No. 629,771. Patented Aug. 1, 1899.

# W. E. COLES.

## ALARM MECHANISM.

(Application filed Dec. 7, 1898.)

(No Model.)

Fig. 1.

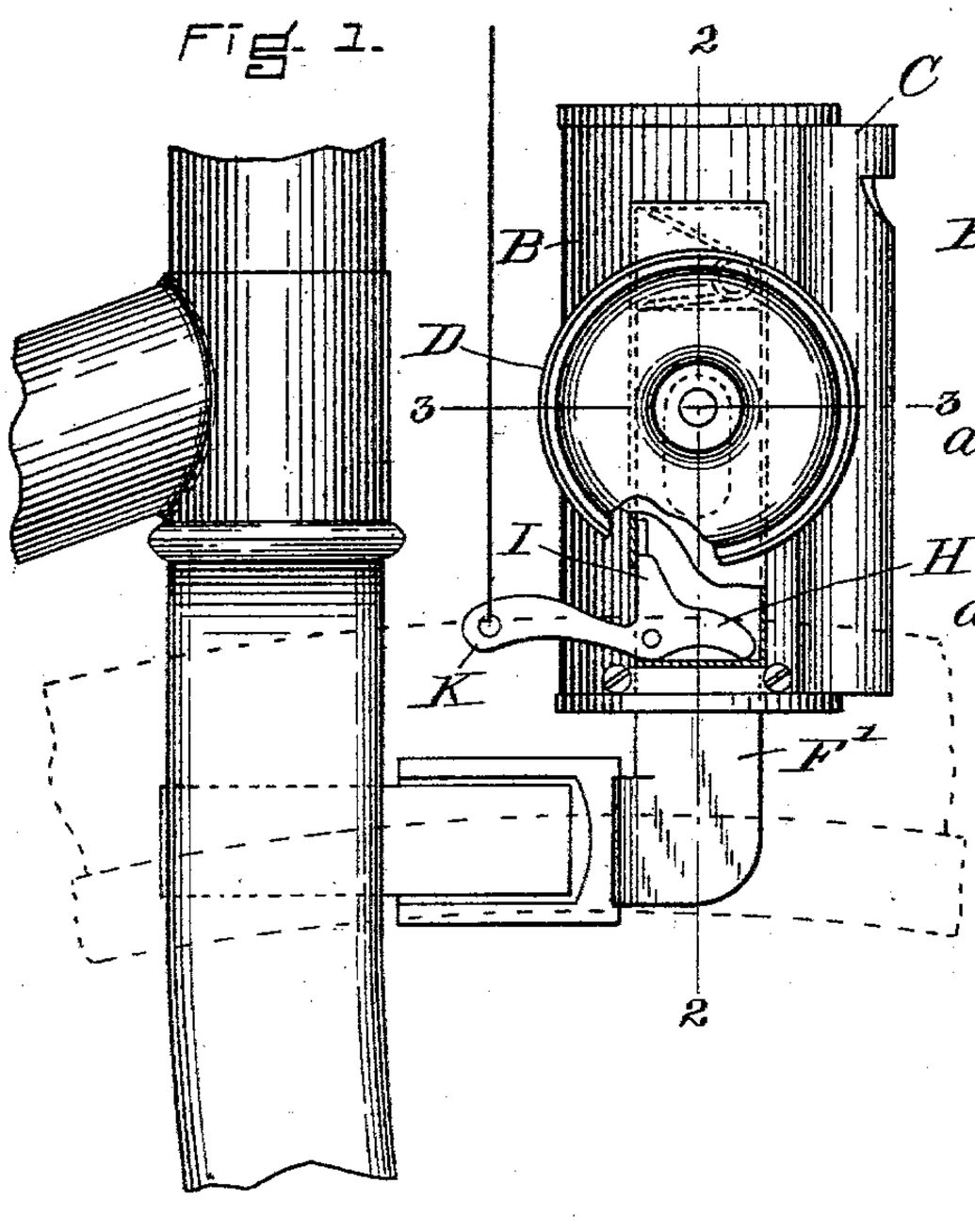



Fig. 2.

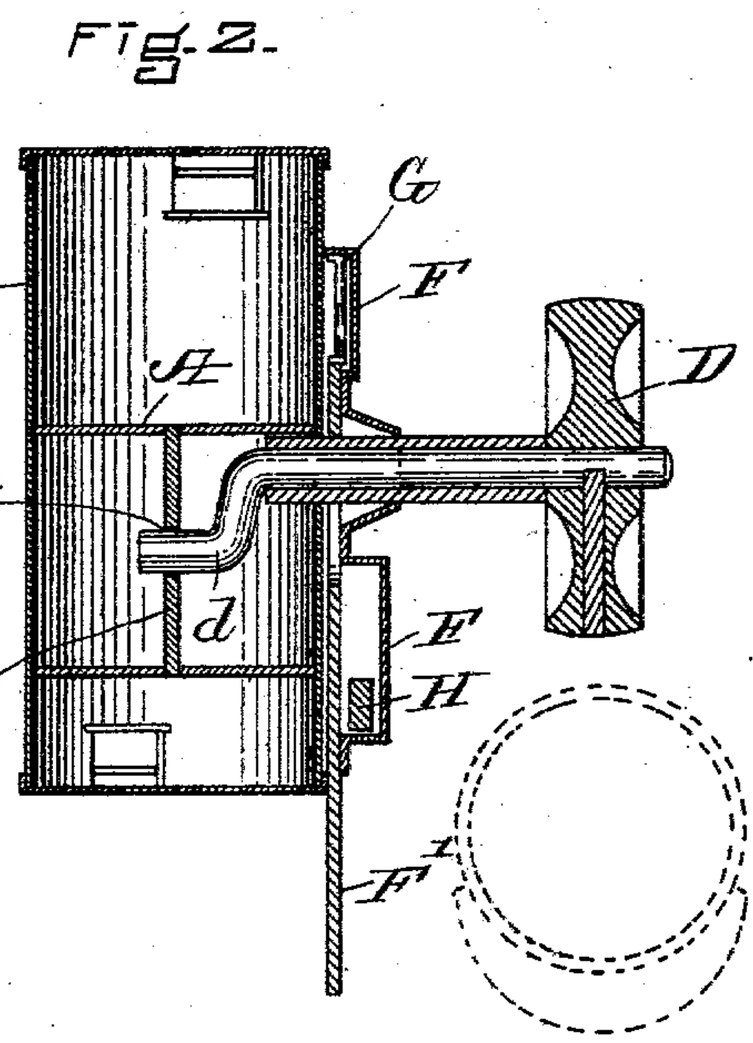



Fig. 3.

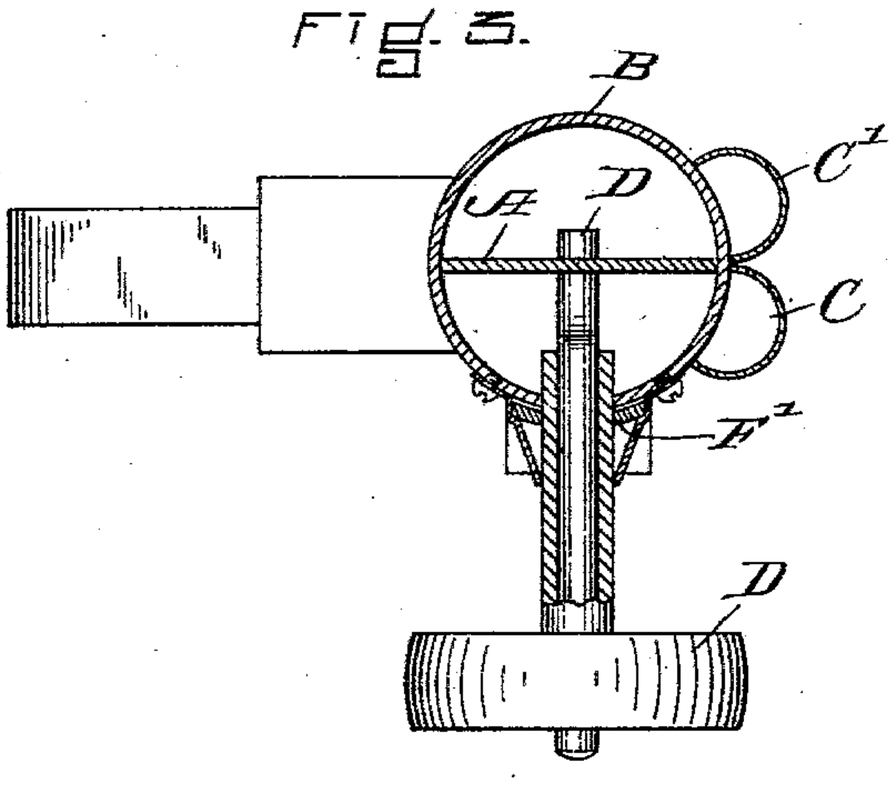
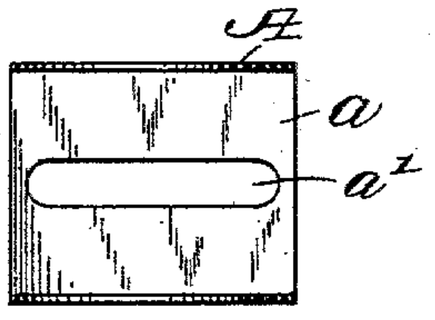



Fig. 4.




WITNESSES.

A. D. Grover.

E. B. Tomlinson.

INVENTOR.

William E. Coles

by Alex. P. Browne

atty

# UNITED STATES PATENT OFFICE.

WILLIAM E. COLES, OF ATTLEBOROUGH, MASSACHUSETTS, ASSIGNOR TO THE BUTCHER SIGNAL AND ALARM COMPANY, OF DENVER, COLORADO.

## ALARM MECHANISM.

SPECIFICATION forming part of Letters Patent No. 629,771, dated August 1, 1899.

Application filed December 7, 1898. Serial No. 698,524. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM E. COLES, a citizen of the United States, residing at Attleborough, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Alarm Mechanisms, of which the following is a specification.

My invention relates to improvements in alarm mechanisms of the whistle type, and particularly to those in which the alarm-whistle is sounded by a rapidly rotating or reciprocating device; and its object is to improve the construction of such mechanisms in the manner to be hereinafter more fully pointed out.

My invention relates particularly to improvements in that type of devices wherein a whistle, and preferably a pair of whistles, is adapted to be sounded as an alarm at the will of the operator through the intervention of a part, preferably a wheel, which is caused to be rapidly rotated and reciprocated. Such alarms are particularly well adapted for use in connection with bicycles; and my present invention relates mainly to improvements adapting the device for such use. Alarms of this character have heretofore been constructed in which a double-headed piston works practically air-tight in a cylinder communicating at its end or ends with a whistle chamber or chambers. Reciprocating motion is imparted to the piston through the medium of a friction-wheel, which when the device is used in connection with a bicycle is ordinarily held out of contact with the bicycle-tire and is adapted to be brought into contact therewith when desired, so as to cause the wheel to be frictionally revolved, thereby sounding the alarm.

My present invention relates specifically, first, to improvements in the connecting mechanism between the friction-wheel and the piston whereby a cheap, simple, and effective device may be produced, and, second, to improvements in the mechanism whereby the friction-wheel and connected parts while held ordinarily out of contact with the wheel of the bicycle may be moved so as to bring the friction-wheel into contact to sound the whistle when desired.

In the accompanying drawings, Figure 1 is a side elevation showing part of the frame of a bicycle to which the device is attached. Fig. 2 is a vertical section on line 2 2 of Fig. 1. Fig. 3 is a horizontal section on line 3 3 of Fig. 1. Fig. 4 is a side view of the piston, hereinafter more fully described.

In the drawings the piston A is shown as composed of two disks adapted to slide with a working fit in the cylinder B, with which the whistles C C′ (see Fig. 3) are connected, as shown in Fig. 2. The piston-heads are joined and the piston completed by means of a plate or diaphragm *a*, provided with a transverse slot *a′*. (Best shown at Fig. 4.) The axle of the wheel D of the device extends into the cylinder B and is provided at its end with a crank *d*, which enters and works within the slot *a′* of the piston-diaphragm. By means of this connection a cheap, simple, and efficient device is produced whereby irrespective of the rate of speed of revolution the piston is reciprocated with certainty, the parts being so relatively arranged that they are cheaply formed, easily put together, and are practically without wear.

My improvement in the device whereby the operating-wheel carrying its connected parts is adapted to be moved toward or away from the tire of the bicycle-wheel or other source of motion is as follows: The cylinder, piston, whistle-chambers, and operating-wheel have heretofore been connected together and normally held up or out of contact with the tire of the bicycle merely by means of a spring interposed between the parts named and some portion rigidly attached to the frame of the machine, and when it has been desired to depress the wheel to sound the whistle this has been done by means of some mechanism adapted to be worked by a cord or rod extending upwardly to the hand of the rider.

It has been found that when the spring alone is used to hold the parts against the movement downward or in a direction to bring the operating-wheel into contact with the tire there is a likelihood that when riding over an obstacle the jar may be sufficient to overcome the lifting power of the spring and cause the whistle to sound. It is desirable for many reasons to avoid this, and I have done so by

causing the alarm-wheel and connected parts to be mounted upon a slide F, adapted to slide upon a post F′, attached to a convenient part of the frame of the bicycle, a spring G being interposed between the two so as normally to keep the wheel and connected parts raised. I further provide a depressing and locking pawl or finger H, which is pivoted upon the post F′ and which bears upon the slide F. This pawl H is provided with an extension I, arranged to lie in the path of the sliding motion of the part F when the pawl is in its normal position, thereby acting as a stop to prevent the slide F from moving accidentally. When it is desired to sound the whistle, the tail K of this pawl is raised by the rider by means of a cord or other suitable connection, and this motion forces downwardly the slide connection carrying the wheel and connected parts, while at the same time the pawl rocks about its pivot and thereby throws the extension or stop I to one side, thereby permitting the friction-wheel to be pressed downward until it is brought into contact with the tire.

I claim—

1. In a device of the character described, the combination with a cylinder provided with a whistle or whistles, of a piston formed of two cylinder-heads connected by a slotted diaphragm, and a crank, the end of which lies within the slot of said diaphragm, and a wheel connected with said crank to operate the same and oscillate the said piston as set forth.

2. In a device of the character described, the combination with a post adapted to be attached to the frame of a bicycle, of a cylinder, piston, whistle chamber or chambers, and operating-wheel, all being connected together and adapted to slide vertically upon said post, and a pawl pivoted upon said post, whereby the cylinder and connected parts may be depressed when desired, said pawl being provided with an extension adapted to interlock with and support the said cylinder, for the purpose set forth.

In testimony whereof I have hereunto subscribed my name this 5th day of December, 1898.

WILLIAM E. COLES.

Witnesses:

WILLIAM A. SPIER,

OTTO I. NESER.