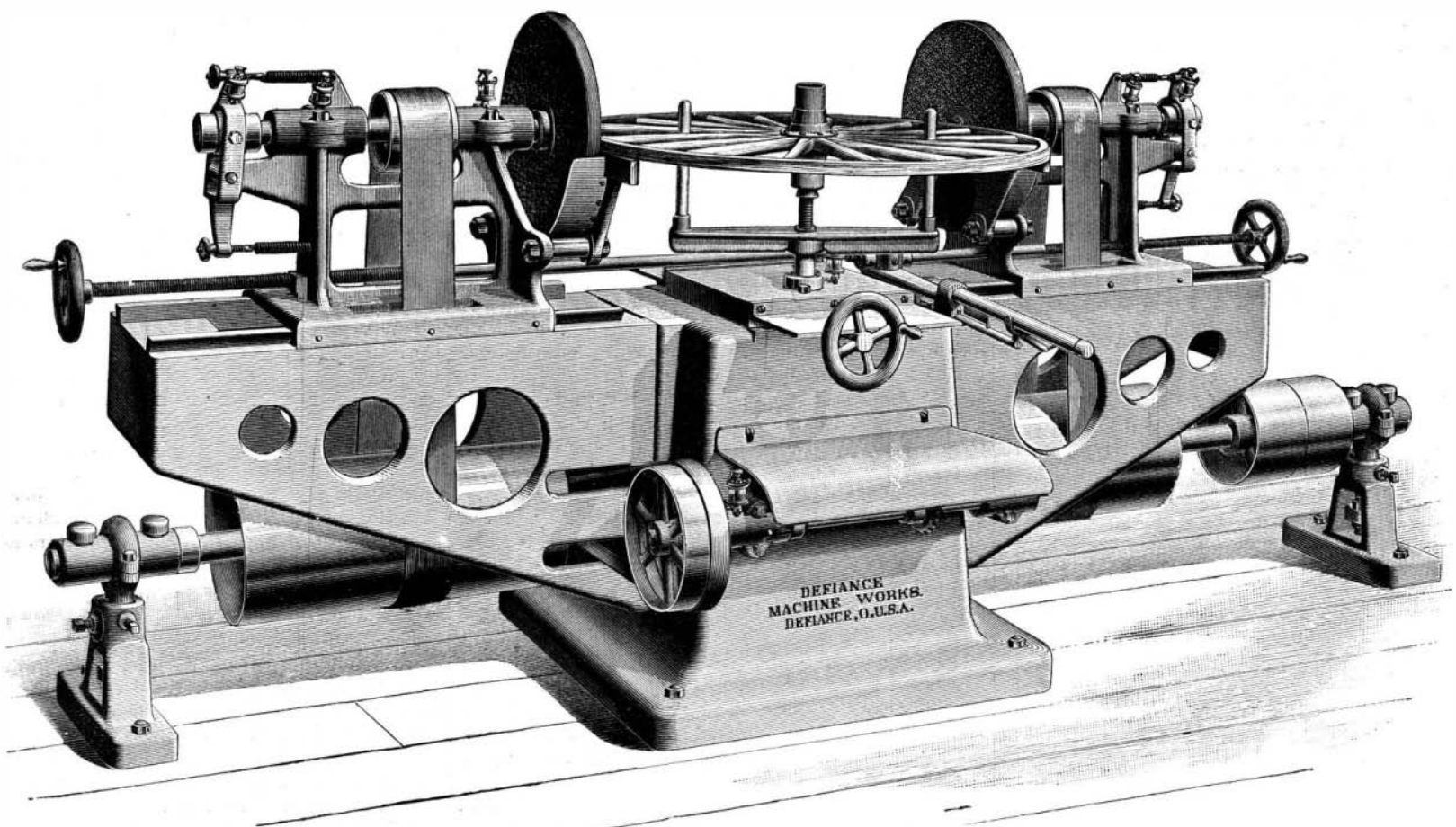
making the seat of the valve a knife-edge, clogging is prevented.

In operation, the gas takes the course indicated by the arrows, first entering the governor at the bottom opening, then passing through the valve and finally acting on the float, which is balanced to maintain the desired pressure. As the gas in each burner is ignited, the float sinks and the valve is further opened to permit the passage of more gas. Should the pressure become excessive, the float rises and, partially closing the valve, permits only an amount of gas to pass through, which is sufficient for the needs of the burners in operation.

**AN IMPROVED TREAD-SANDING MACHINE.**

The accompanying illustration represents a new machine made by the Defiance Machine Works, of Defiance, Ohio, which automatically smooths the tread of a vehicle-wheel. Mounted upon a suitable bed-plate and stand are two head-stocks sliding in longitudinal guideways. On shafts extending through the head-stocks spindles are fitted carrying sandpaper disks. The spindles are driven by the pulleys and belts shown in the illustration. The wheel to be finished is placed between the disks with its hub resting on a spring-supported cone held on a spindle. Secured to this last spindle is an arm provided with pins extending upwardly between the spokes of the wheel. The wheel-spindle is driven by a system of gearing connected by pulleys and belts with the countershaft. The head-stocks are adjustable relatively to the sandpaper disks by means of screw rods having hand-wheels at their outer ends. The inner ends of the screw rods are provided with collars, between which are loosely held blocks pivotally connected with the ends of a lever. One end of the lever has a handle carrying a hand-lever for operating a spring-pressed catch and locking the handle in position. When the hand-lever is pressed, the handle and lever are unlocked, thus enabling the operator to swing aside the lever and cause the screw rods to move the head-stocks in opposite directions and force the sandpaper disks apart. While the parts are in this position, a wheel is placed on the proper spindle and the lever swung back to its initial position and locked in place. The rotary motion now given to all the spindles causes the wheel and the sandpaper disks to revolve rapidly. When the tread of the wheel has been sufficiently smoothed, the hand-lever is again operated, the disks moved apart, and the wheel removed.

A MOVEMENT is on foot, says The Medical Record, in Allegheny, Pa., to establish an association for the loaning of pictures to be hung on the walls of the hospitals, the pictures to make the tour of the hospitals and then to be returned to their owners. One of the originators of the movement has offered sixty of the pictures from his home. In a letter accompanying



DOUBLE AUTOMATIC TREAD-SANDING MACHINE.

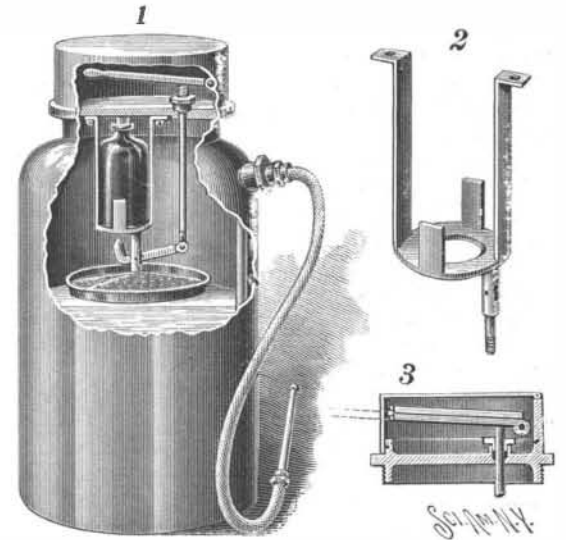
valve-stem connected with the float, a mercury-reservoir, and passageways for the gas. Unlike the valve-stem in most governors, the stem is here supported by loose chains, the flexibility of which presents no opposition to the movements of the float and stem. By

his offer he said that many persons spend a part of the year out of the city, and during that time the pictures would do much good in the hospitals, without in the least depriving their owners of the enjoyment of them,

**A NEW FIRE-EXTINGUISHER.**

The fire-extinguisher which we illustrate belongs to that class in which a tank or reservoir is partially filled with a solution of sodium bicarbonate, into which is precipitated the contents of a bottle containing sulfuric acid, the resulting gas being used to extinguish the fire. Fig. 1 shows the tank provided with the usual discharge pipe, having a nozzle of any desired construction. The tank is provided with a screw-closure having a circular wall covered by a screw-cap. Secured to the lower side of the closure and projecting into the tank is a yoke, shown in detail in Fig. 2. A glass bottle containing sulfuric acid is held by this yoke so that the cork presses against the cover. Within the cover a lever is fulcrumed and connected by means of a rod with a lever having at its free end a hammer-like formation adapted to bear against the bottom of the bottle. The latter lever is fulcrumed on an arm carrying a pan, the perforated bottom of which lies just above the solution of sodium bicarbonate.

When it is desired to use the extinguisher, the screw-cap is removed and the lever pressed downwardly. This operation causes the hammer to be forcibly driven against the bottom of the bottle, thus breaking the glass and causing the sulfuric acid to fall upon the



RING'S FIRE-EXTINGUISHER.

pan, whereby the acid is sprayed into the soda solution. The resulting gas is then used to extinguish the fire.

In Fig. 3 we have shown a modification, in which the operating lever inclosed within the cover is formed of two sections. These sections may be doubled on each other or they may be extended to the position shown by dotted lines. Instead of being screwed in place,

the cover is hinged to a lug. By means of this construction, the cover may be quickly displaced and the lever extended for operation.

The extinguisher is the invention of Dr. Allan Mott Ring, of Arlington Heights, Mass.