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W. C. BILZ.
FIRE EXTINGUISHING DEVICE.

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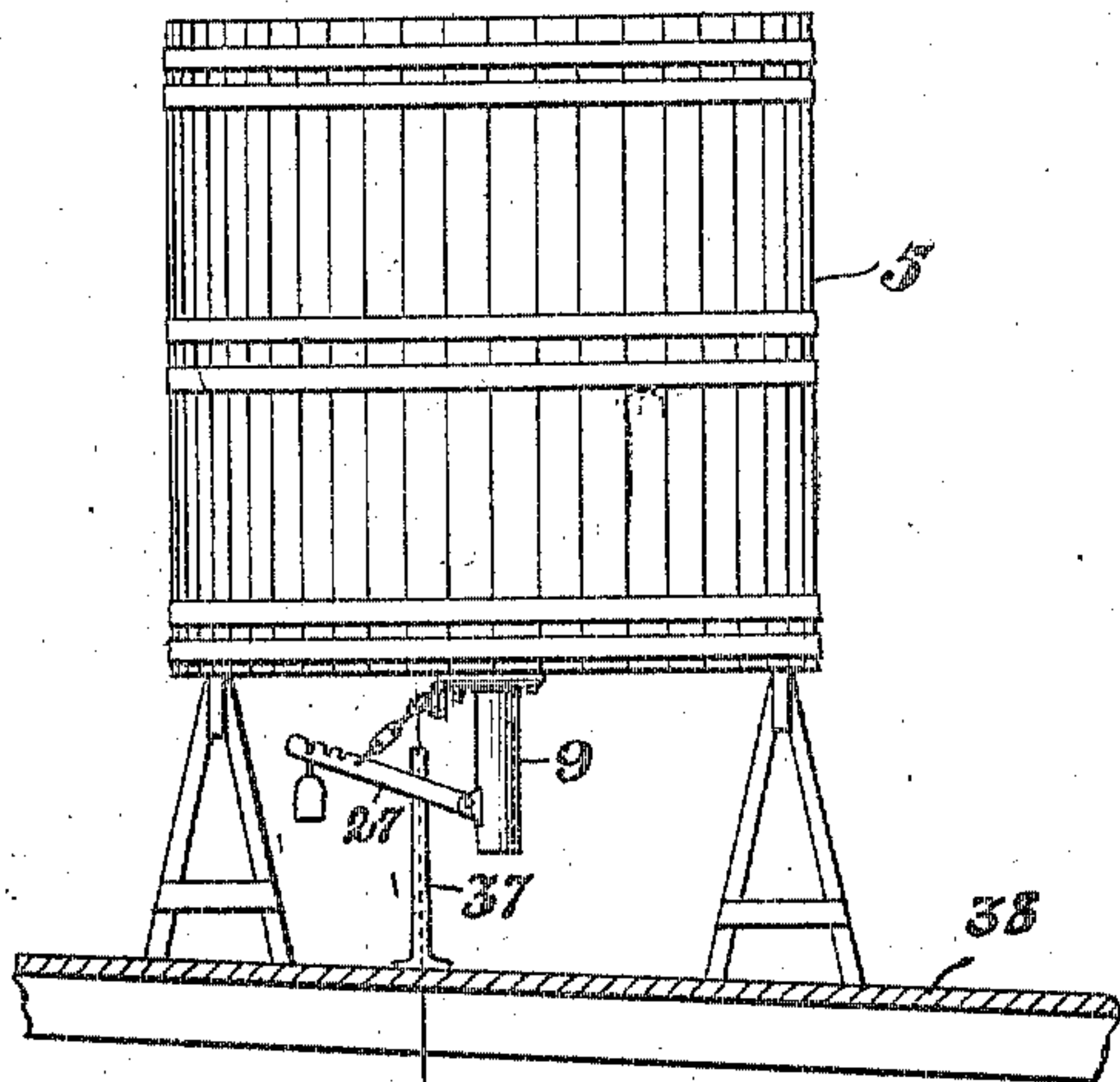


Fig. 1.

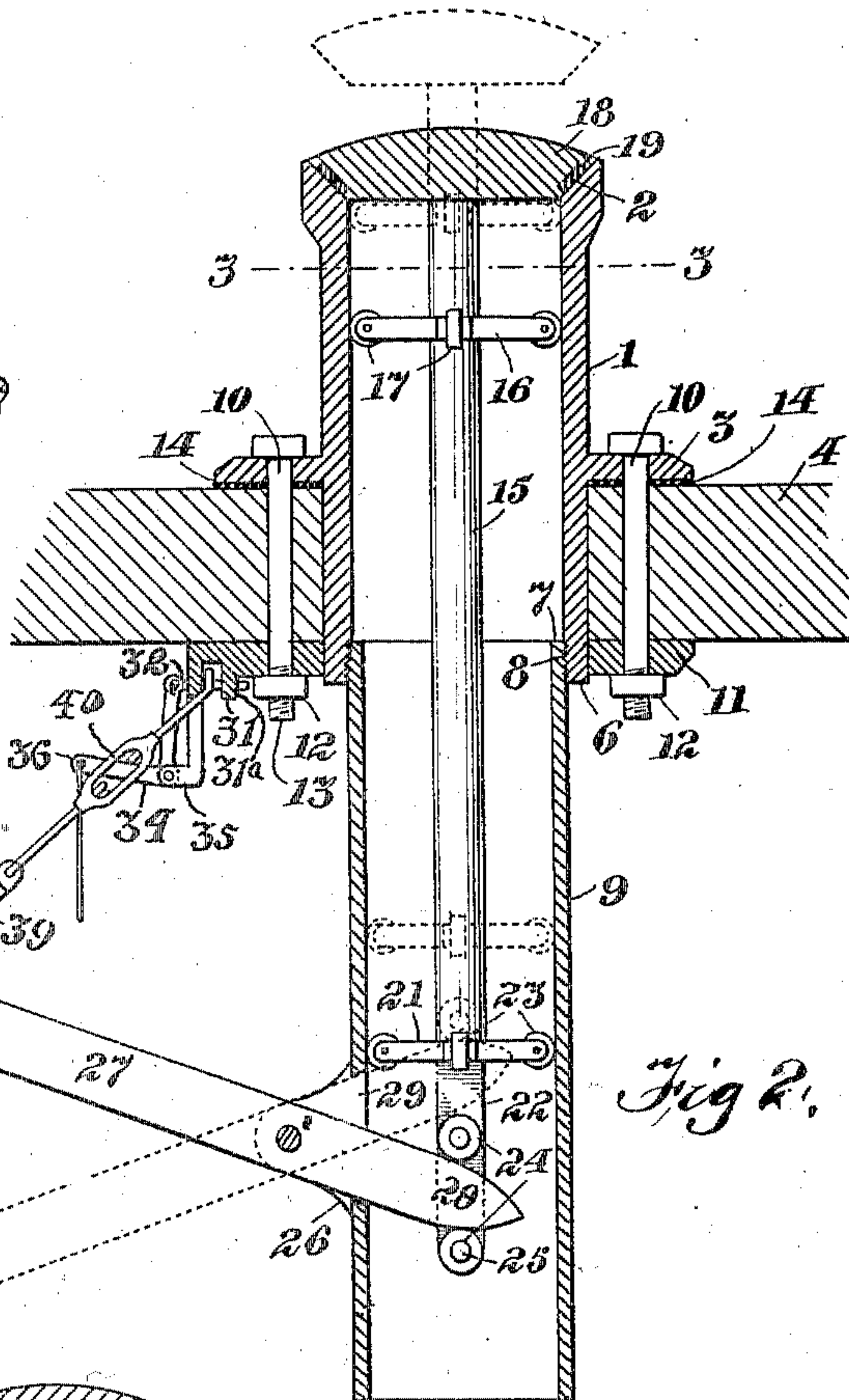


Fig. 2.

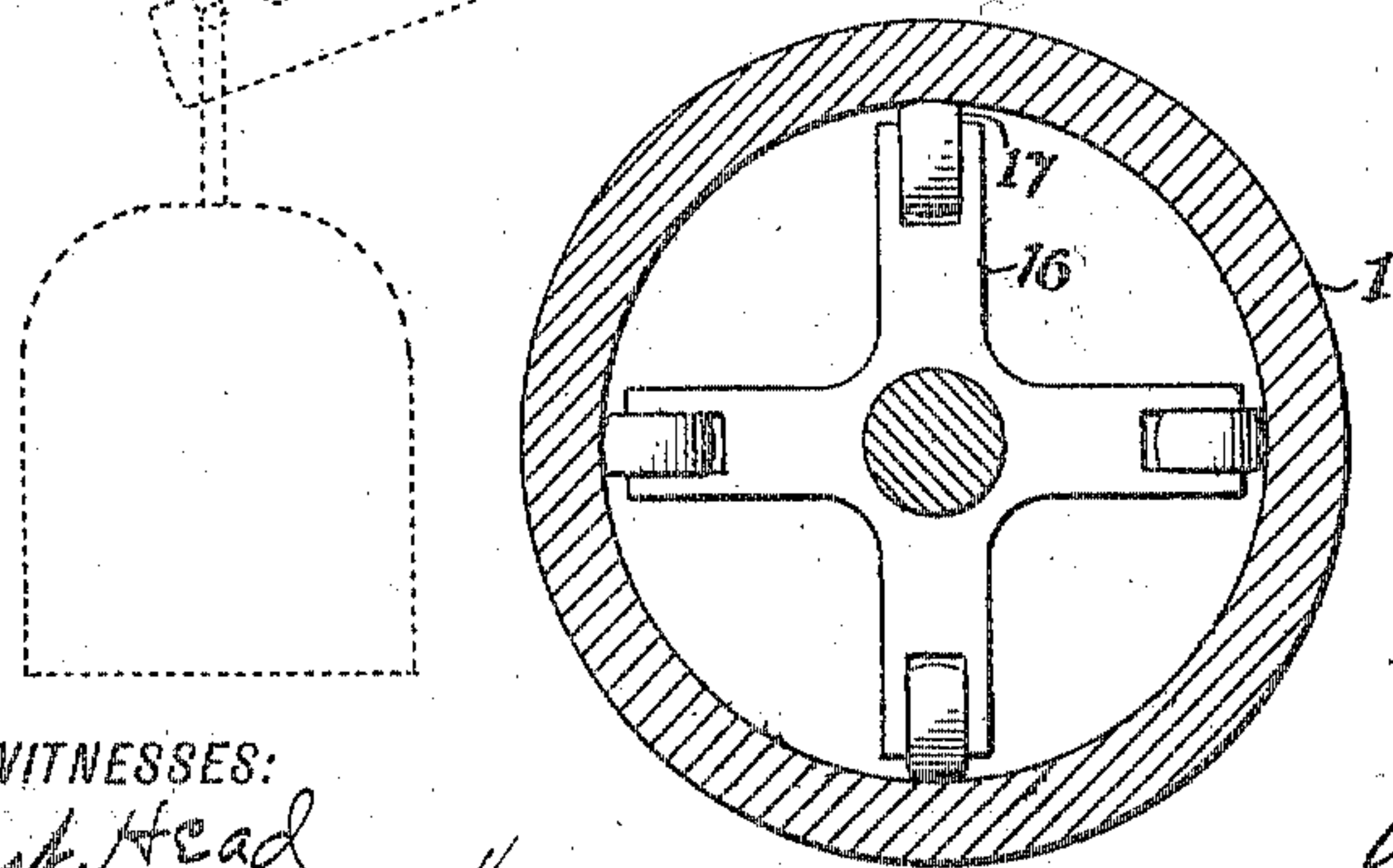


Fig. 3.

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FIRE-EXTINGUISHING DEVICE

No. 812,001.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM C. BILZ, a citizen of the United States, residing in the borough of Manhattan, city of New York, county and State of New York, have invented a certain new and useful Fire-Extinguishing Device, of which the following is a specification.

This invention relates to certain improvements in fire-extinguishers provided with means for causing the valves to open automatically in case of fire, and its objects are to improve and simplify the construction of the valve-opening mechanism and to provide improved means for causing the operating of the valve mechanism by the melting of a single fuse.

In the drawings forming part of this specification, Figure 1 is a vertical elevation of the fire-extinguisher embodying my present invention. Fig. 2 is a vertical sectional elevation of the fire-extinguishing device, showing the parts in their normal position and also showing the position of the parts in dotted lines when in operation. Fig. 3 is a plan through line 3 3 of Fig. 2.

In the several views like parts are identified by like signs.

The invention consists primarily of a casing 1, having on its upper end a valve-seat 2. The casing 1 is provided with a flange or collar 3 on the outside of the casing and is used to secure the casing to the bottom 4 of the tank 5. In the lower end 6 of the casing 1 is cut an internal thread 7, adapted to receive the screwed end of the pipe 9.

The casing 1 is mounted on the inside of the tank 5 and is secured to the bottom 4 of the tank 5 by means of bolts 10, passing through the flange or collar 3, bottom 4, and the washer 11 on the under side of bottom 4 of the tank 5, and locked by means of nuts 12, screwed on the threaded ends 13 of the bolts 10. Before the casing 1 is secured to the bottom 4 of the tank 5 a plastic joint 14 or any suitable waterproof material is inserted between the flange or collar 3 and the bottom 4 in order to make a water-tight joint and prevent leakage of the water from the tank 5 to the roof.

Mounted inside the casing 1 is a valve-stem 15, which is secured to a spider 16, provided with rollers 17 for the purpose of facilitating the upward and downward operation of the valve-stem. Secured to the upper

end of the valve-stem 15 is a valve 18, provided with a flexible seat 19 to coact with the valve-seat 2 on the upper end of the casing 1. The lower end of the valve-stem 15 is secured to a spider 21, provided with a projection 22, extending downward in the pipe or casing 9. The spider 21 is provided with rollers 23 to facilitate the operations of the valve-stem in its upward and downward movement. Mounted on the side of the projection 22 are rollers 24 by means of screwed studs 25 or other suitable means of holding the rollers in an operative position.

Attached to the pipe or lower casing 9 are lugs 26. A lever 27, pivoted in lugs 26, has one end 28 extending into the pipe or lower casing 9 through an aperture 29, which limits the downward stroke of the lever 27. The said end 28 is tapered to a point, and the ends of the tapered part being semicircle shape are situated in operative contact with the rollers 24 on the projection 22 of the spider 21. On the outer end of the lever 27 are notches 30, graduated to regulate the pressure of the valve 18 on the valve-seat 2.

Secured to the under side of the washer 11 is a yoke 31, having an aperture 31^a, through which passes a lock-pin 32, provided on one end with an aperture or eye 33, to which is connected a lever 34, said lever being pivoted in a lug 35 on the side of the yoke 31. A rope fastened to the end 36 of the lever 27 passes downward through a funnel or tube 37, which is attached to the roof 38, to the floors below the roof in order that the valve mechanism can be operated without having to go upon the roof of the building.

Secured to a suitable part of the lever 27 is a fusible joint 39, which is connected to the lock-pin 32 by means of a turnbuckle 40. A weight 41 is placed on one of the notches 30 on the end of the lever 27 to operate the valve-opening mechanism when the fusible joint is broken by heat or the lock-pin is withdrawn from the yoke.

The operation of the device is as follows: The device is attached to a tank, as above described, and the weight is placed in the proper notch on the lever 27, so as to get the proper pressure of the valve on the valve-seat to prevent any leakage of the water from the tank to the roof. The turnbuckle connection is made the proper length, so that when the heat strikes the fusible joint the joint parts and the weight being released

draws the lever 27 down to the position shown in dotted lines, Fig. 2. The end 28 of the lever 27 extending in the casing forces the valve above the valve-seat. The valve now
 5 being open the water will escape through the opening in the end of the casing to the roof and will immediately spread over the whole roof, thereby extinguishing any fire that may be on the roof and preventing the roof from
 10 catching fire from any adjoining building.

Having thus described my invention, I claim—

1. In a fire-extinguishing device, comprising a casing, a valve-seat extending downwardly from the top into said casing, a valve
 15 mounted on a valve-stem, and adapted to register with the valve-seat on the top of the casing; spiders fixed to said valve-stem for guiding the valve-stem in its movements, a
 20 projection fixed to one of the spiders and extending downward in said casing, a lever operatively attached to said projection, a graduated scale of notches on the outer end of the lever for engaging a weight and a turnbuckle
 25 connection for holding the lever to the means for operating same.

2. The combination with a casing a valve mounted on a movable valve-stem therein, an arm for lifting the valve-stem, said arm
 30 being mounted on the side of said casing and the end of the arm extending into the casing, adapted to engage with rollers mounted on a projection attached to the valve-stem, and a fusible joint connecting the arm with a lock-pin in a yoke attached to a washer on the under side of the tank, and means for manually withdrawing the lock-pin from the yoke,

thereby releasing the valve-operating mechanism.

3. The combination with a water-tank, a casing secured to and projecting from the bottom of said tank, a valve mounted on a movable valve-stem in said casing, a lever for lifting the valve-stem, said lever being mounted on the side of the casing, one end of
 45 said lever extending into the casing, said end being adapted to engage with rollers mounted on a projection attached to the valve-stem, a fusible joint, separable by heat, connecting the lever with a lock-pin in a yoke which is
 50 attached to a washer secured to the bottom of the tank, and means for manually withdrawing the lock-pin from the yoke thereby releasing the valve-operating mechanism.

4. The combination with a water-tank, a casing secured to the bottom of said tank, a valve mounted on an actuating valve-stem in said casing, a lever for lifting the valve-stem, said lever being mounted on the side of the casing, one end of the lever extending into
 60 the casing, said end being adapted to engage with rollers mounted on a projection attached to the valve-stem, a thermally-controlled joint connecting the lever with a locking means in a yoke attached to a washer on
 65 the bottom of the tank, and means for manually withdrawing the locking means from the yoke thereby releasing the valve-operating mechanism.

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