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NEW SYSTEM FOR VENTILATING AND CLEANSING DRAIN PIPES IN BUILDINGS.

We illustrated, not long ago, a new form of floodway for buildings, intended to drain off water from floors deluged either through leaks in the supply pipes or through the means adopted for extinguishing fires, and so to prevent injury by water to other portions of the edifice. The inventor of this ingenious device, Mr. John H. Morrell, of New York city, has lately patented, through the Scientific American Patent Agency, another invention of equal and perhaps greater utility, and one which will commend itself to all who appreciate the necessity of an economical supply of water and the complete prevention of the escape of noxious sewer gases from the drains and sinks of a dwelling. The danger of these foul emanations, carrying as they do the germs of typhoid and diphtheria, cannot be too forcibly impressed upon the public; and since of late numerous severe cases of disease, directly traceable to the miasma, have been prominently brought to general notice, inventions tending to improve the sanitary arrangements of residences possess a present and timely interest.

Mr. Morrell's device, of which we give engravings in detail herewith, involves arrangements both for ventilating and for cleansing the sinks. By means of a reservoir, from which distributing pipes lead to the various receptacles, the rain water which falls on the roof is collected and conducted to the various traps or closets, or water may be supplied to said reservoir by a pump or any other convenient means. Utilizing the rain water, however, is mentioned here in advance, because such employment virtually renders the apparatus automatic. That is to say, supposing the house to be closed and empty, the system of pipes will serve as ventilators; and when a fall of rain occurs, they will then serve to fill the traps, thus supplying the water evaporated from the latter, and, besides, washing them out, so that the very frequent occurrence, of an unoccupied house becoming filled with foul gases from its drains receiving no attention, is thus rendered practically impossible. There are various other advantages of Mr. Morrell's plan, which will be found noted in proper place in the following description.

The large pipe, A, Fig. 1, is the sewer conduit, which it is proposed to lead up through the roof, and to provide with an open top and cap above, for ventilation of its interior. B is a reservoir, which receives water from the roof or from the pipe, C, connected with a suitable pump on a lower story. In Fig. 1 the mouth of the tube which connects the reservoir with the roof is shown covered by a cap and grating. In case this opening is frequently liable to be obstructed by snow and ice, another arrangement, shown in Fig. 2, which exhibits the reservoir and its parts on a larger scale, is employed. The supply pipe, C, would be used for water, and ventilation gained by the curved tube, D, in connection with a register cover. It will be observed that this tube, D, is made of sufficient size and height not to be impeded by ordinary deposits of snow or ice, and that it is always open for ventilation, whether the register cover be

open or not. But as a security against the obstruction of the register, the inventor proposes to use a double walled box or hood, placed above the register, as in Fig. 8. The warm air which collects within the hood, directly above the register, will always keep the latter free from ice or snow. The water supply pipe, C, has a check valve to prevent back flow of water or gas. At E, in the reservoir, is attached a pipe for carrying off the water to any portion of the building where it may be needed. F is the overflow pipe, so arranged as to conduct off all water which rises above its orifice in the reservoir, directly to the trap of a water closet, in manner shown by

adding still another and important advantage. To facilitate the ventilation of the system during the down flow of the water, the curved roof pipe, in Fig. 2, is extended, as shown at J, through the interior of pipe, F. At convenient points, openings are made in it for the upward escape of the gases. It may also extend down through other pipes and chambers, eventually connecting with the sewer pipes; and it may also be led to the traps, as shown in Figs. 2 and 3. The same arrangement of inner and outer pipe may be carried to a water closet basin, as represented in Fig. 5, so as to ventilate the same. Instead of using double pipes, a single pipe may be employed, having a partition, as in Fig. 4, one side being for ventilation and the other for a water conduit. Fig. 6 shows the application of the double pipes to distributing pipes and branches, a rise, K, being formed just at the points of junction, in order to divide the water equally into each branch. Fig. 7 represents the application of the double pipe to urinals. In Fig. 1 is also illustrated the floodway drain referred to in the initial paragraph. L is the sunken receptacle, beneath the floor and covered with a grating. In this the water collects, and then, by the inclined pipe, at M, escapes into the sewer pipe.

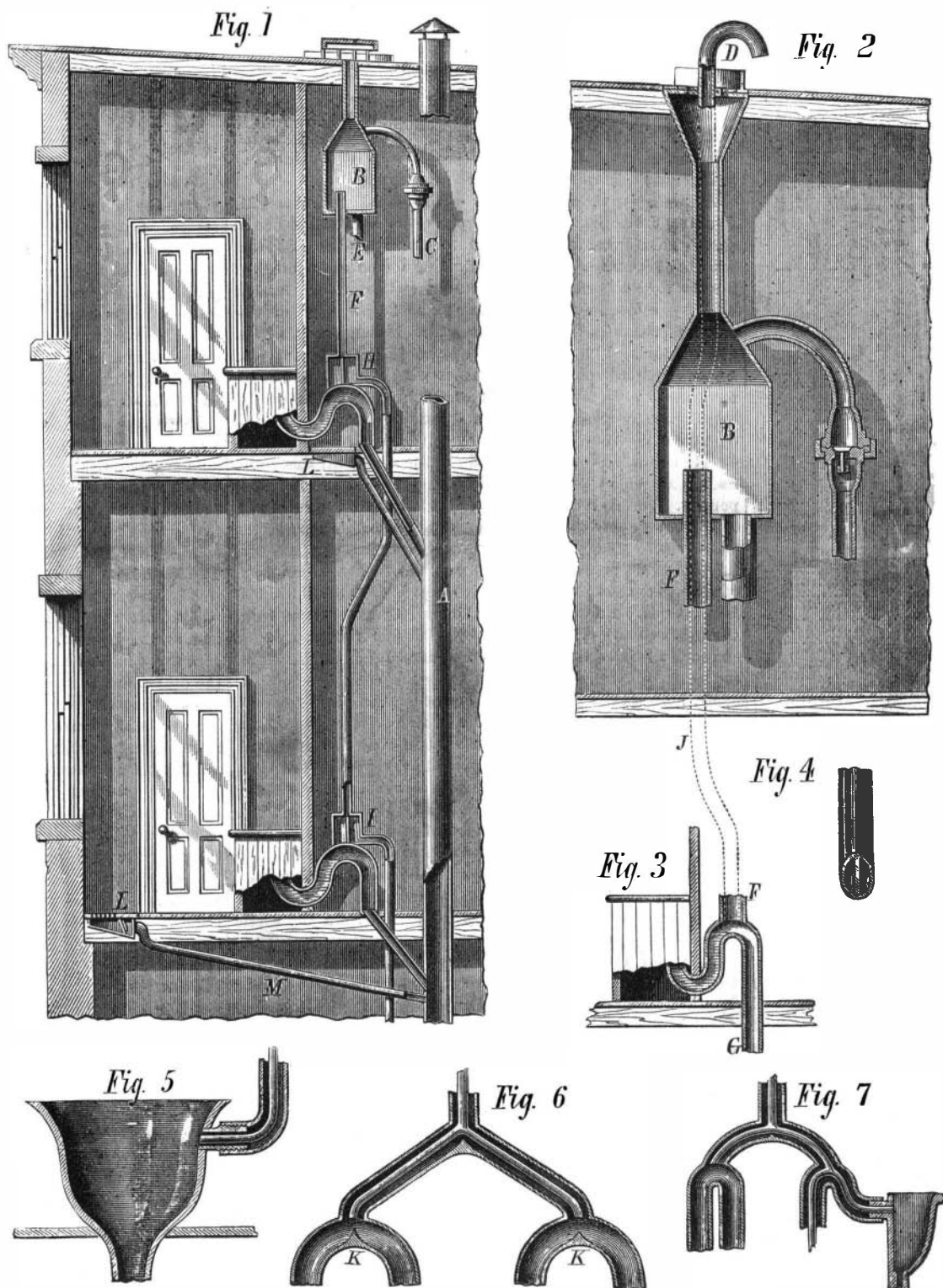
For further information address or apply to the inventor, 475 Fourth avenue, corner 32d street, New York city, where a person will be ready to show the entire invention, now in full operation, in a building near by

A Physiological Problem.

A rather curious problem for physiologists is engendered by experiments recently tried by M. Ponchet upon a puppy. It is the general opinion that the brain of an infant, when the eyes are first used, or that of a person born blind and afterward restored to sight, is unable to translate correctly the impressions conveyed from the retina by the optic nerve. The individual has no idea, it is asserted, of relative distances, nor of the relative physical characteristics of bodies, but only learns the same through practice, and therefore it is to be expected that the sudden restoration of sight will result in a kind of optical confusion, which is only reduced to order after lapse of time. M. Ponchet's experiment, however, seems to negative all this, so far as the use of one eye is concerned; that is to say, if a person, blind in one eye, regains sight therein, and at the same time loses vision in the former perfect organ, the newly

acquired sight is exactly as good as that lost, and the new eye requires no education whatever. The eyelids of one eye of a puppy, immediately after birth, were surgically treated so as to cause them to grow together, completely of course shutting off vision from the organ. The animal as it grew used but the single eye until it was four months old, when the good eye was similarly closed and the eyelids of the other opened. Although the left eye had never been used, and although it served as the sole means of sight, not the slightest difference could be detected in the actions of the animal. It recognized objects or avoided obstacles with perfect facility, and, in brief, the most careful examination failed to prove that the dog experienced any different sensations from those to which it had become accustomed.

The subject is interesting in view of the theory which already exists of there being corresponding points in both retinas, from which vibrations are transmitted to the brain.



MORRELL'S SYSTEM OF VENTILATION AND CLEANSING DRAIN PIPES.

the dotted lines connecting Figs. 2 and 3; so that the water, after filling the trap, passes off by the pipe, G, to the sewer. Instead of leading the pipe directly to the trap, it may, as in Fig. 1, connect with a receiver, H, which contains a partition so arranged that water, entering from F, will be divided, one portion passing to the trap and thence to the sewer pipe, and the other running through another pipe to another receiver, I, Fig. 1, there to be again divided and led to other traps, and so on to as many sinks as may be desired. The above described arrangement is such that, in addition to cleansing the traps whenever there is a down flow of water, the system, when its pipes are empty, offers through the latter a free exit for foul gases, so that the fourfold advantage is gained of a storage reservoir, a distributing reservoir for water, a water closet supply and pipe cleaner, and a ventilating apparatus. As we have already pointed out, the action is automatic, and therefore no care or attention is necessary, thus