No. 612,387. Patented Oct. 18, 1898.

C. H. ALLEN.

BICYCLE BELL.

(Application filed Oct. 5, 1897.

(No Model.)

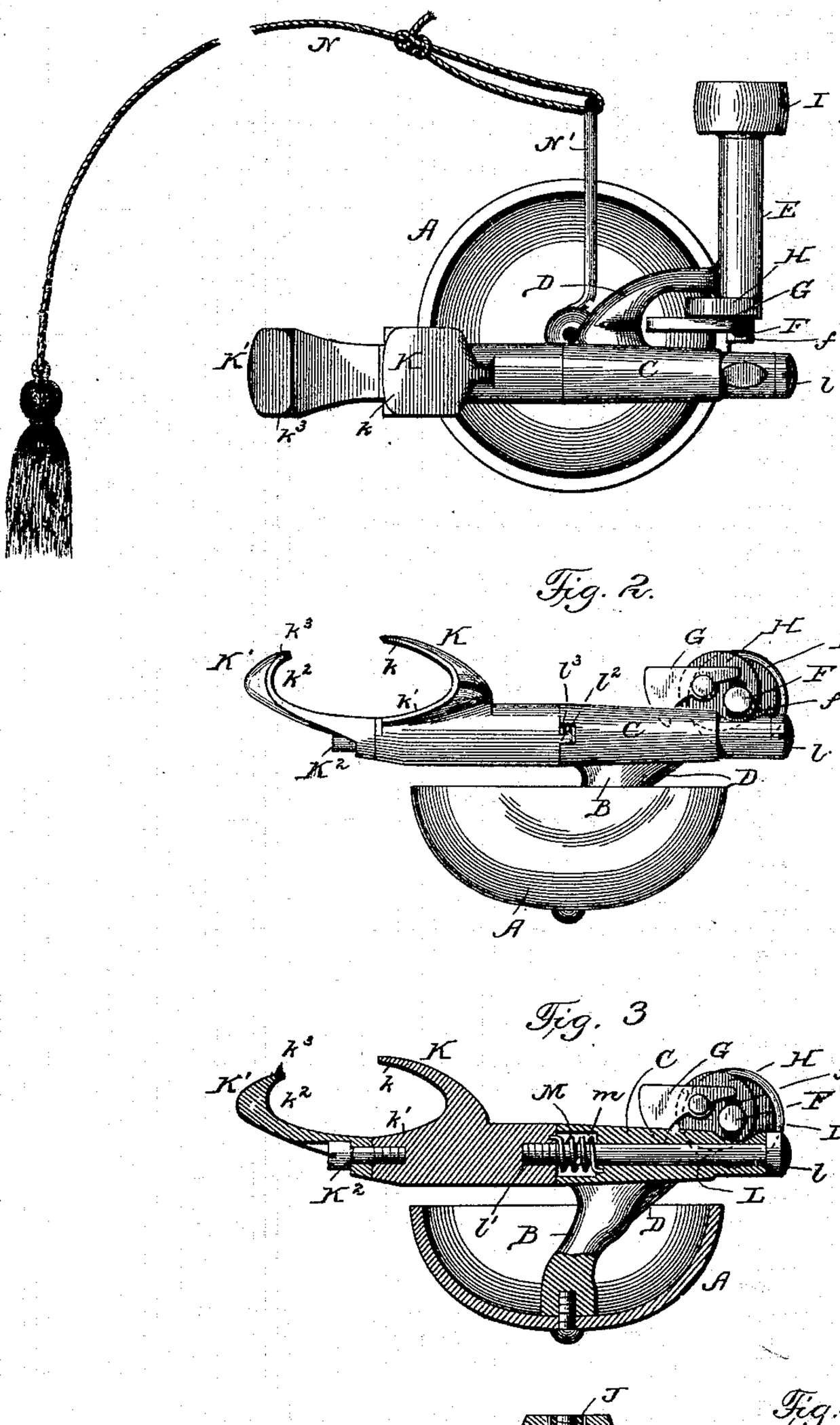

Fig. 1.

Fig. 2.

Fig. 3

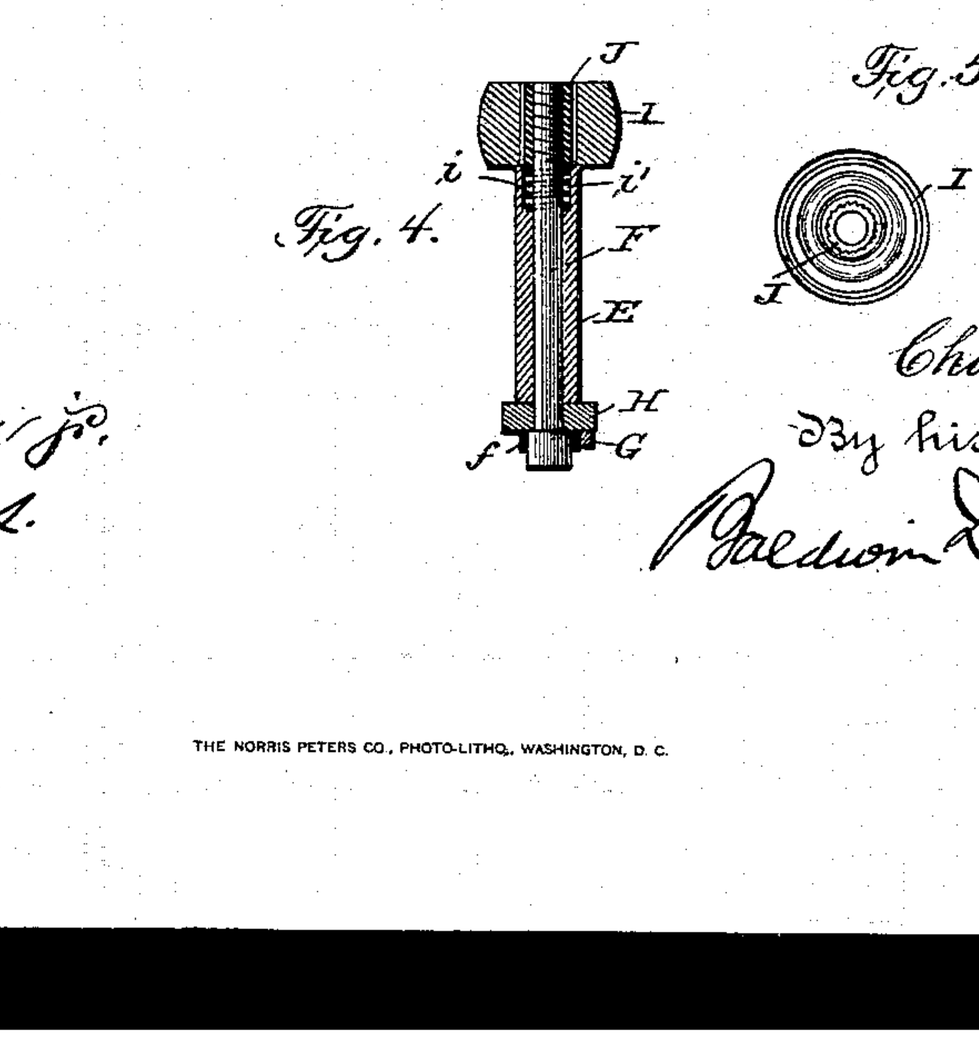

Fig. 4.

Fig. 5.

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BICYCLE-BELL.

SPECIFICATION forming part of Letters Patent No. 612,387, dated October 18, 1898.

Application filed October 5, 1897. Serial No. 654,113. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. ALLEN, a citizen of the United States, residing at Dansville, in the county of Livingston and State of New York, have invented certain new and useful Improvements in Bicycle-Bells, of which the following is a specification.

My invention relates to that class of bicycle-bells known as "wheel-actuated" bells, in which a gong is continuously rung by devices connecting its hammer with one of the wheels of the velocipede. My Patent No. 584,764, of June 22, 1897, is a good example of bells of this class. That patent shows a bell supported on a frame attached to one of the forks of the bicycle, and the hammer is operated by a train of gearing which is also connected with a roller that bears against the tire of the front wheel. The roller is carried on a swinging plate, and by the movement of this plate toward or from the bicycle-wheel the hammer-operating mechanism may be thrown into and out of operation at the will of the rider. By my present invention I seek to simplify the different parts of the bell to render them more reliable in operation, dust-proof, and antirattling.

In the accompanying drawings, Figure 1 shows a rear elevation of a bicycle-bell embodying my improvements. Fig. 2 is a plan view thereof. Fig. 3 shows a longitudinal central section. Fig. 4 is a detail view in section, showing particularly the hammer-operating devices. Fig. 5 is an end elevation of the friction-roller, showing the manner of attaching it to its spindle.

The bell or gong A is supported on a bracket B, projectlng laterally from a sleeve C. The sleeve also carries an arm or bracket D, on the outer end of which is formed a sleeve-bearing E for the spindle F, forming part of the hammer-operating mechanism. The hammer G is pivotally connected with an eccentric-plate H, secured to the spindle F. This spindle passes through the sleeve-bearing E and at its outer end carries a friction-roller I, preferably formed of ebonite or vulcanite and secured to the spindle by means of a bushing J. The bushing is serrated or corrugated on its periphery, so as to take firm hold of the roller, and its interior is screw-threaded to fit a screw-thread on the end of the spindle. The screw-thread is left-handed, or contrary to the direction in which the roller revolves when in operation. In order to take up wear and prevent rattling, I interpose a spring *i* between the roller and the sleeve-bearing E. This spring is arranged in a recess *i'* in the sleeve and its ends are free, permitting the roller and spindle to revolve without interference, but always insuring a tight fit between the eccentric H and the end of the sleeve. The hammer G is of substantially the same form as that shown in my patent before mentioned and it is operated in substantially the same way.

In order to prevent rattling of the hammer, I secure pads *f* on the end of the spindle F, against which the hammer strikes when rebounding. In this way a clearer sound to the bell is insured. The sleeve C is secured to a clamp by means of a screw-bolt L, headed at *l* and screw-threaded at *l'*, where it enters the clamp. The bolt is smooth from its head to its inner screw-threaded end, so as to permit the sleeve C to move about it. The rotary movement of the sleeve, however, is limited by means of a stop l^2, projecting from the clamp into a recess l^3 in the sleeve. The sleeve is held in its normal position—that is, with the friction-roller I in such position as to be disengaged from the bicycle-wheel by a spring M, arranged in a chamber *m* at the inner end of the sleeve and which encircles the end of the bolt L and is secured at one end to the clamp and at the other end to the sleeve. When the sleeve is tilted to cause the roller to engage with the bicycle-wheel, the spring is put under tension and the roller must be held against the wheel by a strain on the cord N, which is connected with the bell by an arm N'. When the strain on the cord is released, the spring M turns the sleeve C back to its normal position, and thus the roller I is withdrawn and the bell will cease to ring.

The clamp consists of two parts. The larger member K is formed with an arm *k*, arranged opposite a curved portion *k'* of the body of the member, forming a semioval socket adapted to fit a portion of the fork of a bicycle. The other member K' is formed with a curved seat or socket k^2, adapted to partially embrace the rear portion of the fork. The

socket k^2 forms a continuation of the socket in the opposite member K. The arm k^3 on the member K′ is much shorter than the arm k on the member K, there being a wide space or opening between the two arms to permit the clamp to be readily applied to the fork.

A screw K^2 is employed to secure the member K′ to the member K, and this screw also serves as a pivot about which the member K′ may turn. The inner end of the member K′ is made narrow, so that it can turn about the screw K^2 as a pivot without rubbing against the fork. By this arrangement the clamp may be readily applied to a bicycle-fork without entirely separating both members of the clamp. The member K′ may be turned halfway around and the member K may be put in place on the fork at its lower or smaller end. The member K′ may then be turned into position about the screw K^2 as a center, the end of the arm k^3 clearing the edge of the fork and the inner end of the body portion of the member K′ not rubbing against the fork. When thus turned, the clamp may be slid upwardly onto the larger portion of the fork and then the screw K^2 may be tightened. This affords a very strong and easily-operated means for attaching the bell to the bicycle.

It will be observed that the bearings and the operating means which I employ are well protected. The spring M is inclosed or incased between the clamp and the end of the sleeve, and the end of the sleeve-bearing is closed by the head of the screw-bolt. The spindle F, which carries the hammer and the friction-roller, is also mounted in a close bearing, and the spring i, which takes up wear and prevents rattling, is inclosed in a chamber covered by the end of the roller. The recess l^3 constitutes an opening from the outside to the chamber in which the spring M is arranged; but this opening is so small that very little, if any, dust or foreign matter can find its way into the recess or interfere with the operation of the spring or the bearing of the sleeve.

I claim as my invention—

1. The combination of a sleeve formed with a laterally-projecting bell-supporting arm, another arm carrying a bearing for a shaft, a shaft mounted in said sleeve carrying a hammer on one end, and a friction-wheel on the other, a clamp adapted to be attached to a bicycle-fork, a screw-bolt passing through the first-mentioned sleeve and attached to the clamp, and a spring arranged in a closed chamber between the clamp and the sleeve and attached to the clamp and also to the sleeve, and a stop for limiting the movement of the sleeve about its axis.

2. The combination of a sleeve formed with a bell-supporting arm, another arm carried by the sleeve and formed with a sleeve-bearing at its outer end arranged at right angles to the axis of the first-mentioned sleeve, a spindle mounted in said sleeve-bearing, a roller attached thereto at one end, a hammer carried by the other end of the spindle, and a clamp to which the first-mentioned sleeve is secured.

3. The combination of a sleeve formed with a bell-supporting arm, another arm carried by the sleeve and formed with a sleeve-bearing at its outer end, arranged at right angles with the axis of the first-mentioned sleeve, a spindle mounted in said sleeve-bearing, a roller attached thereto at one end, a hammer carried by the other end of the spindle, a screw-bolt passing through the first-mentioned sleeve, a clamp to which it is secured, a spring arranged in a chamber at the inner end of the sleeve and secured to both the sleeve and the clamp, a stop for limiting the movement of the sleeve about its axis, and an operating-arm projecting from the bell.

4. The combination of a bell or gong and its supporting and operating mechanism, of a clamp consisting of one member having a semi-elliptical socket adapted to fit a portion of the fork of the bicycle, and another member pivotally secured to the first-mentioned member by a clamping-screw and having a socket much shallower than that of the first-mentioned member and being narrower at its base than at its opposite end, whereby the pivoted member may be turned into position without striking the edge or rubbing against the sides of the fork, substantially as herein-before described.

In testimony whereof I have hereunto subscribed my name.

CHARLES H. ALLEN.

Witnesses:

OLIVER P. ROSS,

CHAS. WORDEN.