A. F. ROCKWELL.

ALARM BELL.

APPLICATION FILED NOV. 17, 1911.

1,226,010.

Patented May 15, 1917.

2 SHEETS—SHEET 1.

Fig. 3.

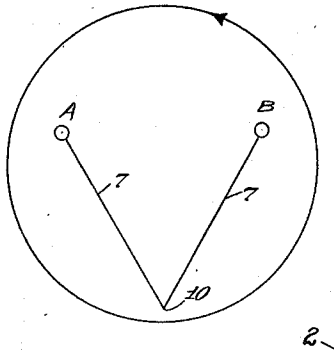


Fig. 4.

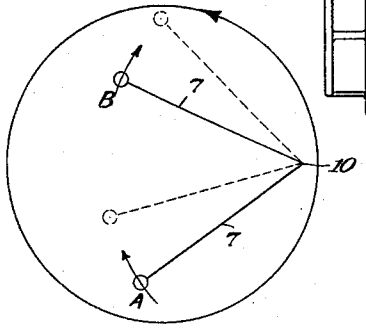


Fig. 1.

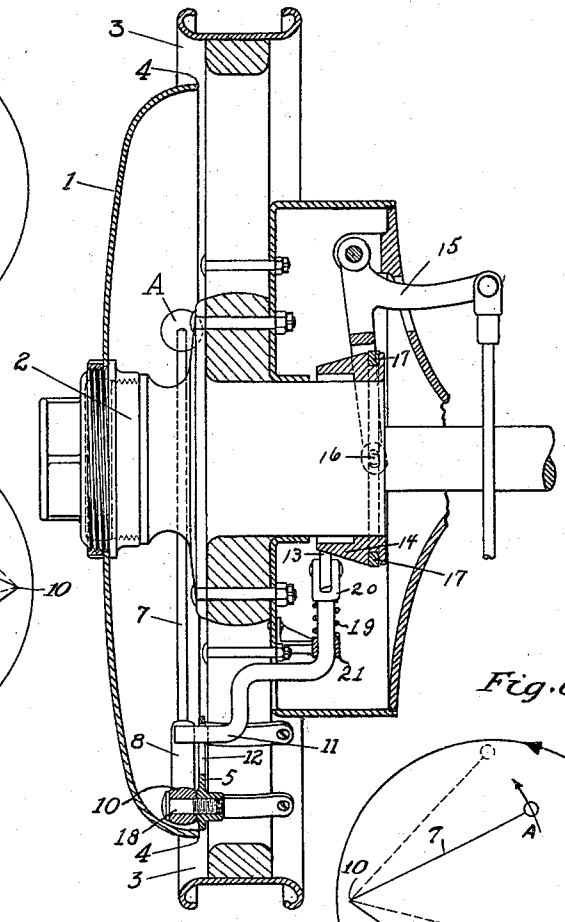


Fig. 6.

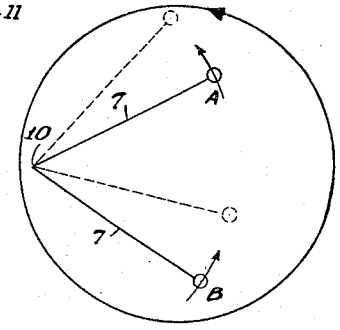
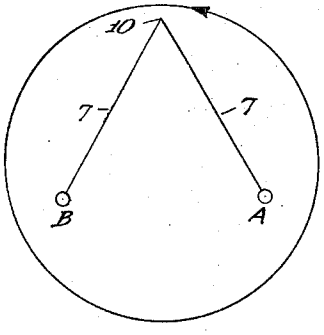


Fig. 5.



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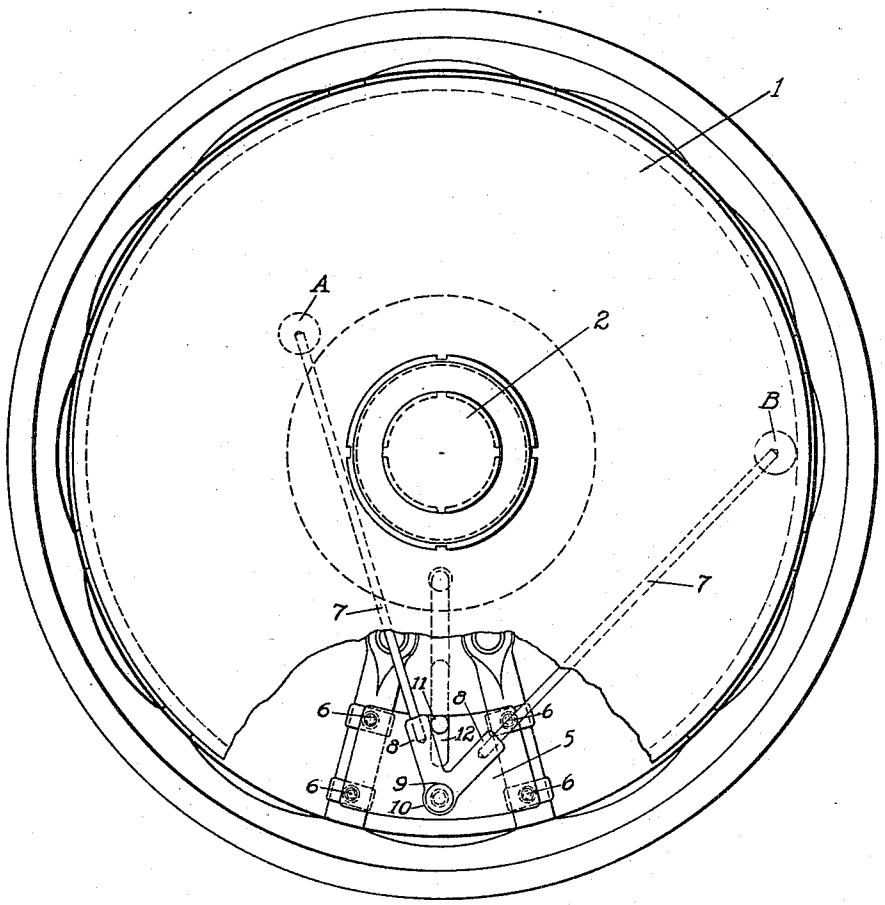
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Fig. 2



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UNITED STATES PATENT OFFICE.

ALBERT F. ROCKWELL, OF BRISTOL, CONNECTICUT, ASSIGNOR TO THE NEW DEPARTURE MANUFACTURING COMPANY, OF BRISTOL, CONNECTICUT, A CORPORATION OF CONNECTICUT.

ALARM-BELL.

1,226,010. Specification of Letters Patent. Patented May 15, 1917.

Application filed November 17, 1911. Serial No. 660,871.

To all whom it may concern:

Be it known that I, ALBERT F. ROCKWELL, a citizen of the United States, residing at Bristol, county of Hartford, State of Connecticut, have invented a certain new and useful Alarm-Bell, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to alarm bells and more particularly to bells for use upon vehicles.

One object of my invention is to provide a bell whose striking mechanism may be operated by the centrifugal force generated by the rotation of a traction wheel about its traction point.

Another object is to provide a simple striking mechanism for bells and the like.

Another object is to provide an alarm bell adapted for attachment to a vehicle wheel.

Another object is to provide a simply controlled bell.

To these ends and also to improve generally upon devices of the character indicated, my invention consists in the various matters hereinafter described and claimed.

Figure 1 is a diametrical section of a device embodying my invention;

Fig. 2 is a side view thereof partially in section; and

Figs. 3 to 6, inclusive, are diagrammatic views illustrating the operation of the present embodiment.

As is well understood, a traveling traction wheel is stationary at the traction point and all other points of the wheel are turning about the traction point as a fulcrum or axis. It follows that the linear velocity of every point is proportional to the straight or radial distance from the traction point, such velocity increasing as the radial distance increases.

Therefore, the centrifugal force due to rotation about the traction point and acting at a point on the wheel is at a minimum when such point is nearest the traction point and increases until a maximum is reached when such point is its greatest distance from the traction point, and then decreases to a minimum.

It follows, therefore, that, if a weight be attached to a traction wheel so that it will take part in the movement of the wheel but can also have a movement crosswise of the wheel from and to the traction point, this weight will, assuming sufficient velocity for the wheel, at some point in its normal path of travel with the wheel have a radius from the traction point of a length great enough to provide sufficient centrifugal force to cause the weight to travel substantially radially away from the traction point and approach the rim of the wheel. Also, there will come a time in the further movement of the wheel when the radius of the weight about the traction point becomes so short that there is not sufficient force to keep the weight out of its normal path and in the position it has previously assumed and the weight will return to its normal path.

My invention provides a device operating in accordance with the above principles. The illustrated embodiment is shown as comprising a gong 1 and striker elements A and B for coöperation with the gong. The gong is adapted to be carried in proximity to a traction wheel, as 3, to travel therewith and is preferably mounted upon the hub 2 thereof, as shown. Preferably the gong is of nearly the same diameter as the wheel, as indicated at 4.

The striker elements A and B are mounted upon the wheel so that they will partake of the motion thereof and also can have a travel crosswise thereof. As here shown, the elements A and B are carried at the ends of rigidly connected arms 7 extending from one side of the hub crosswise of the wheel to the other side of the hub. The arms 7 are arranged at an angle with respect to each other and at their meeting point are pivotally mounted upon the wheel near the periphery thereof.

Thus, referring to Figs. 3 to 6 inclusive and assuming the wheel to be in motion in the direction of the arrow, in Fig. 3 the forces are balanced; in Fig. 4, A has descended and has a short radius about the traction point while B has a radius about the traction point of a length to provide sufficient centrifugal force to throw B outward out of its normal path and into contact with the gong to give a stroke; in Fig. 5 the forces are again balanced; and in Fig.

6 B has a short radius and A a radius of a length to provide sufficient centrifugal force to throw it against the gong and give a stroke.

Figs. 3 to 6 are drawn upon the assumption that the speed of the wheel is such that it is about at the maximum radius that the stroke occurs but evidently with an increase in speed the stroke point will move backward toward the traction point.

Since a traction wheel usually is above the surface traveled upon I may term the centrifugal force due to rotation about the traction point an "upward force."

It is apparent that the pivotal point need not necessarily be at the periphery of the wheel, and also that the gong may be in different positions than that shown in the drawings and still embody the features of my invention.

As here illustrated, the arms 7 are mounted in the holder 9 as by being inserted in sockets 8. A plate 5 is secured to the spokes of the wheel, as by clamps 6, and provides a support for the holder 9. The connection between the holder 9 and the plate 5 is preferably by a pivot pin 18 secured to the plate and passing through the apex 10 of the holder.

The bell may be controlled by any suitable means. As here shown there is provided a shiftable stop 11 so located as to project between the jaws of the holder 9. Evidently when the stop is at or near the apex of the triangle of the jaws, the holder and hammers will be held against oscillation about the pivot 18, whereby the hammers A and B cannot come into contact with the gong and the bell will not sound. If the stop is shifted away from the pivot point the holder can oscillate and the gong be sounded.

The stop is shown as projecting at one end through a radial slot 12 in the plate 5 and as normally urged away from the pivot 18 by means of a spring 19 under compression and abutting at one end a projection 20 at the other end of the stop and abutting at its other end a fixed support 21.

To shift the stop against the action of the spring so as not to permit the hammer arms to oscillate I preferably provide a slidably mounted cam sleeve 14 conveniently carried upon the hub 2 and having its inclined surface in contact with the roller 13 on the stop 11. The sleeve may be shifted by means of a lever 15 secured, as at 16, to a loose ring 17 carried by the sleeve 14.

It will be seen that I have provided a simple, compact and inexpensive alarm bell of few parts and which may be operated by the centrifugal force generated by the rotation of a traction wheel about its traction point.

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

1. In a device of the character indicated, the combination with a traction wheel, a sounding member, and means immediately under the influence of the centrifugal force immediately generated by the rotation of said wheel about its traction point and movable under the immediate action of such force to sound said member, of means under the control of the operator for permitting or preventing the movement of said first named means; substantially as described.

2. In a device of the character indicated, the combination with a traction wheel and a sounding member in the character of a circular gong mounted concentrically upon said wheel, of striking means for said member carried by said wheel and within said gong and movable into contact with said gong by the centrifugal force generated by the rotation of said wheel about its traction point; substantially as described.

3. In a device of the character indicated, the combination with a traction wheel and a sounding member, of a pair of angularly related sounding-member-striking arms rigidly connected approximate the apex of the angle therebetween and eccentrically pivoted to said wheel near said apex and extending crosswise of the wheel; substantially as described.

4. In a device of the character indicated, the combination with a sounding member and an arm movable to sound said sounding member, of an arm rigidly connected to said movable arm and extending therefrom at an angle thereto, and a stop located between said arms and movable to and from the junction thereof; substantially as described.

5. In a device of the character indicated, the combination with a sounding member and a pair of angularly related sounding-member-striking arms rigidly connected approximate the apex of the angle therebetween and movable to sound the sounding member, of a stop located between said arms and movable to and from said apex; substantially as described.

6. In a device of the character indicated, the combination with a sounding member, a pair of angularly related sounding-member-striking arms rigidly connected approximate the apex of the angle therebetween and pivotally movable into striking contact with said sounding member, and a support for said arms, said arms being pivoted to said support adjacent their connection, of a stop between said arms and movable to and from the pivotal point; substantially as described.

7. In a device of the character indicated, a sounding member, a rotatable support

provided with a hub, movable striking means for said sounding member carried upon said support, a stop shiftable to control the movement of said striking means and rotatable with said means, and a member shiftable upon said hub, said stop being operatively connected to said member to be shifted thereby when said member is shifted on said hub; substantially as described.

8. In a device of the character indicated, a sounding member, a rotatable support provided with a hub, movable striking means for said sounding member carried upon said support, a stop shiftable to control the movement of said striking means and rotatable with said means, and a collar shiftable upon said hub, said stop being operatively connected to said collar to be shifted when said collar is shifted upon said hub; substantially as described.

9. In a device of the character indicated, in combination, a traction wheel, a support for said wheel relatively stationary with respect thereto, a sounding member, a striker element eccentrically and loosely pivoted to said wheel, whereby said element is movable to strike and sound said member during rotation of said wheel and under forces generated during and by such rotation, said element being wholly unconnected with said support in all positions of its operation, and means under the control of the operator for permitting or preventing the striking operation of said element; substantially as described.

10. In a device of the character indicated, the combination with a wheel having spokes at an angle to each other, a sounding member, a striking means to be carried upon said wheel, and a support for so carrying said means, of a pair of clamps carried by said support with their axes arranged at an angle to each other, such clamps being detachably connected to said spokes whereby due to the angular relations of said clamps and of said spokes said support is held in fixed position upon said wheel; substantially as described.

11. In a device of the character indicated, the combination with a wheel having spokes, a sounding member, a striking means therefor, and a support for said striking means carried by said wheel and bridging the space between two of said spokes, of means for controlling the operation of said striking means including a stop projecting between said two spokes, said support being provided with a guide-aperture for the reception of said stop; substantially as described.

12. In a bell, a sounding member, a striker element mounted adjacent said member to be moved into striking relation therewith by centrifugal force, means for generating said force and applying it to said element, such means being capable of continuous operation to uninterruptedly place said element under the influence of said force, and controlling means coöperating directly with said element for permitting or preventing the movement of said element under said force, such controlling means being distinct and separate from said force applying means and exercising no control thereover, whereby said force applying means is unaffected by said controlling means and continuously tends to apply said force to said element; substantially as described.

In testimony whereof, I hereunto affix my signature, in the presence of two witnesses.

ALBERT F. ROCKWELL.

Witnesses:
GEORGE L. SANFORD,
GEO. B. WARD.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."