

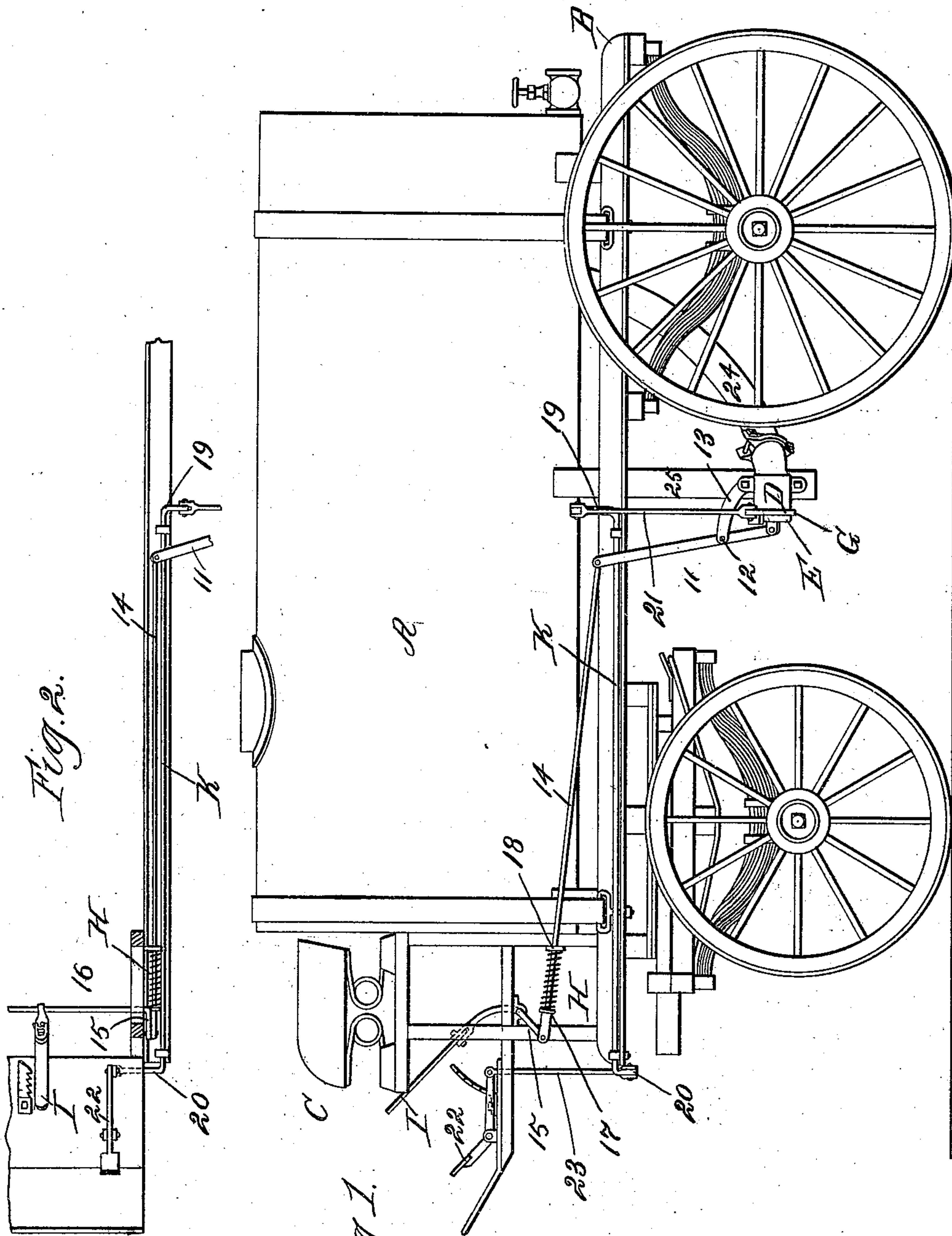
(No Model.)

2 Sheets—Sheet 1.

M. G. BUNNELL.
SPRINKLER.

No. 549,955.

Patented Nov. 19, 1895.



Witnesses
Wm. J. Humm
Arthur H. Remond.

Inventor
Morton G. Bunnell
by Chas. G. Page Atty.

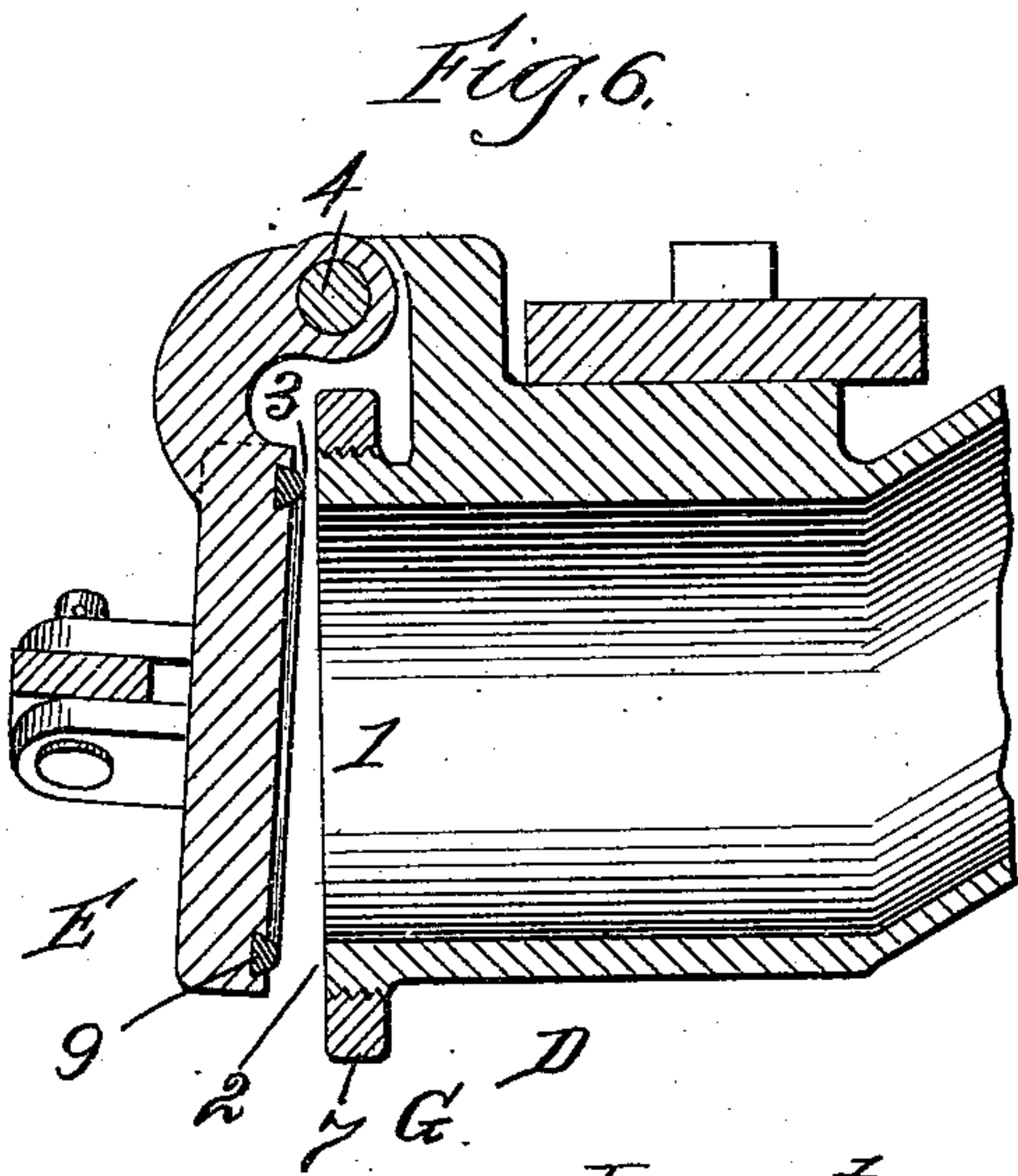
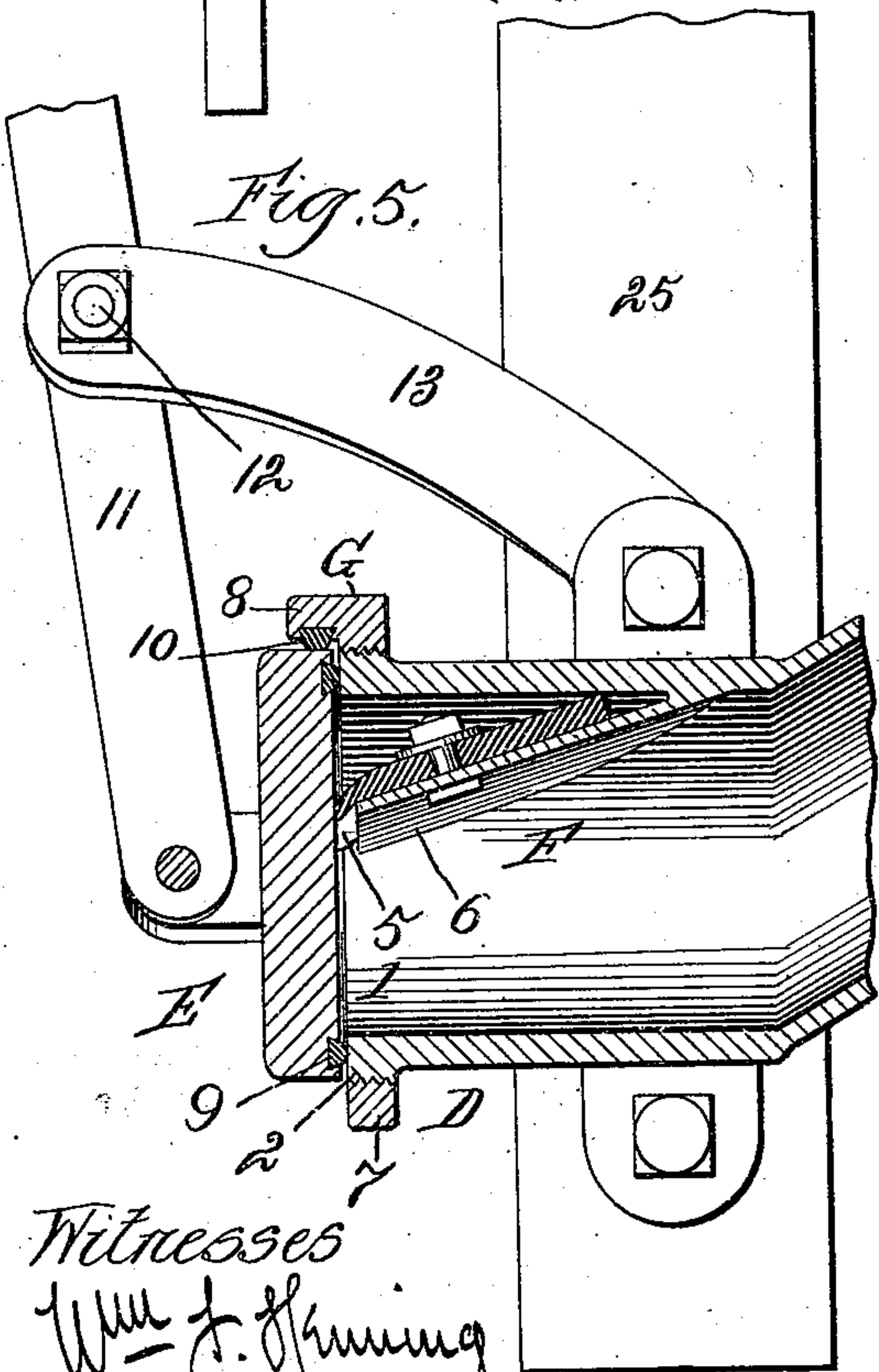
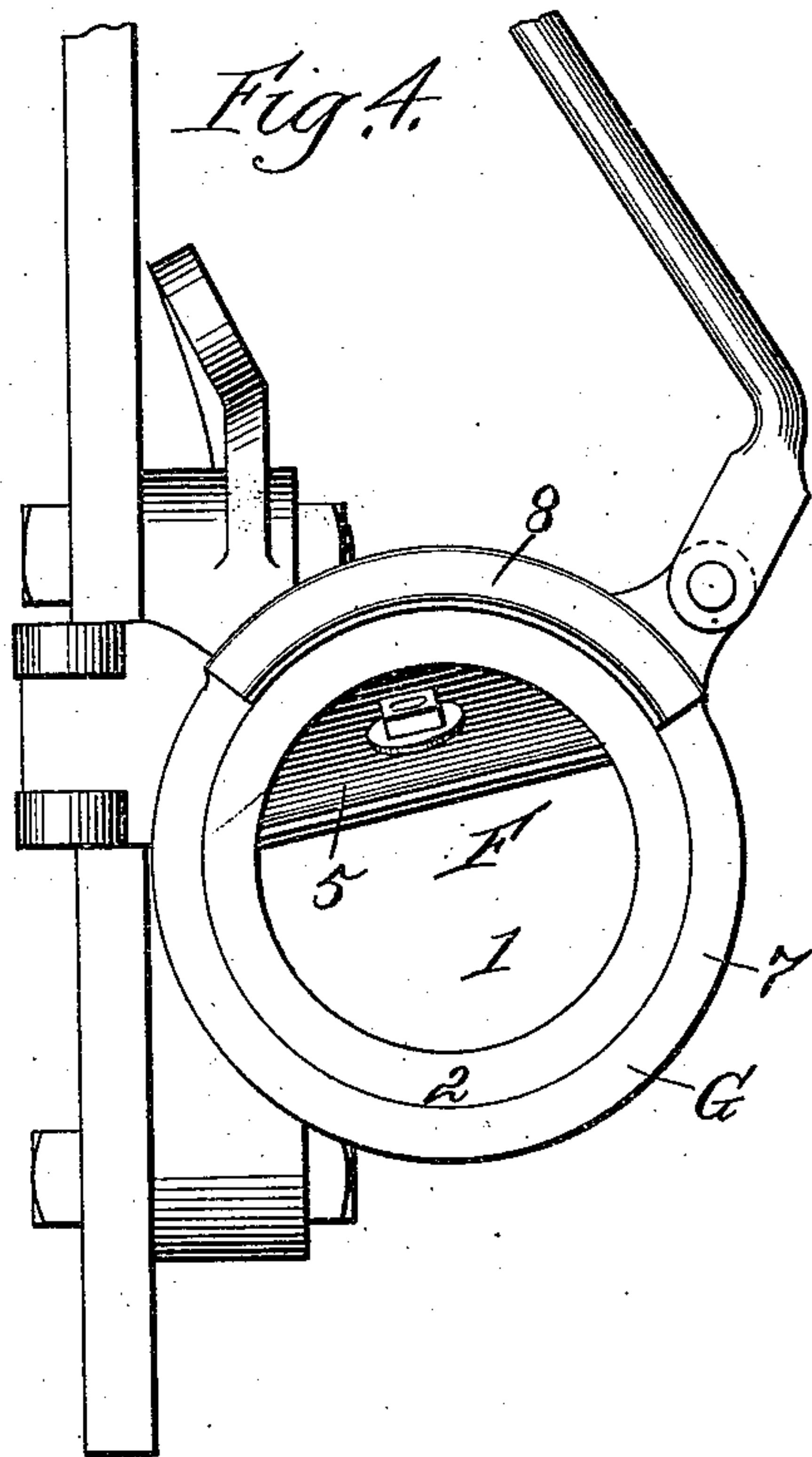
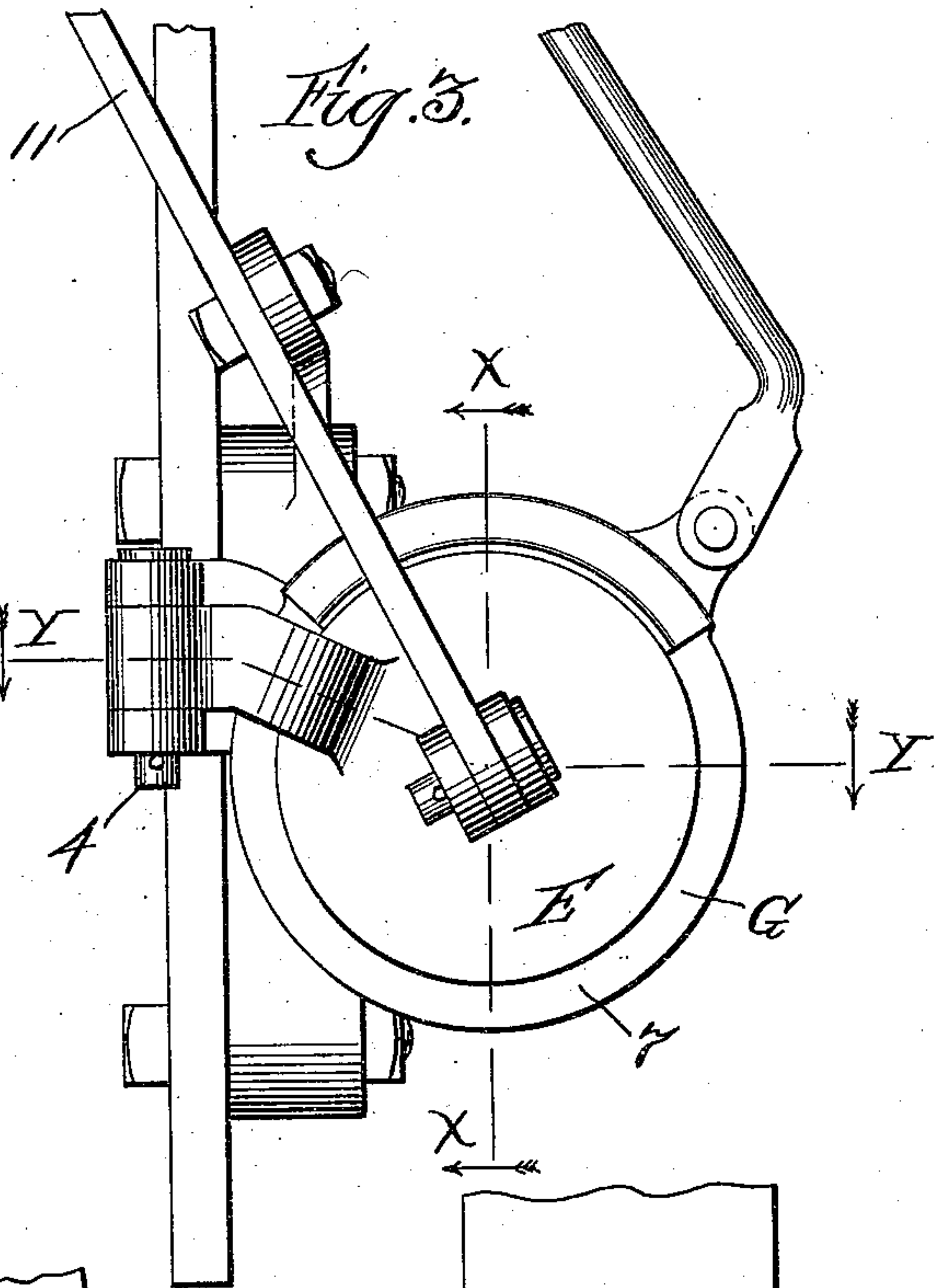
(No Model.)

2 Sheets—Sheet 2.

M. G. BUNNELL.
SPRINKLER.

No. 549,955.

Patented Nov. 19, 1895.



Witnesses
Wm. J. Fleming
Arthur P. Howard

Inventor
Morton G. Bunnell
by *Chas. F. Page* Atty.

UNITED STATES PATENT OFFICE.

MORTON G. BUNNELL, OF CHICAGO, ILLINOIS, ASSIGNOR TO FREDERICK C. AUSTIN, OF SAME PLACE.

SPRINKLER.

SPECIFICATION forming part of Letters Patent No. 549,955, dated November 19, 1895.

Application filed September 24, 1894. Serial No. 523,929. (No model.)

To all whom it may concern:

Be it known that I, MORTON G. BUNNELL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Sprinklers, of which the following is a specification.

A prominent object of my invention is to vary the thickness of a sheet of water discharged from the nozzle of a street-sprinkler and to cause the thicker portion of such sheet to be the lateral or side discharge in contradistinction to the downward discharge. By thus discharging the greater volume of water laterally, undue wetting of the street at a point below the nozzle is avoided.

A further object is to provide a simple and effective cut-off or regulating device whereby any portion of the discharge can be cut off. Further objects are to provide a simple, effective, and economical construction of valve and to avoid the collection of dirt within the nozzle.

To the attainment of the foregoing and other useful ends my invention consists in matters hereinafter set forth.

In the accompanying drawings, Figure 1 represents in side elevation a street-sprinkling wagon with my improvements applied. Fig. 2 is a plan of portions of the devices for operating the valve and the cut-off. Fig. 3 shows the nozzle in end elevation with the valve closed. Fig. 4 is a like view with the valve removed. Fig. 5 is a vertical section on line *x x* in Fig. 3. Fig. 6 is a longitudinal section on line *y y* in Fig. 3.

In the sprinkling-wagon shown, the tank A is arranged upon the wheeled wagon-body B, and a seat C for the driver is arranged in front of the tank. The sprinkling-nozzles (whereof one is illustrated) are arranged to discharge the water in sheet form in a plane between the front and rear wheels of the wagon, and means for opening, closing, and varying the discharge are arranged under control of the driver. It is understood, however, that the sprinkling-nozzles could discharge back of the rear wheels, if so desired, and also that my invention can be used in connection with a two-wheeled cart as well as with a wagon.

The nozzle D is provided with an outwardly-opening valve E, which is hinged upon the nozzle and arranged to seat against the end of the same so as to cut off the discharge. The nozzle is open at its end, so as to provide it with a mouth or port 1, and the valve is external to the nozzle, whereby it can be closed against the end of the nozzle, so as to cut off the discharge, as in Fig. 5, or be opened outwardly or away from the ported end of the nozzle, as in Fig. 6, so as to permit the water to discharge in sheet form through the space between the rear side of the valve and the annular valve-seat 2 formed by the end of the nozzle.

As best shown in Fig. 3, the valve is hinged at one side of the nozzle, said side being the one nearest the longitudinal middle of the wagon, so that when the valve is open, as in Fig. 6, the space or opening between the rear edge portion of the valve and its seat 2 will be greatest at a point farthest from the middle line of the wagon and will from such point contract toward said middle line. By such arrangement the valve opens obliquely or at an angle to the plane of its seat, and thereby permits the lateral discharge of water to have a greater volume than the discharge that takes place downwardly from the nozzle. In other words, the sheet of water issuing from the nozzle will be thickest at the side of the nozzle which is opposite the side whereat the valve is hinged, and said sheet of water will diminish in thickness from the aforesaid point toward the side of the nozzle at which the valve is hinged. In this way an excess of water discharging downwardly from the nozzle onto the street will be avoided, and at the same time a suitable volume will be given to the discharge which is projected laterally in a direction away from the side of the wagon.

In Figs. 4 and 5 I have shown a deflector F, arranged within the nozzle and positioned to deflect the water away from such space as may occur between the valve and the nozzle end 2, at and adjacent to the upper portion of the nozzle, thereby avoiding an upward discharge when the valve is open. As a matter of course, the space between the open valve and the nozzle end, at 3, in Fig. 6, will be diminished proportionately to the nearness of

the valve-hinge to the end of the nozzle; but I prefer setting the pintle 4 of such hinge away from the end of the nozzle to some extent. The employment of the deflector is, however, preferable, and under the arrangement best shown in Fig. 4 the deflector prevents the discharge of water vertically upward and also in a direction upwardly at an inclination toward the tank or body of the wagon.

The deflector consists of an inclined shield held within the nozzle, and as a desirable construction said deflector may consist of a flexible shield or plate 5, bolted upon a bed-plate of holder 6, arranged within the nozzle and either secured thereto or formed integral with the same. The flexible and desirably-elastic shield or plate 5 may be held so as to project out from the mouth of the nozzle when the valve is open, in which way it will maintain its contact with the open valve and be bent back within the nozzle when the valve is closed.

In order to cut off as much of the lateral discharge as may be necessary in sprinkling near a sidewalk or in passing a pedestrian, the nozzle is provided with an adjustable cut-off G, consisting of a rotary adjustable ring 7, arranged upon the nozzle and having a segmental portion 8, which laps over a portion of the annular edge of the valve. The ring 7 could be held upon the nozzle in any suitable way; but as a matter of further improvement it is arranged to screw upon the nozzle, so that when it is turned in a direction to bring it over the under portion of the space between the open valve and valve-seat it will work toward the end of the nozzle, and thereby cause the segment to effectively cover the width of the space or gap over which the latter is caused to project. The rear side of the valve is desirably provided with a gasket or packing-ring 9, and the ledge or segment 8 is likewise desirably provided with a packing rib or strip 10, which latter engages the annular edge of the valve.

The valve E opens against the resistance of a spring, which, broadly considered, may be arranged and applied in any desired or suitable way. In Fig. 1 the spring H, which is adapted to oppose the opening of the valve with a yielding elastic resistance, is applied to the device or valve-movement employed for opening the valve. The valve-movement shown in said figure comprises a lever 11, fulcrumed at 12 upon an arm 13 and having its short arm connected with the valve. The long arm of said lever is hinged to a rod 14, which latter extends forward and connects with the crank-arm 15 of a rock-shaft 16, which latter carries a treadle or foot lever I. With such construction the spring can be arranged on rod 14 and confined between a shoulder 17 on said rod and fixed stop 18 on the body of the wagon. By the foregoing arrangement the long arm of the lever 11 is subject to the spring, and hence when the valve-

opening device is released by the driver the spring will serve to effectually close the valve against the pressure of the water, and on the other hand the driver can readily open the valve by depressing foot-lever I. The cut-off G can also be adjusted by the driver, and to such end a rock-shaft K is arranged upon the wagon-body and provided at its ends with arms 19 and 20, projecting laterally in opposite directions. Arm 19 of said rock-shaft connects with the rotary adjustable cut-off by a link 21, while arm 20 is connected with a foot-lever or treadle 22 by a link 23. The cut-off normally occupies about the position shown in Fig. 3, from which position it can be shifted round to cut off the side discharge, heretofore referred to, by depressing the forward or foot portion of lever 22. Any suitable latching or locking device can be employed in conjunction with lever I, and said lever can be arranged to be operated by hand or by foot power.

The nozzle connects with the water-tank A by a pipe 24 and is shown attached to a support or bracket 25, arranged to depend from the body of the wagon.

What I claim as my invention is—

1. A street-sprinkler comprising a cart or wagon provided with a water-supply tank, a nozzle D suitably connected with the supply tank, a hinged valve E arranged to close against and open outwardly from the end of the nozzle, and suitable valve operating means connected with the valve and under control of a driver upon the cart or wagon, said valve being hinged at one side of the nozzle adjacent the longitudinal axis of the cart so that when it is open the portion of the sheet of water discharging laterally from the nozzle will be thicker than the portion of such sheet discharging downwardly, substantially as described.

2. A street sprinkler comprising a cart or wagon provided with a water-supply tank, a nozzle D suitably connected with the water supply tank, a valve E hinged at one side of the nozzle adjacent the longitudinal axis of the cart and arranged to close against and open outwardly from the end of the latter for the purpose set forth, and an operating lever having a hinged connection with the valve, substantially as described.

3. In a street sprinkler comprising a cart or wagon provided with a water supply tank, the nozzle D suitably connected with the water supply tank, the valve E provided with an arm E' which is hinged at one side of the nozzle adjacent the longitudinal axis of the cart, said valve being arranged to close against and open outwardly from the end of the nozzle for the purpose set forth, and an operating device hinged to the valve, substantially as described.

4. In a street-sprinkler, the nozzle D provided with an outwardly opening valve hinged at one side of the nozzle arranged to close against the end of the same, and a deflector

arranged within the nozzle and extending back from the end of the same, substantially as and for the purpose set forth.

5 In a street-sprinkler, the nozzle D provided with an outwardly opening valve hinged at one side of the nozzle and arranged to close against the end of the same, and a deflector arranged within the nozzle and having an elastic end portion which is forced back by
10 the valve when the latter is closed, substantially as and for the purpose described.

6. In a street-sprinkler, the nozzle provided with a hinged valve arranged to close against the end of the nozzle and open away from the

same, so as to provide a discharge space be- 15
tween the valve and the nozzle, and a cut-off arranged for varying the width of the sheet of water discharging through the space between the valve and nozzle and consisting of a screw
ring fitted to turn upon a threaded end por- 20
tion of the nozzle and having a ledge arranged to lap over the space between the valve and nozzle, substantially as described.

MORTON G. BUNNELL.

Witnesses:

CHARLES G. PAGE,
RETA M. WAGNER.