

No. 608,478.

Patented Aug. 2, 1898.

H. S. PULLMAN.

BICYCLE BELL.

(Application filed Oct. 25, 1897.)

(No Model.)

Fig. 1

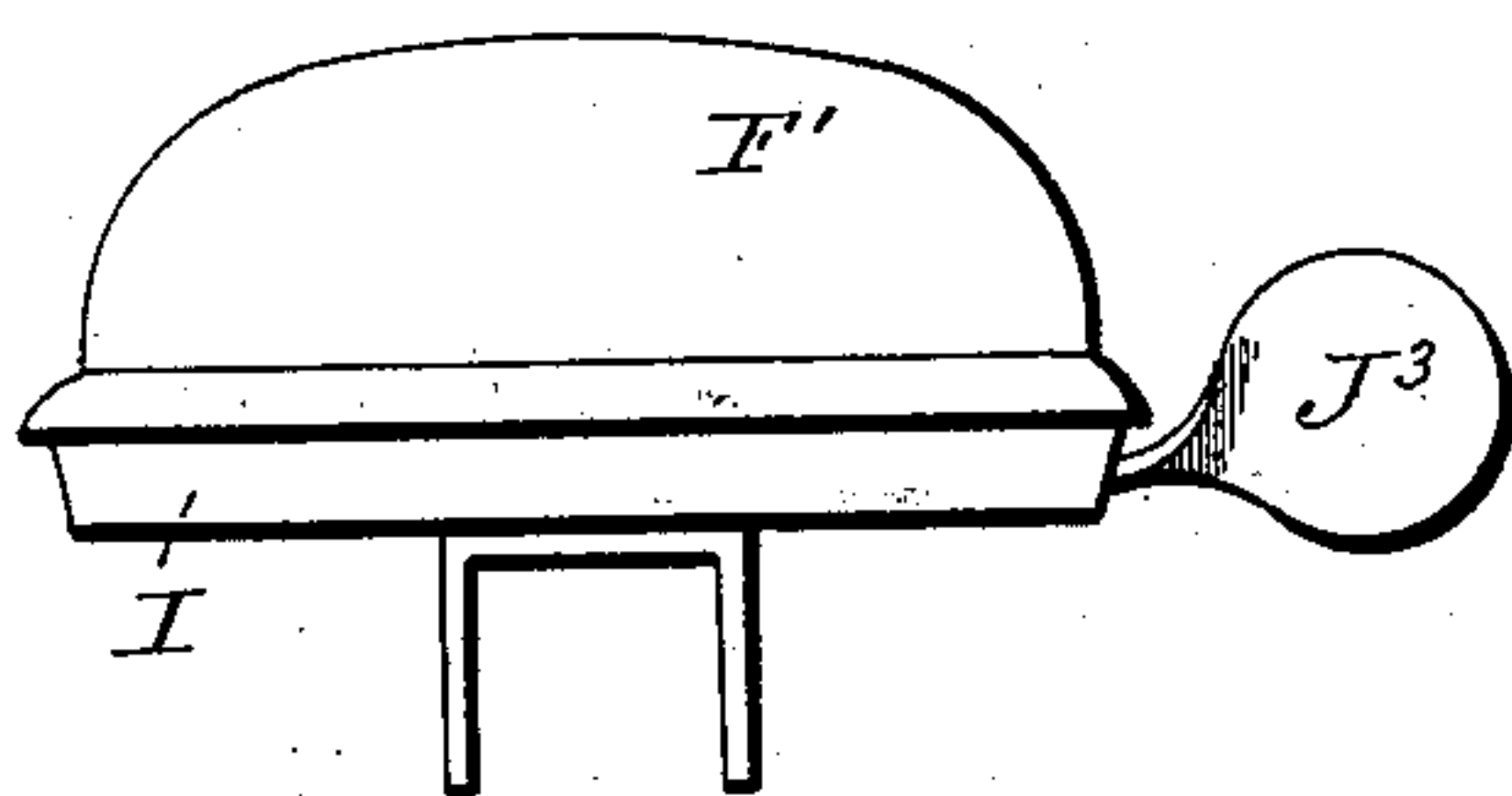


Fig. 2

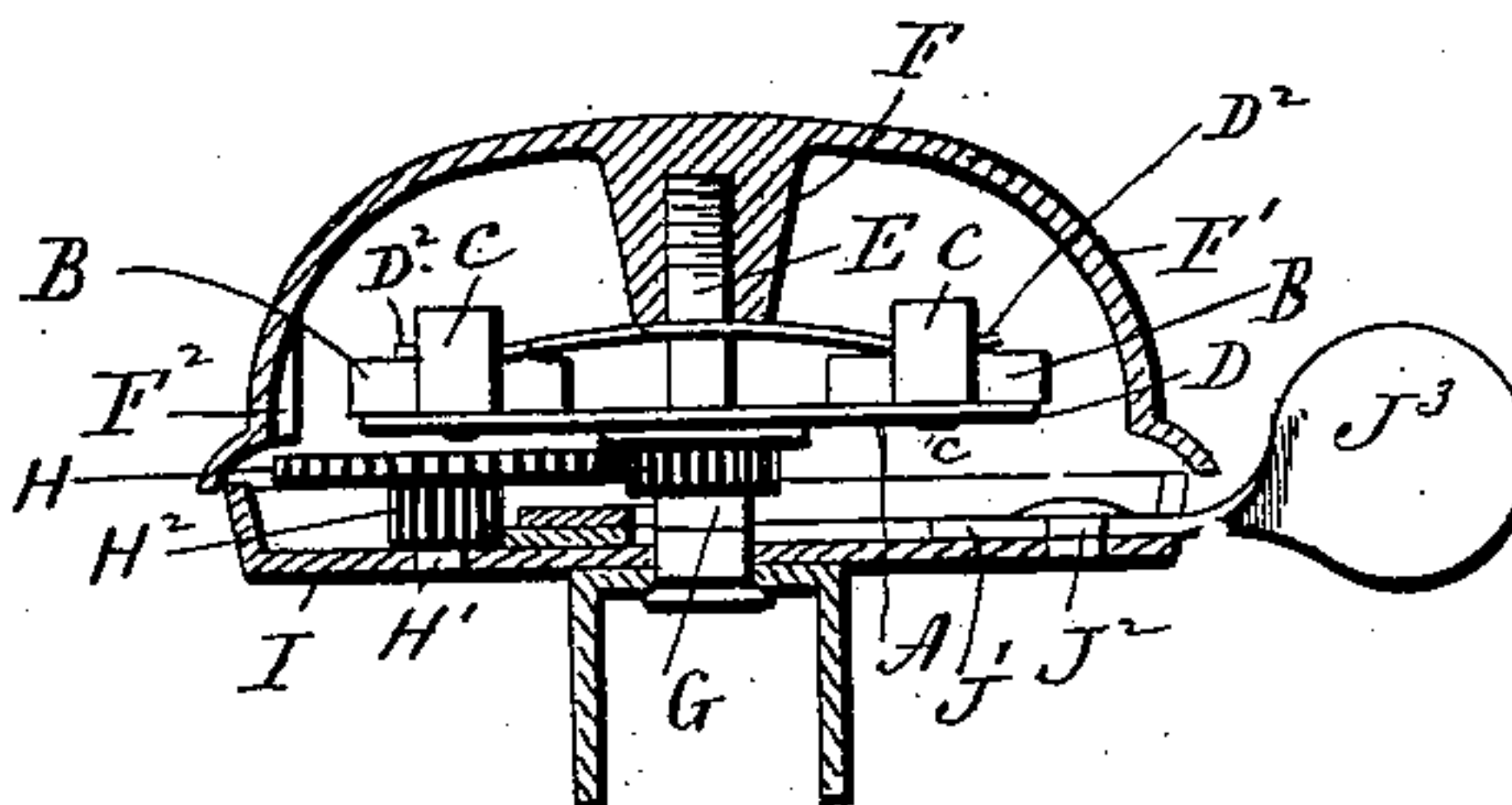


Fig. 3

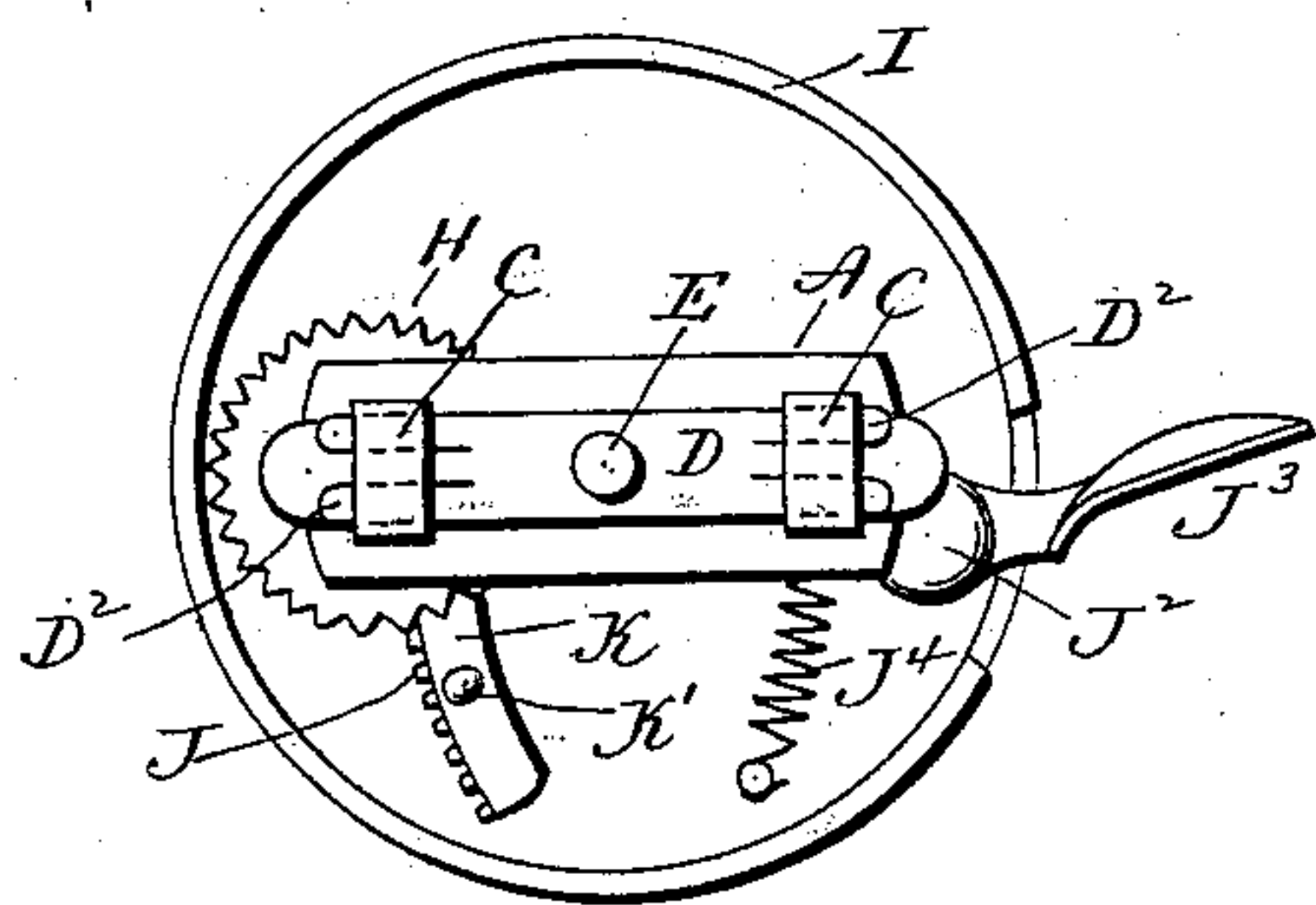


Fig. 4

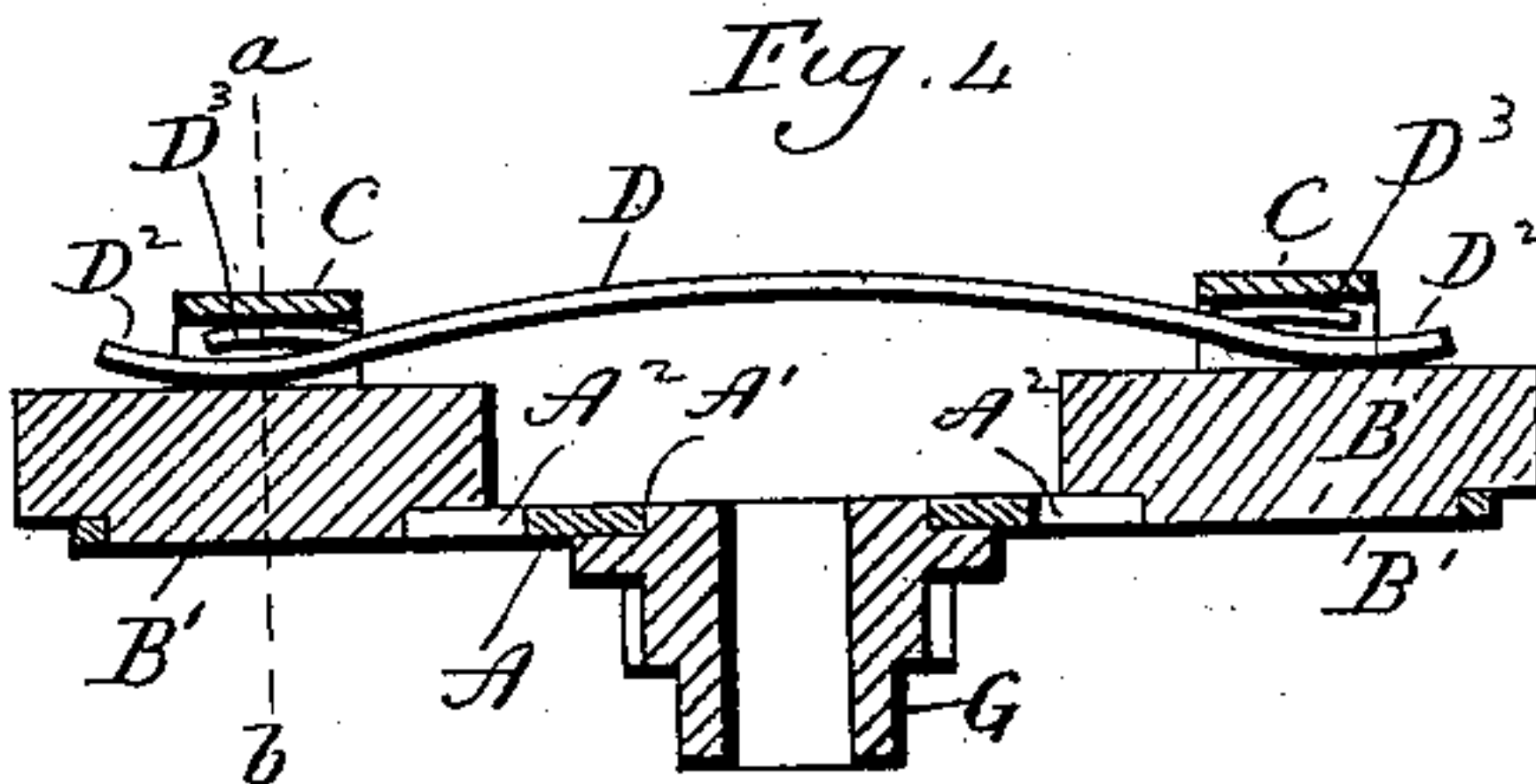


Fig. 5

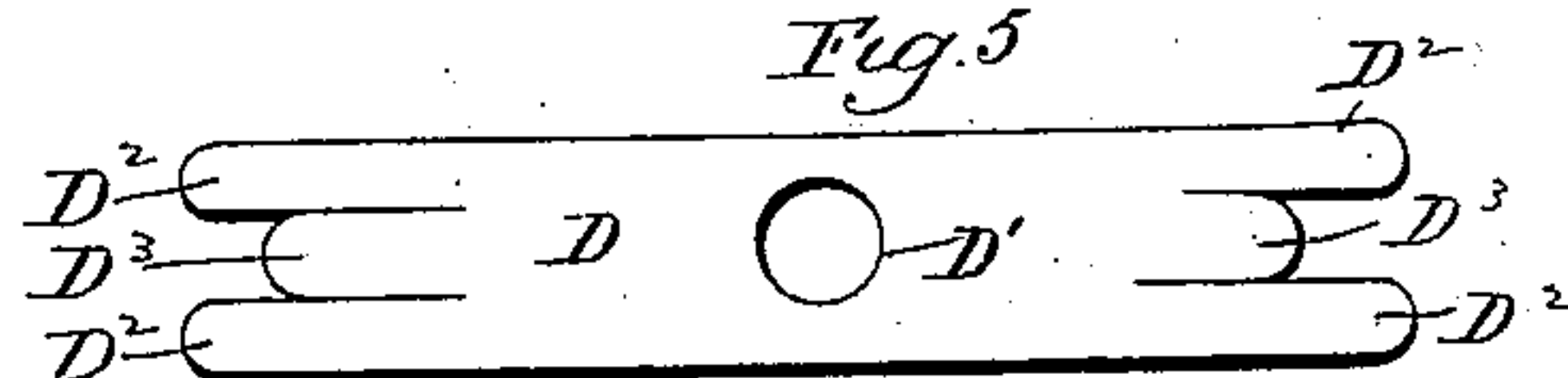


Fig. 6

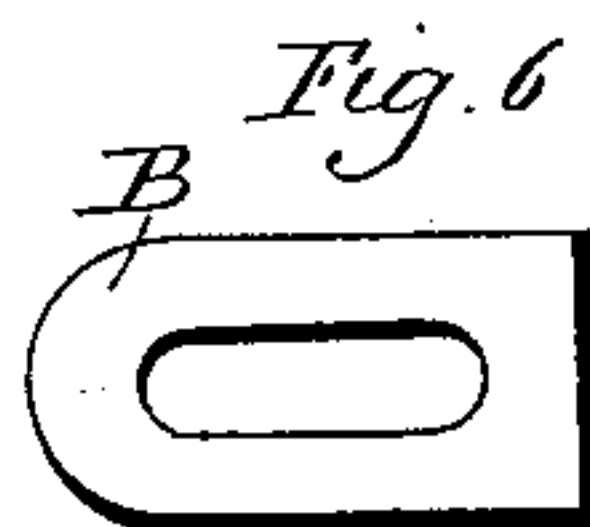


Fig. 7

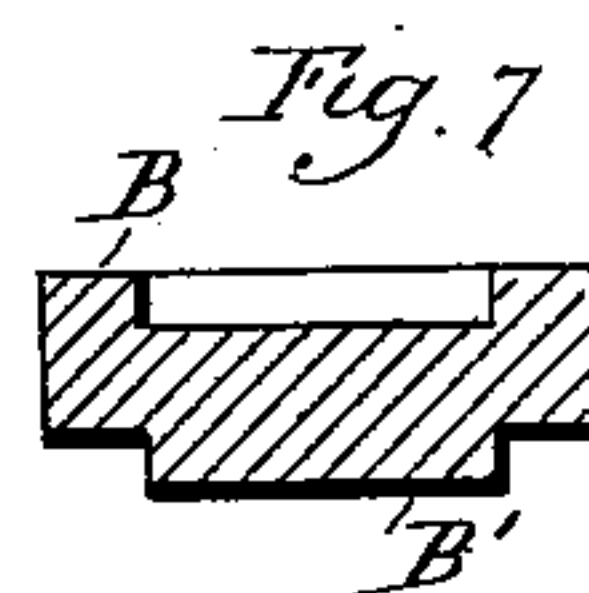


Fig. 11



Fig. 8

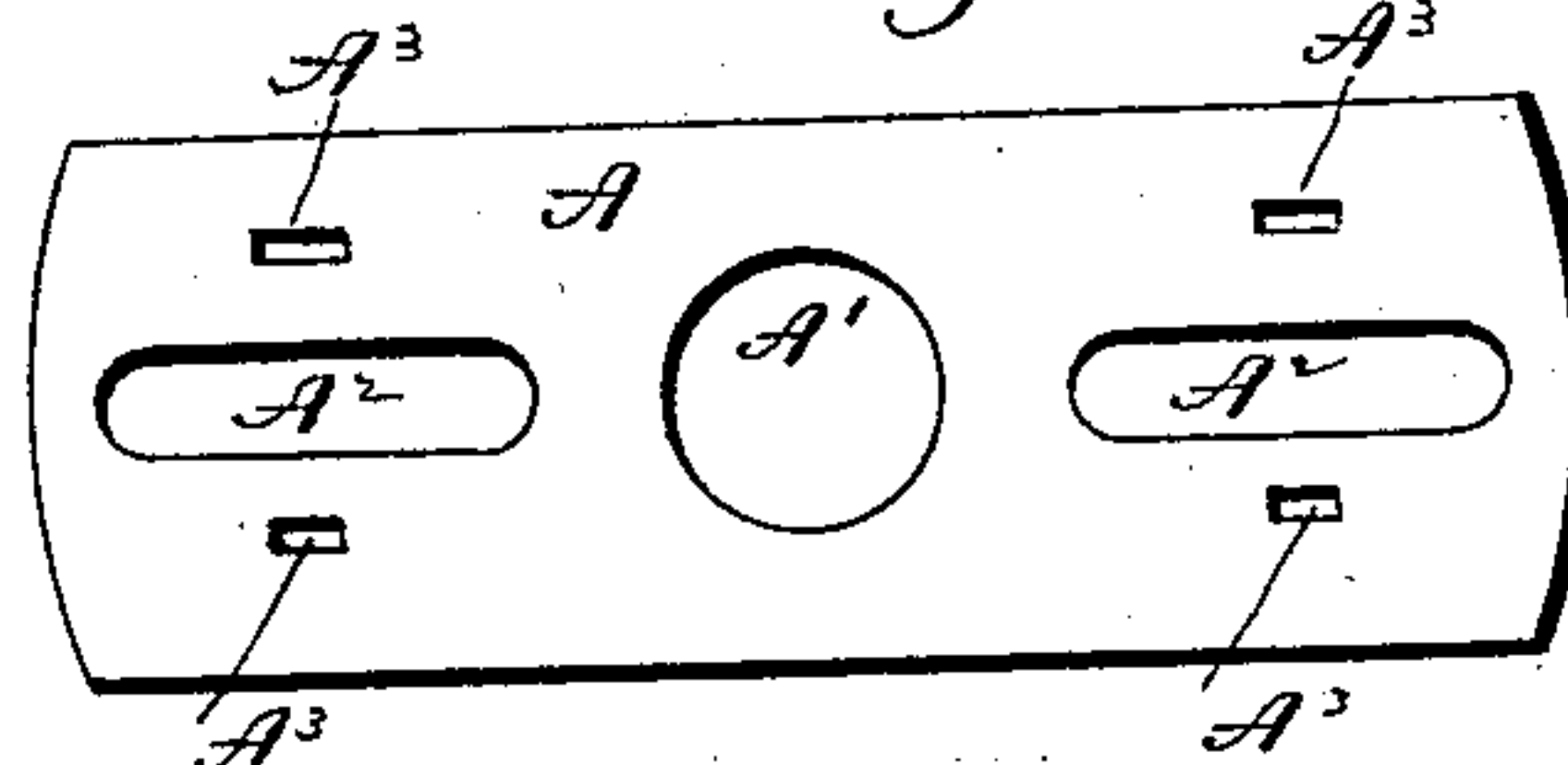


Fig. 12.

Witnesses.
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UNITED STATES PATENT OFFICE.

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BICYCLE-BELL.

SPECIFICATION forming part of Letters Patent No. 608,478, dated August 2, 1898.

Application filed October 25, 1897. Serial No. 656,268. (No model.)

To all whom it may concern:

Be it known that I, HERBERT S. PULLMAN, of Waterbury, in the county of New Haven and State of Connecticut, have invented a new Improvement in Bicycle-Bells; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a view in side elevation of a bell constructed in accordance with my invention; Fig. 2, a view thereof in vertical section; Fig. 3, a plan view of the bell with the gong removed; Fig. 4, an enlarged detached view, in central longitudinal section, of the carrier, the tubular hub to which it is staked, the strikers, the straps, and the friction-spring; Fig. 5, a detached plan view of the friction-spring; Fig. 6, a detached plan view of one of the strikers; Fig. 7, a detached view of one of the strikers in vertical longitudinal section; Fig. 8, a detached plan view of the carrier stripped of all its adjuncts; Fig. 9, a view in transverse section on the line *a b* of Fig. 4; Fig. 10, a plan view of the bell with the gong and carrier and the adjuncts thereof removed; Fig. 11, a detached edge view of the rack of the operating-lever and the antirattling lever; Fig. 12, a detached plan view of the antirattling lever.

My invention relates to an improvement in that class of small portable bells primarily designed to be used upon bicycles, the object being to produce a simple, light, durable, and effective bell.

With these ends in view my invention consists in a bell having certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In carrying out my invention I employ a sheet-metal carrier *A*, having straight sides and slightly-rounded ends and formed with a central circular opening *A'*, two striker-lug slots *A² A²*, longitudinally arranged on opposite sides of the opening *A'*, and with four strap-openings *A³*, arranged in pairs and located on opposite sides of the said striker-lug slots *A²*. Upon the upper faces of the ends of

the said carrier I locate flat slug-like strikers *B B*, made of sheet metal and having rounded outer ends and square inner ends. These strikers are formed upon their lower faces with longitudinally - arranged oblong stop-lugs *B'*, having straight sides and rounded ends and adapted to fit within the striker-lug slots *A² A²* of the carrier. The said lugs are nearly as wide as the said slots, but shorter than the same, so as to permit the strikers to have longitudinal play. By preference the lugs are formed by submitting the striker-blanks to the action of dies which enter the upper faces of the blanks and shear the same, so as to form the lugs in an operation of a shearing character, which is not carried far enough to detach the lugs from the blanks, the upper faces of the strikers having recesses corresponding exactly in dimensions to the depending lugs produced as described. The said strikers are held against lateral displacement by means of transversely - arranged sheet-metal straps *C C*, the arms of which are shouldered and formed with retaining-fingers *c c*, which are passed through the openings *A³* in the carrier-plate and bent inward, as shown in Fig. 9, whereby the straps are firmly secured in place. The upper portions or reaches of the straps stand, however, sufficiently above the upper faces of the strikers to receive beneath them the ends of a longitudinally - bowed friction - spring *D*, having a central opening *D'*, which adapts it to be passed over the gong-stud *E*, the said spring being placed under tension by the hub *F* of the gong *F'*, which is removably connected with the said stud through the said hub in the usual manner. The ends of the spring are longitudinally slotted, so as to form at each end two spring - fingers *D² D²*, upturned at their ends, and a shorter intermediate spring-finger *D³*, turned downward at its end, but set above the other fingers. The fingers *D²* of the spring bear upon the upper faces of the strikers, while the intermediate fingers *D³* of the spring engage with the under faces of the straps and assist in keeping the ends of the spring under tension and forcing the fingers *D² D²* into closer contact with the upper faces of the strikers. However, the number of fingers formed at the ends of the

friction-spring and the particular mode of bending them may be varied; but I prefer to form a plurality of fingers at the ends of the spring.

5 It will be readily understood from the foregoing description that the strikers are free to reciprocate under the restraint of the friction-spring within the limits allowed by the length of the slots Λ^2 in the carrier. It will
10 also be understood that their action is a rebounding action—that is to say, that under the action of centrifugal force due to the rotation of the carrier they will be thrown outward, so as to strike the inwardly-projecting
15 striking-lug F^2 of the gong, by which lug they will be forced inward, so as to pass the same.

The carrier is mounted for rotation concentrically with the gong by being staked in the usual manner upon the upper end of a
20 tubular pinion G, which rotates upon the lower end of the gong-stud E as upon a center. The pinion G is meshed into by a wheel II, turning upon a stud II' , mounted in the shallow cup-like circular base I of the bell. The
25 said wheel II is itself provided with a pinion II^2 , which is meshed into by a segmental rack J, formed upon the inner end of the operating-lever J' , which is swiveled upon a stud J^2 , riveted in the base I and formed with a
30 finger-piece J^3 , by means of which it is operated against the tension of the coiled operating-spring J^4 .

To assist in preventing the bell from rattling, I provide it with an antirattling lever
35 K, which is pivotally mounted upon a stud K' , located toward the end of the rack J of the operating-lever J' . The inner end of this lever K is formed with an operating-bevel K^2 and a stop-finger K^3 , arranged to engage with
40 a fixed point, such as the base of the gong-stud, so as to throw the said end of the lever outward toward the pinion II^2 , with which the lever is adapted to interlock by its provision with a notch K^1 . When the operating-
45 lever is drawn by the spring J^4 back into its normal position, the bevel K^2 of the antirattling lever engages with the gong-stud and moves the outer end of the said lever outward and finally engages and interlocks it
50 with the pinion. Just at this time the stop-finger K^3 of the antirattling lever engages with the gong-stud and brings the movement of the operating-lever J' to a stop. It will thus be seen that here the said stop-finger
55 takes the place of a stop-pin for the operating-lever, which is stopped while still under the tension of the operating-spring J^4 , the tension of which is therefore communicated through the operating-lever to the antirattling lever, which is maintained in its interlocked position thereby. The operating-spring J^4 is therefore utilized to lock the train of the bell, so to speak, against movement when the bell is not being operated.

65 I would have it understood that I do not limit myself to the exact construction herein shown and described. Thus the details of

the carrier, strikers, and friction-spring may be changed, as well as the details of the antirattling lever. Furthermore, the antirattling
70 lever is not limited to use in conjunction with such a carrier and with such strikers, and vice versa.

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

1. In a portable bell, the combination with a sheet-metal carrier adapted to be rotated and provided with striker-lug slots, of flat, slug-like strikers mounted upon the ends of
80 the said carrier, and having integral oblong lugs depending below their lower faces for entrance into the said slots, sheet-metal straps made independently of and mounted in the ends of the carrier for embracing the said
85 lugs, and a friction-spring, the ends of which are entered into the said straps and engaged with the upper faces of the strikers.

2. In a portable bell, the combination with a sheet-metal carrier adapted to be rotated,
90 and formed with longitudinally-arranged striker-lug slots, of flat, slug-like strikers upset to form integral depending oblong lugs entering the said slots, two straps made independently of and applied to the respective
95 ends of the carrier and embracing the said strikers, and a friction-spring engaging with the upper faces of the strikers, entered into the upper ends of the said straps, and having its said ends cut to form a plurality of spring-
100 fingers which are reversely bent for bearing upon the straps and strikers.

3. In a portable bell, one or more sheet-metal strikers formed with depending longitudinally-arranged integral oblong lugs produced by a partial shearing of the centers of
105 the striker-blanks, whereby recesses exactly corresponding in dimensions to the said lugs are formed in the upper faces of the strikers.

4. In a portable bell, the combination with
110 an operating-lever formed with a segmental rack, of a pinion into which the said rack meshes, a spring connected with the said lever for operating it in one direction, and an antirattling lever pivotally mounted upon the
115 operating-lever, and adapted to be engaged with a fixed point so as to be thrown outward to interlock with the pinion when the operating-lever is brought into its normal position, the antirattling lever being held in its
120 locking position by the tension of the said spring.

5. In a portable bell, the combination with an operating-lever, an operating-spring therefor, and an antirattling lever pivotally mounted upon the said operating-lever and held in
125 its operating position by the tension of the operating-spring when the operating-lever is in its normal position.

6. In a portable bell, the combination with
130 the gong-post thereof, of an operating-lever formed with a segmental rack, an operating-spring connected with the said lever, and an antirattling lever pivotally mounted upon

the operating-lever and formed with an operating-finger and a stop-finger which coacts with the gong-stud, the said antirattling lever being engaged with a member of the bell
5 for locking the same against rattling when the bell is in its normal adjustment.

In testimony whereof I have signed this

specification in the presence of two subscribing witnesses.

HERBERT S. PULLMAN.

Witnesses:

M. L. SPERRY,
W. E. TWINING.