

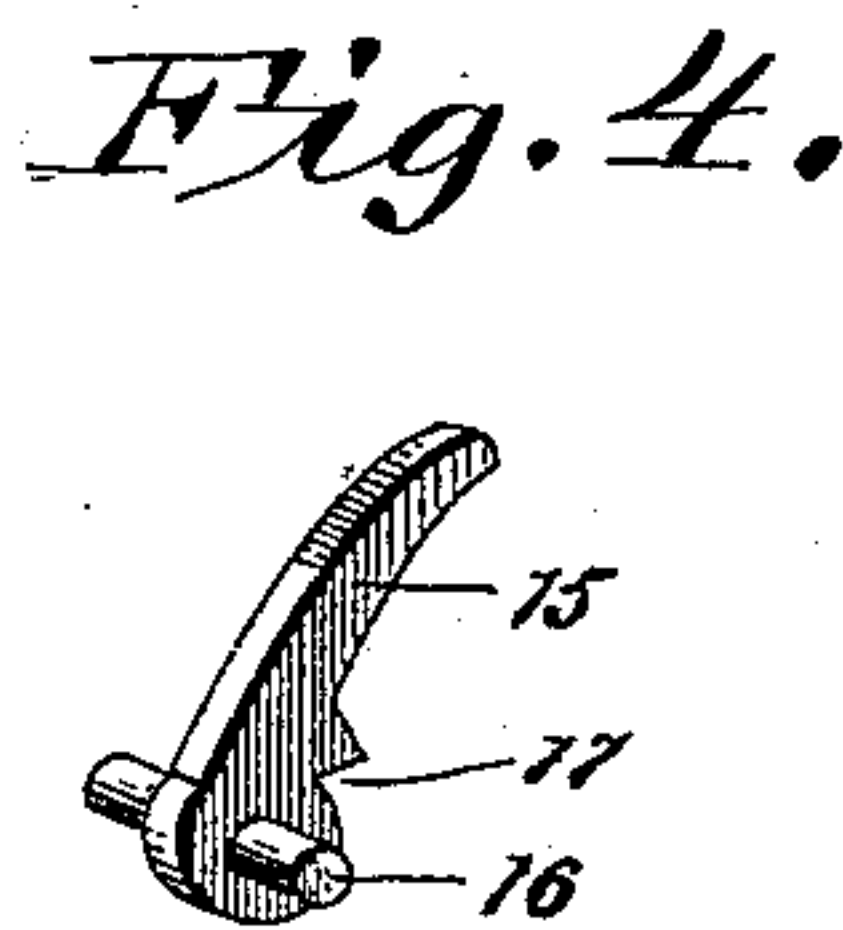
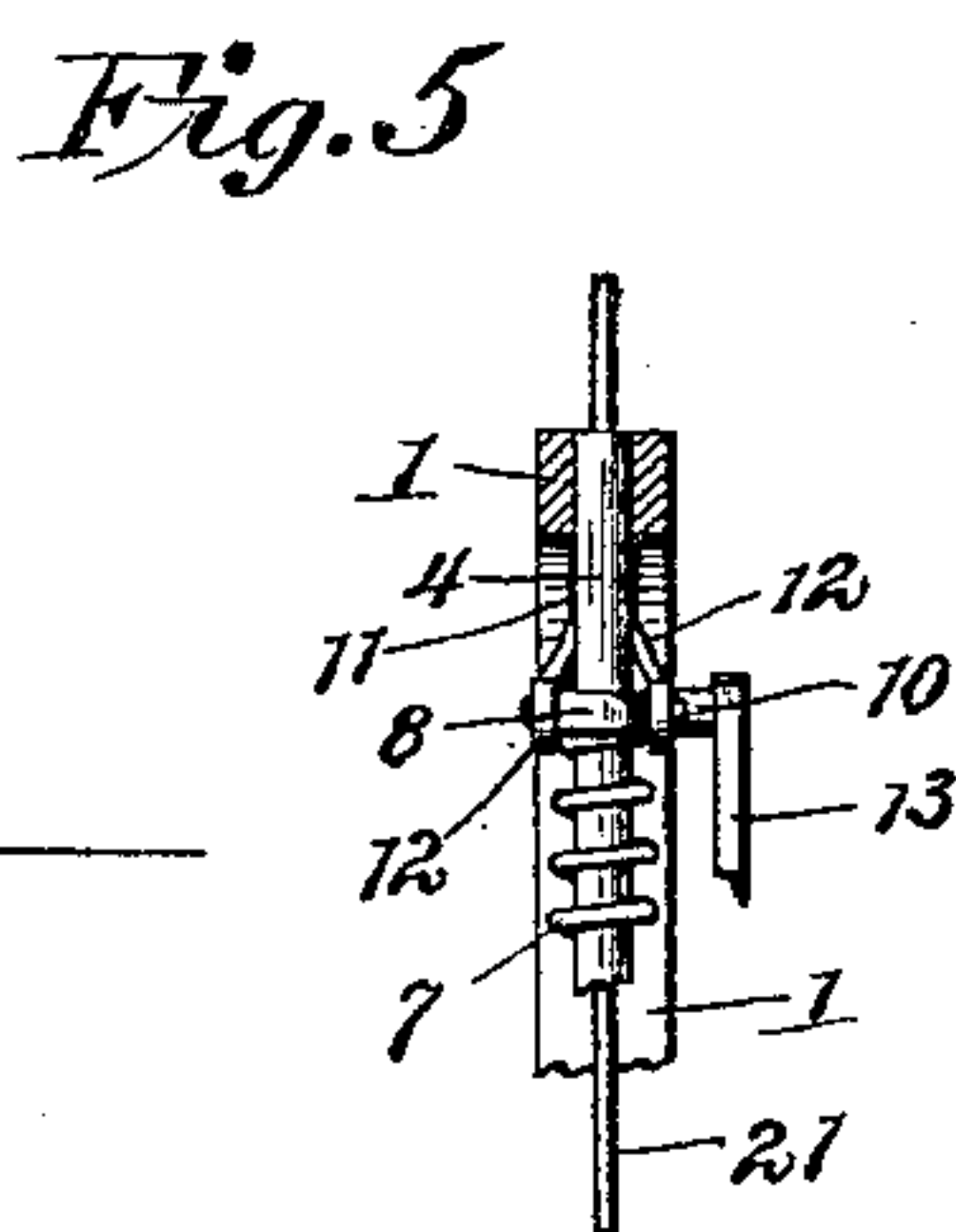
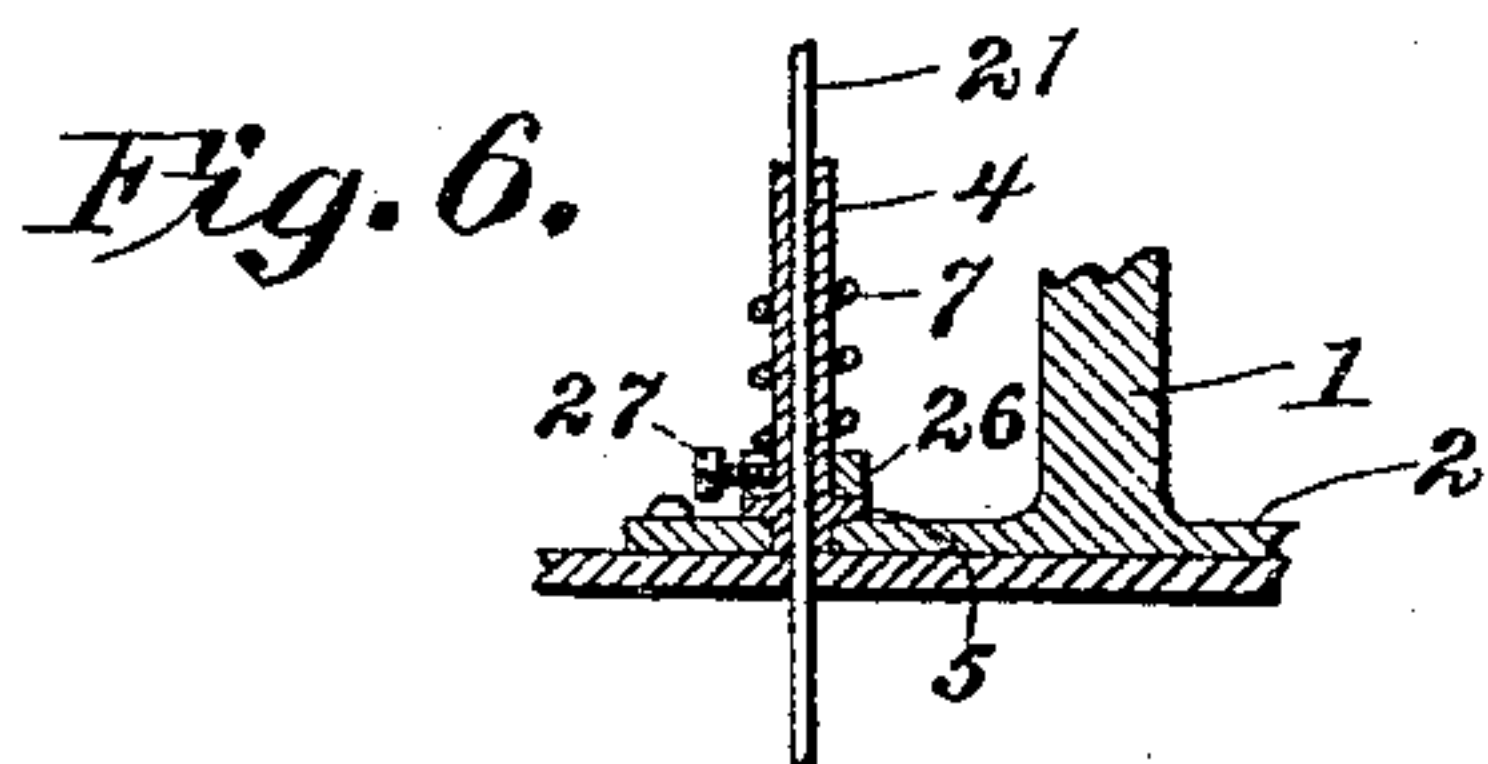
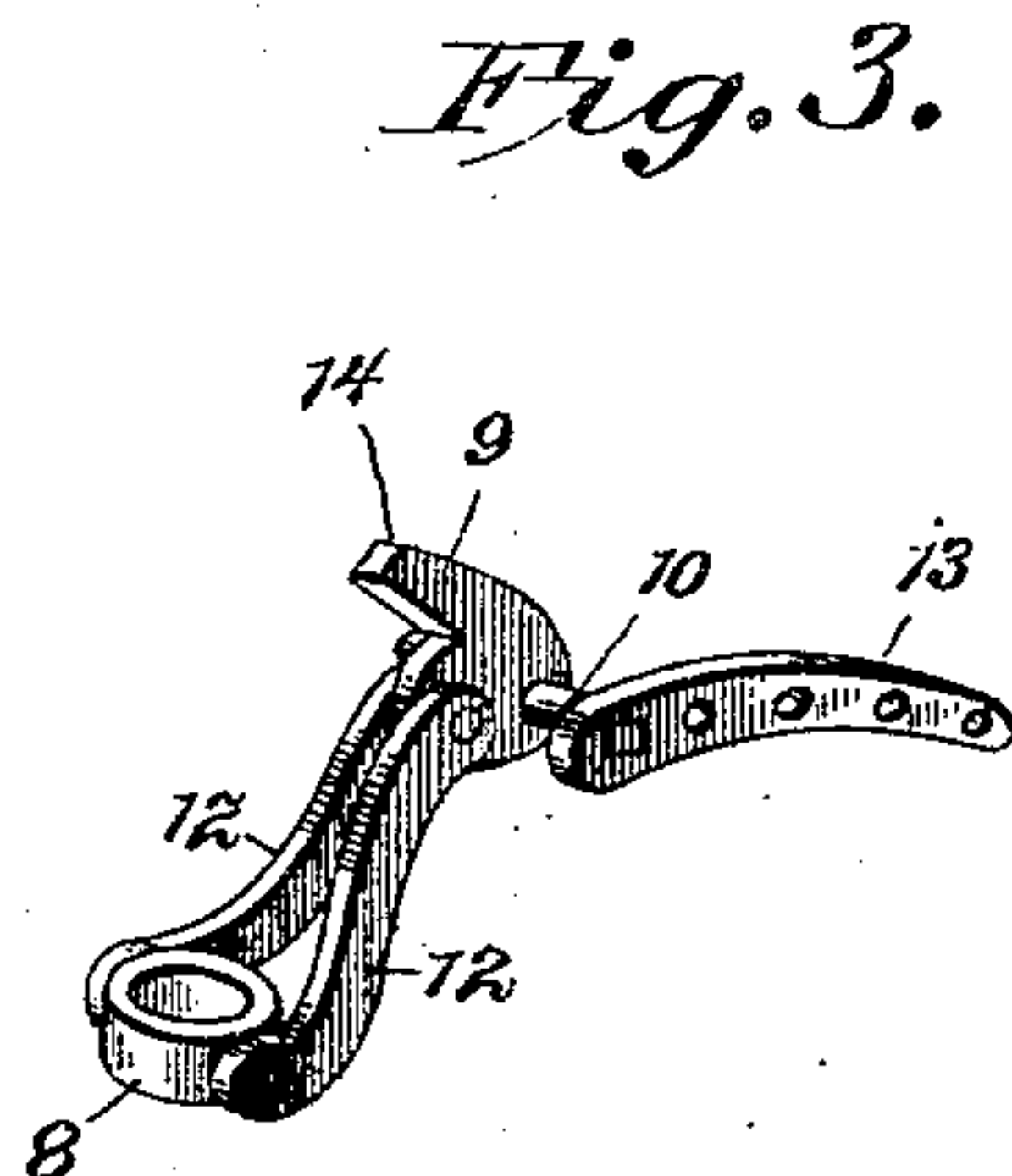
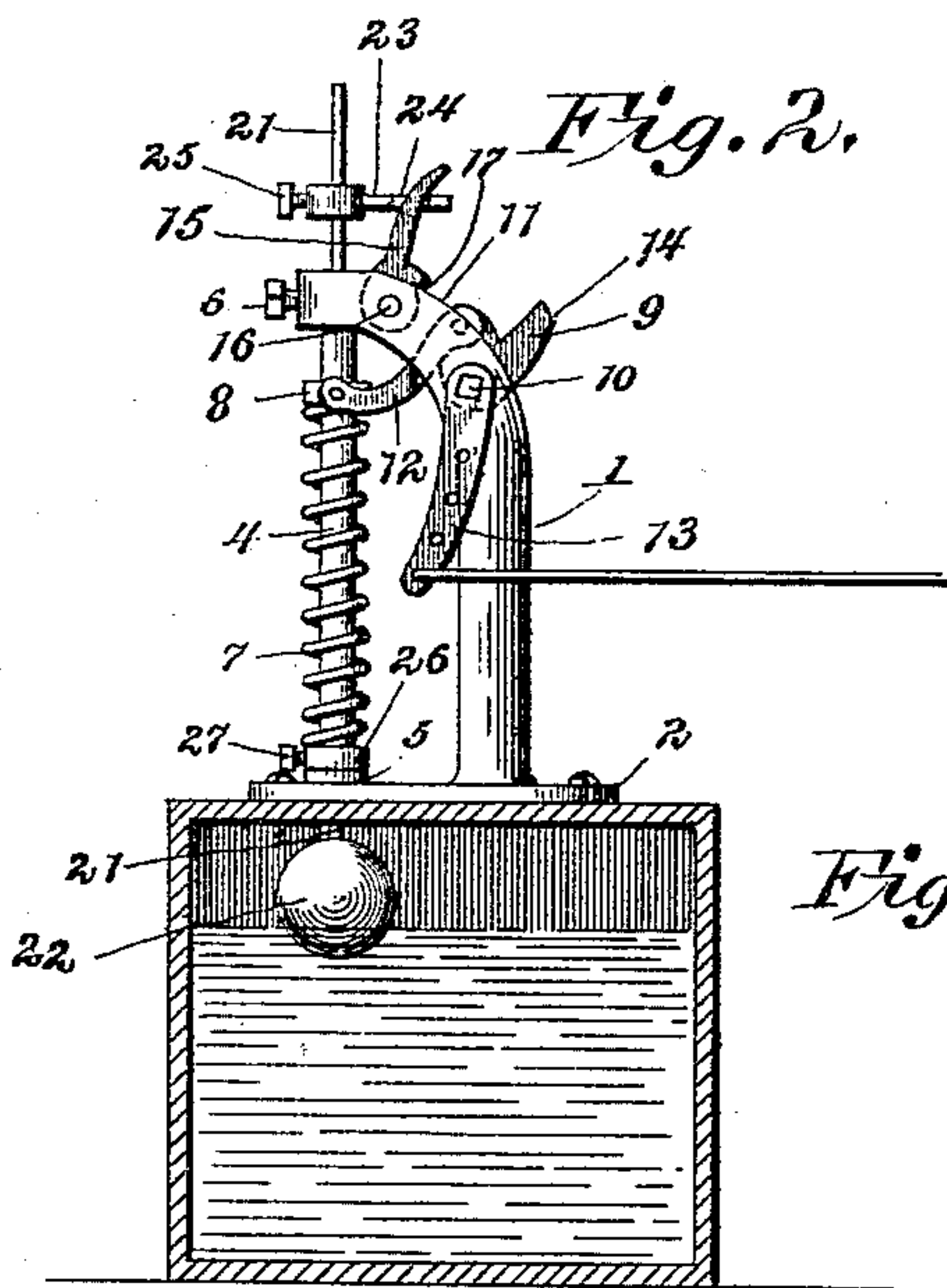
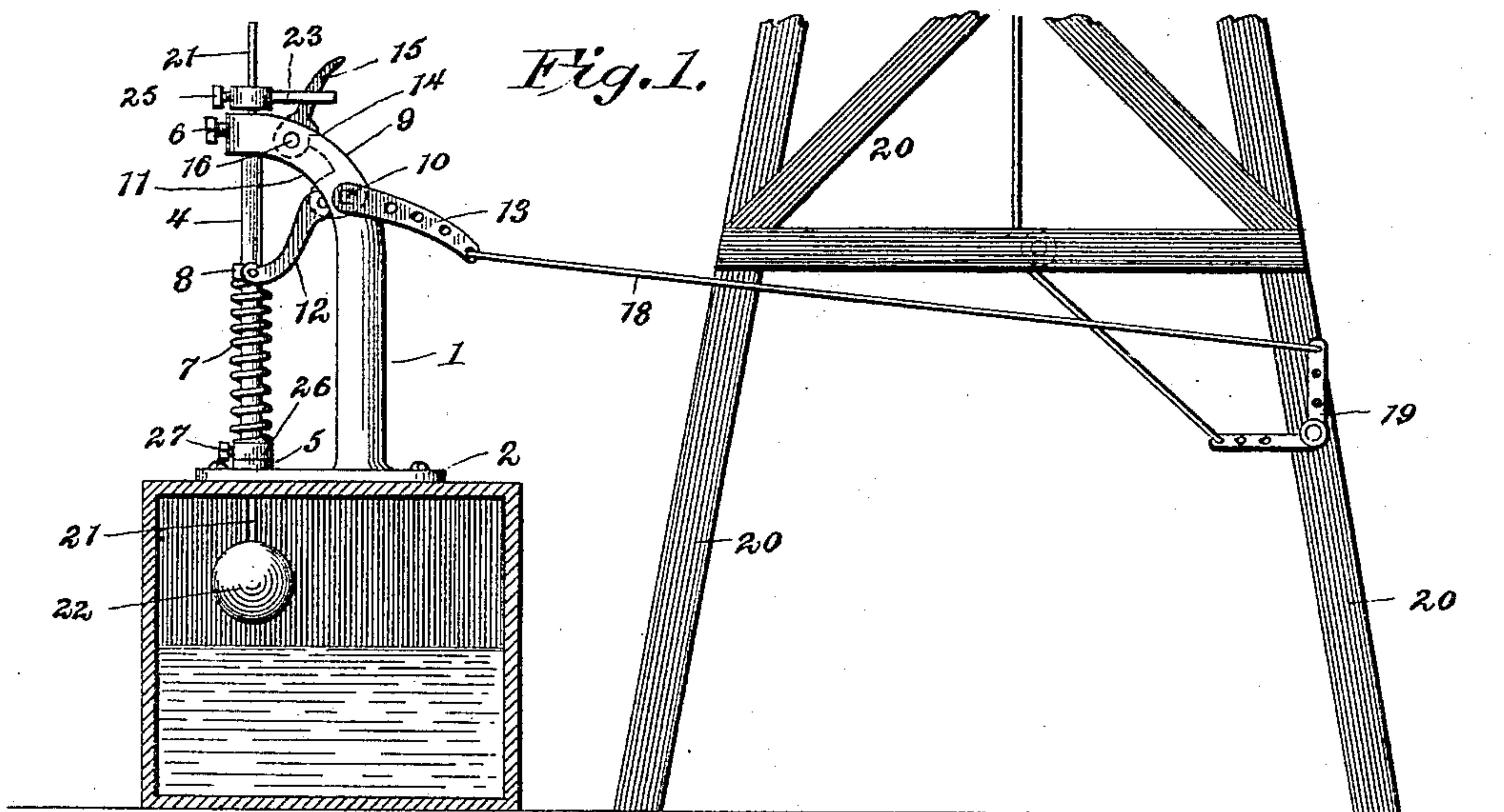
No. 632,929.

Patented Sept. 12, 1899.

B. M. TOTDAHL.
WINDMILL REGULATOR.

(Application filed June 2, 1898.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

BENIARDUS MAGNUSEN TOTDAHL, OF ST. OLAF, MINNESOTA.

WINDMILL-REGULATOR.

SPECIFICATION forming part of Letters Patent No. 632,929, dated September 12, 1899.

Application filed June 2, 1899. Serial No. 719,122. (No model.)

To all whom it may concern:

Be it known that I, BENHARDUS MAGNUSEN TOTDAHL, a citizen of the United States, residing at St. Olaf, in the county of Otter Tail and State of Minnesota, have invented a new and useful Windmill-Regulator, of which the following is a specification.

The invention relates to improvements in windmill-regulators.

The object of the present invention is to improve the construction of windmill-regulators and to provide a simple, inexpensive, and efficient device adapted to be mounted upon a tank or reservoir and capable when the water within the same reaches the desired height of automatically throwing the windmill out of operation.

A further object of the invention is to provide a device of this character adapted to be connected with any ordinary windmill and capable of being readily adjusted to take up any slack of the connections.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a side elevation partly in section, showing a windmill-regulator constructed in accordance with this invention and mounted on a tank, the parts being set and the windmill being in operation. Fig. 2 is a similar view illustrating the position of the parts when the device is tripped. Fig. 3 is a detail perspective view of the bell-crank arm of the shaft. Fig. 4 is a similar view of the trigger. Figs. 5 and 6 are detail sectional views illustrating the manner of mounting the vertical tube.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a standard or support provided at its lower end with a base or attachment plate 2 and designed to be secured upon a tank, as clearly illustrated in Fig. 1 of the accompanying drawings, and the upper portion of the standard is curved over the base and is provided with a perforation, in which is arranged a vertical tube 4. The lower end of the tube 4 is provided with a flange 5 and is stepped in a perforation of the base, and the upper end of the tube is secured in the per-

foration of the standard by a set-screw 6. Disposed on the tube 4 is a coiled spring 7, which engages a sliding collar 8, and the latter is connected by links with a bell-crank arm or dog 9 of a shaft 10 and is arranged within a slot 11 of the upper portion of the standard. The bell-crank arm or dog is connected with the sliding collar by means of a pair of links 12, and the shaft 10 carries an arm 13, which is rigid with the shaft and the bell-crank arm or dog, the whole forming a lever for drawing a windmill out of the wind.

The spring is adapted to be compressed by rotating the shaft, which is locked to retain the spring in its compressed position by a trigger which engages the upper projecting portion 14. The trigger 15 is adapted to be released by the rising of the water within the tank, whereby the spring is permitted to expand and throw the windmill out of the wind. The trigger is mounted within the upper portion of the slot of the standard on a transverse pin 16, and it is provided with a notch 17, forming a shoulder, which is adapted to engage the bell-crank dog or arm of the shaft.

The arm 13 of the shaft is connected by a wire 18 with a bell-crank lever 19, fulcrumed at its angle on the tower 20 of a windmill and having one of its arms connected with the mechanism for throwing the windmill out of the wind. The straight arm 13 of the shaft is elevated to compress the spring and set the windmill-regulator for operation, and when the device is tripped the arm 13 is swung downward, whereby the bell-crank lever is operated to throw the windmill out of the wind. The arms of the bell-crank lever and the arm 13 of the shaft are designed to be provided with perforations to permit the connections to be adjusted to take up any slack of the parts.

Within the vertical tube 4 is arranged a rod 21, forming a guide for a float 22, located within the tank and adapted to be moved upward by the water rising within the same. The rod or stem of the float projects above the standard and carries a horizontal tripping device 23, adjustably secured to it and provided with an opening 24 for the reception of the trigger, which is arranged at an angle to the rod or stem when the parts are set, whereby the said trigger is adapted to be drawn inward by the rising of the float to trip the device. The tripping device is provided at

its inner end with a socket or head and is secured to the rod or stem by a set-screw 25. The tension of the spring is adjusted by a lower collar 26, arranged on the vertical tube and forming a bearing for the lower end of the spring and provided with a set-screw 27, adapted to clamp the collar at the desired point on the tube. By raising and lowering the collar 26 the tension of the spring is regulated by causing the same to be compressed to a greater or less extent by the lever mechanism of the device.

The invention has the following advantages: The windmill-regulator, which is simple and comparatively inexpensive in construction, is strong and durable and adapted to be readily applied to a windmill and a tank, and it is capable of being set so that the windmill will be thrown out of operation when the water in the tank rises to a given height. The spring, which is compressed when the device is set, may have its tension readily regulated, and the tripping device is adjustably mounted on the rod or stem of the float, whereby the device may be tripped when the water is at any desired height. The trigger which holds the lever in its set position is disposed at an angle to the rod or stem of the float and is pivotally mounted, so that only a very small float is necessary to operate the windmill-regulator.

Changes in the form, proportion, size, and the minor details of construction within the scope of the appended claims may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

What is claimed is—

1. A windmill-regulator comprising a support mounted on a tank or reservoir, a lever fulcrumed on the support, means for connecting the lever with the operating mechanism of a windmill, a spring arranged to be compressed by the lever when the device is set and adapted when the device is tripped to draw the windmill out of the wind, a trigger for setting the lever, and a float having a tripping device arranged to disengage the trigger from the lever, substantially as described.

2. A windmill-regulator comprising a standard or support mounted on a reservoir, a shaft journaled on the standard or support, means for connecting the shaft with the operating mechanism of a windmill, a spring, a dog mounted on the shaft and arranged to compress the spring to set the device, means for setting the dog, and a float adapted to trip the dog, substantially as described.

3. A windmill-regulator comprising a spring-actuated lever connected with the mechanism for throwing a windmill out of the wind, means for setting and tripping the lever, and a float connected with the said means, substantially as described.

4. A windmill-regulator comprising a support, a shaft fulcrumed on the support and having an arm adapted to be connected with

the operating mechanism of a windmill, a dog carried by the shaft, a spring arranged to be compressed by the dog, links connecting the dog with the spring a trigger mounted on the support and adapted to engage the dog to set the device, a float, and a tripping device connected with and operated by the float and arranged to disengage the trigger, substantially as described.

5. A windmill-regulator comprising a support, a shaft mounted on the support and having an arm connected with a windmill, a spring, a dog mounted on the shaft and arranged to compress the spring, links connecting the dog and the spring a trigger engaging the dog and disposed at an inclination, a float having a vertical stem, and a tripping device mounted on the stem and having an opening receiving the trigger and adapted to disengage the same, substantially as described.

6. A windmill-regulator comprising a support having a vertical tube and designed to be mounted on a tank or reservoir, a coiled spring disposed on the tube, a lever fulcrumed on the support and connected with and adapted to compress the spring, said lever being designed to be connected with the operating mechanism of a windmill, a trigger arranged to set the lever, a float having a stem extending through the tube, and a tripping device mounted on the stem of the float and arranged to engage the trigger, substantially as described.

7. A windmill-regulator comprising a support provided with a vertical tube, a coiled spring mounted thereon, a shaft journaled on the support and having an arm connected with the operating mechanism of a windmill, a dog mounted on the shaft, a sliding collar arranged on the tube and adapted to compress the spring, links connecting the sliding collar with the dog, a trigger for setting the dog, a float having a stem extending through the tube, and a tripping device carried by the stem and adapted to disengage the trigger, substantially as described.

8. A windmill-regulator comprising a standard having a base and mounted upon a tank or reservoir, a vertical tube supported by the base and the top of the standard, a coiled spring disposed on the tube, a shaft journaled on the standard and designed to be connected with the operating mechanism of a windmill, a dog mounted on the shaft, a sliding collar engaging the spring and connected with the dog, a trigger pivoted to the standard and engaging the dog, a float having a stem extending through the tube, and an adjustable trip carried by the stem and arranged to engage the trigger, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

BENHARDUS MAGNUSEN TOTDAHL.

Witnesses:

C. F. HANSON,

J. H. CAMPBELL.