

(No Model.)

A. B. BURNS.
BICYCLE BELL.

No. 584,032.

Patented June 8, 1897.

Fig. 1.

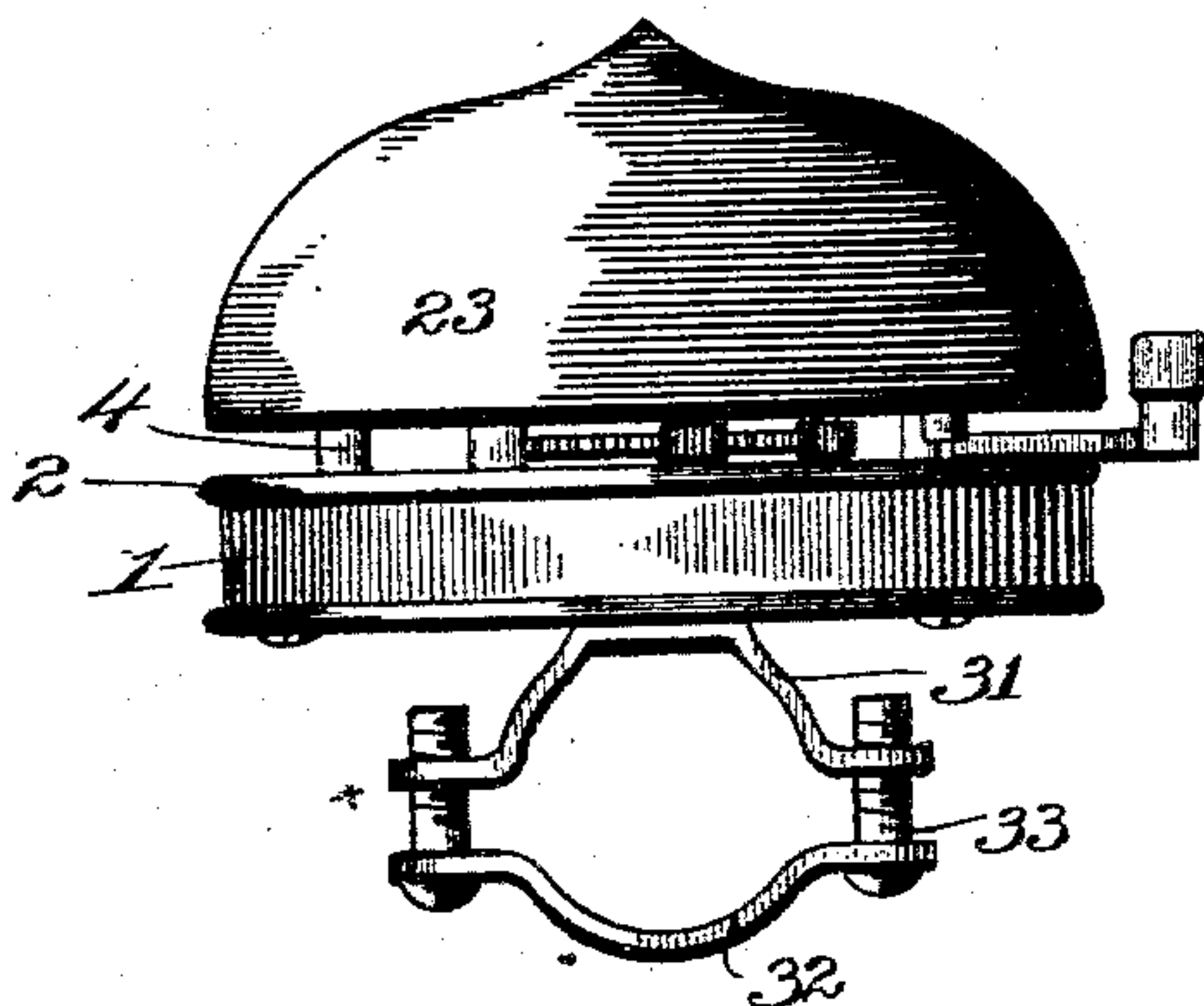


Fig. 2.

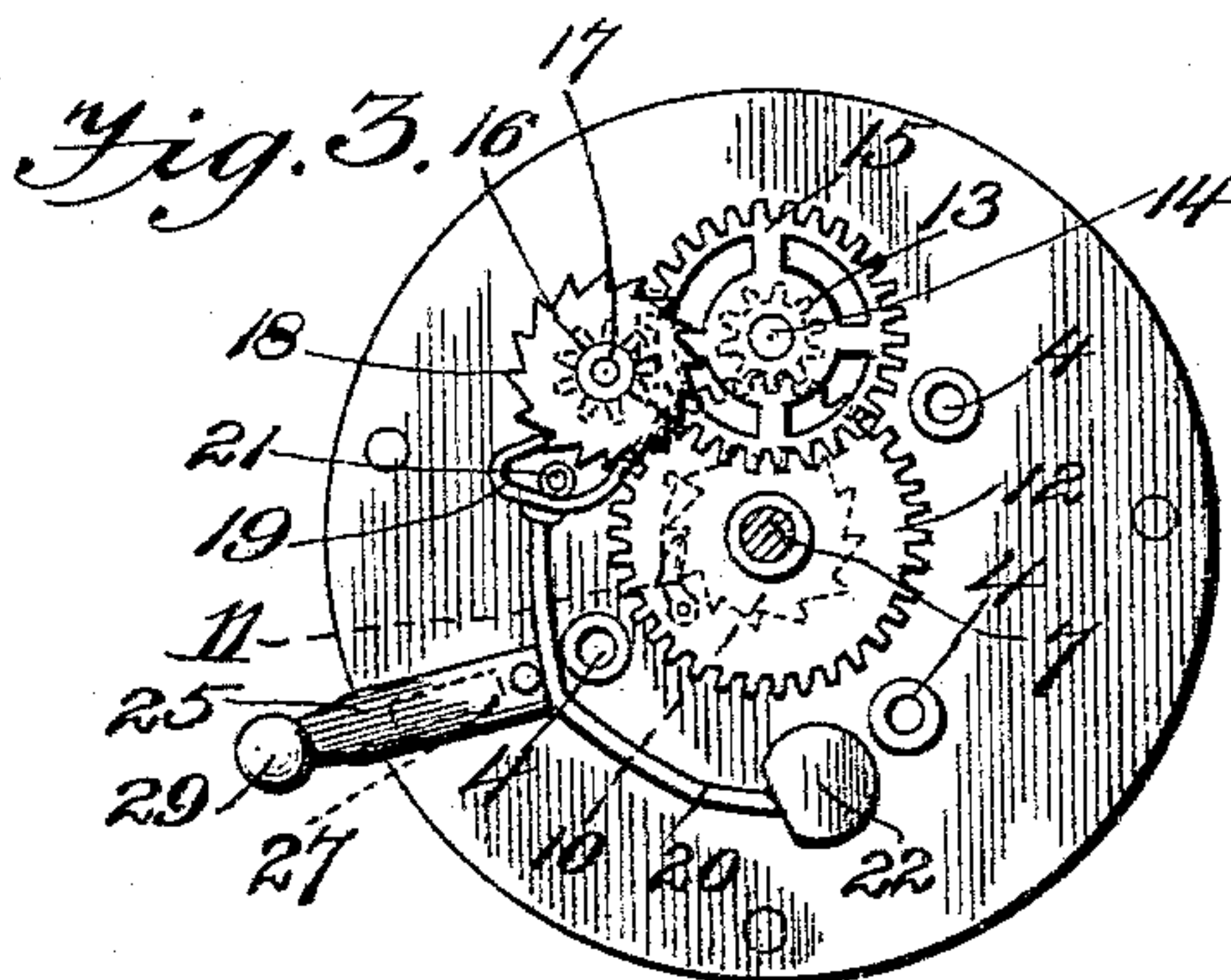
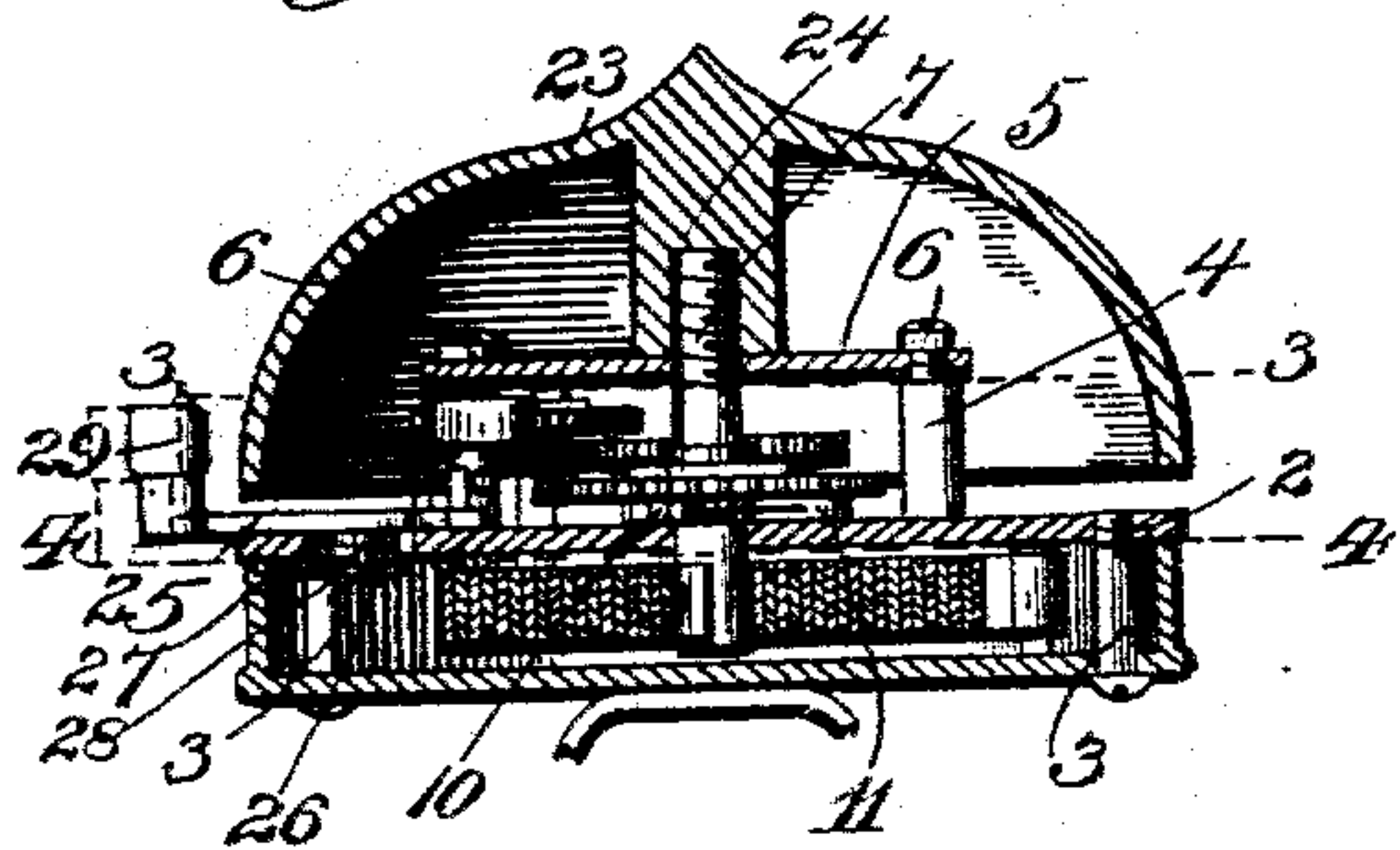


Fig. 4.

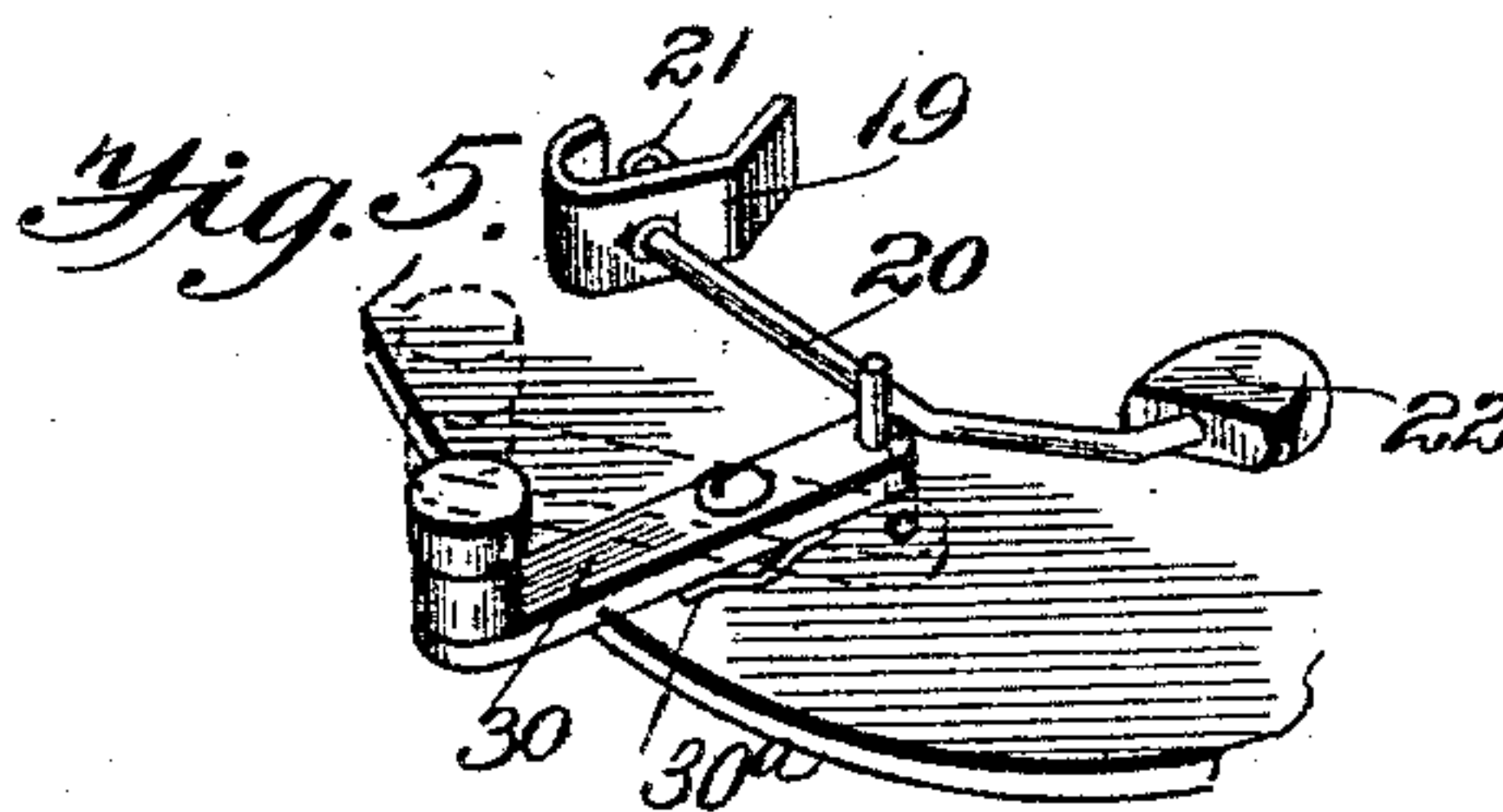
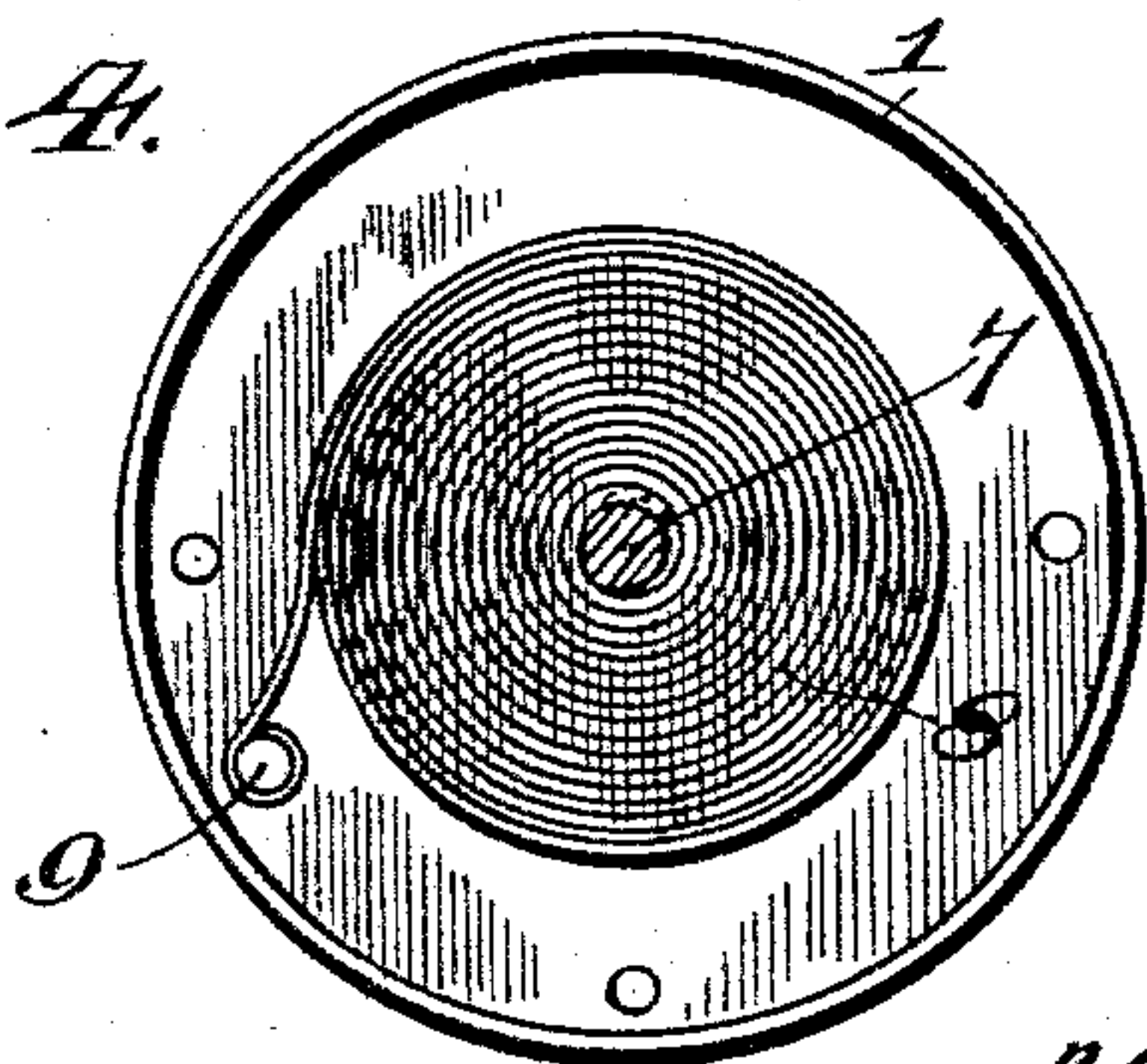
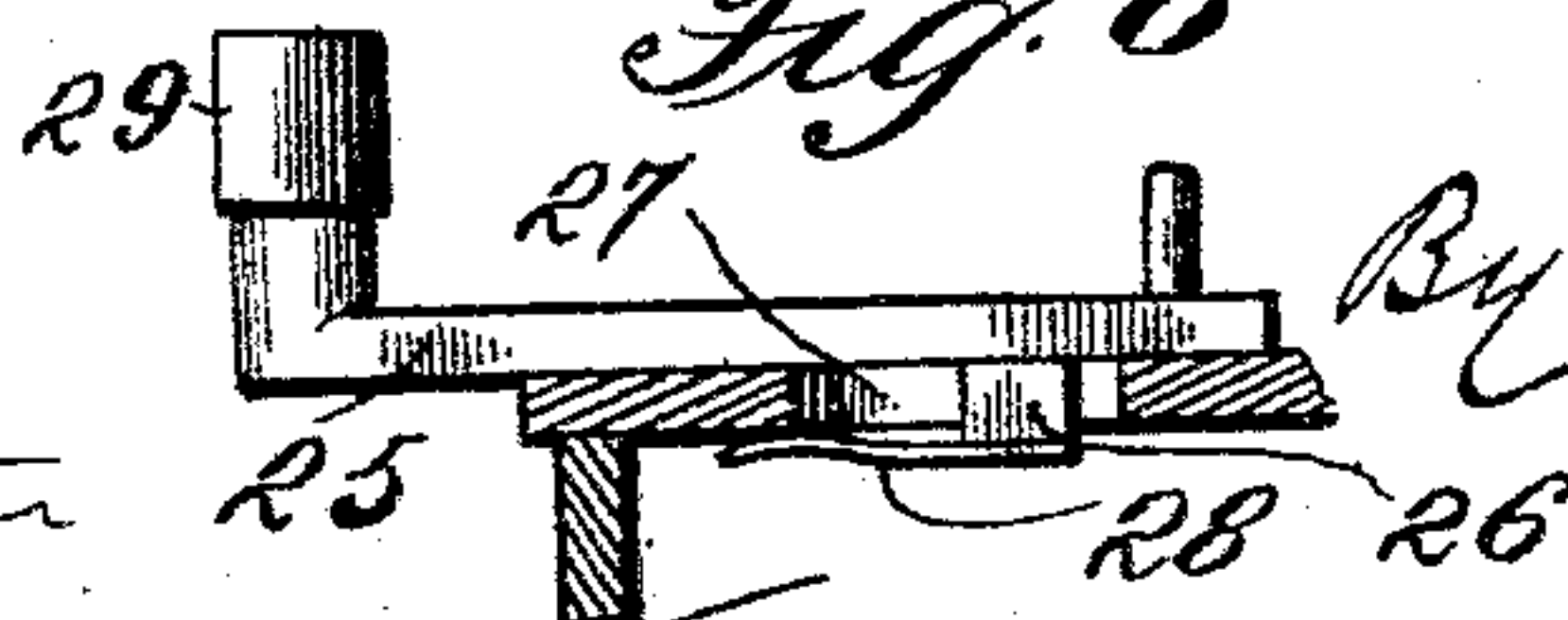


Fig. 6



Witnesses

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UNITED STATES PATENT OFFICE.

ALEXANDER B. BURNS, OF WASHINGTON, DISTRICT OF COLUMBIA, AS-
SIGNOR OF ONE-HALF TO ISADORE SAKS, OF SAME PLACE.

BICYCLE-BELL.

SPECIFICATION forming part of Letters Patent No. 584,032, dated June 8, 1897.

Application filed August 13, 1896. Serial No. 602,650. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER B. BURNS, a citizen of the United States, residing at Washington, in the District of Columbia, have
5 invented certain new and useful Improvements in Automatic Bicycle-Bells; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which
10 it appertains to make and use the same.

The invention relates to certain improvements in automatic bicycle-bells of the class known as "continuous ringing;" and it consists, essentially, in providing a train of multiplying-gearing, a suitably-wound spring to
15 impart motion to the gearing, a vibratory hammer actuated by the gearing, and a device for locking the hammer against action and releasing it to permit continuous ringing.

20 The principal object of the invention is to produce a bell in which the hammer may be automatically vibrated to ring the bell continuously for a period of time, so as to permit the rider of a bicycle to have the free use
25 of both hands at all times to manage the handle-bar of the machine and thus enable him to have perfect and entire control of the wheel while the bell is ringing, thereby preventing the class of accidents generally due when an
30 ordinary bell is used by reason of the rider being compelled to employ one hand to manipulate the bell and the other to control the machine. This object is attained by means of the mechanism illustrated in the accompa-
35 nying drawings, in which—

Figure 1 is a side elevation of the bell complete and ready for attachment to the bicycle; Fig. 2, a vertical central sectional view showing the gearing in elevation; Fig. 3, a horizontal sectional view on line 3 3 of Fig. 2;
40 Fig. 4, a similar section on line 4 4 of Fig. 2; Fig. 5, a detail perspective view of a modified form of the device for locking and releasing the vibratory hammer, and Fig. 6 a
45 detail view of the detent and spring.

Referring to the drawings, the numeral 1 indicates a cylindrical casing or shell upon which is secured a flat metal plate 2 by means of screws 3. The upper face of the plate is
50 provided with posts 4, to which is secured a plate 5 by means of screws 6, as shown in Fig.

2. Centrally journaled in the plates 2 and 5 is a winding-post 7, the lower end of which projects into the casing and has secured to it the inner end of a convolute actuating-spring 55 8, the other end of the spring being secured to a post 9, attached to the inner side of the bottom of the casing. To the winding-post, above the plate 2, is secured a ratchet-wheel 10, and to the plate is pivoted a spring-actuated pawl 11, which engages the teeth of the ratchet-wheel to hold the winding-post against the tension of the actuating-spring when wound. Above the ratchet-wheel on the winding-post is secured a gear-wheel 12, which in- 60 tergears with a pinion 13, mounted on a shaft 14, journaled in the plates 2 and 5. Above the pinion 13 on the shaft 14 is secured a gear-wheel 15, which intergears with a pinion 16, mounted on a shaft 17, also journaled in the 65 plates 2 and 5, and above the pinion 16 on the shaft 17 is an escapement-wheel 18, which engages alternately the pallets 19 of an escapement-lever 20, fulcrumed on a post 21, attached to the plate 2. The end of the es- 70 capement-lever opposite to that carrying the pallets is provided with a hammer 22, which is normally held against vibratory action, as will be hereinafter explained. The upper end of the winding-post is screw-threaded, and a 75 gong-shaped bell 23, provided with a screw-threaded boss 24, is screwed thereon. 80

The numeral 25 indicates a detent, which in Figs. 1, 2, and 3 consists of a bar having a feather 26 on its lower face, which feather 85 sets into and is adapted to move in an oblong slot 27, made in the plate 2. Secured to the lower side of the feather is a leaf-spring 28, which bears against the lower face of the plate 2, so as to hold the detent when pushed 90 in or drawn out in frictional contact with the plate 2. The outer end of the detent is provided with a suitable knob or finger-piece 29, by means of which it may be manipulated to lock the escapement-lever and its hammer 95 against vibratory movement or to release it, so that it may be vibrated by the train of gearing acted upon by the force of the wound actuating-spring.

In the modification shown in Fig. 5 the de- 100 tent consists of a bar 30, fulcrumed on the plate 2 in such position that its inner end

can be thrown into or out of engagement with the escapement-lever to hold the hammer against vibratory movement or to permit it to vibrate. The lower side of the detent is preferably provided with a leaf-spring, which bears against the upper face of the plate 2 and holds the detent in frictional contact against accidental shifting.

To the lower side of the casing is secured one member 31, which, in connection with a similar member 32, forms the usual clamping means for securing the bell to the handle-bar or other part of the frame of the machine, the two members being clamped by screws 33.

In operating my improved bell the actuating-spring is first wound by turning the bell proper and the detent set to hold the escapement-lever against vibration. When it is desired to sound an alarm, the detent is drawn out or pushed away from the escapement-lever, which, being released, will be instantaneously set into vibratory motion by the tensioned force of the spring acting upon the train of gearing. The bell will continue to ring until the spring is run down or the detent is again brought into contact with the escapement-lever.

It will be observed that when the detent, which can be pulled away from the escapement-lever by a slight movement of the thumb or finger, is out of engagement with the escapement-lever no force of the rider is required to hold it, as the frictional contact of the spring 28 with the plate 2 is amply sufficient. In the modified form a slight upward pull on the handle forces the free end of the detent out of engagement with the escapement-lever, and a push in the opposite direction brings it into engagement again.

The bell is quite simple in construction and can be cheaply made. The parts are not lia-

ble to get out of order or become injured by ordinary use, and when the hammer is released will ring continuously without the constant manipulation or holding any part of the operating mechanism, as is the case with all of the bells now in use and known to me.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a bicycle-bell, the combination with a train of gearing actuated by the tensioned force of a spring, of an escapement-lever carrying a hammer, and a single bar or detent movably secured upon the plate supporting the train of gearing and arranged to be pushed into and out of engagement with the escapement-lever, whereby the bell is caused to ring continuously when the bar or detent is moved out of engagement with said escapement-lever and is stopped when the bar or detent is moved into engagement with the escapement-lever, substantially as specified.

2. In a bicycle-bell, the combination with the escapement-lever and its operating mechanism, of means for locking and releasing said escapement-lever, said means consisting of a bar provided with a feather setting into and adapted to move in a slot in the plate supporting the operating mechanism and provided with a leaf-spring bearing against the under side of said plate, whereby the bar is held by frictional contact in or out of engagement with the escapement-lever, substantially as specified.

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

ALEXANDER B. BURNS.

Witnesses:

CHAS. T. SPARO,
JAMES G. JESTER.