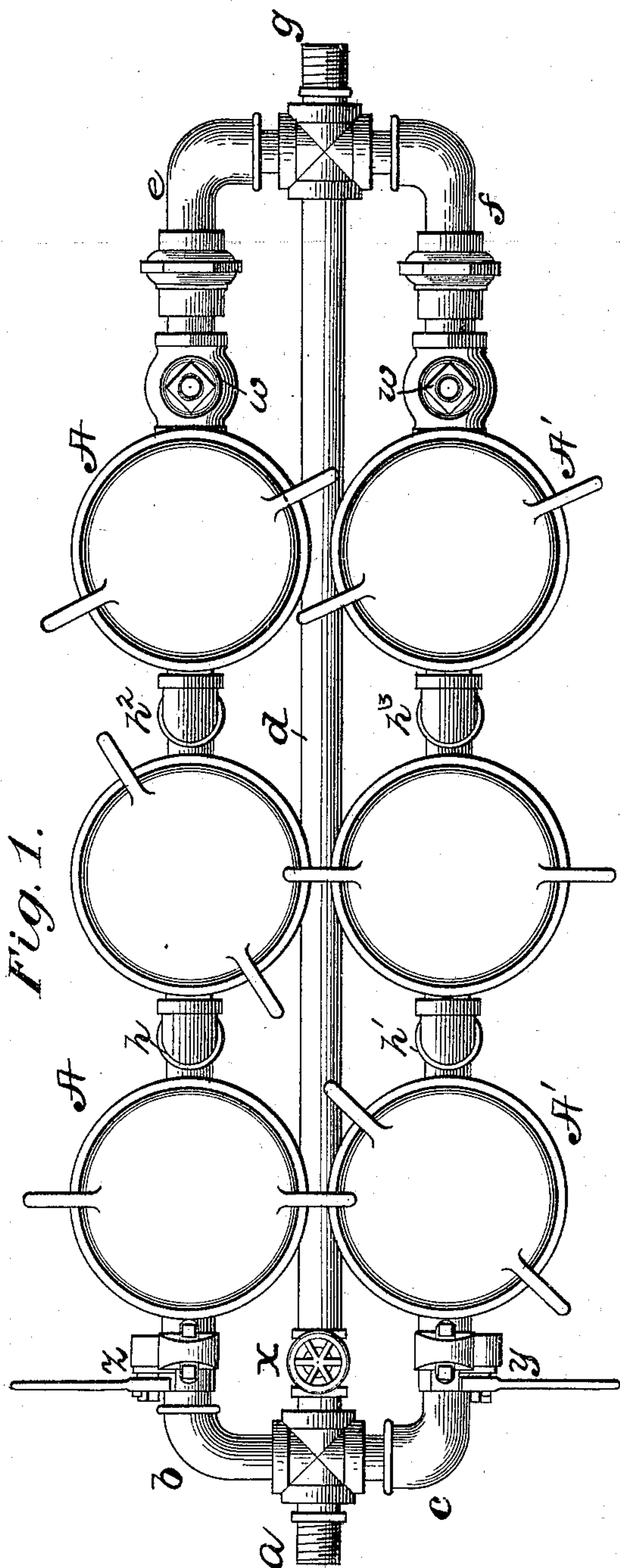


(No Model.)

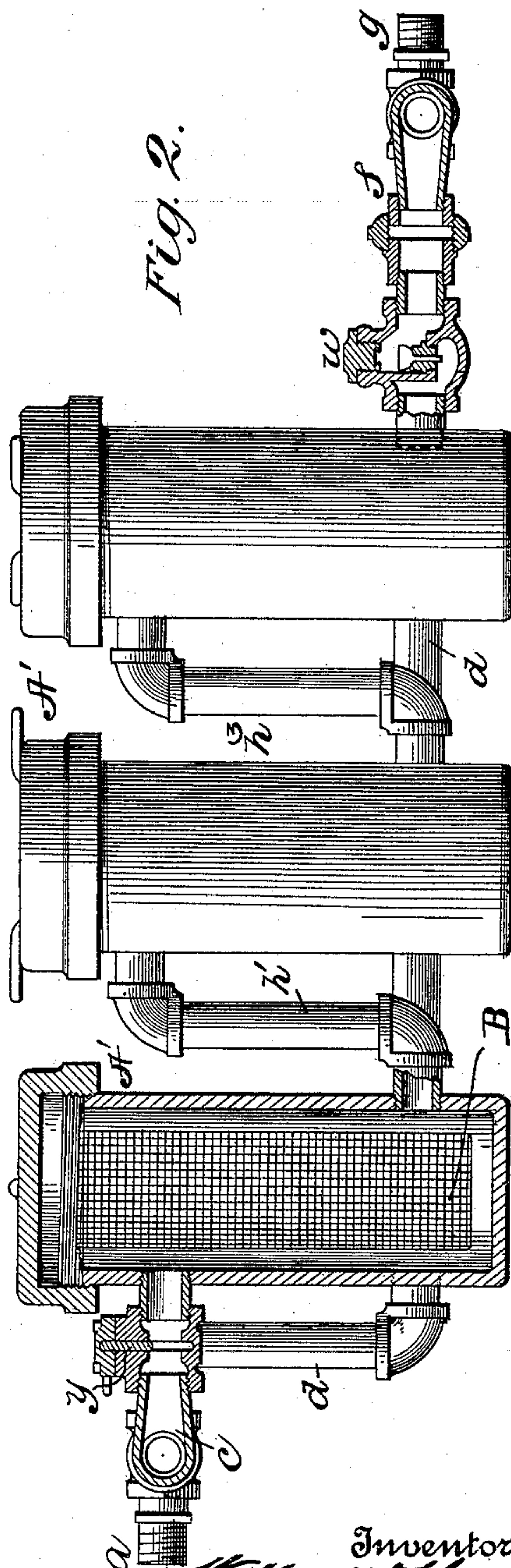
W. M. THOMPSON & C. NUHRING.
APPARATUS FOR EXTINGUISHING FIRE AND DISTRIBUTING
DISINFECTANTS.

No. 604,439.

Patented May 24, 1898.



Witnesses:
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UNITED STATES PATENT OFFICE.

WALTER M. THOMPSON AND CHARLES NUHRING, OF CINCINNATI, OHIO.

APPARATUS FOR EXTINGUISHING FIRE AND DISTRIBUTING DISINFECTANTS.

SPECIFICATION forming part of Letters Patent No. 604,439, dated May 24, 1898.

Application filed May 23, 1896. Serial No. 592,816. (No model.)

To all whom it may concern:

Be it known that we, WALTER M. THOMPSON and CHARLES NUHRING, citizens of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Apparatus for Extinguishing Fire and Distributing Disinfectants; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to apparatuses for mixing or uniting a chemical or chemicals with water, but more particularly to an apparatus for extinguishing fire or for distributing disinfectants and the like.

The primary object of our invention is to provide a simple and efficient apparatus, either stationary or portable, for mixing or uniting a chemical or chemicals with water, so that fire may be more readily extinguished or as a means for distributing disinfectants, &c., without materially detracting from the force of the stream or column of water.

A further object is to provide simple and efficient means whereby a part or all of the water may be chemicalized or the water may be caused to flow without mixing or coming in contact with the chemical or chemicals.

The invention will first be hereinafter more particularly described, and then pointed out in the claim at the end of the description.

Referring to the accompanying drawings, forming a part of this specification, Figure 1 is a plan view of the apparatus. Fig. 2 is a sectionalized side elevation of the same.

In the drawings, A and A' designate chambers or casings, preferably provided with closed lower ends and with removable caps at their upper ends, so as to contain and hold water under pressure. These chambers are shown arranged in two parallel series or in a series of pairs, and a main water-conducting pipe *d* extends between the two series, to one end of which pipe, as at *a*, may be connected a supply-pipe and to the other end, as at *g*, may be connected a suitable pipe or a hose or nozzle for conveying and directing the water to the desired point. A suitable valve, as at *x*, is arranged in the main conducting-pipe for cutting off or permitting the water to pass

therethrough, and branch pipes *b* and *c*, suitably coupled to said main pipe, communicate with the upper ends of the two chambers, respectively, of the first pair, and the two branch pipes are provided with suitable cut-off valves *z* and *y*, respectively, for controlling the supply of water to the said chambers. Pipes *h* and *h'* connect the lower ends of the first pair of chambers with the upper ends of the second pair of chambers, and similar pipes *h*² and *h*³ connect the latter with the last pair of chambers. Branch pipes *e* and *f* connect the lower ends of the said last pair of chambers with the main pipe *d*, and these branch pipes are provided with suitable check-valves (indicated at *w*) for the purpose of preventing the water from being forced backward into the chambers.

For the purpose of chemicalizing the water we preferably arrange or suspend within each of the chambers a cage, basket, or screen B. This cage may be held in the chamber in any suitable manner, preferably by a flange resting upon the upper edge of the body of the chamber, so as to be removably supported therein, and may be of open or porous material, preferably of suitable wire-netting, so as to provide suitable passages capable of allowing the circulation of water therethrough, yet adapted to retain solid substances placed therein, except such as may be dissolved in the water, the force and the character of the stream or column of water passing through the branch and conducting pipes depending upon the pressure and the character of the substances held by the water in solution. Each cage or basket is preferably arranged so as to provide an annular space between the same and its inclosing chamber and may extend substantially the entire length of said chamber, so as to provide an extended chemical surface to more readily impregnate the water passing therethrough, though in some instances the construction and arrangement of the cage may be varied, if desired.

If it is desired to use our device in the extinguishment of fire, it will be necessary to place in the cages or baskets within the chambers some substance soluble in water, which when held by the water in solution and coming in contact with sufficient heat will cause to be generated at that point a fluid inimical

to fire. We prefer to use for this purpose chlorid of ammonia, though other substances—such as sal-ammoniac, common salt, carbonate of soda—will answer the same purpose.

5 Under similar conditions to produce and apply a disinfectant it will be necessary to substitute in the cages a substance soluble in water which will yield a disinfecting fluid. We prefer to use sulfate of iron, but other
10 substances—such as corrosive sublimate, salicylic acid, borax, sulfate of copper, permanganate of soda, or a mixture of iron and copper sulfates and carbonate of lime—may be used.

15 If it is desired to use carbonic anhydrite, (CO_2) commonly called "carbonic acid," in the extinguishment of fire, the cages of one chamber of each pair are supplied with a substance soluble in water, preferably tartaric
20 acid, which will produce carbonic anhydrite as the result of chemical action when said substance in solution in the water comes in contact with the water holding in solution another substance coming from the other chambers of the pairs, into the baskets of each of
25 which shall have been placed such substance also soluble in water. We prefer as the latter substance bicarbonate of soda, though other substances perhaps may be used; but
30 it is essential that such substances be used as aforesaid, so that carbonic anhydrite will plentifully result from their chemical action.

The operation of the invention will be readily understood from the foregoing description
35 when taken in connection with the accompanying drawings.

As will be seen, if the conducting-pipe d be connected to the water-supply and the valves z and y closed and the valve x opened
40 the entire stream or column of water will pass through said pipe; but if all of said valves be opened or each partially opened a part of the stream will be caused to pass through the branch pipes b and c into the chambers A and
45 A' and after passing through the branch pipes e and f will unite with the stream passing through the main conducting-pipe. If either of the valves y or z be closed and the other left open, the water will pass through the
50 chambers communicating with the open branch pipe; but if the valve x be closed and either or both of the valves y and z opened all of the water will be caused to pass through

either or both of the series of chambers A and A' .

We thus provide a simple and efficient apparatus having chambers containing a suitable chemical through which all or a part of the stream or column of water utilized may be caused to pass and unite with the chemical or chemicals without materially detracting from the force or pressure of the stream.

When the chambers are arranged in pairs, as shown, it will be possible to use one series of chambers at a time, thus allowing an opportunity for those not in use to be refilled. The ingress and egress pipes of each chamber being placed at the opposite ends thereof the water has as much contact as possible with the substance it is intended to dissolve. By thus arranging the chambers in series the water will become more nearly saturated than if but one chamber be used. The water entering the first chamber will dissolve the substance very rapidly, less rapidly in the second, and so on, and will become fully saturated if enough chambers be used. Moreover, the series arrangement permits greater latitude in the matter of chemical combinations by providing a number of chambers which may contain different chemicals and through which the stream of fluid successively passes.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent of the United States, is—

In an apparatus of the character described, the combination of a through water-pipe having a stop-cock, a series of vertically-disposed receptacles, baskets or holders suspended therein, a branch pipe connecting said through water-pipe with the upper part of the first receptacle of the series, said branch pipe having a stop-cock, a pipe connecting the lower part of said receptacle with the upper part of the next succeeding receptacle, a pipe connecting the lower part of the last receptacle of the series with the through water-pipe and a check-valve in the latter connecting-pipe.

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