

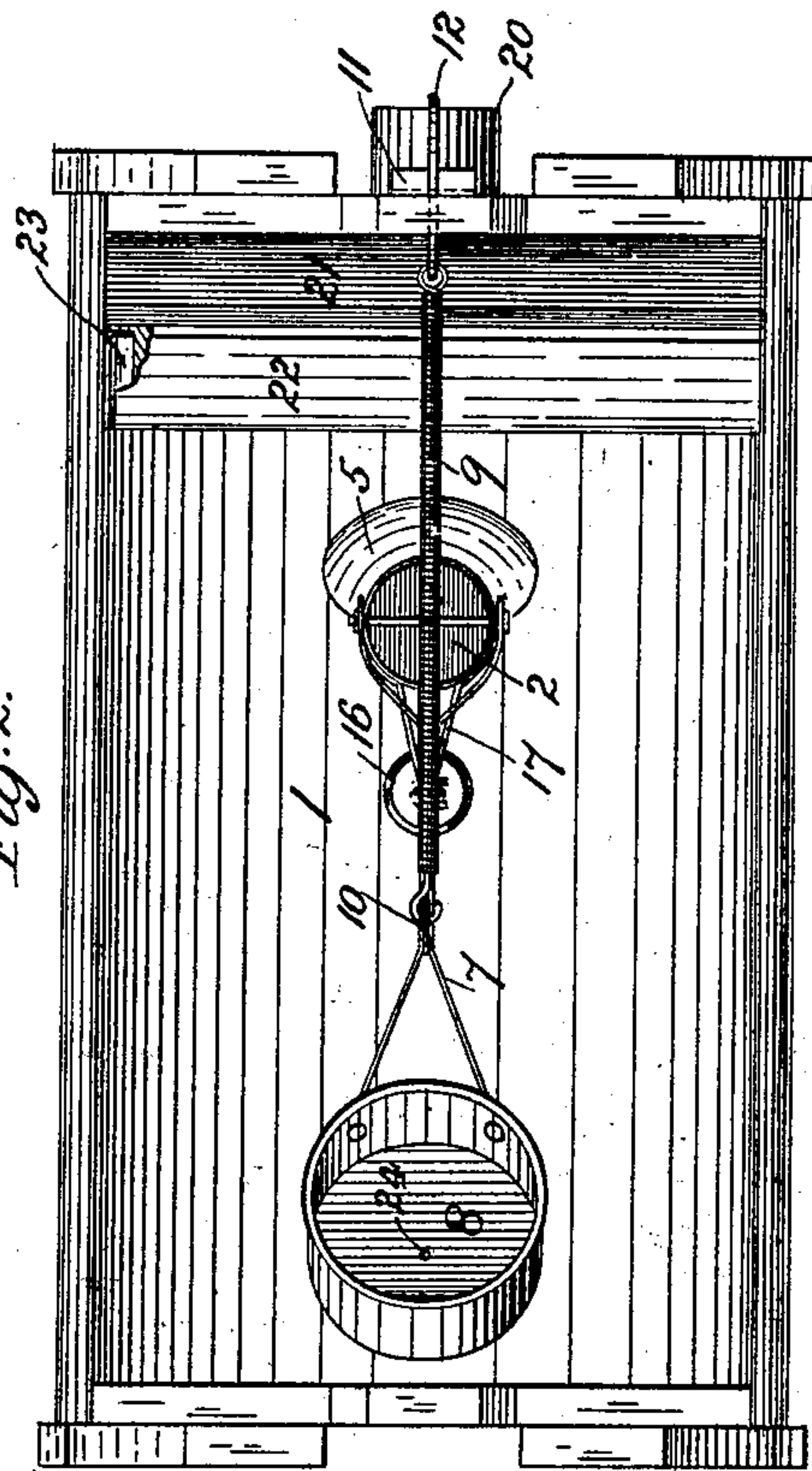
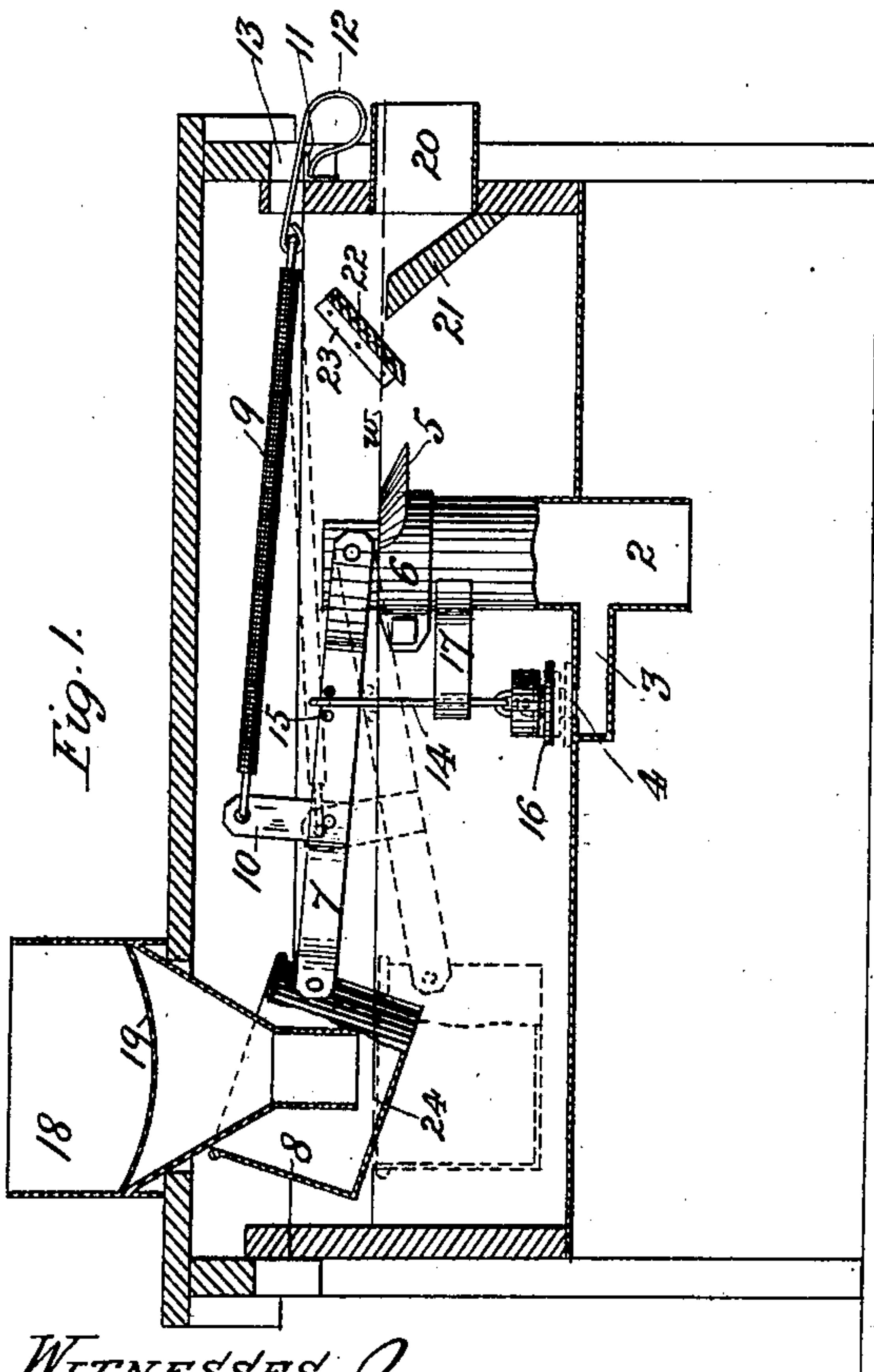
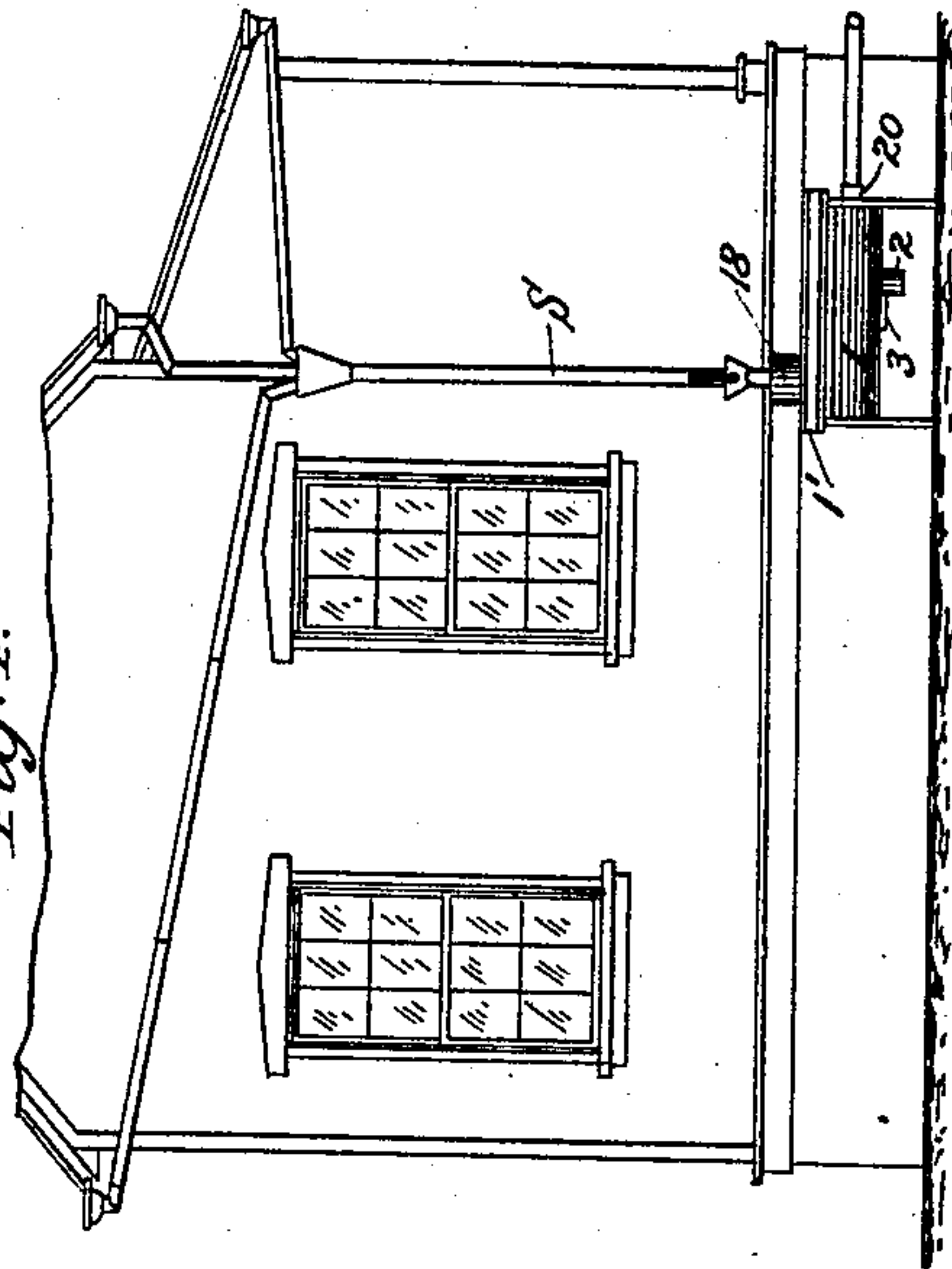
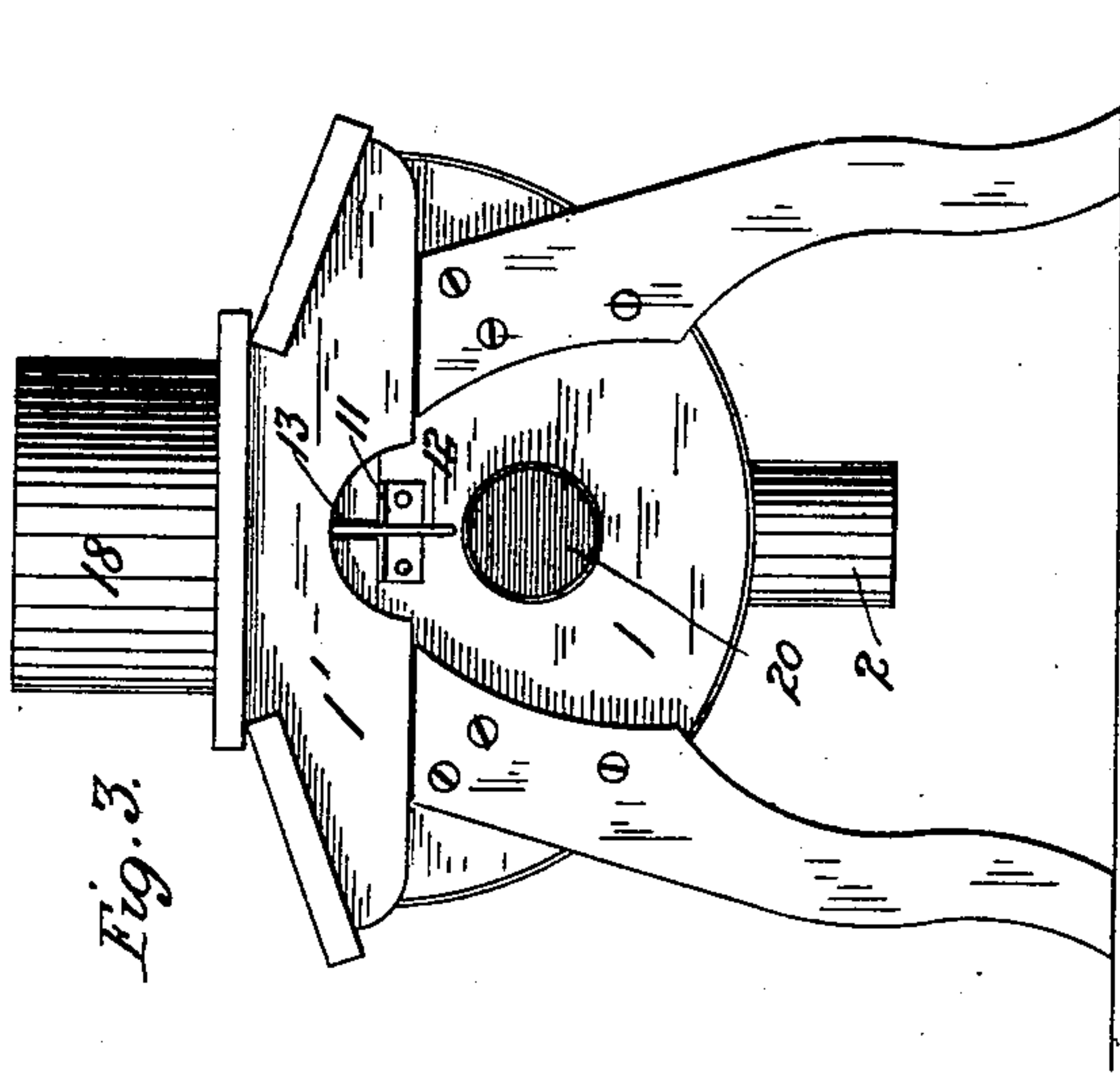
No. 669,398.

Patented Mar. 5, 1901.

G. RITTER.
RAIN WATER PURIFIER.

(Application filed Oct. 10, 1900.)

(No Model.)



WITNESSES
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UNITED STATES PATENT OFFICE.

GEORGE RITTER, OF PINCKNEYVILLE, ILLINOIS.

RAIN-WATER PURIFIER.

SPECIFICATION forming part of Letters Patent No. 669,398, dated March 5, 1901.

Application filed October 10, 1900. Serial No. 32,651. (No model.)

To all whom it may concern:

Be it known that I, GEORGE RITTER, a citizen of the United States, residing at Pinckneyville, in the county of Perry and State of Illinois, have invented certain new and useful Improvements in Rain-Water Purifiers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to improvements in rain-water purifiers; and it consists in the novel arrangement and combination of parts more fully set forth in the specification and pointed out in the claims.

In the drawings, Figure 1 is a middle vertical section of the casing, showing the operative parts in side elevation. Fig. 2 is a top plan of the device with cover removed. Fig. 3 is an end elevation with cover in place; and Fig. 4 is a diagrammatic view of a dwelling-house, showing my device applied to the down-spout thereof.

The object of my invention is to construct a device which shall thoroughly and effectively eliminate all suspended impurities from rain-water, such as leaves, insects, soot, dirt, and other foreign matter which rain-water gathers on its way to the cistern.

In detail the invention may be described as follows:

Referring to the drawings, 1 represents a vessel or casing having a cover or hood 1', the latter being detachable. Projecting through the bottom of the casing and extending a suitable distance upward is a waste-pipe 2, to which leads a lateral passage or tube 3, communicating with the inside of the vessel through an opening or port 4. A portion of the upper peripheral wall of the pipe 2 is removed to a certain depth below the upper end of the pipe, thus leaving a horizontal edge over which the impurities floating on the surface of the water in the casing will be carried down into and through the said waste-pipe. These floating impurities and the upper sheet of water carrying them pass over an apron 5, which is secured to the pipe 2, even with the edge referred to, by an adjustable band or clamp 6. Pivoted at one end about the walls of the pipe 2, above the apron 5, is a lever 7, whose free end has riveted

thereto a cup or receptacle 8, the lever being normally held in a raised position by a coiled spring 9, whose one end is secured to an arm 10, projecting from the lever, and whose outer end is temporarily fastened to a lip or ledge 11, carried by the end wall of the casing, the connection being effected by a hook or arm 12, coupled to the spring and passed under the lip, as best seen in Fig. 1, the body of the hook passing loosely through an opening or slit 13, cut in the cover or hood 1'. Loosely swung from the lever 7 by an arm 14, suspended between pins 15, is a valve 16, adapted, upon depression of the lever 7, to close the port or opening 4, the arm 14 being guided between the walls of the terminal loop of an arm 17, projecting from the pipe 2. Formed at one end of the cover is an opening for the reception of a strainer-cup 18, whose discharge end reaches into the cup 8, mounted at the free end of the lever 7, the wire diaphragm 19 of the strainer serving to intercept the leaves and other large particles carried by the water. The end wall of the casing to which the hook 12 is secured is provided with an outlet-pipe section 20 for the escape of the purified water on its way to the cistern. Mounted transversely of the casing in position to bring the lower edge thereof even with the lower edge of the pipe 20 is an overflow-plate or dam 21, over which the purified water passes, the floating impurities being previously intercepted by a skimmer-plate 22, mounted in advance thereof and normally submerged a slight distance below the surface of the water to effectively skim the impurities before they reach the edge of the dam 21, the water-level being indicated by the dotted line *w* in Fig. 1. The device is placed so as to bring the strainer 18 into communication with the discharge end of the down-spout S, as seen in Fig. 4, when it is ready to perform its work.

The operation is as follows: Normally the parts assume the position shown in full lines in Fig. 1. As the water from the spout S discharges into the strainer 18 the large particles—such as leaves, bugs, and the like—are intercepted by the wire diaphragm 19. The water now flows into the cup 8 and fills the same, the weight of the water overcoming the tension of the spring 9 and causing the lever

7 to drop, as shown by dotted lines in Fig. 1, the valve 16 closing the port 4. As the water continues to flow from the cup 8 into the casing the latter fills until the water reaches the level *w*, Fig. 1, when the light impurities floating on the surface will be effectively skimmed by the plate 22, the clear water passing over the dam 21 through the pipe 20 into the cistern. The impurities skimmed pass over and are guided by the apron 5 into the waste-pipe 2. Like the apron 5, the skimmer-plate 22 is adjustable, the ends of the plate being slit to form grooves to embrace the tongues formed by the horizontal members of the angle-pieces 23, secured to the walls of the casing. The plates can thus be carefully adjusted along said tongues, Fig. 2 showing one end of the plate 22 broken away to expose the tongue referred to. After the rain has ceased the contents of the cup or receptacle gradually drip out through the drip opening or puncture 24, formed in the bottom of the cup, thereby again lightening the weight to allow the spring 9 to restore the parts to their normal position, the valve 16 opening the port 4 and allowing the contents of the casing to escape through the waste-pipe 2 with any accumulated impurities. The cup or receptacle 8 is essential for the following reason: When the cup drops to the dotted position indicated in Fig. 1, the water discharges therefrom from all directions uniformly, thereby agitating the water in the casing to a minimum degree and permitting the contents of the casing to remain comparatively quiet. The surface water under the circumstances passes without any material agitation under the skimmer and over the dam, and all light particles and impurities are left behind.

The object of draining the contents of the casing, as indicated, is to prevent the same from becoming stagnant or in cold weather from freezing. It is apparent, of course, that the details of the construction may be departed from without affecting the spirit of my invention.

Having described my invention, what I claim is—

1. In a rain-water purifier, a casing, an out-

let and inlet therefor, an opening or port leading from the bottom of the casing, a cup or receptacle mounted in the casing and adapted to be filled with water, intermediate connections between the cup and port for closing the latter upon the filling of the cup, a suitable skimmer-plate in the casing, and a waste-pipe for carrying off the impurities gathered by the skimmer, substantially as set forth.

2. In a rain-water purifier, a casing, an outlet and inlet therefor, an opening or port leading from the bottom of the casing, a cup or receptacle mounted in the casing and adapted to be filled with water, intermediate connections between the cup and port for closing the latter upon the filling of the cup, and thereby permitting the casing to fill to a certain level before the contents thereof are permitted to be discharged, an overflow-plate or dam located adjacent to the outlet, a skimmer-plate mounted in advance of the dam, and a waste-pipe for carrying off the impurities gathered by the skimmer, substantially as set forth.

3. A rain-water purifier comprising a casing, an inlet and outlet therefor, a waste-pipe, a port in the casing-bottom communicating with said waste-pipe, the upper end of the waste-pipe having a peripheral segment removed, an apron mounted adjacent to the opening left as a result of the removal of said segment, a lever pivoted to the waste-pipe above the apron, a cup or receptacle at the free end of the lever, a valve depending from the lever and adapted, when the latter drops under the weight of water in the cup, to close the port at the bottom of the casing, a coiled spring for retaining the lever and cup normally in a raised position, a dam or overflow-plate located adjacent to the outlet, and a skimmer-plate mounted in advance of the dam, the parts operating as and for the purpose set forth.

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

GEORGE RITTER.

Witnesses:

EMIL STAREK,
G. L. BELFRY.