

(No Model.)

N. T. MILLS.
BICYCLE BELL.

No. 584.389.

Patented June 15, 1897.

Fig. 1.

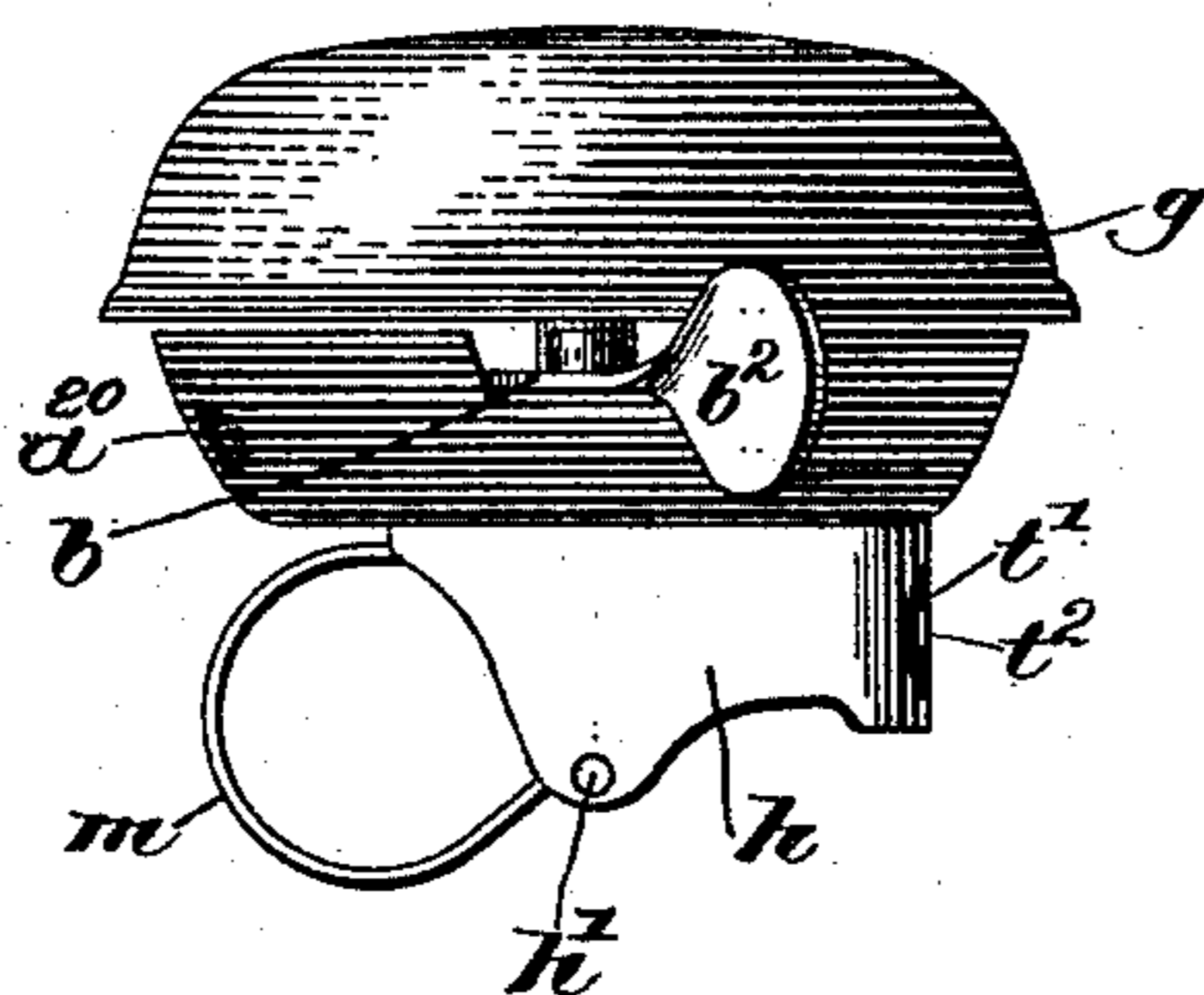


Fig. 2.

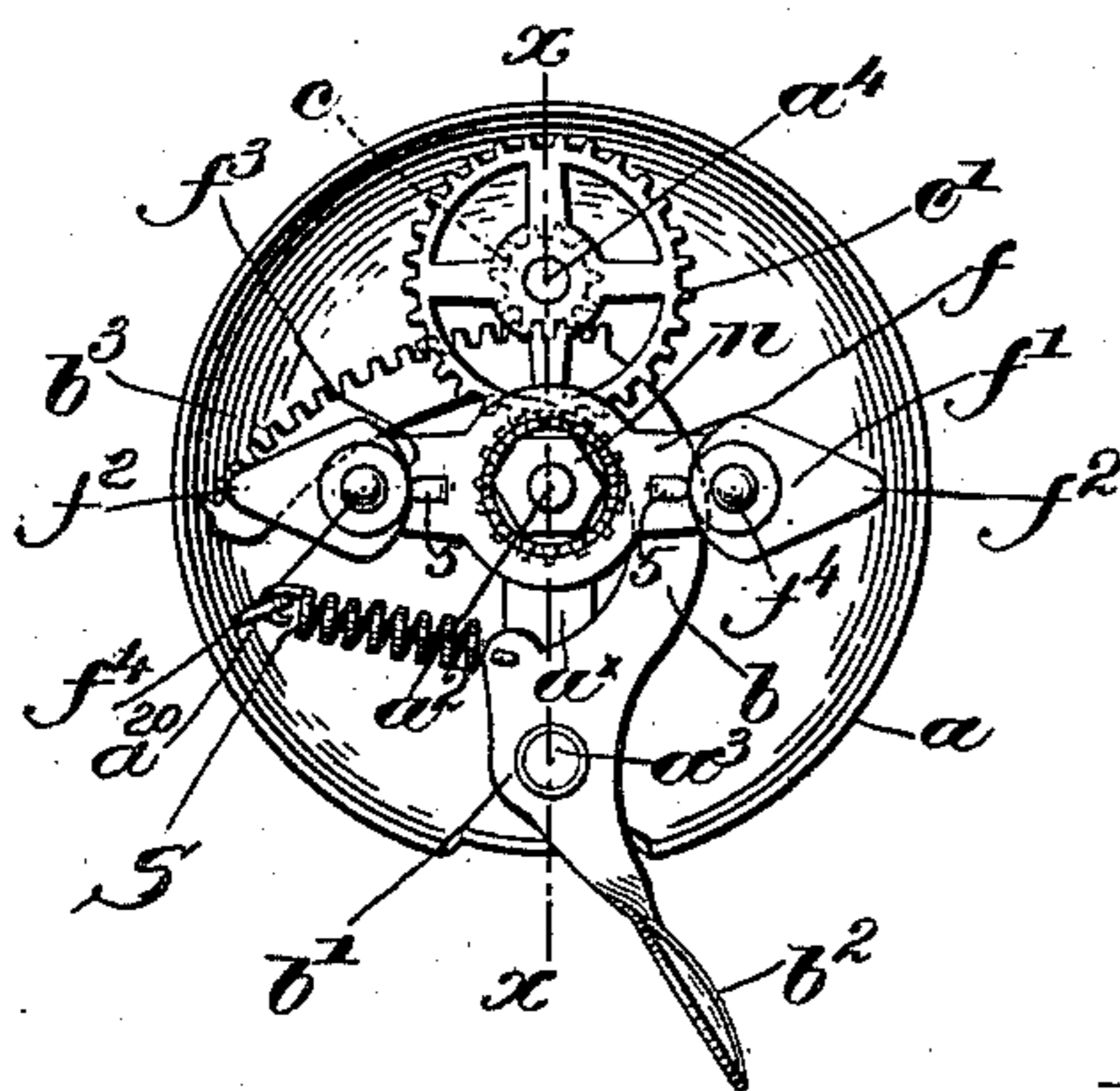


Fig. 3.

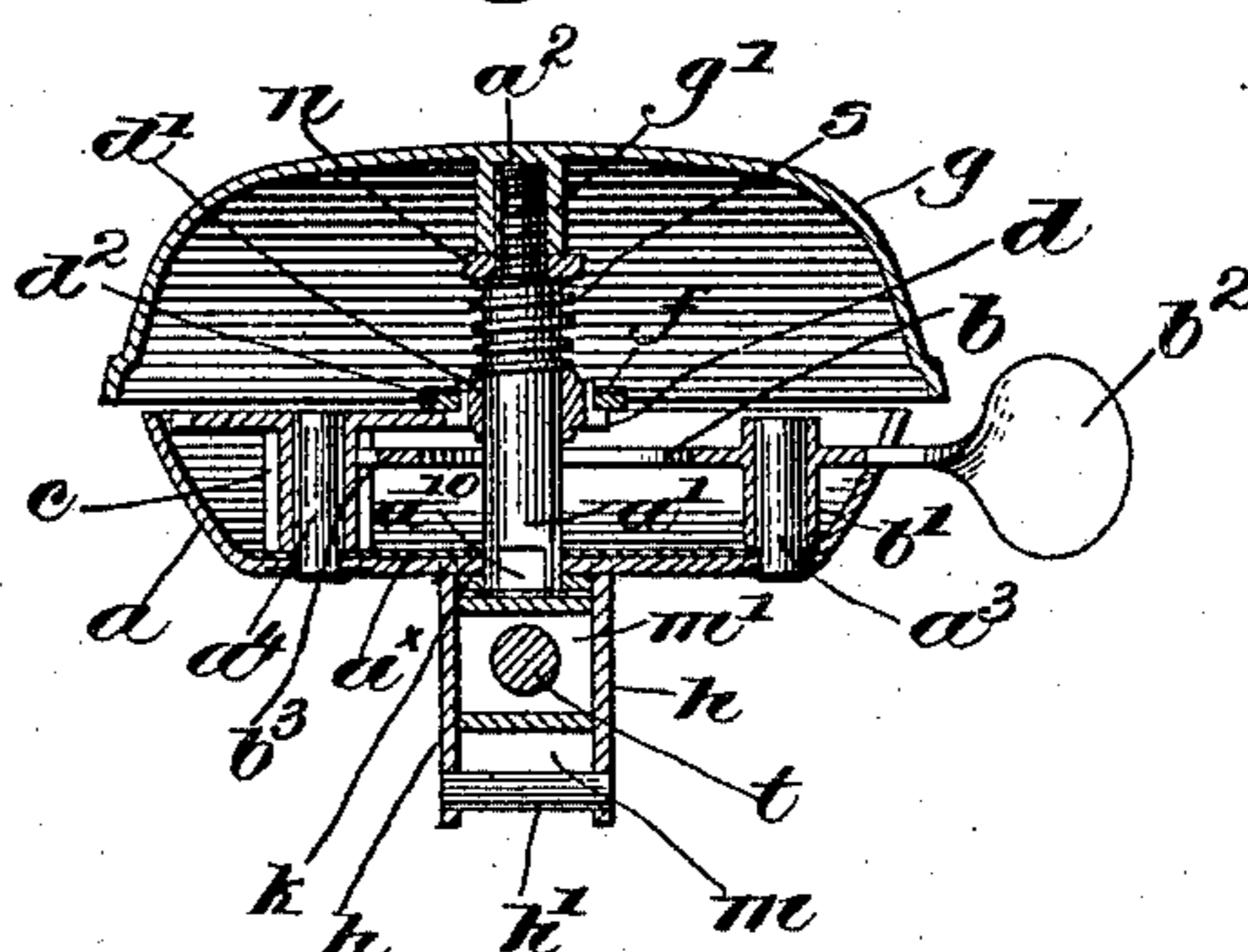


Fig. 4.

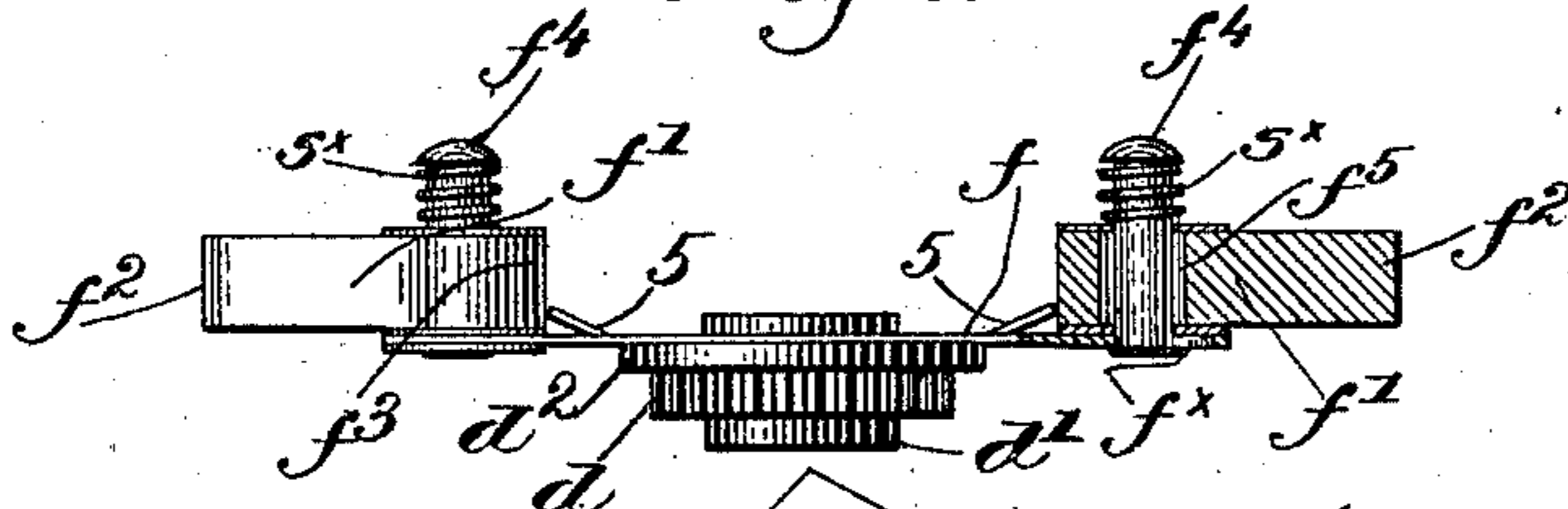


Fig. 5.

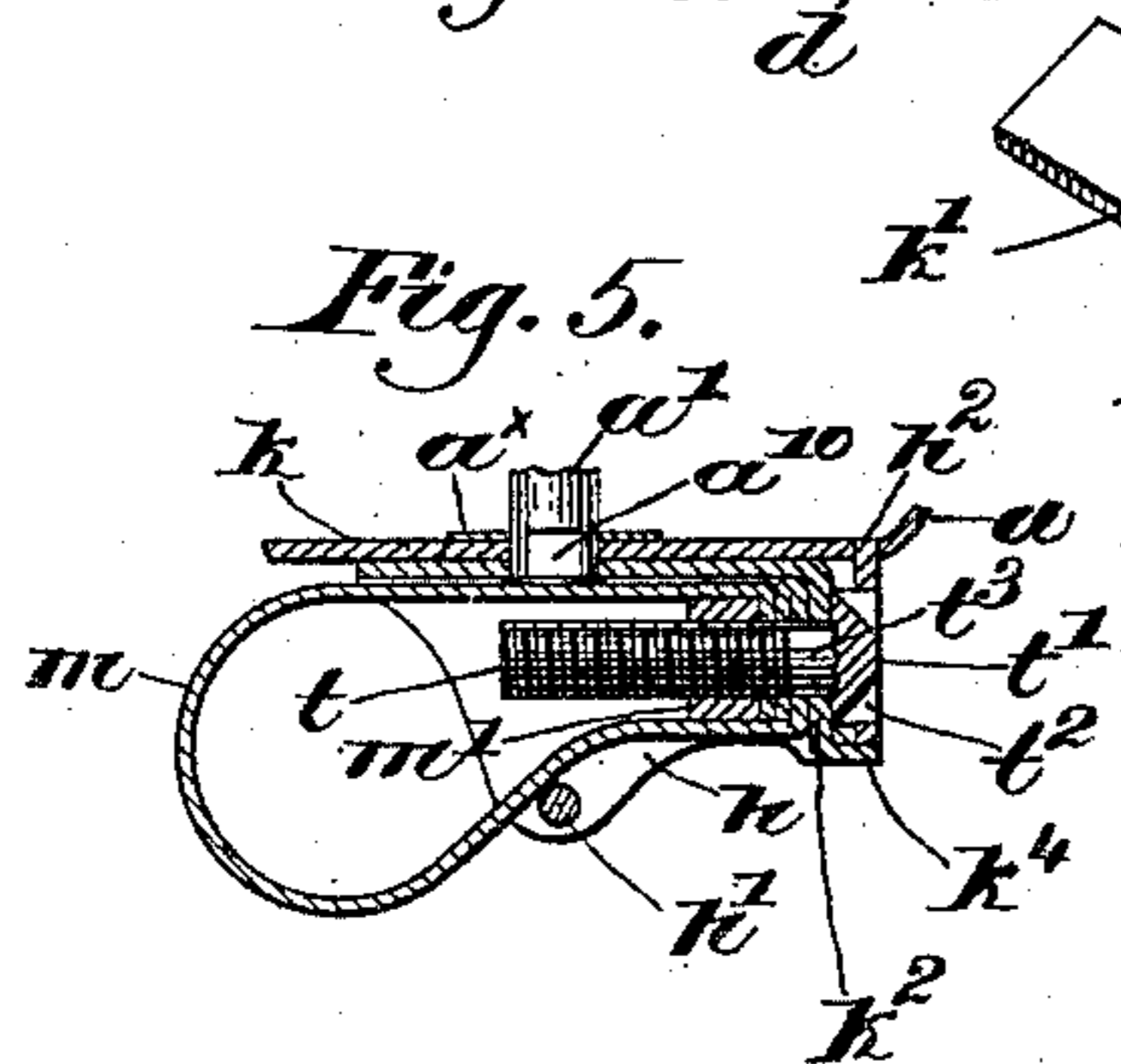


Fig. 7.

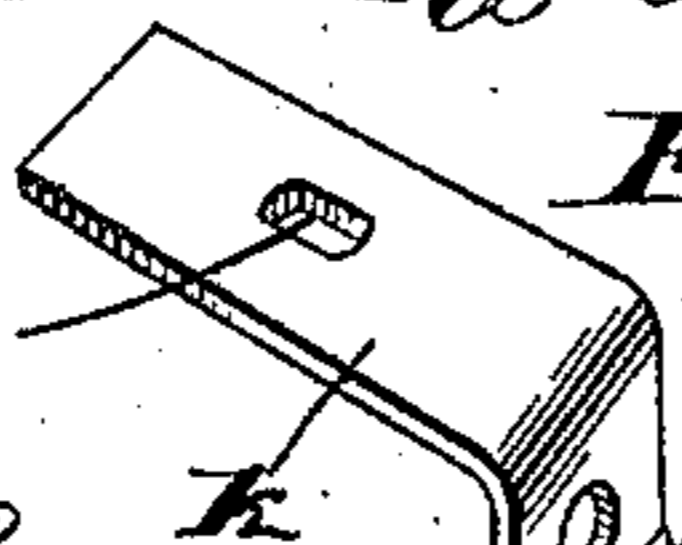
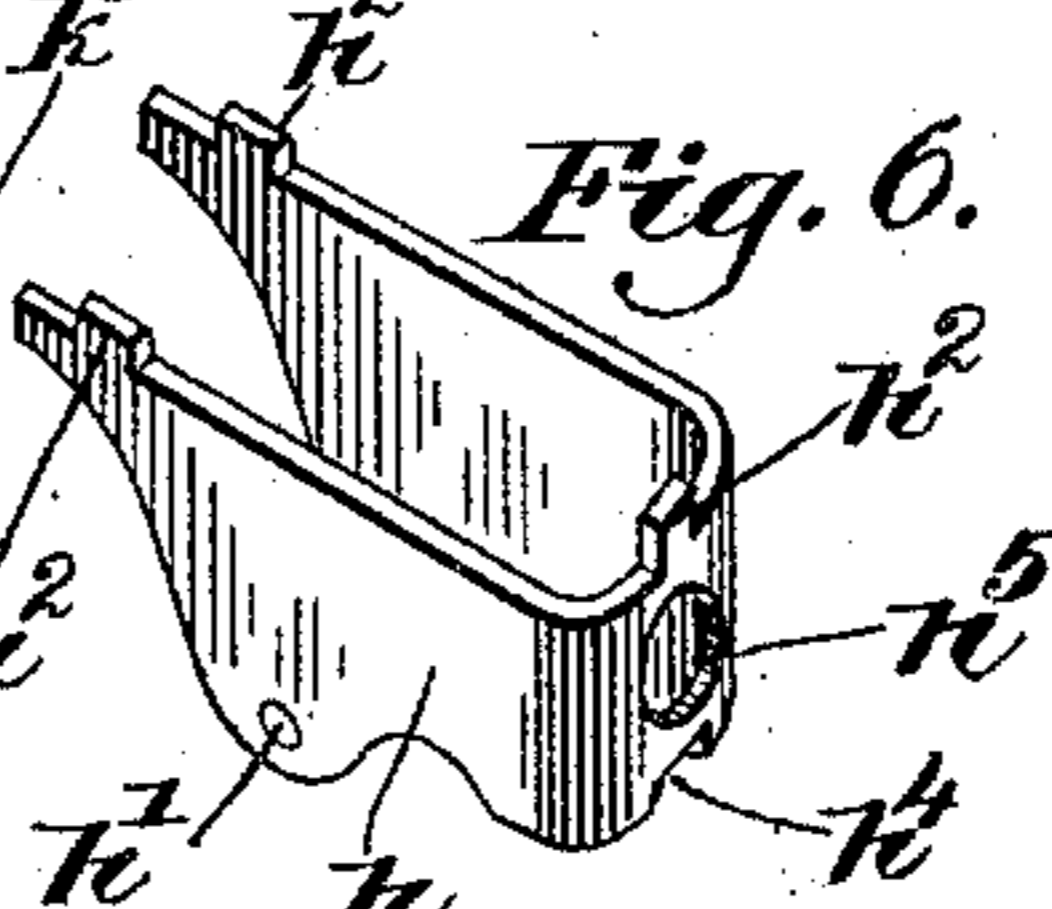


Fig. 6.



Witnesses.
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UNITED STATES PATENT OFFICE.

NORMAN T. MILLS, OF EAST HAMPTON, CONNECTICUT.

BICYCLE-BELL.

SPECIFICATION forming part of Letters Patent No. 584,389, dated June 15, 1897.

Application filed August 8, 1896. Serial No. 602,172. (No model.)

To all whom it may concern:

Be it known that I, NORMAN T. MILLS, of East Hampton, in the county of Middlesex and State of Connecticut, have invented an Improvement in Gong-Bells, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

10 This invention has for its object the production of a gong or bicycle bell having a small number of simple and cheaply-constructed operative parts, means being provided for holding the parts from rattling when the bell is silent.

15 The clip is also novel in various particulars, and I have also provided a novel and improved hammer.

20 Figure 1 is a side elevation of a bell embodying my invention. Fig. 2 is a plan view of the base and the operative parts of the bell mounted thereon. Fig. 3 is a vertical section on the line xx , Fig. 2, looking toward the right hand. Fig. 4 is an enlarged side elevation of the hammer-carrier, one of the hammers being shown in section. Fig. 5 is a longitudinal sectional view of the clip and coöperating devices, and Figs. 6 and 7 are perspective views of the clip-holder to be described.

30 The base a , struck up in suitable manner, has mounted therein a post a' , reduced and threaded at its upper end at a^2 to engage the usual threaded hub g' of the gong g , Figs. 1 and 3.

35 A plate a^x is secured to the base by two diametrically-located studs a^3 a^4 , and upon the former is mounted the elongated hub b' of a lever b , having a finger-piece b^2 and at its opposite end an externally-toothed segment-gear b^3 , which is in mesh with a long pinion c , rotatably mounted on the stud a^4 . A gear c' is secured to the upper end of the pinion c , said gear engaging a pinion d , having a sleeve-like hub d' , which loosely surrounds the post a' . The upper part of the pinion d is cut away to receive a flat ring or washer d^2 , which supports the hammer-carrier f , the ring and hammer-carrier being preferably forced onto the upper end of the pinion d .

As best shown in Figs. 3 and 4, the ring d^2 projects beyond the teeth of the pinion d and rests upon the gear c' near its periphery, the hammer-carrier and hammers being thus supported, doing away with a long hub extending to the base-plate and also providing means for locking the parts from rattling, as will now be described.

A light spring s surrounds the post a' between the top of the hub d' and, preferably, a nut n , screwed onto the part a^2 of the post, the spring pressing the pinion d against the gear c' with sufficient force to prevent rattling when the bell is silent, but not interfering with the rotation of the hammer-carrier f when the bell is rung.

A hammer f' , (see Figs. 2 and 4,) having an outwardly-extended point f^2 and a convexed base f^3 , is mounted movably on each end of the hammer-carrier, the latter having a round hole therein at f^x , Fig. 4, to receive headed studs f^4 , extended up through the holes f^5 in the hammers, springs s^x on the studs between their upper heads, and the hammer controlling the latter, the curvature of the base being eccentric to the stud f^4 .

The hammer-carrier is struck up at the rear of each hammer, as at 5, to form a stop to limit the swing of the hammers on their pivots and maintain their extremities f^2 extended outwardly, and also to act on the convexed bases of the hammers, forcing the hammers outwardly on the hammer-carrier as they are partially rotated.

85 A spring s , secured at one end to the base, is attached at its other end to the lever b to move it in one direction, the lever being moved manually in the opposite direction.

The wall of the base a is struck up, Figs. 1 and 2, to form a loop a^{20} on the inner side of the base, to which the fixed end of the spring s is secured, thus obviating the use of a stud riveted to the base.

95 The use of a stud is objectionable on account of the additional cost of construction, the necessary use of a shorter spring, as the stud would have to be secured to the flat portion of the base, and the tendency of the stud to catch rouge and lint in the finishing processes.

On account of its shape and location the

loop tends to pull the spring toward the bottom of the base, which is necessary in order to hold the lever *b* down on its stud and prevent its working up against the gong, thus obviating riveting.

The spring is liable to slip over the top of a stud, but cannot do so when attached to a loop formed as described, and the loop decreases weight and also affords more room for the working parts of the bell.

Referring now to Figs. 1, 3, 5, 6, and 7, the clip-holder is shown as composed of two pieces of sheet metal *h* and *k*, the former being bent to form ears, connected by a pin *h'*, and prongs *h*² on the upper edge of said member *h* enter suitable holes in the base *a*, and are upset to secure the clip-holder thereto. The member *k* has a slot *k'* therein to receive and be secured to the correspondingly-shaped end *a*¹⁰ of the post *a'*, extended through the base for the purpose, and the member *k* is downturned at *k*² and provided at its lower edge with a ledge *k*³ and a tongue *k*⁴, which enters a notch *h*⁴ in the end wall of the member *h*. The two members are thus locked together and firmly secured to the base *a* of the bell. The clip *m*, made of thin flexible metal, is upturned at its ends in opposite directions to overlap, and a threaded block *m'* is secured to one of said ends to receive the shank of the adjusting and locking screw *t*.

As shown in Fig. 5, the head *t'* of the screw is nicked at *t*² to receive a key, and the smooth part *t*³ of the screw-shank enters the hole *k*⁵ in the part *k*² of the holder, while the head itself enters a large hole *h*⁵ in the member *h*, forming a countersink for the head. The bell thus constructed is cheap, simple, and efficient, is readily adjustable on the support as a handle-bar, and is effectually locked from rattling when silent.

The spring *s* as herein employed constitutes one form of antirattle device arranged to exert a yielding pressure herein through the collar *d*² laterally on one of a series or train of wheels acting to prevent rattle of the parts when not in use operating the bell. While this arrangement is not necessarily limited to actuating mechanism employing a train of geared wheels when applied to a gong-bell—such, for instance, as a bicycle-bell—yet in the latter instance it has an especial application, since it cures a very troublesome and in some instances vital defect of bells now in use.

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

1. In a gong-bell, the combination with the gong, a hammer and hammer-carrier, a post on which the latter is rotatably and longitudinally movable, the actuator, the actuating mechanism including one or more wheels arranged between said actuator and hammer-carrier to actuate the latter by or from the former and to support the hammer-carrier on the post, combined with an antirattle spring arranged to exert upon the hammer-carrier

a yielding pressure laterally against one of the wheels of the actuating mechanism to prevent rattle of the same when not in use, without interfering with the proper operation of the actuating mechanism when needed for use in sounding the gong, substantially as described.

2. In a gong-bell, the gong, the actuator, the hammer, the pinion on which the latter is mounted, intermediate gearing between said pinion and actuator, a collar fast with said pinion, and overlapping a portion of said intermediate gearing, and a spring acting through the medium of said collar laterally against a portion of said intermediate gearing to prevent rattle of the parts, substantially as described.

3. In an actuating mechanism for bells, the combination with a train, of two or more intermeshing gear-wheels, one of which is provided with an annular enlargement to overlap the other, of an antirattle device arranged to exert a yielding pressure laterally with relation to said overlapped and overlapping wheels to hold them against rattle, substantially as described.

4. A rotatable hammer-carrier, a hammer having a convexed base eccentric to its pivotal point, mounted on said carrier and having a radial and a partially rotative movement thereon, and a stop on the carrier to bear upon the base of the hammer, preventing complete rotation thereof and moving the hammer outwardly as it partially rotates, substantially as described.

5. A rotatable hammer-carrier, a headed stud extended loosely through it and through the hammer near its base, a triangular hammer having a convex base eccentric to said stud and mounted to move radially and rotatively on the hammer-carrier, and a stop integral with the carrier to act upon the convex base of the hammer and control the movement thereof relatively to the carrier, substantially as described.

6. The combination with a bell, of an attaching means therefor, said attaching means comprising a contractible member and a holder therefor, comprising two members struck up from sheet metal overlapping each other at one end and rigidly secured in place, and a clamping-screw mounted in the overlapping ends thereof, as and for the purpose specified.

7. The combination with the base carrying the gong and the sounding mechanism therefor, of a contractible member or clip, and a holder therefor, comprising two members struck up from sheet metal and rigidly secured in operative position, one of said members constituting the bottom and the other the surrounding sides of said holder, and a clamping-screw, substantially as described.

8. In a gong-bell, the base provided with an upright post, a rotatable hammer-carrier and a triangular hammer, a stud extended through a slot in one and loosely through the other,

said hammer having a convexed base eccentric to its pivotal point, a stop movable with the carrier and bearing upon said base, preventing complete rotation of and moving the hammer outwardly as it partially rotates, and means to retain the hammer on its stud, substantially as described.

9. In a gong-bell, a hammer provided with a slot so that it may slide longitudinally on the hammer-carrier, a hammer-carrier provided with an upright entering the slot of the hammer, and a stop struck up from the said hammer-carrier, combined with a spring-actuated friction device bearing on the said hammer, the struck-up stop limiting the sliding motion of the hammer, substantially as described.

10. The combination with a bell-base of attaching means therefor, said means comprising a contractible clip, a holder therefor composed of two members one of which is substantially U-shaped and the other substantially L-shaped, the latter constituting the bottom and the former the surrounding sides

of said holder, and a clamping-screw, substantially as described.

11. The combination with a bell-base of attaching means therefor, said means comprising a contractible clip, a holder therefor composed of a substantially U-shaped member, a substantially L-shaped member overlapping each other at one end, the latter member constituting the bottom and the former the surrounding sides of said holder, the inner and outer overlapping ends of said members being provided with concentric holes of different diameters to receive the shank and the enlarged head respectively of a clamping-screw, and the clamping-screw, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

NORMAN T. MILLS.

Witnesses:

S. MILLS BEVIN,
MAYO S. PROSPER.