

(No Model.)

E. D. ROCKWELL.
BELL.

No. 545,378.

Patented Aug. 27, 1895.

Fig. I.

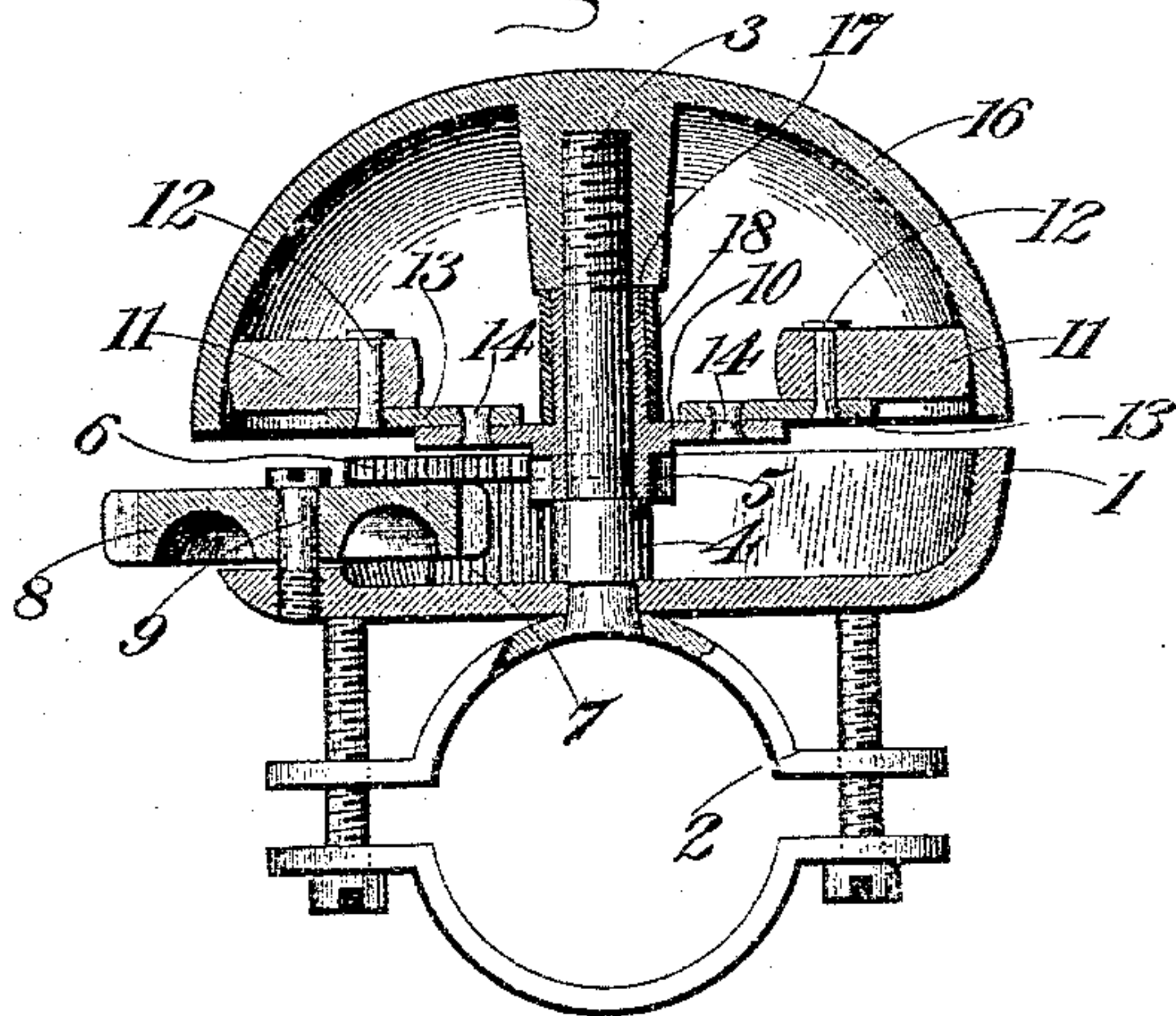


Fig. II.

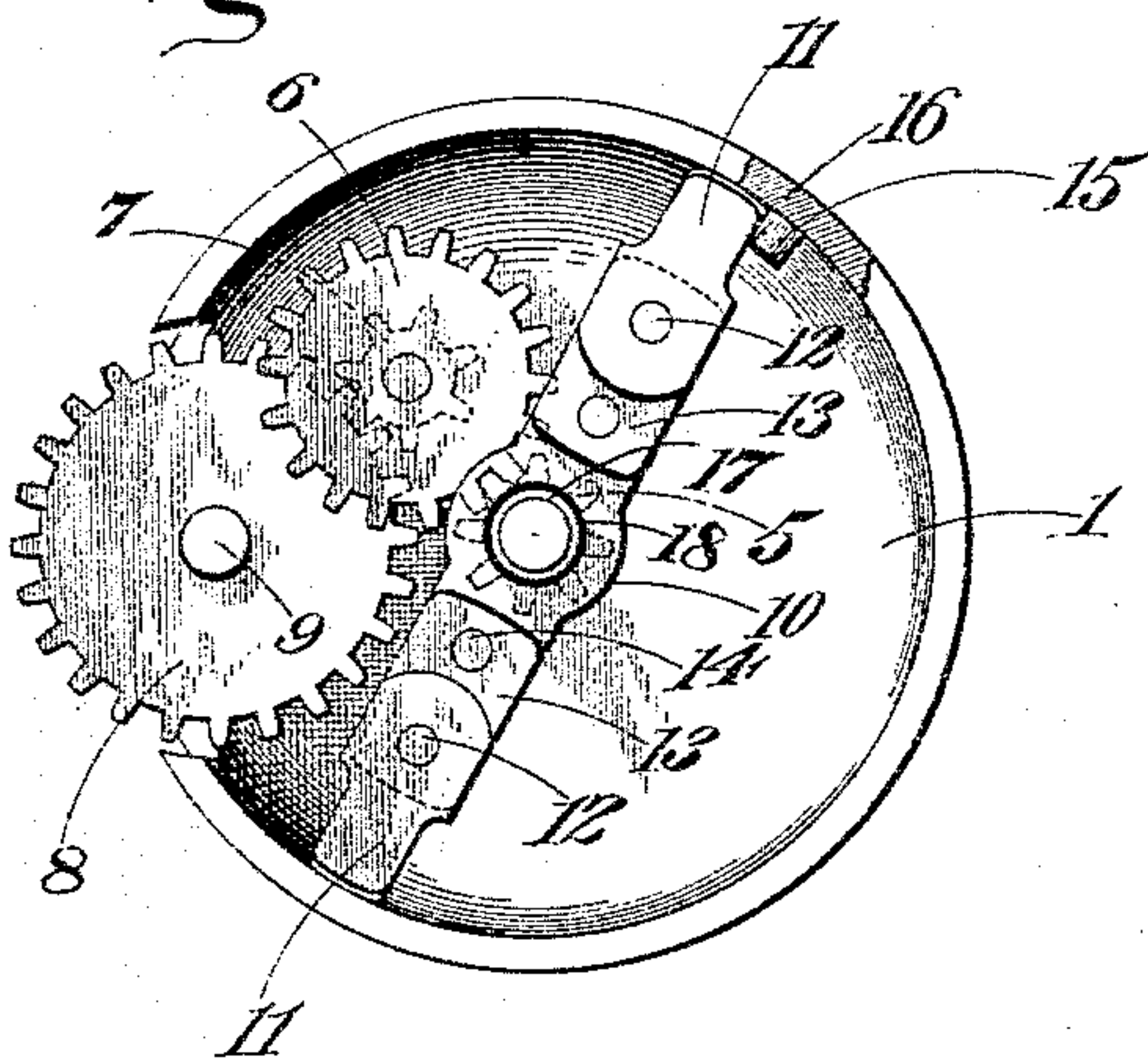


Fig. III.

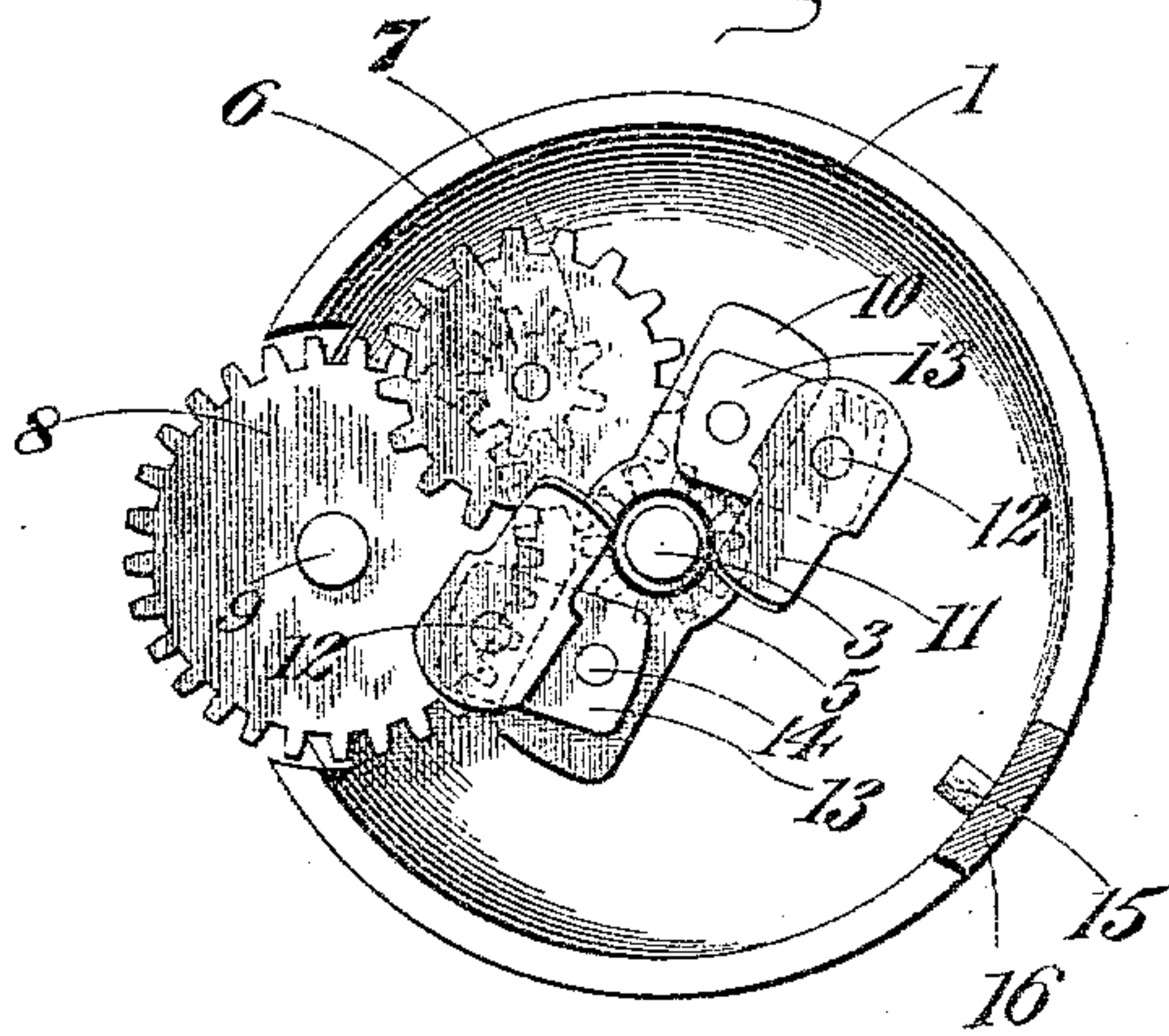
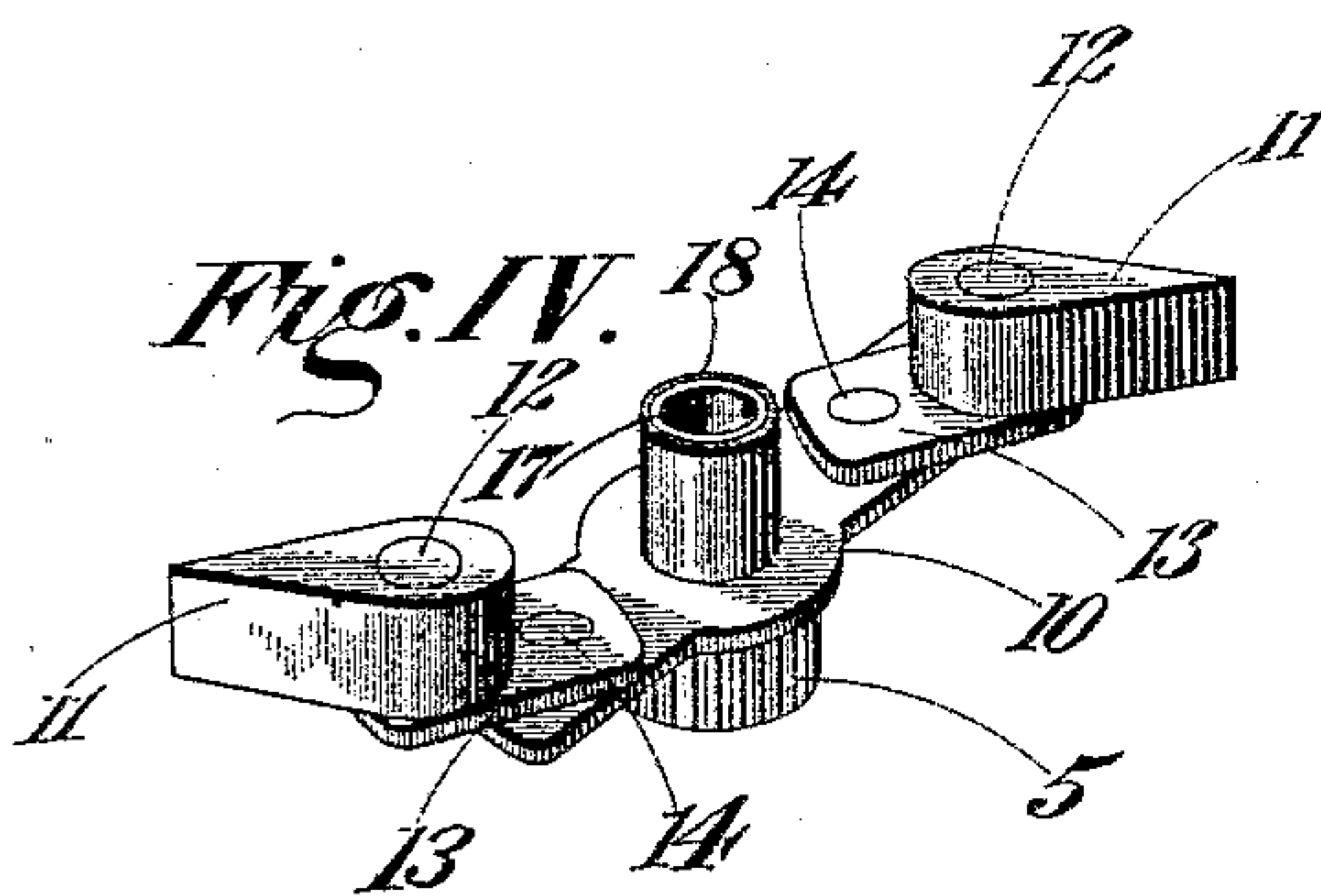


Fig. IV.



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BELL.

SPECIFICATION forming part of Letters Patent No. 545,378, dated August 27, 1895.

Application filed May 17, 1895. Serial No. 549,658. (No model.)

To all whom it may concern:

Be it known that I, EDWARD DAYTON ROCKWELL, of Bristol, county of Hartford, State of Connecticut, have invented certain new and useful Improvements in Bells, of which the following is a specification, reference being had to the accompanying drawings.

The object of my invention is to produce improvements in the striker and striker mechanism or that part of the bell which is by suitable mechanism caused to make a direct impact against a gong and to produce a sound. In such improvements as I have made the purpose has been to produce a striker or striker mechanism which, on account of certain characteristic features, is adapted to strike a gong, as against a lug provided upon its interior surface, a sharp quick blow, and then instantly retreating to permit the free unmuffled nodal play of the gong. In devices heretofore employed with a similar object in bells an objection has been that the strikers were not delicately responsive enough to the reactionary influence of the force of the blows which they delivered against their gongs, and consequently that they impaired to a degree, notably in certain classes of bells in which purity and clearness of tone are a great desideratum, the sound which they produce. Through my invention I am able to secure in bells of all varieties great purity, sweetness, and volume of tone.

In the accompanying drawings I have illustrated as an example of bell and bell mechanism a bicycle-bell, and in those drawings—

Figure I is a central vertical section of my bell complete. Fig. II is a plan view thereof looking toward the strikers and striker-carrier and showing the strikers as driven outwardly by centrifugal force and as in the act of striking. Fig. III is a similar view showing the strikers as having retreated after striking. Fig. IV shows a modified form of striker proper, which, while resembling generally the form of striker shown in the other figures, is more exactly wedge-shaped, being drawn to a thin striking-edge at its striking extremity.

Referring to the figures on the drawings, 1 indicates the base of my bell, which may be of any suitable shape, size, dimensions, and material. It is designed as affording a frame

for assembling the operative parts into a whole. As shown in the drawings, this base is dish-shaped and is for the sake of beauty highly finished and polished upon its exterior surface. It is provided, as illustrated, with any suitable fastening mechanism—as, for example, the split collar 2, which is designed in the present example for fastening the base to the handle-bar of a bicycle.

3 indicates a central arbor or stud, which revolvably supports, as upon a collar 4 of suitable height, a movable striker-carrier 10, which in the example illustrated is a revolvable cross-head. To the bottom of the cross-head is securely fixed a pinion 5, with which a gear 6, revolvable upon the base, meshes. The gear 6 is also provided with a multiplying-pinion 7, with which a driving-gear 8, revolvably secured, as by a pin 9, to the base and projecting through a recess in the outer wall thereof, meshes. The driving-gear thus presenting a smoothly-cogged periphery to the thumb or finger of an operator affords means for imparting rotary movement to the carrier 10.

Any suitable means for actuating the movable striker may be substituted for that illustrated, which is shown solely for the purpose of explication.

11 indicates a striker, which is preferably, but not necessarily, of the general wedge shape shown clearly in Figs. II and III of the drawings or of the distinct and positive wedge shapes shown in Fig. IV, and is pivoted through the broad end or head of the wedge, as indicated at 12, to a striker-delivering arm 13, that is pivoted, as indicated at 14, to the extremity of the carrier and constitutes an intermediate connection between the carrier and the striker.

I denominate the intermediate pieces which connect the strikers and the carrier as "striker-delivering arms," because when the strikers are in the position shown in Fig. III of the drawings, which position they assume after having been hurled against the lug 15 of the gong 16 and having been thrown back by their impact therewith, they are, when the gear is next actuated, revolved upon the pivots 14 and deliver the strikers directly against the lug or other part of the gong by a blow the force of which is multiplied by the leverage gained by the arms swinging about the

pivots 14 added to the centrifugal force which is imparted directly by the rotation of the carrier.

Where a number of revolutions, as is usually the case in operating the bell, are imparted to the carrier, the strikers will be alternately thrown backward and forward a number of times between the gong and the position shown in Fig. III of the drawings. In order, therefore, to render the striker quickly and perfectly responsive to the force which tends to throw it from the position shown in Fig. III to that in which it impinges against the gong, I prefer to provide upon the side of the carrier opposite to the pinion 5 a metallic sleeve 17, and around that secure a cushion 18, which may be made of a rubber tube. By this means not only is any clashing sound, which might occur by the impact of the strikers against the central arbor, prevented, but in the operation of the bell the alternate movement of the striker from the retreating position is facilitated by the resiliency of the cushion 18.

I do not confine myself to the details of construction herein shown and described, but, as in instances heretofore pointed out in the body of the specification and otherwise, I reserve the right to modify and vary the same within the scope of my invention.

What I claim is—

1. As an improvement in bells, a movable

striker carrier, a striker delivering arm pivoted approximately to the end thereof, and a striker pivotally secured to the striker delivering arm, substantially as specified. 35

2. In bell mechanism, the combination with a movable striker, a striker delivering arm pivoted to the striker, and a wedge-shaped striker pivotally secured at its head to the arm, substantially as set forth. 40

3. In bell mechanism, the combination with a frame and rotary carrier, of a striker delivering arm pivoted to the carrier, a striker pivoted to the arm, and carrier actuating mechanism, substantially as set forth. 45

4. In bell mechanism the combination with a frame, rotary carrier, gong and lug upon the gong, of carrier actuating mechanism, a striker delivering arm pivotally connected to the carrier, and a striker pivoted to the arm, substantially as set forth. 50

5. In bell mechanism, the combination with a rotary carrier, and means for actuating the same, of a sleeve upon the carrier, a cushion upon the sleeve, and a striker pivotally secured to the carrier, substantially as set forth. 55

In testimony of all which I have hereunto subscribed my name.

EDWARD DAYTON ROCKWELL.

Witnesses:

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