

T. E. FOWLER & A. REEVES.

GAS GENERATOR.

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907,983.

Patented Dec. 29, 1908.

FIG. 1

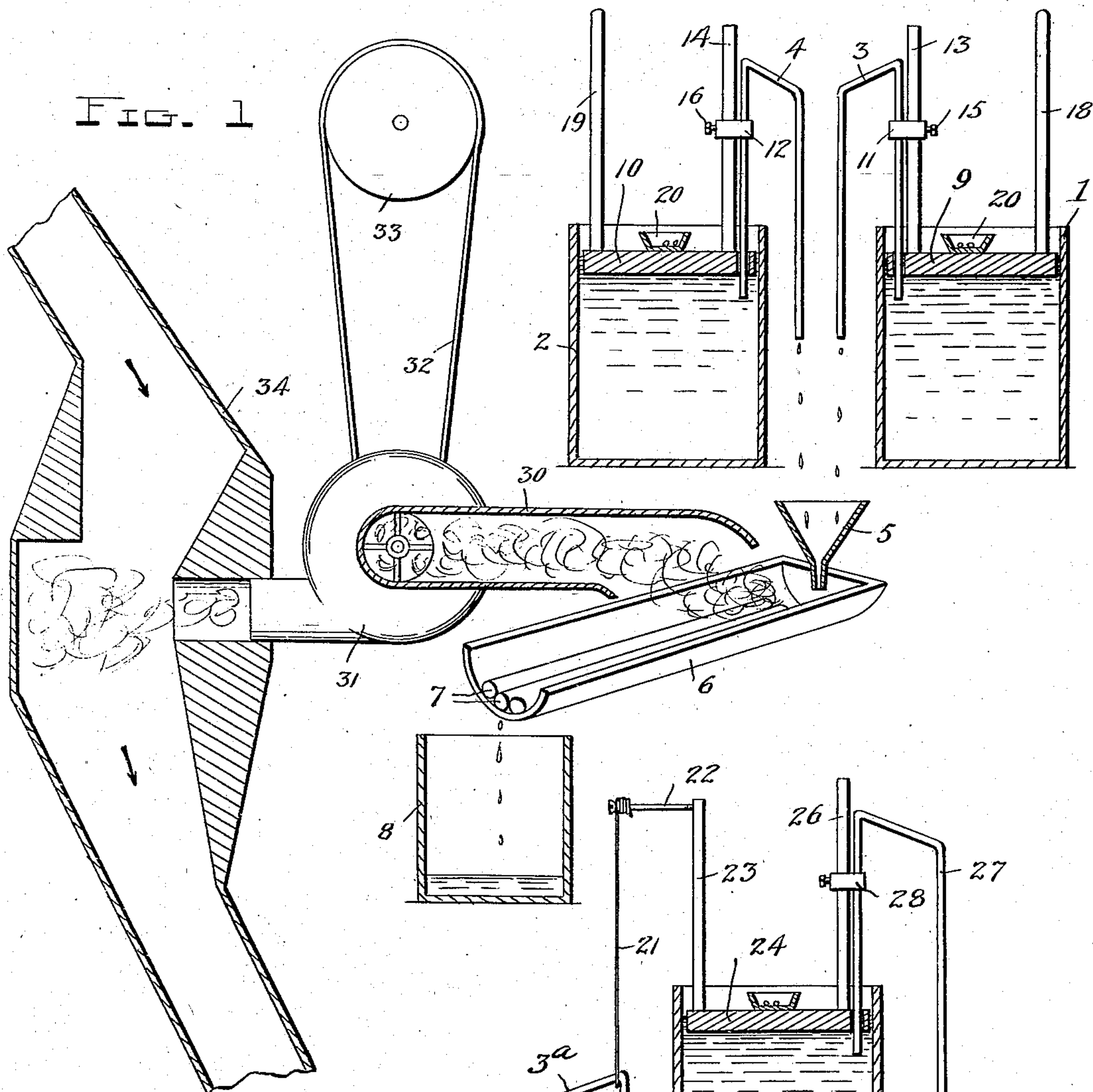
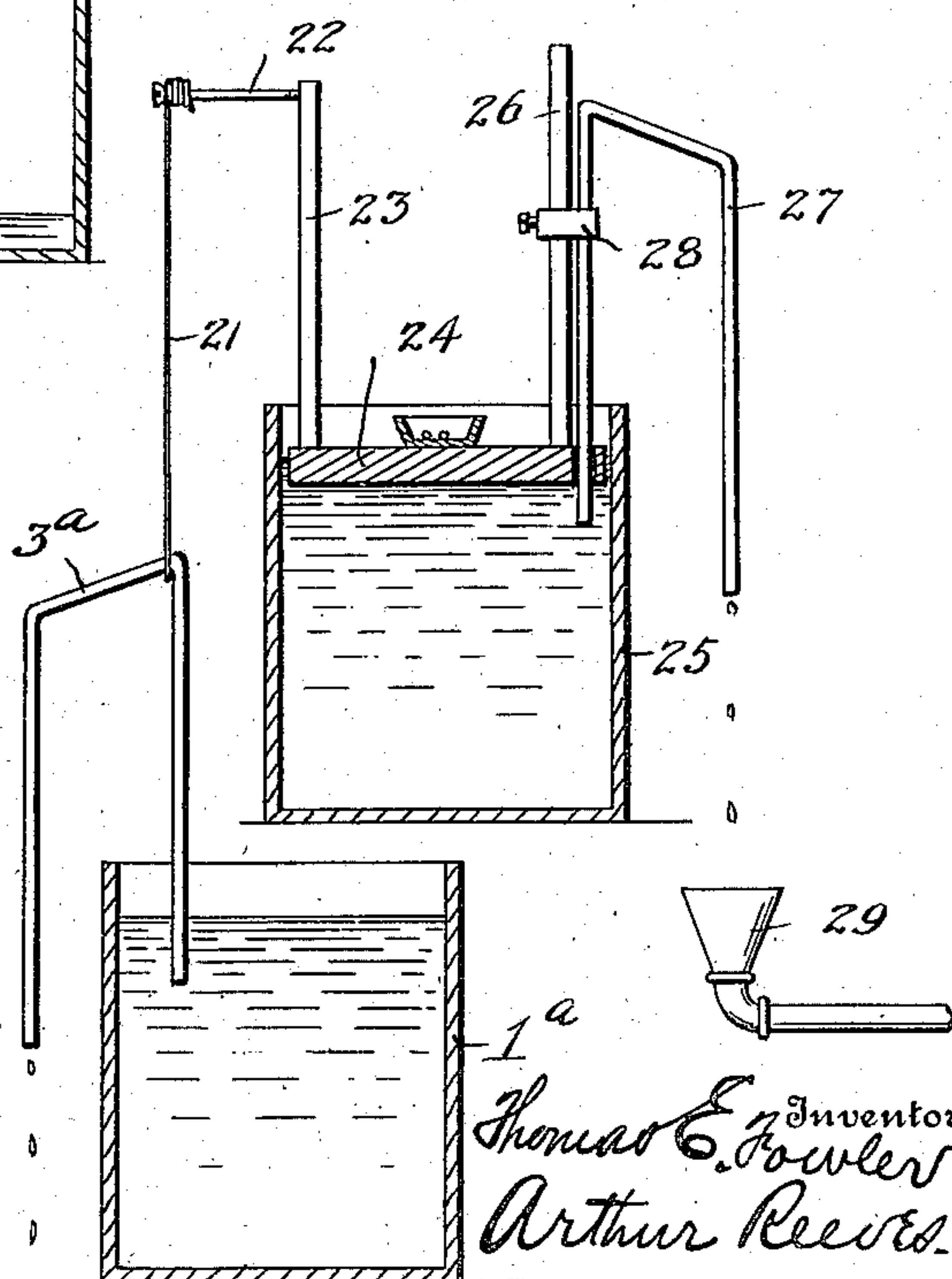


FIG. 2



Witnesses

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UNITED STATES PATENT OFFICE

THOMAS E. FOWLER, OF EVERETT, WASHINGTON, AND ARTHUR REEVES, OF PORTLAND OREGON.

GAS-GENERATOR.

No. 1,907,983.

Specification of Letters Patent.

Patented Dec. 29, 1908.

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To all whom it may concern:

Be it known that we, THOMAS E. FOWLER, a citizen of the United States, residing at Everett, in the county of Snohomish, State of Washington, and ARTHUR REEVES, a citizen of the United States, residing at Portland, in the county of Multnomah and State of Oregon, have invented certain new and useful Improvements in Gas-Generators for Flour-Bleachers, of which the following is a specification, reference being had therein to the accompanying drawing.

Our invention relates to improvements in gas generators for flour bleaching apparatus and consists of the novel construction and the combination and arrangement of parts hereinafter described and claimed.

The object of the invention is to provide a more simple and reliable means for feeding an acid and water or other exciting fluid upon a metal to produce flour bleaching fumes.

The above and other objects of the invention are attained in the preferred embodiment of the same illustrated in the drawings, in which—

Figure 1 is a view partly in elevation and partly in section of our improved gas generator; and Fig. 2 is a similar sectional view showing a slightly modified form of the invention.

The gas generator comprises a receptacle 1 for nitric or other acid and a receptacle 2 for water or any other liquid which will serve to increase the action of the acid upon zinc or other metal in the production of flour bleaching fumes. The liquids in these receptacles are fed drop by drop at predetermined rates through discharge siphons 3, 4 which discharge into a funnel 5 arranged at the upper end of a downwardly inclined receptacle 6 in which the metal 7 is supported. The latter is preferably in the form of one or more rods of zinc or other suitable metal arranged longitudinally upon the inclined bottom of the receptacle 6 so that the acid and water passing through the receptacle will act upon said rods. Beneath the lower open end of the receptacle 6 is a collecting or waste receptacle 8. The siphons 3, 4 are carried by controlling floats 9, 10 arranged in the receptacles 1, 2, respectively, and they are adjustably mounted upon the floats so that their rate of discharge may be readily regulated and will be uniform as the floats lower in the

receptacles. This mounting and adjustment of the siphons is effected by providing upon their inlet legs clamps 11, 12 which are apertured to receive upright guide rods 13, 14 and which are adjustably secured by means of set screws 15, 16. The lower ends of the inlet legs of said siphons pass freely through apertures in said floats and by loosening the set screws and adjusting the clamps upon the supporting and guide rods said legs of the siphons may be made to project to a greater or less extent into the acid and water according to the rate of feed which is desired. In order to counterbalance the floats we provide upon them at points diametrically opposite the siphons and their supports, upright rods 18, 19 which also serve as handles by means of which the floats may be readily manipulated. To permit of a finer adjustment of the feed than can be obtained by changing the positions of the siphons upon the floats we provide upon the latter receptacles in which fine shot or other small weights may be placed for increasing the weight of the floats.

The float 9 in the acid receptacle 1 must be of material that will not be affected by the acid, but when this is not practical we may employ the construction shown in Fig. 2 of the drawings in which 1^a denotes the acid receptacle, 3^a its discharge siphon which is suspended by a cord or the like 21 from an arm 22 on an upright rod 23 carried by a float 24 arranged in a receptacle 25. The latter is adapted to contain water or other liquid and the float 24 is provided with a supporting and guide rod 26 carrying a discharge siphon 27 which is adjustably mounted by a clamp 28. The siphon 27 discharges into a waste pipe 29. It will be seen that the float 24 will lower as the water or other liquid in the receptacle 25 is discharged from the siphon 27 and that since the siphon 3^a is carried by said float 24 said siphon will be lowered in the acid receptacle 1^a at a predetermined rate.

The fumes produced by the action of the acid and water upon the metal in the receptacle 6 pass through a fume conductor 30 to the eye of a rotary fan 31 driven by a belt 32 from a power wheel 33 and adapted to discharge into a flour agitator or chute 34 of any suitable form and construction.

Having thus described our invention what we claim is:

1. A gas generator of the character de-

scribed comprising a receptacle for the solid substance entering into the reaction, a liquid receptacle, a float in the latter, an upright guide rod upon the float, a vertically adjustable member slidable upon said guide rod and a siphon carried by said member and adapted to control the flow of liquid from the liquid receptacle into the first mentioned receptacle.

10 2. A gas generator of the character described comprising a receptacle for the solid substance entering into the reaction, a liquid receptacle, a float in the latter, an upright guide upon the float, a member vertically
15 slidable upon said guide, a set screw for securing said member in an adjusted position and a siphon carried by said member and adapted to control the flow of the liquid from the liquid receptacle to the first mentioned
20 receptacle.

3. A gas generator of the character described comprising a receptacle for the solid substance entering into the reaction, a liquid receptacle, a float in the latter, an upright
25 guide rod upon one side of the float, an upright rod upon the other side of the same and adapted to counterbalance the float and serve as a handle, a clamp vertically adjustable upon said guide rod, a siphon carried by the
30 clamp and adapted to control the passage of liquid from the liquid receptacle to the first

mentioned receptacle, and a weight receptacle upon said float.

4. A gas generator for a flour bleaching apparatus comprising a receptacle for the metal, an acid receptacle, a float in the latter, a receptacle for an exciting fluid, a float in the last mentioned receptacle, upright guides upon said floats, and discharge siphons vertically adjustable upon said upright guides and adapted to discharge into the receptacle for the metal.

5. A gas generator of the character described comprising a receptacle for the solid substance entering into the reaction, a liquid
45 receptacle, a float in the latter, an upright guide rod upon one side of the float, an upright rod upon the other side of the same and adapted to counterbalance the float and serve as a handle, a clamp vertically adjustable
50 upon said guide rod, and a siphon carried by the clamp and adapted to control the passage of liquid from the liquid receptacle to the first mentioned receptacle.

In testimony whereof we hereunto affix
our signatures in presence of two witnesses.

THOMAS E. FOWLER.
ARTHUR REEVES.

Witnesses:

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J. M. BABCOCK.