(No Model.)

E. BRANDT.

BELL MECHANISM FOR BICYCLES.

No. 577,352. Patented Feb. 16, 1897.

Fig. 1.

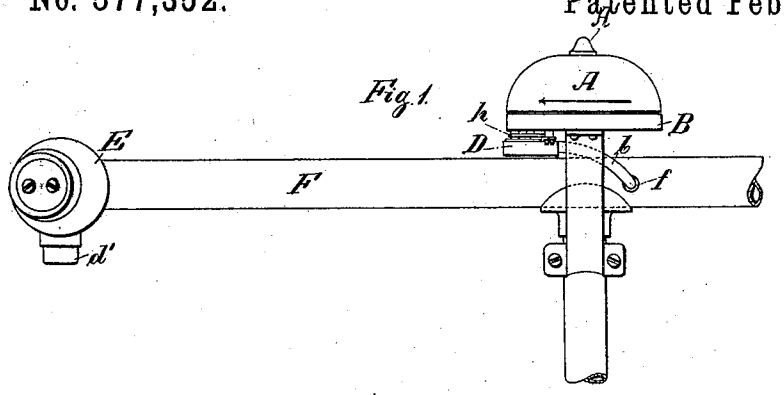


Fig. 2.

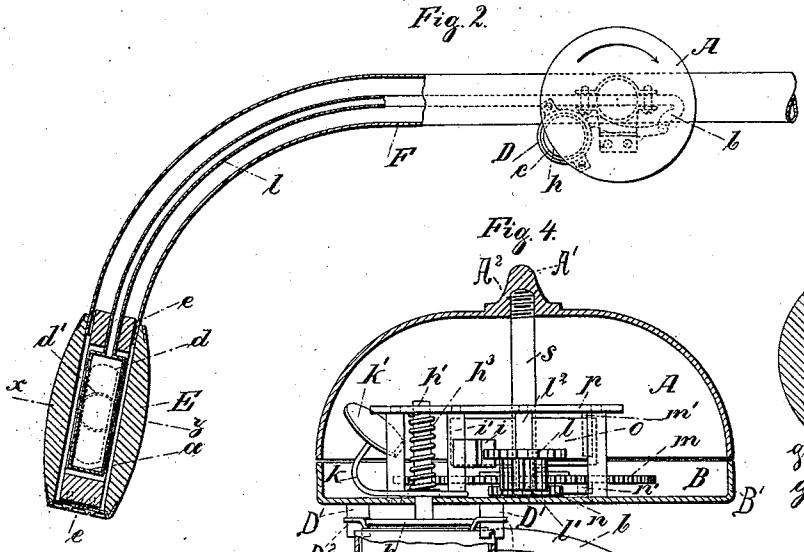


Fig. 3.

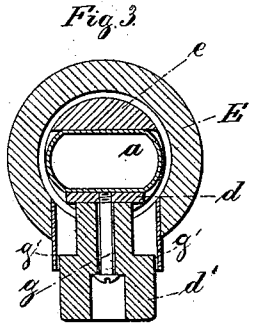


Fig. 4.

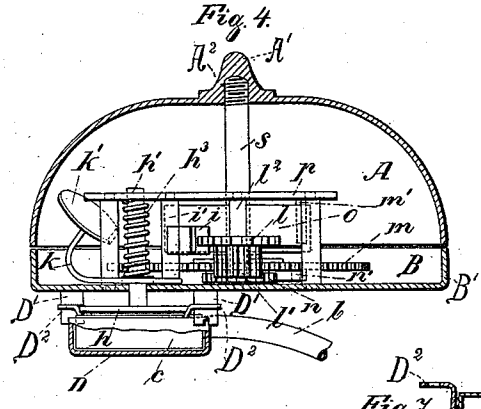


Fig. 6.

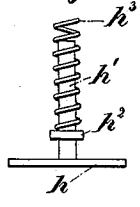


Fig. 7.

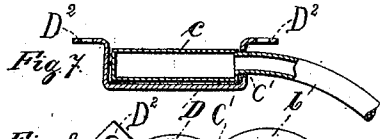


Fig. 8.

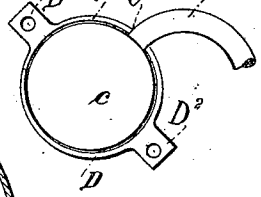
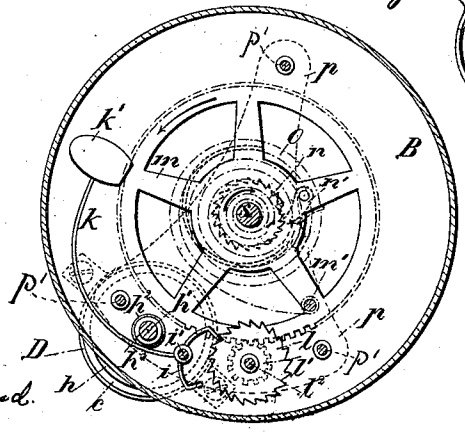


Fig. 5.



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UNITED STATES PATENT OFFICE.

ERNST BRANDT, OF BERLIN, GERMANY.

BELL MECHANISM FOR BICYCLES.

SPECIFICATION forming part of Letters Patent No. 577,352, dated February 16, 1897.

Application filed August 19, 1896. Serial No. 603,282. (No model.)

To all whom it may concern:

Be it known that I, ERNST BRANDT, a subject of the German Emperor, residing in the city of Berlin, Germany, have invented certain new and useful Improvements in Bell Mechanism for Bicycles; and I do hereby declare that the following specification, together with the accompanying drawings, is a full and clear description of the same.

My invention consists of a pneumatic signal mechanism for bicycles or other wheels, in which the bell placed on the handle-bar of the wheel may be sounded by pressing a button which is located in the grip of the handle-bar. By this arrangement it will not be necessary to remove the hands in order to ring the bell, and greater control may be had of the wheel at the time when it is most necessary.

The following specification, with the accompanying drawings, fully describes my invention, so that any one accomplished in the art may readily understand the same.

In the accompanying drawings, Figure 1 represents a side view of a handle-bar of a bicycle having attached thereto my invention. Fig. 2 represents the top view of the same with a portion of the handle-bar cut away. Fig. 3 represents a vertical sectional view on the line x y, Fig. 2, on a larger scale. Fig. 4 represents a vertical sectional view, on a larger scale, of a bell containing my invention. Fig. 5 represents a plan view of the same. Figs. 6, 7, and 8 represent, on an enlarged scale, parts of the mechanism used in my device.

Similar letters in the different figures refer to similar parts.

A is a semispherical top of a bell having a raised central portion A′ on its upper surface, and within said projection is a vertically-extending bore A^2, having a screw-thread therein, which receives the screw-threaded end of a vertically-extending shaft S. Firmly secured to the lower end of said shaft is a base-plate B, having on its rim an annular upwardly-projecting flange B′.

Loosely mounted on the shaft S, and near the bottom thereof, is a large gear-wheel m, which has secured to its lower side a small ratchet-wheel n, which is engaged by a pawl n', mounted on the said bottom or base plate. Above the said ratchet-wheel n is a coil or main spring o, which is secured at its inner end to the shaft s and firmly fastened at its outer end to a lug or pin m', which is carried on the large gear-wheel m. Above the said spring is a horizontally-extending triangular-shaped plate p, mounted on the standards p' p' p', which are in turn secured to the base-plate B. Near the periphery of the said base-plate is a pin or stud l^2, having mounted thereon a gear-wheel l', so placed as to engage the gear-wheel m. Above said gear-wheel l' and actuated by the same, to which it is rigidly secured, is a ratchet-wheel l.

A ratchet i, mounted on an oscillating arbor i', which is journaled in the said base-plate B and in the plate p, engages the said ratchet-wheel l. Secured to said rotatable arbor i' is the curved rod k, carrying the clapper k', the said rod k being caused to vibrate by the movements of the ratchet-wheel l and ratchet i. Adjacent to the said rod and passing through said base-plate is a vertically-movable shaft h'. The upper end of this shaft passes through an opening in the plate p. On the shaft h' and near the lower end thereof is a shoulder h^2, adapted to engage the aforesaid rod k, and on said shaft between said shoulder and said plate is a spiral spring h^3.

The lower end of the shaft h' has secured thereto a transversely-extending circular plate h, which is adapted to bear upon a rubber air-bag c, inclosed in a circular cup-like casing D. The casing D has on its upper edge the outwardly-extending arms D^2, through which pass the clamping-screws D′, which firmly fasten it to the under portion of the base-plate B. At one side of the casing D is an opening c', through which passes a rubber tube b, which in turn enters the handle-bar through an opening f and extends therein to one end of the same.

E designates a grip for a handle-bar, having a longitudinally-extending opening therein which is partially filled with the rubber air-bag a, which has secured to its under side the plate d. To this plate is secured, by means of a screw g, a button d', which latter is held in place by an annular guide or sleeve g'.

The bag a, with the plate d and the button d', is placed into the handle E between the inserted piece or filling e, which thus holds them in position and against which the bag

continually presses. The rubber tube *b*, before fully described, is jointed to the air-bag *a* within the grip E.

The operation of this device may be readily understood from the foregoing description, together with the accompanying drawings. When the rider wishes to sound an alarm without letting go of the grip or losing the slightest control of his machine, he presses the button *d'*, which forces the air out of the rubber bag *a* through the rubber tube *b* and into the rubber bag *c*. This latter as it becomes inflated raises the transversely-extending circular plate *h*, which in turn raises the shaft *h'*, thereby disengaging the shoulder h^2 from the rod *k* and allowing the same to be actuated by the ratchet *i*, ratchet-wheel *l*, gear-wheel *l'*, gear-wheel *m*, and coil-spring *o*. When the button *d'* is released, the elasticity of the bag *a*, being made of rubber, will cause it to expand, thus drawing the air back into the same and allowing the rubber bag *c* to collapse and the shaft *h*, with shoulder h^2, to fall and engage the rod *k*, thus stopping the vibration of the clapper *k'*. It will be necessary to occasionally wind up the bell by turning the upper portion A to the right, as will be readily understood from the drawings.

Having now described my invention, what I claim as new, and wish to protect by Letters Patent, is—

1. In a pneumatic bell mechanism for a bicycle, a handle-bar, a grip on one end thereof, a longitudinally-extending chamber within said grip, an elastic bag provided with a button snugly fitting in said chamber, a bell secured to said handle-bar having means therein for ringing the same, a casing below said bell and secured thereto, means in said casing for locking the said bell mechanism and a rubber tube passing through said handle-bar and connected at its end with said elastic bags all of said parts being combined substantially as and for the purposes described.

2. In a pneumatic bell mechanism, a hollow handle-bar having a hollow grip at one end thereof, an elastic bag having a metal strip secured thereto within said hollow grip, a button secured to the lower side of said plate, a guide for said button, a filling within said grip for holding said elastic bag and extending through said hollow handle, a bell mounted on said handle and having a spring-actuated clapper therein, a casing secured to the under portion of said bell, an elastic bag within said casing and in connection with the other end of said rubber tube, and a plate engaging the upper portion of said latter-mentioned bag and carrying on its upper face means for locking the said spring-actuated clapper, all of said parts being combined substantially as and for the purposes described.

3. A pneumatic bell mechanism for bicycles and other vehicles, having a hollow handle-bar, a hollow grip on one end of said bar, a filling for said grip, an elastic bag having secured thereto a longitudinally-extending plate adapted to snugly fit within said filling, a button secured to said plate, guide for said button, a tube in connection with said elastic bag and extending through a portion of said hollow handle-bar, a bell mounted on said handle-bar having a spring-actuated clapper, a casing firmly secured below said bell, a small elastic bag in said casing, a plate adapted to engage said latter-mentioned bag and carrying on its upper face a vertically-extending shaft, an annular shoulder and a rod adapted to be engaged by said shoulder, all of said parts being combined substantially as described.

4. In a pneumatic bell for bicycles and other vehicles, a hollow handle-bar, a hollow grip on one end of said handle-bar having therein a filling, an elastic bag provided with a plate and operating-button, a bell mounted on said bar, a spring-actuated clapper, a casing below said bell, an elastic bag in said casing, connected with said first-mentioned bag, a plate engaging said latter-mentioned bag and having on its upper face a vertically-extending shaft, an annular shoulder on said shaft, a spring mounted on said shaft above said shoulder, said shoulder being adapted to engage the aforesaid rod, all of said parts being combined substantially as and for the purposes described.

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

ERNST BRANDT.

Witnesses:
C. H. S. SCHULTZ,
ELLA V. BELLI.