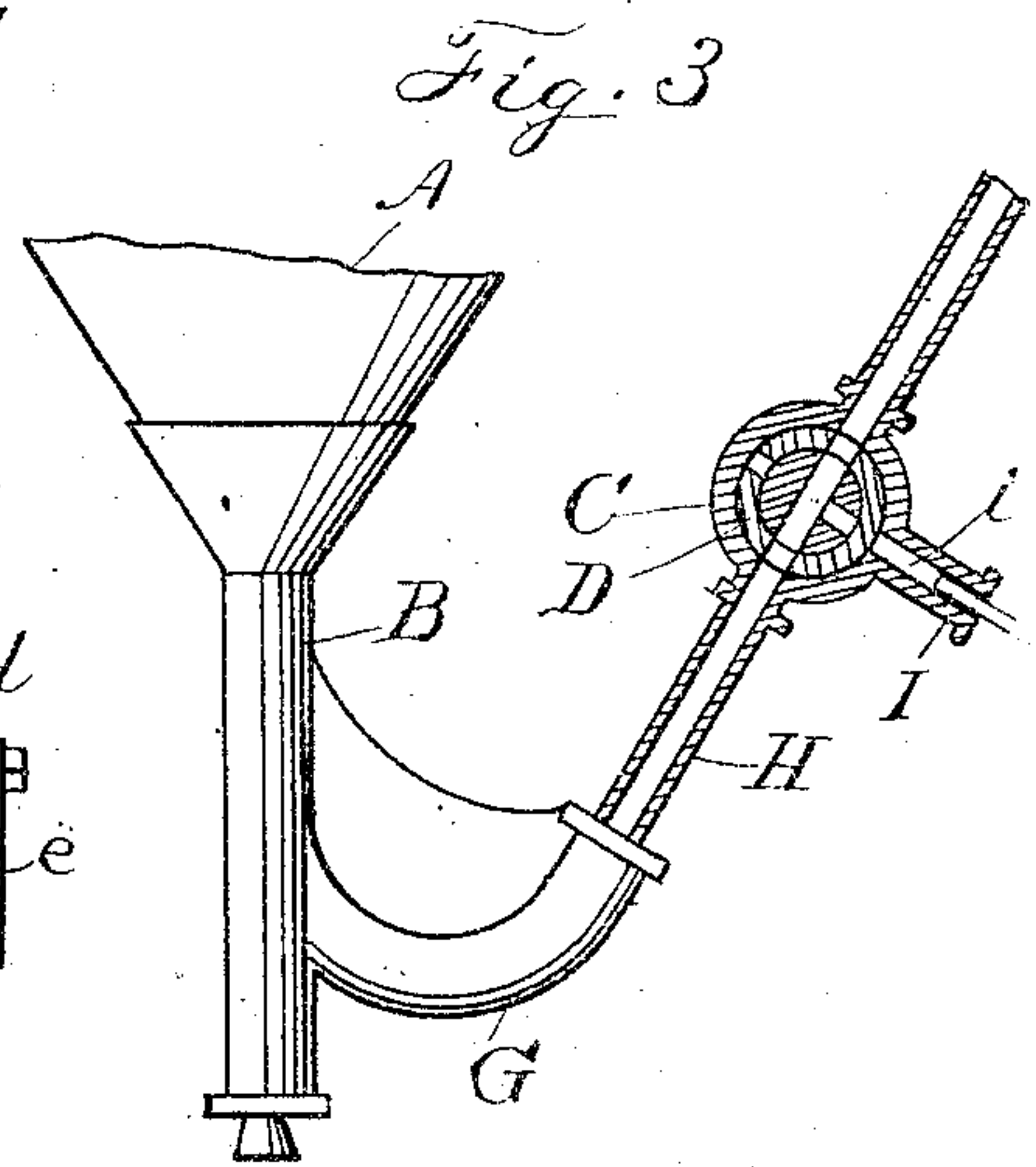
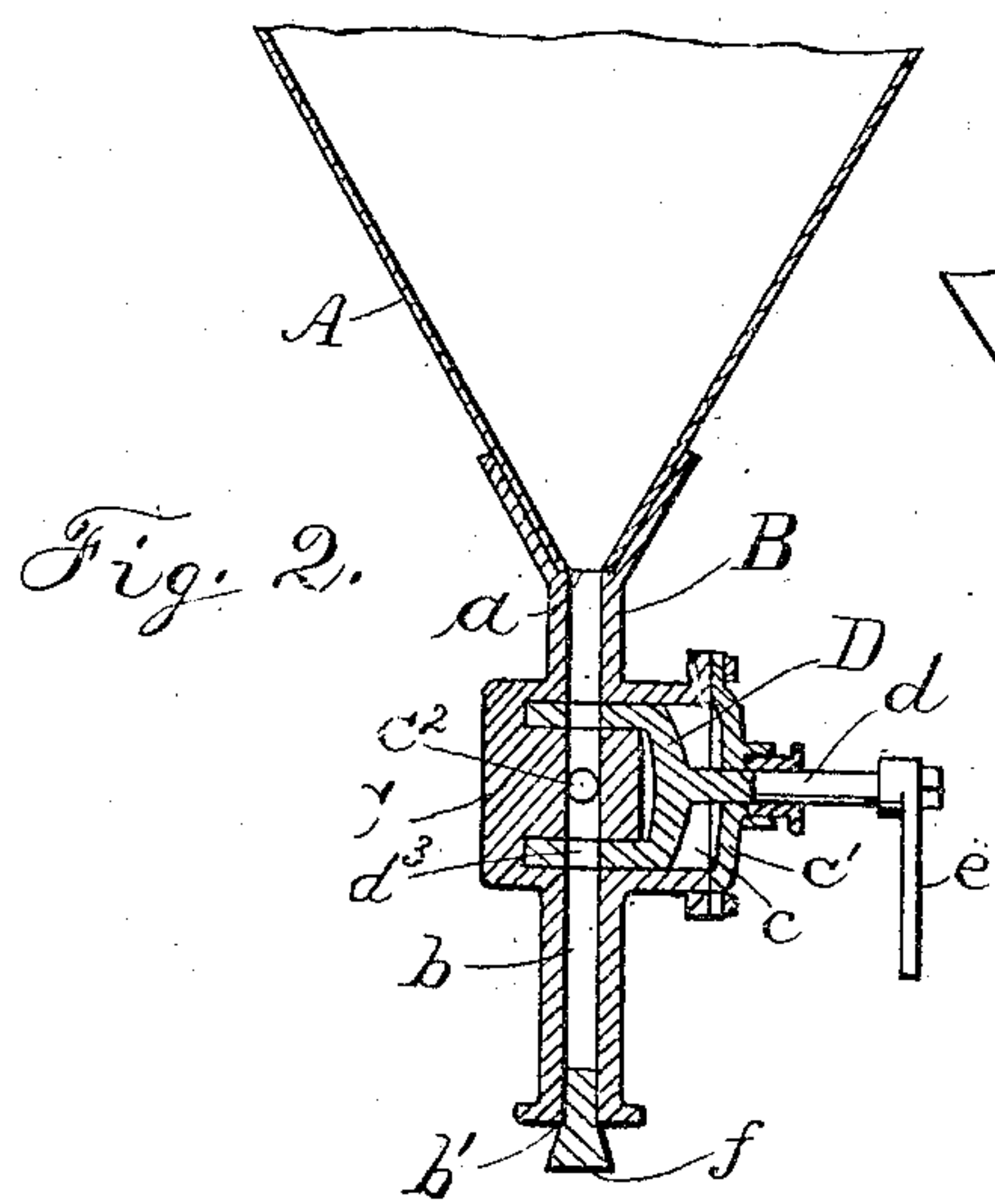
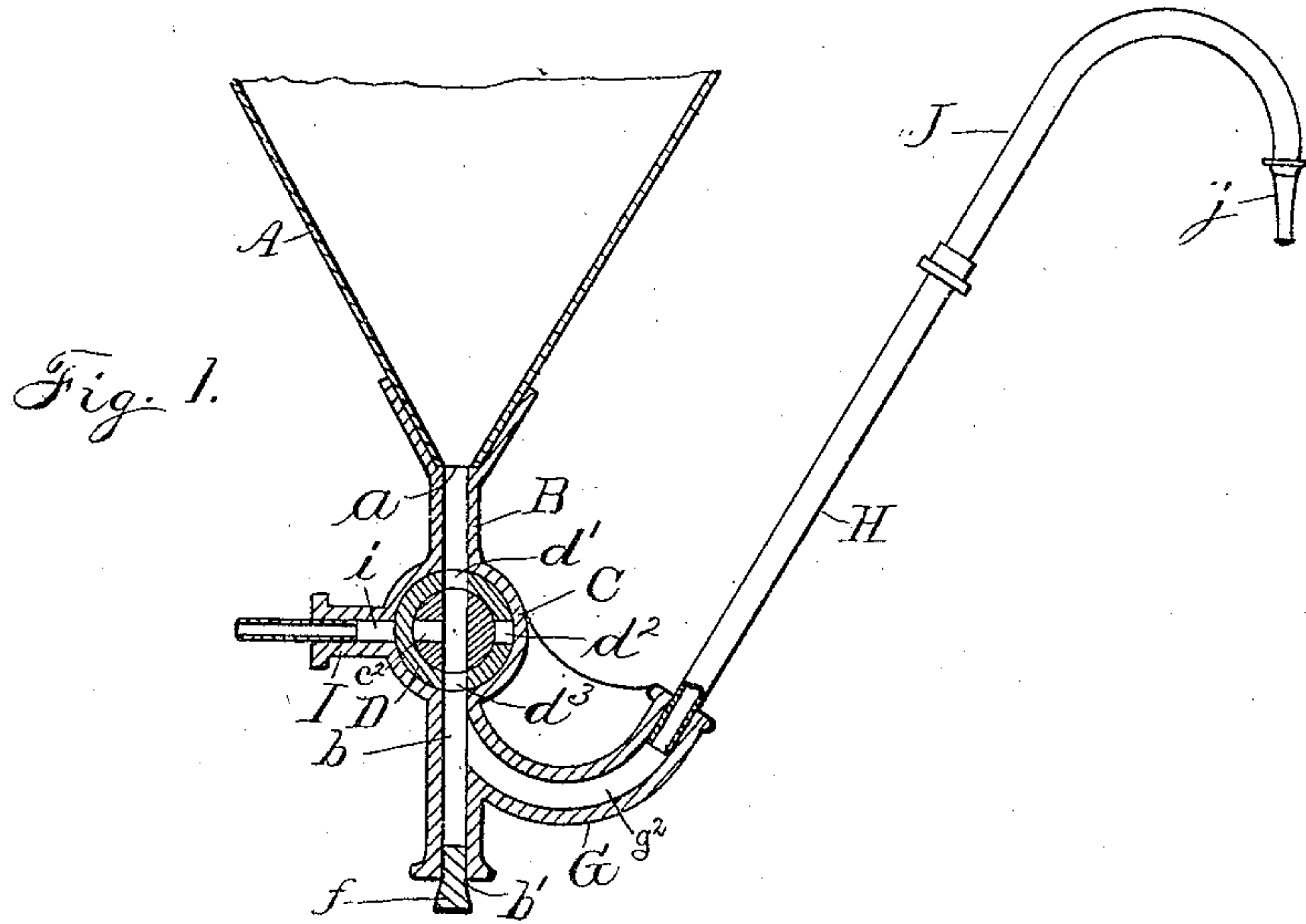


No. 845,520

PATENTED FEB. 26, 1907

J. M. CALLOW.
SETTLING TANK.

APPLICATION FILED NOV. 27, 1905. RENEWED JAN. 22, 1907.



Inventor

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JOHN M. CALLOW, OF SALT LAKE CITY, UTAH.

SETTLING-TANK.

No. 845,520.

Specification of Letters Patent.

Patented Feb. 26, 1907.

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To all whom it may concern:

Be it known that I, JOHN M. CALLOW, a subject of the King of Great Britain, residing at Salt Lake City, in the county of Salt Lake and State of Utah, have invented new and useful Improvements in Settling-Tanks, of which the following is a specification.

In settling-tanks used in treating the slimes of ores it is of great importance that the means employed for drawing off the values should not only effect that withdrawal completely, but should do it without agitating the mass in the tank. It should also include means for flushing and cleansing the vents and ducts connected therewith. These functions require an accurate adjustment of the inlets and outflows and careful calculations as to the pressures and other intermediate and final effects involved.

This device is siphonic and comprises, essentially, a direct downward channel whose vertical axis aligns with that of the settling-tank. In this channel is located a three-way valve which will permit a direct flow through it or will cut off the flow and let in a current from a lateral pressure-pipe, which may be directed upward or downward, as desired.

Other features of this device will be explained in the description following.

The drawings herewith illustrate the invention, its various features being referred to by letters.

In the drawings, Figure 1 is a vertical section of the device attached to the lower part of a funnel-form settling-tank, the latter being shown fragmentarily. Fig. 2 is a vertical section taken at a right angle to that of Fig. 1. Fig. 3 is a side elevation, partly in section, showing a modification of the device.

The letter A designates a funnel-form settling-tank having an outlet *a* at its lower end.

B is a casting attached to the lower end of the tank A and serving as an exit therefor. This casting has a vertical channel *b* opening into the tank, its axis being in line with the axis of the tank, and a lateral channel *g*² continuous with said channel *b* and extending on into a pipe H.

C is a valve-chamber formed by enlarging the channel either in the casting B or the pipe H. This valve-chamber has a lateral opening *c*, provided with a cap *c*¹.

D indicates a three-way valve located in the chamber C and having openings *d*¹, *d*², and *d*³. *d* is a stem on said valve connecting

with a lever *e*, by means of which the valve may be turned to control the flow from the tank or from a pressure-pipe I, having a channel *i*, which connects with the main channel through a core *c*² in the chamber C. *f* is a stopper for the opening *b*¹ of the channel *b*.

G is a lateral extension of the casting having the channel *g*².

J is a flexible hose connecting with the pipe H and provided with the nozzle *j*.

In the operative adjustment of the device shown in Fig. 1 the flow of the settled material is down through the valve D and by way of the lateral channel *g*² and pipe H out through the hose and nozzle; but if by the accidental introduction of foreign matter into the tank an obstruction gradually accumulates within the casting B or the pipe H or hose J and the free discharge of settlings ceases, by operating the valve D water under a high pressure can be introduced for the purpose of removing and ejecting such obstructions. Should any obstruction occur beyond the valve D, by a partial revolution of the valve the connection to the tank is cut off, and high-pressure water through *i* forces its way through the channels *b* and *g* and out through the nozzle. Should the obstruction occur in the throat of the casting, a simple reversal of the valve-lever shuts off the connection beyond the valve, and the full pressure of water is brought to bear on the obstruction here and to break it up. Then by bringing back the valve to its first position and removing the stopper the pressure of the water in the tank above and gravity will together expel it through the passage *b*¹.

What I claim, and desire to secure, is—

1. In a settling device, a tank provided with a discharge-opening, an exit-casting attached to the lower end of the tank and having a vertical channel connecting with the opening in said tank, a connecting-pipe, said pipe and the casting having a lateral outlet-passage connecting with the vertical channel through said casting, said discharge elements being provided with a valve-chamber, a three-way valve therein, means to operate the same, and a pressure-pipe connecting through said valve with the channel and with the lateral outlet as described.

2. In a settling-tank an exit-casting attached to the lower end of said tank, and having a vertical channel connecting with the opening in said tank, a stopper for the lower

end of said channel, said casting having a valve-chamber, a three-way valve in said chamber; means to operate said valve, a pressure-pipe connecting with said channel through said valve said casting having a lateral outlet from said channel below said valve as described.

3. The combination with a funnel-form settling-tank having an opening at its lower part, of a casting having a vertical channel connecting with said opening and provided with a valve-chamber, a three-way valve in said chamber, a pressure-pipe connecting through said valve with said channel, a stopper at the lower end of said channel, a lateral outlet-pipe between said valve and the lower end of said channel, an upwardly-inclined

pipe connecting with said outlet-pipe, and a flexible hose on said inclined pipe for the purposes specified. 20

4. In a settling-tank, a bottom casting having a vertical and a lateral channel, a stopper for said vertical channel, a pipe connecting with said lateral channel, a three-way valve in said pipe and a pressure-pipe connection with said valve, for the purpose specified. 25

In testimony whereof I affix my signature in presence of two subscribing witnesses.

JOHN M. CALLOW.

Witnesses:

ELMO V. SMITH,

CHAS. H. ANDERSON.