No. 638,420. Patented Dec. 5, 1899.

J. RAMSAY.

BICYCLE BELL.

(Application filed Aug. 26, 1899.)

(No Model.)

FIG. I

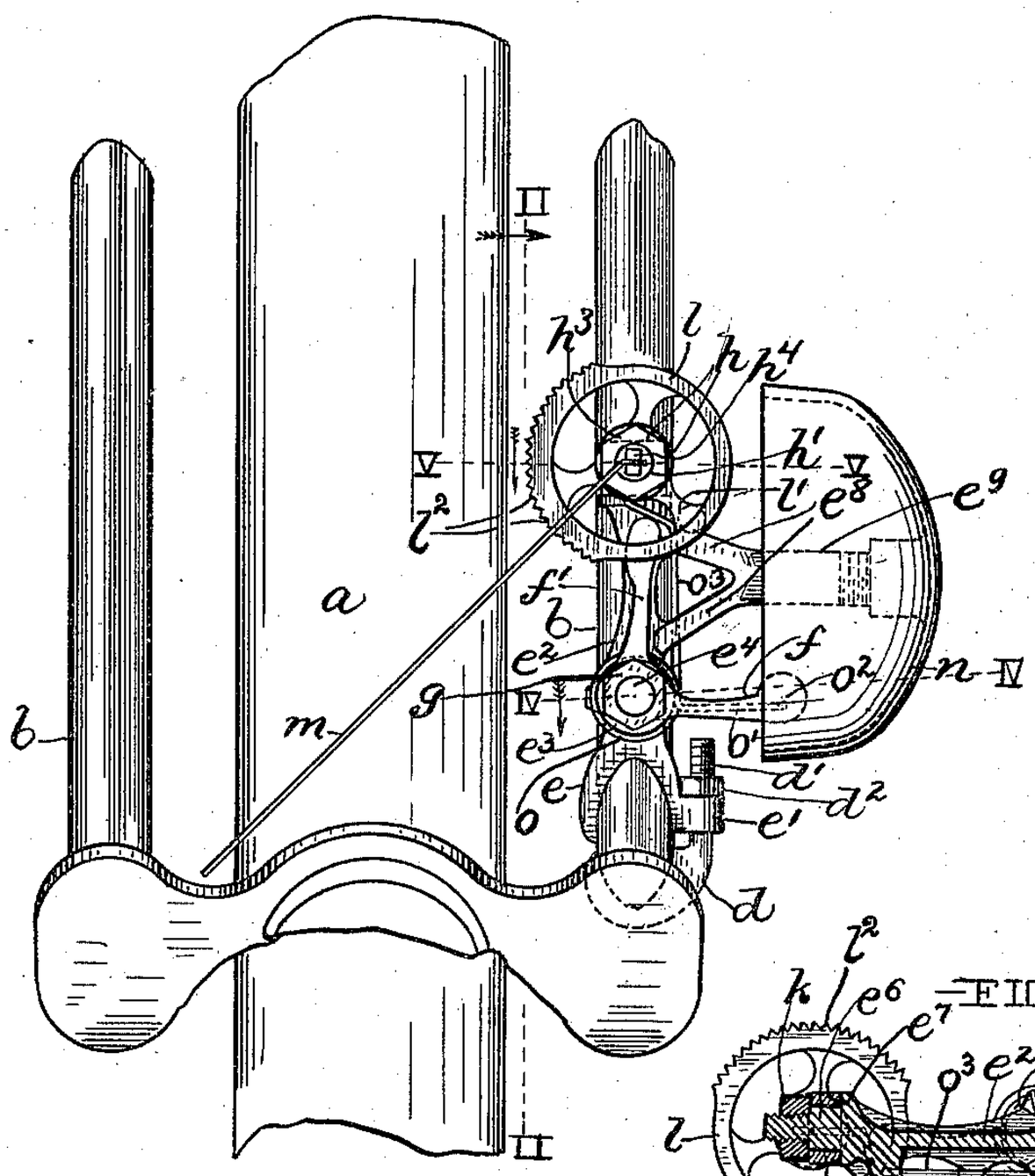


FIG. III

FIG. II

FIG. IV

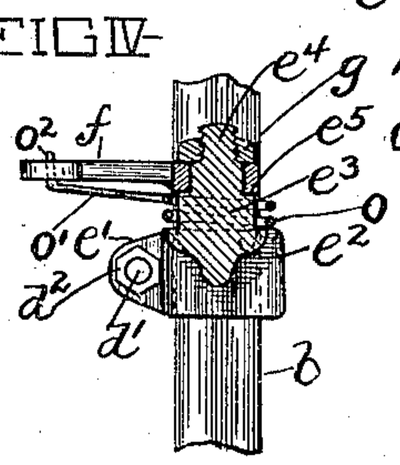
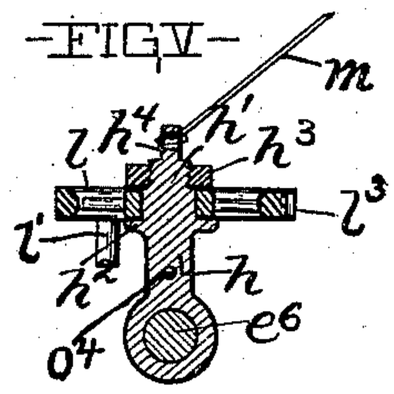


FIG. V



WITNESSES:

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JAMES RAMSAY, OF CLEVELAND, OHIO.

BICYCLE-BELL.

SPECIFICATION forming part of Letters Patent No. 638,420, dated December 5, 1899.

Application filed August 26, 1899. Serial No. 728,550. (No model.)

To all whom it may concern:

Be it known that I, JAMES RAMSAY, residing at Cleveland, county of Cuyahoga, and State of Ohio, have invented certain new and useful Improvements in 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 it pertains to make and use the same.

My invention relates to improvements in bicycle-bells of the type wherein the bell-hammer-operating mechanism includes a friction-wheel that is pulled by a string or cord into operative contact with the tire of the forward wheel of a bicycle.

The object of this invention is to provide a bell of the character indicated that is desirable and exceedingly simple in construction, that is reliable in its operation and not liable to get out of order, and that can be readily attached and removed from the steering-fork of a bicycle.

With this object in view the invention consists in certain features of construction and combinations and arrangement of parts hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure I is a top view of a bell embodying my invention and shows the bell attached to the steering-fork of a bicycle. Fig. II is a side elevation, partly in section, on line II II, Fig. I. Fig. III is a bottom view, mostly in section, on line III III, Fig. II. Fig. IV is a section on line IV IV, Figs. I and II, looking in the direction of the arrow. Fig. V is a section in detail on line V V, Fig. I.

Referring to the drawings, *a* designates the tire of the forward wheel of a bicycle, and *b* represents the bicycle's steering-fork. The framework of my improved bell comprises a clamp for attaching the bell to one of the arms or legs of the steering-fork. The clamp comprises two jaws *d* and *e*, arranged to engage the forward side and rear side, respectively, of the bell-supporting steering-fork member. Jaw *e* embraces the forward side of the bell-supporting member and terminates at the latter's outer side in a laterally and outwardly projecting ear e', and the companion jaw *d* embraces the rear side of the bell-supporting member and terminates at the latter's outer side in a forwardly-projecting stud d', that extends easily through the ear e', and a nut d^2 is mounted upon the said stud and abuts against the forward end of the ear e'. By tightening the said nut the clamp is securely fixed upon the bell-supporting member of the steering-fork, and by loosening the nut the clamp is loosened relative to or detached from the bell-support.

The jaw *e* is provided centrally with a forwardly-extending arm or bracket e^2, that is integral with the said jaw and is provided upon its upper side and at or near the jaw with an upwardly-projecting lug e^3, that terminates at its upper or outer end in an upwardly-projecting stud e^4, that is arranged in line with and centrally of the lug. An annular shoulder e^5 is formed upon the lug around the inner end of the stud. The bell-hammer *f* is journaled upon the stud e^4 between the shoulder e^5 and a nut *g*, mounted upon the stud and preventing the hammer from displacement upon the stud. The hammer projects laterally and outwardly from the stud e^4 and is provided with an arm f', projecting forwardly from the inner or axial end of the hammer.

The bracket e^2 at its forward or outer end terminates in a stud e^6, that is arranged in line with the arm. A shoulder e^7 is formed upon the bracket at the inner end of the stud e^6. An upright post or arm *h* is journaled upon the stud e^6 between the shoulder e^7 and a nut that is mounted upon the said stud and prevents displacement of the said upright arm or post endwise upon the stud. A friction-wheel *l* is rotatably mounted upon the outer end of the arm *h* in any approved manner and has its periphery extending into such proximity to the side of the tire *a* as to render a slight pull upon a cord *m*, that is attached to the outer end of the arm *h* in the required direction capable of oscillating or shifting the said arm inwardly sufficiently to establish operative connection between the said wheel and the tire, so that power will be transmitted from the bicycle's forward wheel during the operation of the bicycle to the aforesaid friction-wheel. The arm *h* has its outer end terminating in a stud h', that projects upwardly and forms the bearing for the wheel *k*, that is journaled upon the stud between

a shoulder h^2, formed upon the arm h at the inner end of the said stud, and a nut h^3, mounted upon the stud and preventing upward displacement of the wheel endwise of the stud. The arm h at its outer end is provided, preferably, with an ear h^4, that is engaged by the wheel-shifting cord m, extending, preferably, through the said ear and tied to the latter.

The wheel l at any suitable point between its axis and periphery and upon its under surface is provided with a depending lug or pin l', that and the arm f' of the bell-hammer have such relative arrangement as to cause the said arm, and consequently the bell-hammer, to be oscillated in a direction away from the hammer-strikable portion of the gong n of the bell against the action of a suitably-applied spring o. The bell-hammer is arranged normally in such proximity to the hammer-strikable portion of the gong that the hammer after its release by the hammer-oscillating member of the friction-wheel shall be forcibly returned by the tension to which the spring was subjected during the hammer's aforesaid oscillation in the opposite direction beyond its normal position against and thereby sound the gong.

The bracket e^2 of the bell's framework between the arm h and the bell-hammer-supporting lug is provided with two laterally and outwardly projecting and outwardly-converging arms or members e^8 e^8, that terminate at their outer ends in a single arm e^9, to which the gong is secured in any approved manner.

The spring o is preferably a torsional spiral spring coiled upon the lug e^3 any suitable number of times, having one end portion o' thereof extending along the bell-hammer and into the latter, as at o^2, and having its other end portion o^3 extending from the spiral portion of the spring to and under the rear member e^8, thence between the two members e^8 and e^8 to and over the forward member e^8, and thence to and into the arm h, as at o^4. This peculiar arrangement and application of the spring o is meritorious in that it not only facilitates the application of the spring to the framework of the bell, but insures the spring against displacement and renders the spring durable and reliable.

The wheel l has preferably a radially-enlarged segment l^2, that is toothed transversely upon its periphery or suitably roughened to render it capable of more positively engaging the tire a during the operation of the bell, and the arrangement of the said segment l^2 relative to the bell-hammer-operating member l' of the wheel is such that immediately before the member l' commences to operate the segment l^2 has come into operative engagement with the tire.

What I claim is—

1. A bicycle-bell comprising the following: a clamp consisting of two jaws d and e arranged as required to render them capable of engaging the rear side and forward side, respectively, of an arm or leg of a bicycle's steering-fork; means for securing the jaws in their operative position; a forwardly-extending arm or bracket formed upon the forward jaw; a gong arranged at the outer side and supported from the bracket; an upright laterally-tiltable arm supported from the forward end of the bracket; the tire-actuated wheel supported from the said upright arm, and having a depending member; the tiltable gong-sounding hammer supported from the bracket between the bracket-bearing jaw and the aforesaid upright arm, which hammer has an arm arranged to be engaged and actuated by the aforesaid depending member during the rotation of the wheel, and a spring acting to retain the hammer in the latter's normal position, all arranged and operating substantially as shown, for the purpose specified.

2. A bicycle-bell comprising the following: a clamp consisting of two jaws d and e arranged as required to render them capable of engaging the rear side and forward side, respectively, of an arm or leg of a bicycle's steering-fork; a laterally and outwardly projecting ear formed upon the forward jaw; a stud formed upon the rear jaw and extending easily through the said ear; a nut mounted upon the said stud at the ear's forward end; a forwardly-extending arm or bracket formed upon the forward jaw; a gong arranged at the outer side and supported from the bracket; an upright laterally-tiltable arm supported from the forward end of the bracket; the tire-actuated wheel supported from the said upright arm, and having a depending member; the tiltable gong-sounding hammer supported from the bracket between the bracket-bearing jaw and the aforesaid upright arm, which hammer has an arm arranged to be engaged and actuated by the aforesaid depending member during the rotation of the wheel, and a spring acting to retain the hammer in the latter's normal position, all relatively arranged substantially as shown, for the purpose specified.

3. A bicycle-bell comprising a forwardly and rearwardly extending arm or bracket; means for attaching the said bracket to an arm or leg of a bicycle's steering-fork; a stud formed upon the forward end of and arranged in line with the arm or bracket; a nut mounted upon the stud; a shoulder formed upon the bracket at the stud's inner end; an upright arm journaled upon the stud between the nut and the shoulder; the tire-actuated wheel supported from the said upright arm and having a depending member; a tiltable gong-sounding hammer supported from the bracket and having an arm arranged to be engaged and actuated by the aforesaid depending member during the rotation of the aforesaid wheel; a suitably-applied spring acting to retain the bell-hammer in its normal position, and the gong supported from the bracket and arranged to be struck by the aforesaid hammer, substantially as shown, for the purpose specified.

4. A bicycle-bell comprising a forwardly and rearwardly extending arm or bracket; means for fastening the said bracket to an arm or leg of a bicycle's steering-fork; an upright laterally-tiltable arm supported from the forward end of the bracket; an upright stud formed upon the upper end of the aforesaid upright arm; a shoulder formed upon the upright arm at the inner end of the stud; a nut mounted upon the said stud; a wheel rotatably mounted upon the stud between the nut and the shoulder and having a depending member; a gong-striking hammer supported from the bracket and having an arm arranged to be engaged and actuated by the aforesaid depending member during the rotation of the aforesaid wheel; a spring acting to retain the gong-striking hammer in its normal position, and the gong supported from the aforesaid bracket, all relatively arranged and operating substantially as shown, for the purpose specified.

5. A bicycle-bell comprising a forwardly and rearwardly extending arm or bracket; means for attaching the rear end of the bracket to an arm or leg of a bicycle's steering-fork; a laterally-tiltable upright arm supported from the forward end of the bracket; the wheel rotatably supported from the upper end of the upright arm and having a depending member; a lug formed upon the bracket between the latter's rear end and the aforesaid upright arm; an upright stud formed upon the said lug; a shoulder formed upon the lug at the inner end of the stud; a nut mounted upon the stud; a gong-sounding hammer journaled upon the stud between the nut and the shoulder and having an arm arranged to be engaged by the aforesaid depending member during the rotation of the aforesaid wheel; a suitably-applied spring acting to retain the gong-striking hammer in its normal position, and the gong supported from the aforesaid bracket, all relatively arranged and operating substantially as shown, for the purpose specified.

6. A bicycle-bell comprising a forwardly and rearwardly extending arm or bracket; means for attaching the rear end of the bracket to an arm or leg of a bicycle's steering-fork; a laterally-tiltable upright arm supported from the forward end of the bracket; the wheel rotatably supported from the upper end of the upright arm and having a depending member; a lug formed upon the bracket between the latter's rear end and the aforesaid upright arm; an upright stud formed upon the said lug; a shoulder formed upon the lug at the inner end of the stud; a nut mounted upon the stud; the gong-strikable hammer journaled upon the stud between the nut and the shoulder and having an arm arranged to be engaged by the aforesaid depending member during the rotation of the aforesaid wheel; the two laterally and outwardly projecting and outwardly diverging members e^8 e^8 formed upon the bracket between the aforesaid lug and the aforesaid wheel-carrying arm and terminating in a single arm; the gong supported from the last-mentioned arm, and a spring coiled upon the aforesaid lug, which spring has one end portion attached to the bell-hammer and has its other end portion attached to the aforesaid wheel-bearing arm, all relatively arranged and operating substantially as shown, for the purpose specified.

7. A bicycle-bell comprising a forwardly and rearwardly extending arm or bracket; means for fastening the said bracket to an arm or leg of a bicycle's steering-fork; an upright laterally-tiltable arm supported from the forward end of the bracket; an upright stud formed upon the upright end of the said upright arm; a shoulder formed upon the upright arm at the inner end of the stud; a nut mounted upon the stud; a tire-actuated wheel rotatably mounted upon the stud between the nut and the shoulder and having a depending member; an ear formed upon the stud at the outer end of the nut; a cord attached to the ear; a gong-striking hammer supported from the bracket and having an arm arranged to be engaged and actuated by the aforesaid depending member during the rotation of the aforesaid wheel; a spring acting to retain the gong-striking hammer in its normal position, and the gong supported from the bracket, all relatively arranged and operating substantially as shown, for the purpose specified.

Signed by me at Cleveland, Ohio, this 22d day of August, 1899.

JAMES RAMSAY.

Witnesses:
C. H. DORER,
A. H. PARRATT.