T. L. BRIGGS.

ACID DISTRIBUTER.

APPLICATION FILED AUG. 3, 1910.

1,032,657.

Patented July 16, 1912.

2 SHEETS—SHEET 1.

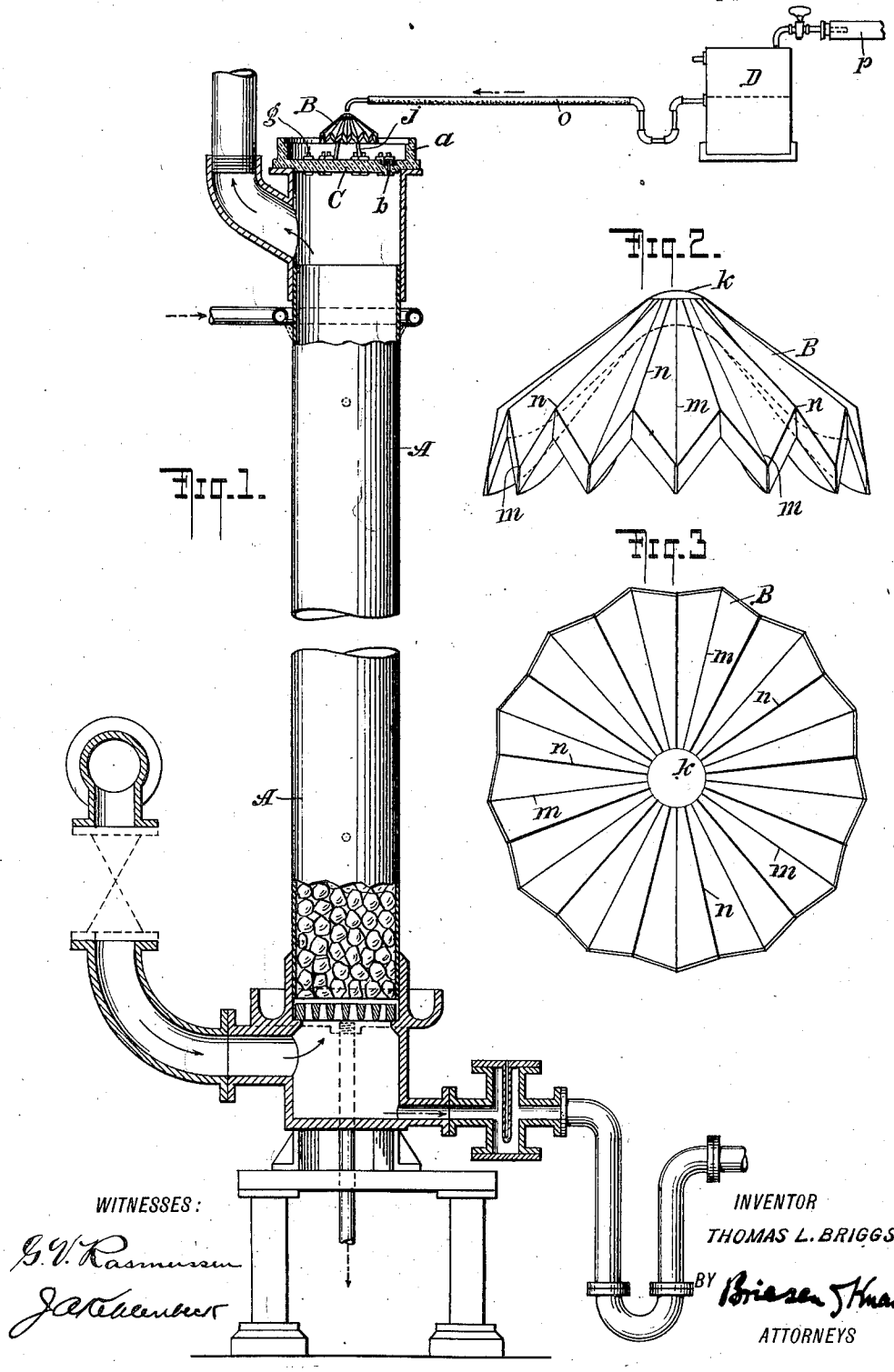

Fig. 1.

Fig. 2.

Fig. 3

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2 SHEETS—SHEET 2.

Fig. 4.

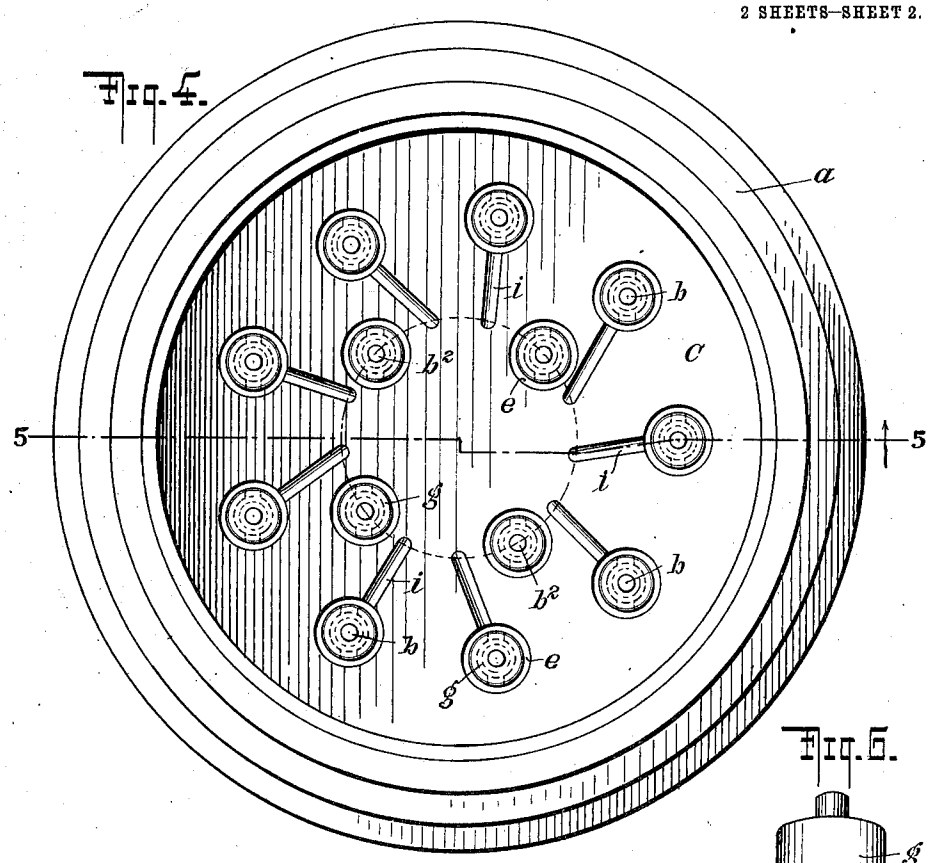


Fig. 6.

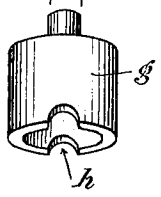
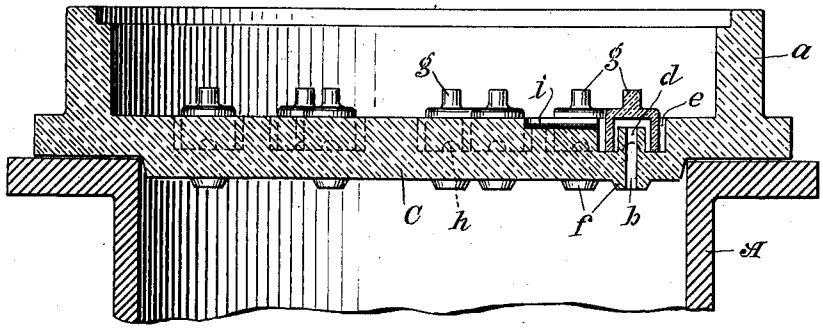


Fig. 5.



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UNITED STATES PATENT OFFICE.

THOMAS LYNTON BRIGGS, OF FLUSHING, NEW YORK, ASSIGNOR TO GENERAL CHEMICAL COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

ACID-DISTRIBUTER.

1,032,657. Specification of Letters Patent. Patented July 16, 1912.

Application filed August 3, 1910. Serial No. 575,286.

To all whom it may concern:

Be it known that I, THOMAS LYNTON BRIGGS, a subject of the King of Great Britain, and resident of Flushing, county of Queens, State of New York, have invented certain new and useful Improvements in Acid-Distributers, of which the following is a specification.

This invention has for its object to provide a distributer capable of providing even, uniform and continuous distribution over a selected area, of acids or other fluids employed in certain industrial processes.

Referring to the drawings, Figure 1 is an elevation, partly in section, of one form of apparatus, employing my improved distributer; Fig. 2 is an elevation on a larger scale of the form of the upper distributer; Fig. 3 is a plan view of the same; Fig. 4 is a plan view of the lower part of the distributer; Fig. 5 is a vertical section on the line 5—5 of Fig. 4; and Fig. 6 is an enlarged perspective view of one of the caps used to cover the ducts in the lower part of the distributer.

In the drawings, A is a tower or tube carrying my distributer at the top. This distributer consists of an upper part B and of a lower part C. The lower part C is a plate, surrounded by an upwardly projecting flange *a*. The plate C is pierced with concentric sets of holes *b*, b^2. Each of these holes is (see Fig. 5) extended through a tube *d* which projects upwardly into a well like cavity *e* formed in the upper face of the plate C. The lower face of the plate C has a boss *f* around each of said holes *b*, b^2.

Adapted to drop loosely into each tubular well *e* so as to cover but not to close each hole *b*, b^2 is a cap *g*, Fig. 6, having notches *h* in its lower edge. The wells *e* pertaining to the outer circle of holes *b* connect with grooves or conduits *i* which extend toward the circle in which is located the other series of holes b^2 so that the inner ends of the conduits *i* and the holes b^2 are all in the same circle. In the illustration shown there are four inner holes b^2 and nine outer holes *b* whose supply channels or grooves reach to the circle of holes b^2, so that all may receive the like supply of acid or other fluid from the umbrella shaped upper part of the distributer which is centrally supported above them. It should be noted that the diametral dimensions of the wells *e* are such as to leave a substantial free space both within and without the tubular wall of the cap *g;* also that a corresponding free space exists btween the top of said cap and the top of the tube *d* below.

Supported centrally above the plate C is the spreader B, or upper part of the distributer. It is made of glass, porcelain or other suitable material inert to the action of acid if used for distributing acid. A tripod or equivalent support *j*, placed on plate C constitutes the means for holding the spreader B. As the configuration of the spreader B is of practical importance I shall describe it at length. At the top is a smooth knob-shaped convex or concave portion *k*, the surface of which is, as accurately as possible, a surface of revolution about a vertical axis; preferably I make this surface spherical. From this knob *k*, the body of the spreader B slopes downwardly and outwardly as shown. In this sloping skirt of the spreader are as many grooves *m* as there are holes *b*, b^2, in this illustration therefore 13. These grooves are separated from one another by ridges *n*. The channels or grooves *m*, therefore, have a greater downward inclination than the intervening ridges *n* and they extend outwardly farther than the said ridges, as shown. The zig-zag edge of this spreader is preferably vertical or nearly so. Generally speaking the spreader, as above described, is seen to be of a mushroom or umbrella shape, its top being a convex smooth knob, said knob merging into a downwardly inclined series of V-shaped troughs with the trough bottoms extending outwardly beyond their sides and tops.

D is the acid supply tank, having an outlet pipe *o* bent at its free end downwardly so as to terminate just above the knob-like center of the spreader B. A pipe *p* provided with a spigot supplies the tank from a main receptacle (not shown).

The operation of the distributer is as follows: The acid being turned on, fills the tank D to a suitable level and thence flows through the pipe *o* and drops squarely upon the center knob *k* of the spreader B. The acid spreads out from the said knob and enters the troughs or sloping channels *m* in equal streams, and then drops also in equal streams upon the caps *g* of the inner holes b^2 and into the channels *i* of the outer holes

b. Each streamlet will then enter its well e, pass through the notches h into the cap g and when a sufficient height within the cap has been attained, over the tops of the tubes d, through the holes b, b^2 in as many uniform streams as there are holes b, b^2 into the tower.

My distributer insures a practically uniform distribution of the incoming fluid and provides that substantially equal amounts of fluid shall be dropped through the tower in equal spaces of time and along definite lines which have been selected. The holes b, b^2 need not be in concentric, or in any circles, as long as they are located each beneath a discharge groove or channel m of the spreader B.

I claim:

1. A distributer for acid and the like, consisting of an upper spreader having external inclined channels and of a lower perforated distributing plate, the acid receiving cavities in which lie vertically below the discharge ends of the spreader, substantially as described.

2. A distributer for acids and the like, having an upper spreader and a lower perforated plate, said plate being provided with the upwardly projecting tubes d passing through wells e in combination with the notched caps g, as described.

3. In a distributer for acids and the like, the plate C having outer discharge holes b and inner discharge holes b^2 and provided with conduits i which extend to the line on which the inner holes are arranged, as specified.

4. In a distributer for acids and the like, an upper spreader B and a lower distributing plate, said plate being provided with depressions or wells e that surround the discharge tubes d, and with conduits extending from said wells to the point of discharge from said upper spreader, as described.

In testimony whereof, I have hereunto set my hand in the presence of two subscribing witnesses.

THOMAS LYNTON BRIGGS.

Witnesses:
M. H. Lockwood,
Frank F. Kirkpatrick.