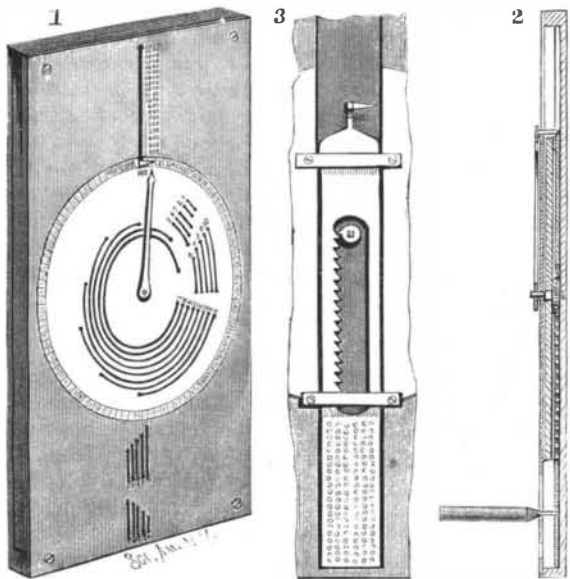


AN IMPROVED ADDING MACHINE.

This machine, patented by Mr. Levi C. Dalton and George C. Myatt, is designed to enable one to perform the arithmetical operation of adding in a very simple and accurate manner by mechanical means. Fig. 1 is a face view and Fig. 2 a central section of the improvement. The casing is covered by a fixed dial plate, on which, in a circle, are the consecutive numbers from 1 to 100, and the pointer is secured to a central shaft on which is fixed, directly below the dial plate, a wheel or disk whose top surface is occupied by circular rows of recesses or apertures adapted to be engaged by the pointed end of a pencil-like tool. The latter is adapted to be passed through segmental numbered slots of different lengths in the dial plate, and, when placed in one of these slots at its numbered

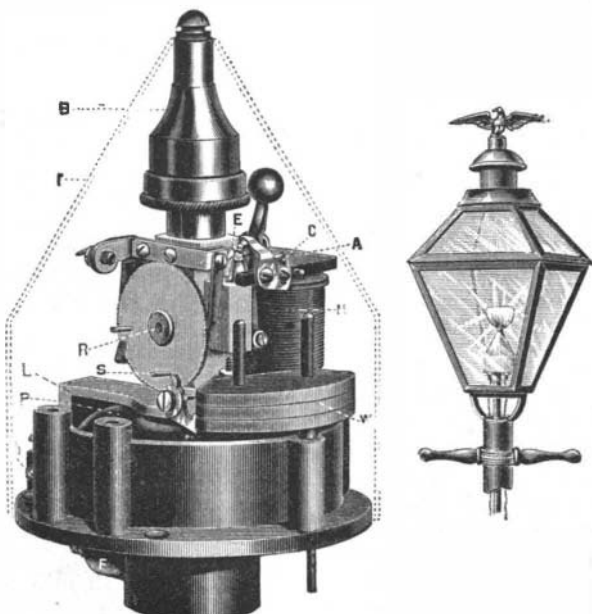


DALTON & MYATT'S ADDING MACHINE.

end, it engages a recess in the wheel or disk below; upon then being moved along the slot, the disk below the dial plate is rotated, and when the tool strikes the end of the slot, the pointer on the dial face has moved to a position indicating on the circle of numbers the amount represented by the length of the slot—the disk, shaft and pointer moving together. When the tool is thus placed and moved in slot 10, say, such number is indicated by the pointer on the dial, the pointer being further moved to 100 by placing the tool in and moving it to the end of slot 90. On the central shaft, below the disk, is a collar having a tooth adapted to engage one of the teeth of a rack in a slide moving in a recess in the casing, as shown in Fig. 3, there being on the upper end of the slide a pointer extending through a straight slot in the dial plate. The latter pointer indicates on a "hundreds" column, in which the numbers range from 100 to 2,000, the pointer being moved up one space for each complete revolution of the shaft. In the lower end of the slide are rows of apertures or recesses, similar to those in the disk, and in front thereof, in the lower portion of the dial plate, are numbered vertical slots of different lengths. By moving the slide with the tool passed through one of these slots, the pointer is correspondingly advanced on the hundreds column. Further information relative to this improvement may be obtained of Mr. James K. Langford, Doniphan, Mo.

A NEW SYSTEM OF LIGHTING STREET GAS LAMPS WITHOUT THE USE OF WIRES.

An electrical system of gas lighting for city streets which operates devices located miles from a central station, without any electrical connection between them,



A NEW SYSTEM OF LIGHTING STREET GAS LAMPS WITHOUT THE USE OF WIRES.

sounds like a fairy tale, but such a system has been introduced by the Cutler-Hammer Manufacturing Company, 247 South Jefferson Street, Chicago, Ill. This system discards the unsightly overhead wires and the expensive underground circuit, and adopts a new and inexpensive method. Each lamp is supplied with two sal ammoniac batteries and a spark coil placed in an iron box buried in the ground at the foot of the post. In the lantern is a miniature gas holder of about two cubic inches capacity, pivoted on a hinge and held down by weights; and directly over this holder is an automatic gas lighter, similar to those used in houses. Two wires about ten feet long connect the lighter with the batteries through the post. Such an installation is under complete control from the gas works. When it is desired to light the lamps of a city, it is only necessary to open the valve connecting one of the large gas holders at the works direct with the gas mains. This results in a decided increase of pressure in the gas all over the city, sufficient to cause all the little gas holders in the lamp posts to lift up about one-eighth of an inch against a platinum stop, and thus close the local battery circuit at each post. The automatic lighter being then supplied with current, immediately turns on and lights the gas.

Our engraving shows the lighter about two-thirds full size. P is the pressure gauge or gas holder sealed with mercury and held down by the weights, W. When the gauge lifts, it closes the electric circuit through the magnet, M; the armature, A, is attracted and caused to vibrate, throwing sparks at E and turning the ratchet wheel, R. The first movement of the ratchet wheel admits the gas to a small auxiliary outlet at E, as well as to the main burner. The electric sparks formed at E ignite the auxiliary jet, which immediately shoots up and lights the main burner. As the ratchet wheel continues to turn, the auxiliary jet is closed, leaving the main burner open. The ratchet wheel is finally stopped, with the gas turned full on and lighted, by a pin in the wheel striking against a stop, S, attached to the pressure gauge, P.

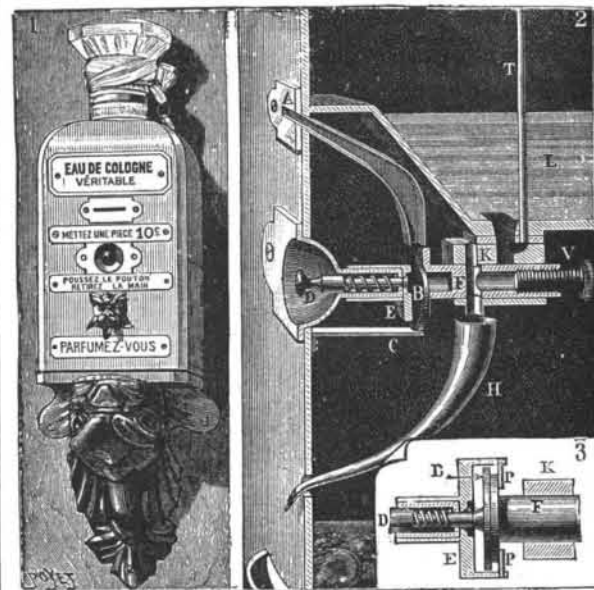
It has been shown in practice that fifteen seconds is amply sufficient for maintaining this increased pressure, to give time to make the increase felt everywhere. It can then be brought back to normal pressure, when the pressure gauge, P, will drop back and open the electric circuit. This operation, if repeated, will extinguish the lamps.

A heavy cast iron shell, 3-16 of an inch thick, shown by dotted lines in the cut, entirely surrounds the mechanism and thoroughly protects it from all kinds of external abuse. The iron battery boxes are supplied with covers flush with the ground, which are intended to be removed once a year for cleaning the batteries, this operation constituting the entire operating expenses.

AUTOMATIC DISTRIBUTOR OF PERFUMES.

For a few weeks past there have been remarked at the doors of stores and in theaters, concert halls, etc., small metal bottles of various colors provided with an enameled plate. These are new automatic distributors, which are distinguished as much by their pleasing form and the simplicity of their mechanism as by their practical utility as retail vendors of expensive perfumes. Fig. 1 gives a general view of the apparatus and represents a bottle 18 centimeters in width by 40 in height, supported against the wall by an ornamented bracket. If a 10 centime piece be put into a slot situated toward the top of the bottle, and we press a button arranged to this effect, we shall immediately see a few drops of liquid fall at the bottom. This result is obtained in the following way, as may be understood by an inspection of Figs. 2 and 3. The coin put in at A falls into a channel that leads it to B, where it rests upon the piece, C. If the button, D, then be pressed, the extremity of its rod, meeting the coin, drives before it the cylinder, F, which slides in a jacket, K. The cavity situated near F is displaced and brings about through this slight motion a suction of air from the exterior. This immediately enters the space left free above, and escapes to the exterior through the tube, T, which is in communication with the atmosphere. But at the same time a few drops of liquid from the reservoir, L, have fallen into the cavity thus disengaged. Upon removing the hand, the pieces, P, whose position is calculated to this effect, travel a sufficient distance before engaging with the flanges of the cylinder, and the coin abandoned in the vacant space falls to the bottom of the bottle. These pieces, P, pulled back by the spring of the button, D, carry the cylinder, F, with them to its original position. The cavity filled with liquid is then in communication with the aperture opposite the discharge tube and flows to the exterior. This arrangement is both very simple and very ingenious. The apparatus can be regulated for any kind of money, and even for operating gratuitously. It suffices, in fact, to close the cavity between B and F in order that the rod of the button, no longer being capable of penetrating this cavity, as in the paying apparatus, may push the piston before it with the least pressure. The quantity of the liquid to be dis-

tributed can thus be increased or diminished by means of the screw, V. The absence of complicated and delicate mechanism permits of this distributor being placed anywhere, without any special precautions being taken, say upon cars, boats, carriages, etc. It will be possible, likewise, to replace the continuous perfumery fountains by an apparatus that will furnish liquids only upon the push of a button at the will of the customer. Mr. P. Leoni, the inventor, has another application in view that we must call attention to. It is well known how earnestly our great physicians are at present recommending, under all circumstances, the use of antiseptics and disinfectants. It is, despite everything, difficult to have their prescriptions put up. The automatic distributor, widely disseminated, would permit of diffusing the use of antiseptics either

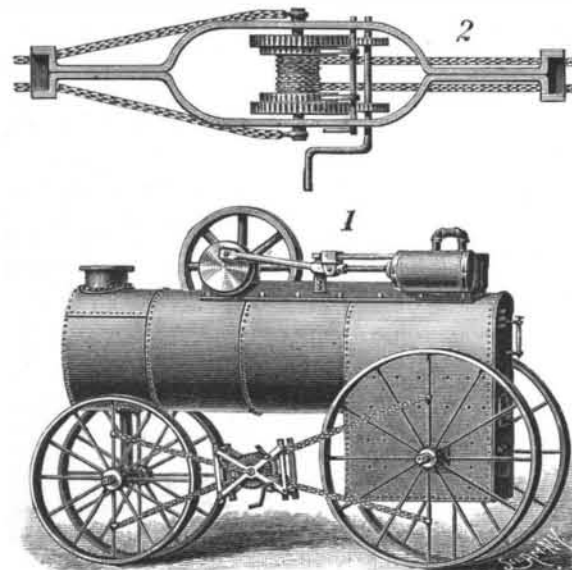


AUTOMATIC DISTRIBUTOR OF PERFUMES.

gratuitously or in exchange for a small coin. The question is now submitted to the study of the sixth commission at the municipal council of Paris. This apparatus, in fact, exciting the curiosity of the public, would certainly obtain great success. It is permitted us, moreover, to judge of it by the apparatus already installed in large numbers in Paris. A great number of persons are always to be seen congregated around the distributor. Some examine it and seem to wish to divine the internal mechanism, while others cause it to operate and receive the odoriferous liquids on their handkerchiefs.—*La Nature*.

A BRAKE FOR PORTABLE ENGINES, ETC.

This device is strong and durable, can be readily applied or removed as desired, and when not in use may be stored away on the vehicle, ready for application for braking purposes on reaching a down grade. It has been patented by Mr. E. W. Cleveland, Roundthwaite, Manitoba, Canada. Fig. 1 shows the application of the improvement, Fig. 2 being a plan view. In a suitable frame is journaled a drum shaft, and two chains connected with the drum have at their outer ends hooks adapted to engage opposite spokes of one of the wheels, while the ends of the drum shaft, outside the frame, are engaged by eye bolts on oppositely extending chains hooked upon opposite spokes of the forward wheel. On the drum shaft are gear wheels meshing with pinions on a transverse shaft which has at one outer end a crank arm, whereby the drum may be rotated to tighten the chains. There are also ratchet wheels on the drum, engaged by pawls on a transverse rod having at its outer end a handle, whereby the pawls may be thrown into or out of mesh with the ratchets, when the device is locked in position upon or removed from a vehicle.



CLEVELAND'S ENGINE BRAKE.