S. KAHN.

SCUPPER.

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1,104,806. **Patented July 28, 1914.**

Fig. 1.

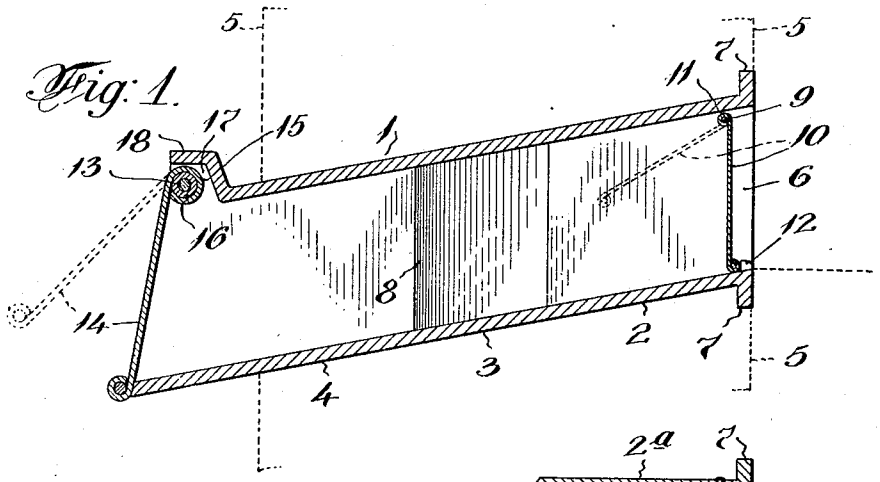


Fig. 2.

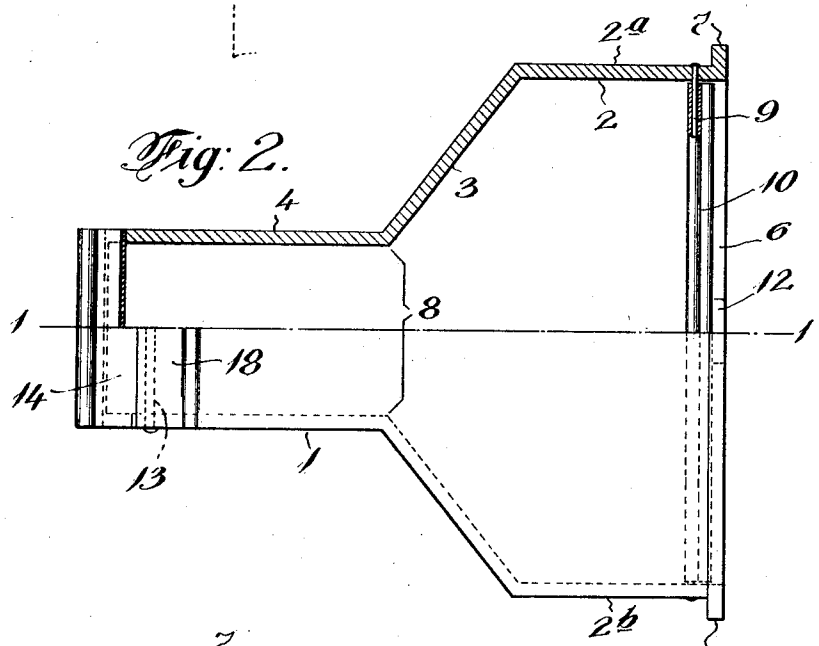
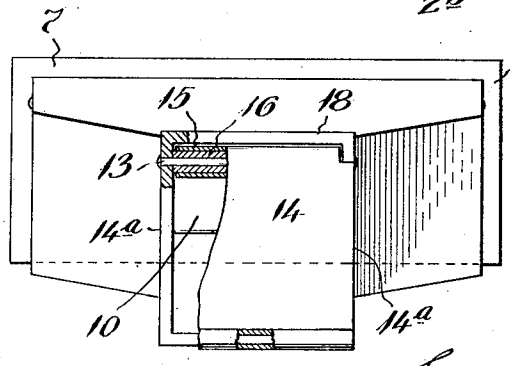


Fig. 3.



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UNITED STATES PATENT OFFICE.

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SCUPPER.

1,104,806. Specification of Letters Patent. Patented July 28, 1914.

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To all whom it may concern:

Be it known that I, SAMUEL KAHN, a citizen of the United States, residing at New York, borough of Manhattan, county and State of New York, have invented certain new and useful Improvements in Scuppers, of which the following is a specification.

This invention relates to scuppers or escapes for water, as where the floor of a building has been flooded by water in the case of a fire or otherwise.

One of the objects of the invention is to provide a drain for the floor of a building which shall shed water flooded onto said floor as by the operation of a sprinkling apparatus, so that the contents of the room are automatically freed from the presence of water, or from a rising flood of water which might otherwise be caused by the use of the fire-hose.

Another object of the invention is to provide a scupper which is constructed with a view to meet the requirements of fire-underwriters.

Another object of the invention is to provide a scupper with suitable means for automatically closing the passage therethrough against the admission of drafts of air from the outside which would be objectionable to those using the floor of the building.

Another object of the invention is to provide means for preventing the valve at the discharge end of the scupper from freezing up.

These being among the objects of the invention, together with the general object of providing a practical, efficient and economical scupper, the same consists of suitable features of construction and combinations of parts to be hereinafter described and then claimed with reference to the accompanying drawing showing a suitable embodiment of the invention, in which—

Figure 1 is a vertical sectional view on the line 1—1 Fig. 2, showing such an improved scupper, drain or water escape; Fig. 2 is a view, one-half of which is a plan and the other one-half is a horizontal section of the device; and Fig. 3 is an end view directed toward the nozzle or discharge end of the scupper, parts being broken away.

The body 1 of the illustrated scupper comprises a tube, pipe or casing of suitable material such as cast-iron, although it is obvious that any other suitable material may be employed. The said casing is set into the wall 5 of a building in inclined position, the upper end of the incline being flush or substantially flush with the surface of the floor, while the discharge or nozzle end of the body or casing projects outside of said wall. It will be obvious from the description as well as the appended claims that the body or casing 1 may be formed as a complete and integral whole, as shown in the drawings, so as that it may be set in the wall of the building as said wall is constructed.

The body or casing 1 comprises a receiving portion 2, an intermediate portion 3 and a discharge portion 4. The receiving portion 2 is wider than the discharge portion 4 and said intermediate portion 3, which connects said two portions, preferably tapers or converges from the receiving portion 2 to the discharge portion 4. Such a taper or convergence as provided by the intermediate portion 3 is desirable at the receiving end of a scupper because of its facilitating the discharge of flood water from a floor. To meet this requirement the taper in the scupper of the present invention is located in an intermediate portion of the scupper, and at the same time to provide for arranging a valve at the inlet end of the receiving portion, such as 2, the side walls 2^a and 2^b of the latter are arranged substantially parallel with each other for a suitable distance. The inlet opening 6 of the box-like receiving portion 2 is preferably surrounded by an external reinforcing flange 7, and said opening, being in the relatively large receiving portion 2 and preferably corresponding in size with the cross section of said receiving portion, provides a large opening which is relatively larger than the throat 8 between the intermediate portion 3 and the discharge portion 4 of the scupper. It will be seen that by reason of the intermediate tapered portion referred to, the large opening 6 permits the free entrance of the water which may be on the floor of the building and that the head of the water forces the same through the scupper in such way that the water is freely cleared from off the floor by its pressure through the discharge portion 4.

Receiving portion 2 of the scupper is pref-

erably equipped with a valve mechanism, to which end a transverse pintle 9 is fixed in the upper end of the inlet opening 6, and upon said pintle a swinging or flap valve 10 of sheet metal or other material is provided, said valve having a bent-over portion 11 which receives the pintle 9 so that a hinge is provided at this point. Said valve 10 corresponds in area substantially with the area of the opening 6, so that there is a substantially snug fit between the edges of the said valve and the walls of the scupper. Of course there is sufficient clearance to permit of the free inward swinging of the valve 10, as indicated in broken lines in Fig. 1, when the head of water presses against said valve. Normally the lower edge of the valve 10 abuts against a stop or lug 12 at the bottom of the inlet opening 6 so that the said valve cannot swing into the room, but said valve 10 freely swings in opposite direction. The opposite wals 2^a and 2^b of the receiving portion and the opposite side edges of said valve 10 substantially coinciding, it is obvious that the said valve is opened by the full effect of the head of water, and that at the same time, by reason of the proportions of said valve and because it cannot swing out of the scupper, the inlet opening 6 is substantially sealed and closed against the admission of a draft of air from the outside which might otherwise enter the room and would be objectionable to the people working in the room. Of course the intermediate tapering portion 3 is spaced a sufficient distance away from the inlet opening 6 so that it will not interfere with the full upward swing of the valve 10 when under the pressure of a head of water.

The discharge end of the improved scupper is preferably provided with suitable means for normally closing it against the entrance of rain and snow and against the admission of drafts of air. To this end there is provided at the upper side of the outer end of the discharge portion 4 a transverse pintle 13 secured in position in any suitable manner, and there is mounted upon said pintle a swinging or flap valve 14 which is preferably so arranged and proportioned as that three of its side edges will come in contact with the corresponding edges of the discharge portion 4. Inasmuch as the hinge-joint of the flap valve 14 is preferably located within the discharge portion 4, the side edges 14^a of said valve are extended laterally so as to overlap and seat upon the corresponding edges of the discharge portion 4, as shown in Fig. 3. Improved means are provided for mounting the valve 14 in position so that it may swing, which means are preferably constructed with a view to locating the hinge-joint within the discharge end of the portion 4. With this view, the upper edge portion of the valve 14 is narrower than the main body of said valve so that it may be inserted within the discharge end of the part 4, said narrower edge portion being bent into suitable shape to provide a sleeve 15 through which the pintle 13 passes. The said valve 14 is preferably composed of non-corrosive metal as lead or bronze and preferably the sleeve 15 is lined with a non-corrosive bushing 16 of lead or the like, so that any rusting of adjacent parts will not also occur in said valve and its hinge-joint. Preferably and to provide for the free outlet of water from the discharge portion 4, the hinge-joint for the valve 14 is located above the upper wall of said discharge portion, within a recess 17 formed by an arched bulge at 18 which consists of an extension of the said upper wall. In this way the hinge-joint is protected against the elements. The proportions of the hinge part of valve 14 with respect to the discharge end of part 4 are such that just enough space is left for the swinging of said valve. It will be seen that by the provision of the preferably integral extension 18 from the portion 4 and by the location of the hinge-joint for the valve relatively thereto, the chance for the admission of rain or snow between the hinge and the top of the portion 4 is reduced to a minimum. Consequently the chance for the freezing up of the valve 14 exposed to the weather is reduced to a minimum, and it is clear that any water flowing through the scupper will automatically open the valve 14.

Obviously the invention is susceptible of modification as parts may be omitted, parts modified, parts substituted, and parts differently arranged and located without departing from the spirit and scope of the invention.

What I claim as new is:—

1. In a scupper, the combination of a box-like receiving portion having parallel sides, a portion tapering away from said receiving portion, a discharge for said tapering portion, smaller than said receiving portion, and an automatically movable valve, having a less area than the cross-section of the receiving portion, and mounted in and normally closing said receiving portion.

2. A scupper provided with a receiving portion and a discharge portion which has a cross-section relatively smaller than said receiving portion, the side walls at least of said receiving portion being parallel, in combination with a controlling valve mounted in the passage through said receiving portion, and having an area which is substantially that of the cross-section of the passage through said receiving portion, said parallel side walls permitting said valve to have an inward swinging movement, whereby a free passage through the scupper is provided.

3. In a scupper, the combination of a box-like receiving portion having parallel sides, a portion tapering away from said receiving portion, a discharge for said tapering portion, smaller than said receiving portion, and an automatically movable valve, having a less area than the cross-section of the receiving portion, and mounted in and normally closing said receiving portion, and a second valve at the end of said discharge.

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Witnesses:
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."