

No. 613,025.

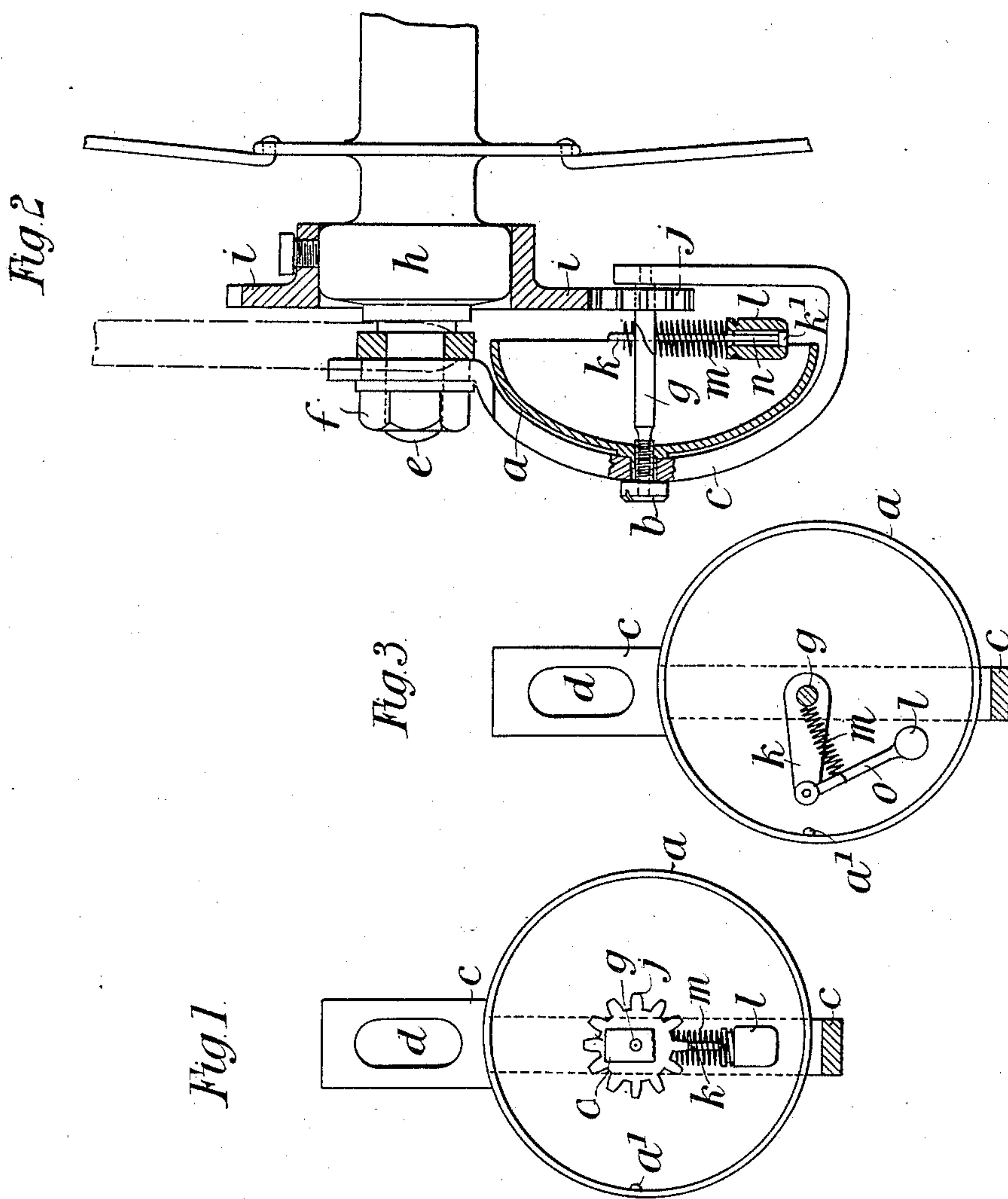
Patented Oct. 25, 1898.

J. CLEMENTS.

SPEED INDICATING ALARM FOR BICYCLES, &c.

(Application filed Oct. 21, 1897.)

(No Model.)



Witnesses
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SPEED-INDICATING ALARM FOR BICYCLES, &c.

SPECIFICATION forming part of Letters Patent No. 613,025, dated October 25, 1898.

Application filed October 21, 1897. Serial No. 655,982. (No model.)

To all whom it may concern:

Be it known that I, JOHN CLEMENTS, a subject of the Queen of Great Britain, residing at London, England, have invented new and useful Improvements in Apparatus for Use in Motor-Carriages, Cycles, and other Vehicles for Indicating when a Predetermined Speed has been Attained, of which the following is a specification.

10 This invention relates to improvements in the apparatus for use with motor-carriages, cycles, and other vehicles described in the specification of my Patent No. 586,544, of July 20, 1897, whereby an audible signal is given when the said carriages, cycles, and other vehicles attain a predetermined speed, the improvements having for their object to simplify the construction and reduce the cost of such apparatus.

20 According to my present invention instead of pivoting one or more arms carrying the hammer or hammers to the spindle I now attach an arm thereto in such a manner that it can only move radially, and I attach the hammer to a spring embracing the arm, which may, if desired, slide in the spindle, the spring normally keeping the hammer free of the bell until the predetermined speed has been attained, when the elasticity of the spring is overcome by the centrifugal force, so as to bring the hammer in contact with the bell as it revolves.

30 In the accompanying drawings, Figure 1 is a sectional elevation of an audible-signal apparatus made according to my invention. Fig. 2 is a vertical section at right angles to Fig. 1 and showing the apparatus applied to a cycle-wheel, and Fig. 3 is a view similar to Fig. 1 of the modified construction of my improved apparatus.

40 *a* is the bell, secured by means of a screw *b* to a support *c*, having a slot *d* at its upper end, which fits over the screw-threaded end of the axle *e* of the cycle-wheel and is adapted to be secured thereon by a nut *f*, which is screwed upon the end of the said axle *e*. The bell *a* is shown in the drawings as being mounted eccentrically upon the support *c*; but this is not essential.

50 *g* is the spindle, which is rotatably mounted in a pivot on the inner end of the screw *b* and in the end of the support *c*, as clearly

shown in Fig. 2, the said spindle being rotated from the hub *h* of the wheel by means of the toothed wheel *i*, which is screwed thereon, and the toothed wheel *j*, with which the said wheel *i* gears and which is keyed upon the spindle *g*.

60 *k* is the arm, which is rigidly fixed to the rotatable spindle *g*, and *l* is the hammer, which is adapted to slide upon the said arm *k* and is normally held out of contact with the bell *a*, as it (the hammer) rotates by means of the spring *m*, which is coiled around the arm *k* and attached at one end to the hammer *l* and at the other end to the spindle *g*. The arm *k* is provided at its outer end with a button *k'*, which prevents the hammer leaving the arm by coming into contact with the inner end of the said hammer, the hole *n* in the inner end of the hammer, through which the arm *k* passes, being made conical, as shown, so that the hammer is allowed a certain amount of lateral movement on the arm *k*.

70 With this construction of apparatus it will be obvious, as above described, that when the cycle-wheel is rotating its motion will be communicated through the toothed wheels *i* and *j* to the spindle *g*, which thereby causes the hammer to rotate inside the bell and tends to swing the said hammer outward by the centrifugal force imparted to it. This centrifugal force, however, is counteracted by the tension of the spring *m* until the wheel rotates with a certain predetermined velocity, when the centrifugal force overcomes the inward pull of the spring *m* upon the hammer *l* and causes the said hammer to strike the bell *a*, thus giving notice that the predetermined speed has been attained.

80 In the modification of my invention illustrated in Fig. 3 the hammer *l* does not slide upon the rigid arm *k*, but is fixed to the arm *o*, which is pivoted to the outer end of the arm *k*, and the spring *m* instead of being coiled around the arm *k* is connected at one end to the arm *o* and at the other end to the spindle *g*, as clearly shown. It will be obvious, however, that the action of this modified form of apparatus is precisely similar to that of the apparatus hereinbefore described.

90 In order that the hammer may produce a sharp ring, I provide the inner peripheral portion of the bell with a stud or projection

a' in the path of the hammer, so that when the hammer has been drawn outward by centrifugal force far enough to strike the stud a' it will be thereby pushed inward as the hammer passes over it and will immediately fly outward again after passing the stud, thus striking the bell sharply.

As above stated, the arm k can be arranged to slide in the spindle g , and in this case the hammer can be rigidly secured to the said arm, and it will be obvious that I can employ two or more centrifugal arms and hammers instead of one only, as illustrated.

Although I have shown the spindle g horizontal and the arm k arranged to rotate in a vertical plane, it will be obvious that the spindle can be arranged vertically, as described in the specification of my Patent No. 586,544, so that the arm rotates in a horizontal plane.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. A speed-indicating device comprising among its members, a revoluble spindle, an arm rigidly secured to said spindle, a hammer carried by said arm and having a sliding engagement therewith, a resistance-spring for said hammer, a bell having peripheral portions surrounding said spindle and provided with a projection adapted to be struck by said hammer when the latter is drawn outwardly

by centrifugal force, substantially as described.

2. A speed-indicating device comprising among its members, a revoluble spindle, a hammer carried thereby but capable of movement toward and from the spindle, a resistance-spring for said hammer, a bell having portions surrounding said spindle and provided with a projection adapted to be struck by the hammer when the latter is drawn outwardly by centrifugal force, and a driving-wheel for said spindle adapted to be secured to the hub of a wheel, substantially as described.

3. A speed-indicating device comprising among its members a frame having a slotted portion adapted to be secured to a vehicle-axle, a spindle revolubly mounted in said frame, a hammer carried by said spindle but movable toward and from the same, a resistance-spring for said hammer, a bell secured to said frame and having a projection adapted to be struck by said hammer when the latter is drawn out by centrifugal force, and a driving-wheel for said spindle adapted to be secured to a revolving hub, substantially as described.

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Witnesses:

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