

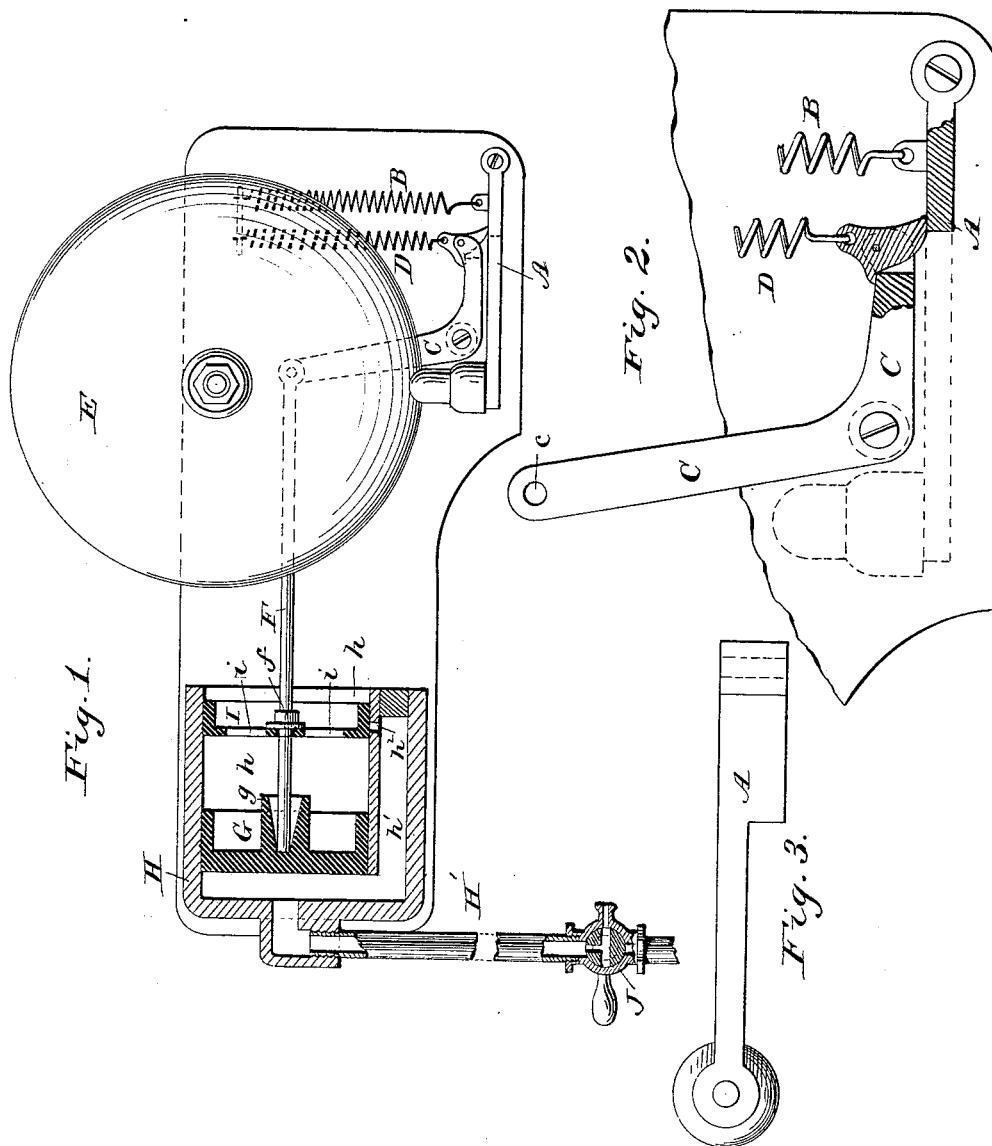
(No Model.)

C. F. WEST.

GONG SOUNDING MECHANISM.

No. 387,027.

Patented July 31, 1888.



Witnesses:  
Edward Sturtevant.  
Daniel Curry.

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# UNITED STATES PATENT OFFICE.

CHARLES F. WEST, OF CONCORD, NEW HAMPSHIRE.

## GONG-SOUNDING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 387,027, dated July 31, 1888.

Application filed March 26, 1888. Serial No. 268,551. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES F. WEST, a citizen of the United States, residing at Concord, in the county of Merrimac and State of New Hampshire, have invented certain new and useful Improvements in Gong-Sounding Mechanism, of which the following is a specification.

The object of this invention is to provide a simple mechanism for striking a gong to be operated by compressed air; and the invention consists of a suitable air-cylinder having a piston in connection with the bell striker or hammer and adapted to actuate the latter by the force of air, as fully illustrated in the accompanying drawings, forming a part of the following specification.

Figure 1 is a front view of the entire apparatus, showing the air-cylinder in section, Fig. 2 being a detached view of a portion of the bed-plate with a section of the bell-hammer and a lever for actuating the same, with a portion of their respective springs for returning them to their normal position. Fig. 3 is a detached side view of the striker.

Like letters designate corresponding parts.

The bell-striker A, its retaining-spring B, and the actuating-lever C, with its retaining-spring D, which I show in the drawings, represent the most approved form for these parts, and these are in their relative positions to the gong E. Ordinarily a pull cord or wire is attached to the lever C at *c* for striking the gong, in place of which I connect one end of a piston-rod, F, the other end of which rests within the piston G of my improved compressed-air cylinder H, which is secured to or formed integral with the bed-plate carrying the gong E.

It is immaterial on which side of the lever C the air-cylinder H is located, as the said air-cylinder may be constructed in a manner to either pull or push the said lever. In the drawings I show the latter construction.

The cylinder H is preferably formed with two chambers, the larger one, *h*, being bored to receive the piston G and a valve, I, and the smaller one, *h'*, being simply an air-passage having a port, *h''*, opening into the chamber *h*, by which the pressure of air upon the piston is relieved when the valve I shall uncover said port. The compressed air is received through the pipe H' at the opposite end of the cylinder

H, and it is obvious that a branch pipe may extend from this pipe and connect with the port *h''* in lieu of providing the chamber *h'* in the air-cylinder H; but convenience and economy of construction would dictate the construction shown in the drawings as preferable.

In operation the compressed air forces the piston G sufficiently toward the gong to cause the striker A to sound the same, and if it passes a little beyond such point in its stroke no particular harm will result, as the projecting portion *g*, which forms a socket for the piston-rod F, strikes the valve I at or about the time the gong is sounded and causes said valve to move far enough to uncover the port *h''*, admitting said air between the piston and valve, said air having free exit through numerous perforations, *i*, formed for this purpose in said valve I. Thus at the time the gong is sounded the pressure of air is instantly relieved from the piston, which is returned to its normal position by the action of the spring D upon the lever C, and a suitable collar, *f*, secured at the proper point upon the piston-rod F, returns the valve I to its normal position, and the apparatus is again ready to operate.

By actual test I have with an air apparatus of this construction been enabled to sound a gong as rapidly as once to every second of time. In order to strike the gong thus rapidly, it is necessary to obtain a very quick release of the air-pressure, and hence a suitable two-way valve, as shown at J, by which the air is applied, is a very great aid to the quick action of the striker, inasmuch as the pressure of air in the pipe H' is relieved at both ends.

Having described my improvements, what I claim is—

1. In a signal-sounding mechanism for railway-trains, the combination, with the signaling device, of the compressed-air cylinder, the piston therein, the piston-rod connected with the signaling device to operate the latter, an automatic relief-valve operated by the movement of the piston to permit the escape of the compressed air from the cylinder, and means, substantially as described, for forcing back and returning the piston when the pressure is relieved, the air-supply pipe, and a combined cut-off and relief cock in the latter, which co-operates with said relief-valve to permit the escape of air at each end of said pipe and al-

low of the rapid sounding of the signal, substantially as set forth.

2. In a signal-sounding mechanism for railway-trains, the combination, with the signaling device, of the compressed-air cylinder, the piston therein, the piston-rod connected with the signaling device to operate the latter, an automatic relief-valve mounted loosely on said piston-rod in advance of the piston, a relief-opening,  $h^2$ , in said cylinder at its forward or open end, an escape-duct extending from said opening to the rear or supply end of the cylinder, and means, substantially as described, for forcing back and returning the piston when the pressure is relieved, substantially as set forth.

3. In a signal-sounding mechanism for railway-trains, the combination, with the signal-

ing device, of the compressed-air cylinder, the piston therein, the piston rod connected with the signaling device to operate the latter, an automatic relief-valve mounted loosely on said piston-rod in advance of the piston and having an opening,  $i$ , a relief-opening,  $h^2$ , in said cylinder at its forward or open end, an escape-duct extending from said opening to the rear or supply end of the cylinder, and means, substantially as described, for forcing back and returning the piston when the pressure is relieved, substantially as set forth.

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

CHARLES F. WEST.

Witnesses:

J. B. THURSTON.

NATHANIEL E. MARTIN.