No. 617,412. Patented Jan. 10, 1899.

# J. M. BUTCHER.

## BICYCLE ALARM.

(Application filed Jan. 11, 1898.)

(No Model.)

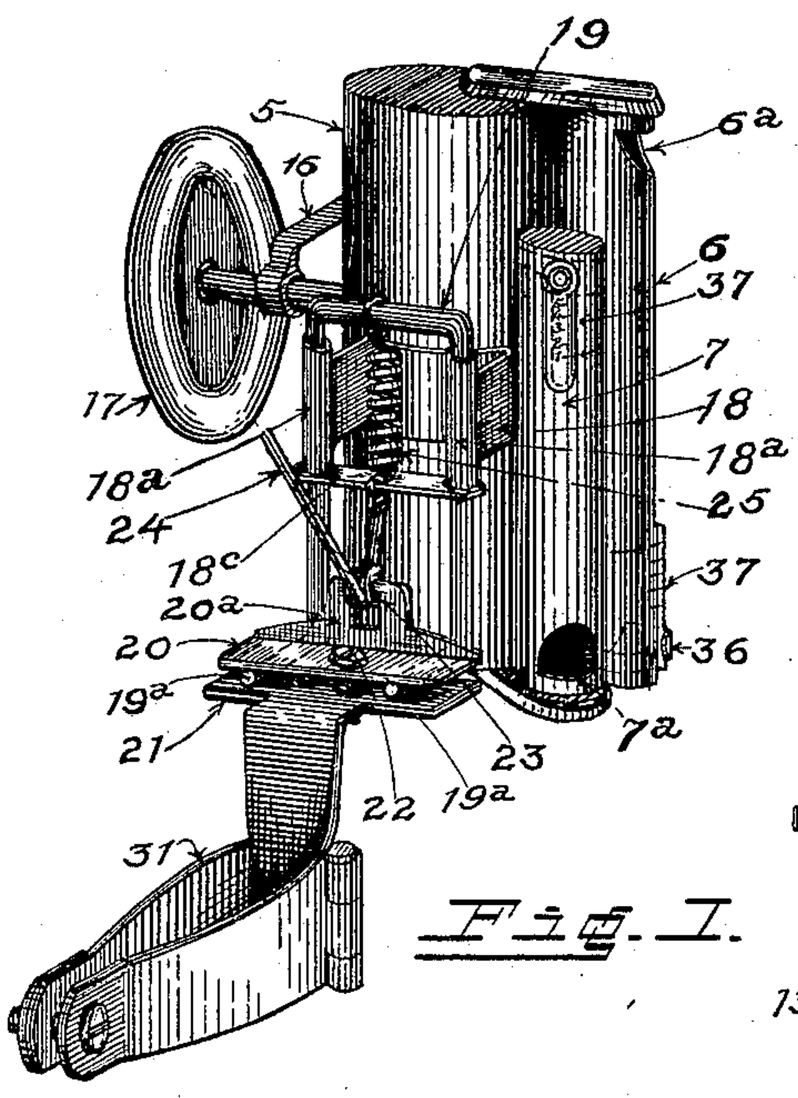


Fig. 1.

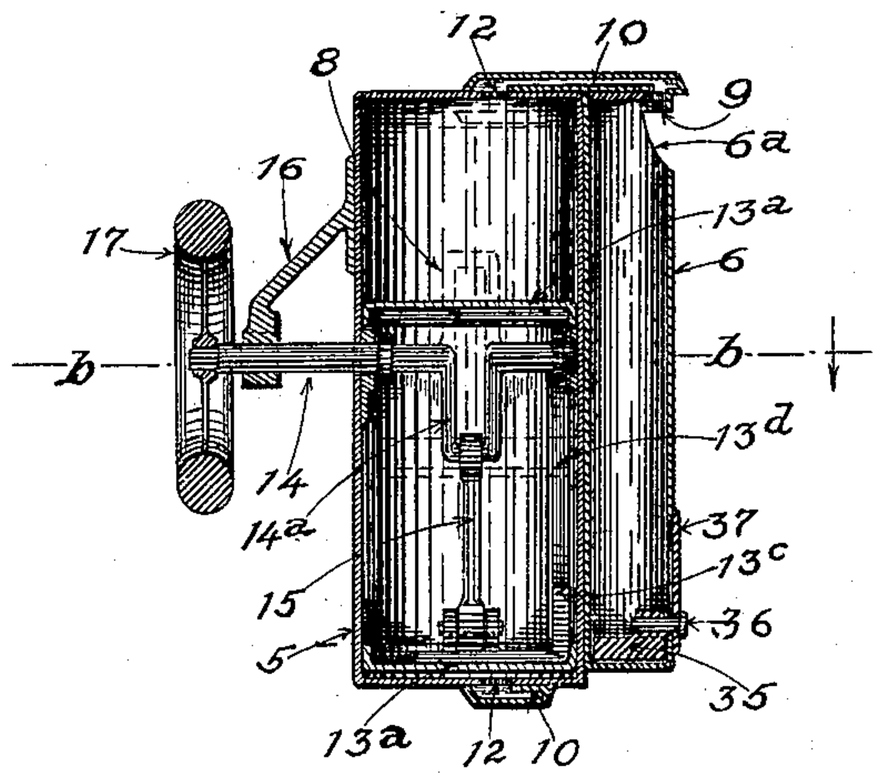


Fig. 2.

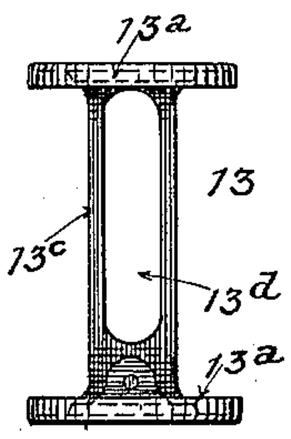


Fig. 5.

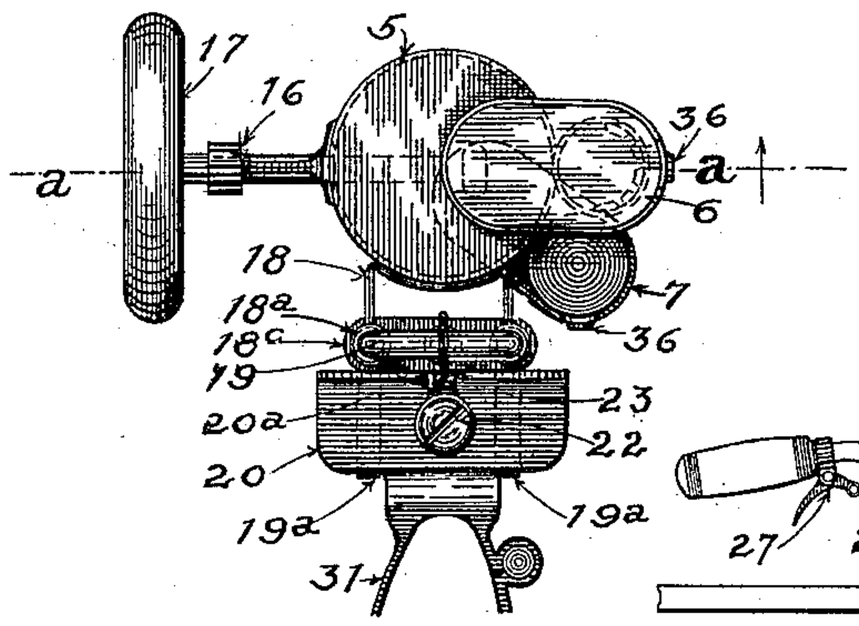


Fig. 3.

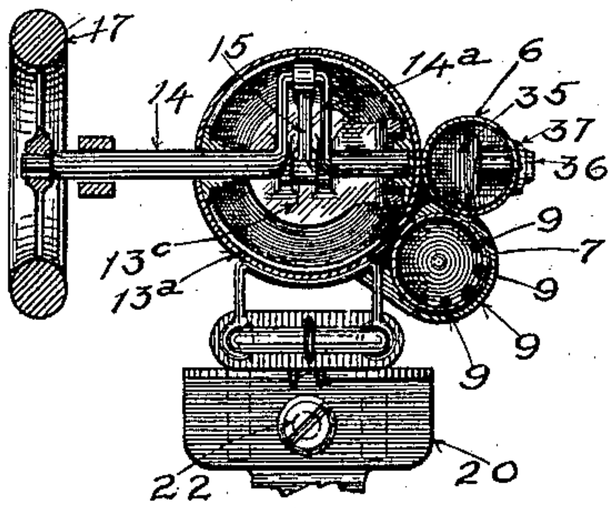


Fig. 4.

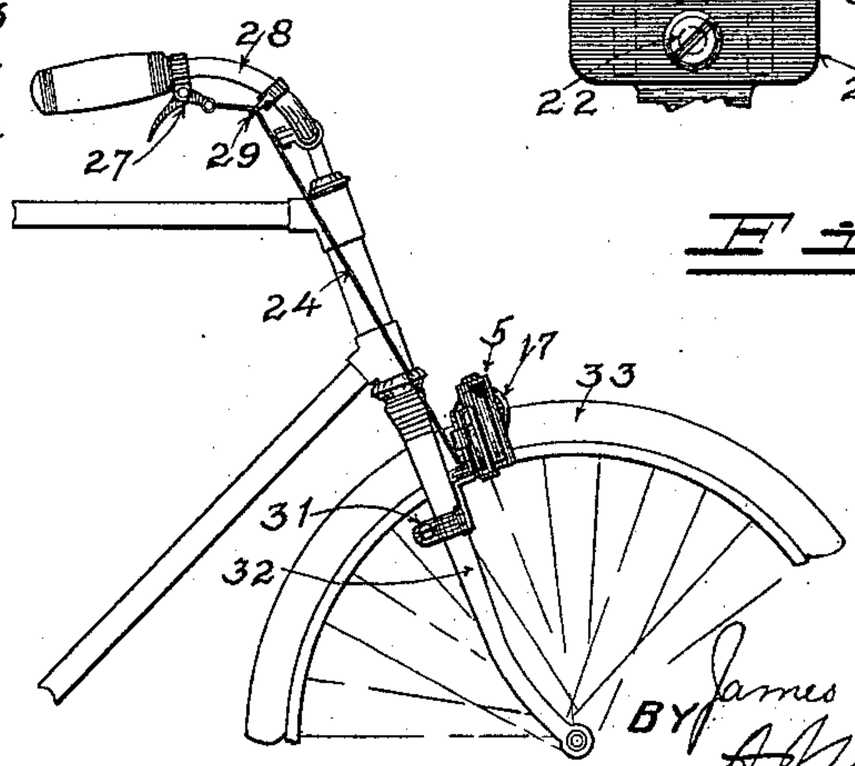


Fig. 6.

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# UNITED STATES PATENT OFFICE.

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## BICYCLE-ALARM.

SPECIFICATION forming part of Letters Patent No. 617,412, dated January 10, 1899.

Application filed January 11, 1898. Serial No. 666,364. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES M. BUTCHER, a citizen of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Alarm Mechanism; and I do declare the following to be a full, clear, and exact description of the invention, 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, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in alarm mechanism, more especially intended for use in connection with bicycles, but which may be employed in many other relations where an alarm is needed or required.

My object is to provide a device of this class which shall be simple in construction, economical in cost, reliable, durable, and efficient in use; and to these ends the invention consists of the features, arrangements, and combinations hereinafter described and claimed, all of which will be fully understood by reference to the accompanying drawings, in which is illustrated an embodiment thereof.

In the drawings, Figure 1 is a perspective view of the complete device. Fig. 2 is a central longitudinal section taken through the same. Fig. 3 is a top view of the device, the clamp being partly broken away. Fig. 4 is a section taken on the line *b b*, Fig. 2, the crank being shown in the half-throw position. Fig. 5 is a detail view of the double piston. Fig. 6 illustrates the device applied to a bicycle and in position for use.

Similar reference characters indicating corresponding parts in the views and referring first specially to Figs. 1 to 6, inclusive, let the numeral 5 designate a casing preferably cylindrical in form and inclosing the piston-chamber 8. Mounted exteriorly on this casing are two whistle-tubes, (designated by the numerals 6 and 7, respectively.) These tubes are made fast to the casing and are provided with openings $6^a$ and $7^a$, respectively, located at the extremities remote from each other and adjacent the extremities of the casing 5. The apertured extremity of each whistle-tube is provided with one or more orifices 9, communicating with one extremity of a passage-way 10, whose opposite extremity communicates with the piston-chamber by means of an aperture 12. Within the piston-chamber 8 is located a double piston 13, composed of two heads $13^a$, connected by a slotted arm $13^c$. Centrally journaled in the casing 5 and passing through the slot $13^d$ in the arm $13^c$ is a spindle 14, in which is formed a crank $14^a$. A pitman 15 is connected at one extremity with this crank, while its opposite extremity is connected with one of the piston-heads $13^a$. One extremity of the spindle 14 protrudes from the casing and is supported by a bracket-arm 16, in which it is journaled. Outside of the arm 16 the spindle 14 is provided with a disk 17, whose periphery is preferably composed of rubber.

Attached to the casing 5 exteriorly is a bracket 18, whose free extremities are formed into vertical tubes $18^a$, connected by a cross-head $18^c$. These tubes $18^a$ engage the vertical arms of a yoke 19. The cross-head $18^c$ is connected with the top of the yoke by a coil-spring 25. The lower extremities $19^a$ of these yoke-arms are bent outwardly at right angles and clasped between two plates 20 and 21, connected by a set-screw 22. The upper plate 20 is provided with a vertical flange $20^a$, on which is mounted a small pulley 23, under which passes a cord 24, one extremity of which is connected with the cross-head $18^c$, while its opposite extremity is attached to a lever 27, fulcrumed on the handle-bar 28 of the bicycle in suitable proximity to one handle thereof. The cord 24 also engages a guide 29, attached to the handle-bar near the lever 27. (Not shown.)

The plate 21 is provided with a downwardly-extending arm 30, whose lower extremity is provided with a clamp 31, adapted to engage an arm 32 of the front fork of the bicycle. The alarm device is mounted on the machine in suitable proximity to the tire 33 of the front wheel. The clamp is so adjusted on the fork-arm that the disk is normally held a short distance above the tire of the wheel by the spring 25. When it is desired to operate the mech-

anism, the free arm of the lever 27 is raised upward and the cord 24 moved sufficiently to draw the casing 5 downwardly, causing the disk to engage the wheel-tire. This engagement with the turning wheel of the machine rotates the disk and its spindle 14, which, through the medium of the crank 14ª and the pitman 15, reciprocates the double piston 13 and forces the air alternately from the extremities of the piston-chamber 8 out through the aperture 12, the passage-way 10, the orifice 9, and the opening 6ª or 7ª of the tubes 6 or 7, as the case may be, producing a whistling sound whose tone is controlled by an adjustable cross-partition 35, attached to a set-screw 36, which passes through a slot in the tube 6, its outer extremity being attached to a sliding graduated plate 37. The tube 6 is provided with an arrow located in suitable proximity to the graduated plate. By loosening the set-screw 36 the partition 35 may be so adjusted as to change the tone of the whistle as desired. By means of this device it is evident that any number of whistles—for instance, all those belonging to any wheel club—may be so regulated as to emit the same tone, while the whistles of another club may be set to give another tone, and so on. It is believed that this adjustable partition will form a very convenient feature of the device.

Having thus described my invention, what I claim is—

1. The combination of the casing inclosing a piston-chamber and provided with one or more whistling-chambers communicating with the piston-chamber, a piston located in said chamber, a crank-spindle journaled in the casing, a pitman connecting the crank-spindle with the piston, a disk mounted exteriorly on the spindle, a bracket fast on the casing and provided with two open-ended tubes connected by a cross-head, a yoke comprising vertical arms passing through the tubes of the bracket, the yoke-arms projecting above the bracket where they are connected, a spring connecting the top of the yoke with the cross-head of the bracket, a clamp fastened to the yoke below the bracket and adapted to be attached to the bicycle in proximity to one of the wheels, a lever mounted on the bicycle, and a cord connected with the lever at one extremity, passing under the pulley on the clamp and connected with the cross-head of the bracket at the opposite extremity, whereby as the lever is actuated, the casing is depressed causing the disk to engage the tire of the wheel.

2. In an alarm mechanism, the combination with a suitable casing inclosing a piston-chamber, of a crank-spindle journaled in the casing, a piston located in said casing, a pitman connecting a crank on the spindle with the piston, a whistling-chamber communicating with the piston-chamber, an exposed disk fast on the crank-spindle, means for regulating the capacity of the whistling-chamber comprising a cross-partition located within the whistling-tube, a set-screw attached to the partition and passing through a slot in the tube, and an exposed graduated plate also attached to the set-screw and adapted to be adjusted with reference to a stationary mark located in suitable proximity thereto, and means for bringing the disk in contact with a moving object for the purpose of operating the piston.

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

JAMES M. BUTCHER.

Witnesses:
CAESAR A. ROBERTS,
EDITH HIMSWORTH.