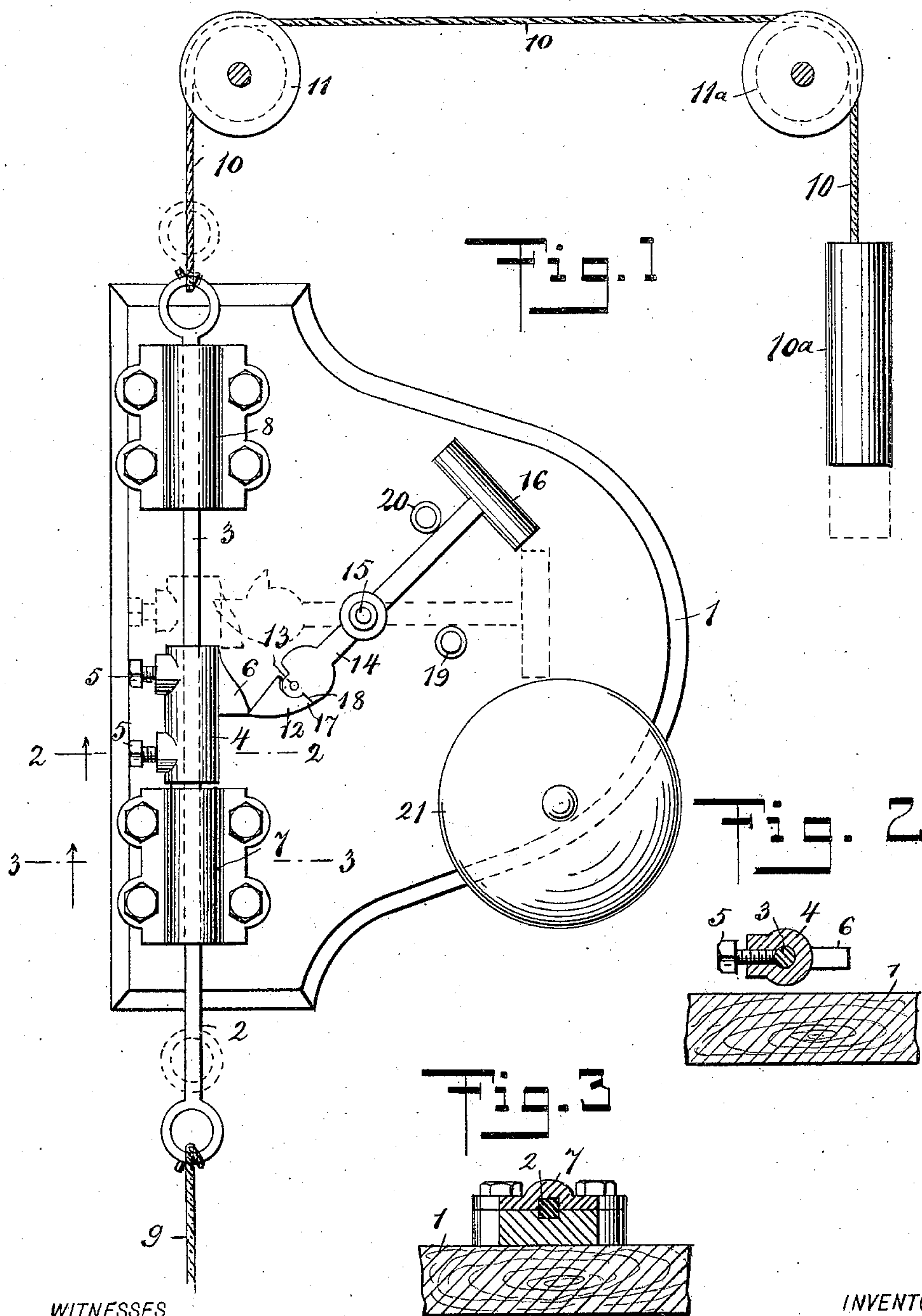


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PATENTED JAN. 21, 1908.

J. McK. CHAMBERS.
GRAVITY SIGNAL BELL.
APPLICATION FILED AUG. 9, 1906.



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JAMES McKINNON CHAMBERS, OF BOULDER, COLORADO, ASSIGNOR OF ONE-HALF TO MOSES MEYER, OF BOULDER, COLORADO.

GRAVITY SIGNAL-BELL.

No. 877,409.

Specification of Letters Patent.

Patented Jan. 21, 1908.

Application filed August 9, 1906. Serial No. 329,864.

To all whom it may concern:

Be it known that I, JAMES McKINNON CHAMBERS, a citizen of the United States, and a resident of the city of Boulder, in the
5 county of Boulder and State of Colorado, have invented a new and Improved Gravity Signal-Bell, of which the following is a full, clear, and exact description.

My invention relates to signal bells and
10 more specifically to bells of this type which are adapted to be located at a distance from the operator.

The objects of my invention are to provide a bell which is positively operated and in
15 which it will be impossible for the operator to sound the bell more than once upon each releasing of its hammer.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference
20 indicate corresponding parts in all the figures.

Figure 1 is a view in elevation showing my device complete; Fig. 2 is a sectional view
25 taken on the line 2—2 of Fig. 1; and Fig. 3 is a detail section taken on the line 3—3 of Fig. 1.

Referring to the drawings, 1 is a support upon which my device is mounted and by
30 means of which it is secured in any desired position.

2 is a pull rod and 3 a counterweight rod. These rods are joined by means of a screw threaded connection with a coupling sleeve 4, which is firmly held in fixed position upon
35 said rods by set screws 5, 5. Said coupling sleeve carries a tappet 6 for a purpose presently to be described. The rods 2 and 3 are squared and movable respectively in bearings 7 and 8, located on each side of the
40 coupling sleeve. The inner ends of the bearings act as stops for the coupling sleeve 4, thus limiting the motion of said sleeve in either direction.

9 is a pull rope attached at one end to the
45 pull rod 2 leading to some point convenient to the operator.

10 is a rope connecting the rod 3 with a counterweight 10^a, of any suitable size and the amount of which may be varied to suit
50 the convenience of the operator.

11, 11^a are two pulleys over which the rope 10 passes, although it is evident that bell crank levers may be used in place of the pulleys, if desired.

55 The tappet 6 engages a pawl 12, pivoted at

13 to a hammer-arm 14, which is pivoted at 15 to the support 1 and carries a hammer 16 on the end thereof opposite to that on which the pawl 12 is pivoted. The pawl 12 has a shoulder 17 on one side of its pivot which is
60 adapted, when the tappet is pulled by the operator into contact with said pawl, to engage a corresponding shoulder 18 on the end of the hammer-arm. A portion of the pawl, on the
65 opposite side of its pivot from the shoulder 17, is cut away in such a manner as to allow the pawl, when engaged by the tappet on its return movement, to tilt, and thus allow the
tappet to pass by, preparatory to a further movement in the opposite direction. The
70 different positions assumed by the pawl are clearly shown by the dotted lines in Fig. 1, as well as the normal position of the hammer-arm.

19 is a cushion which receives the blow of
75 the hammer-arm and holds the hammer away from the gong, except when the full blow is struck, at which time the force of the falling hammer overcomes the elasticity of the cushion. This insures a positive single tap on the
80 gong.

20 is a second stop, which prevents the hammer-arm from turning too far in a direction away from the gong, which it would
85 otherwise tend to do if the operator should give the pull-rope a very violent jerk.

The gong is represented by the numeral 21 and is secured to the support 1 in a position to be engaged by the hammer.

The parts are all mounted in the relative
90 positions shown in Fig. 1, and the force of the stroke of the bell is always the same as it is dependent solely on gravity. The pulling of the rope merely lifts the hammer and allows
95 it to drop, so that the violence or speed with which the rope is pulled does not vary the stroke of the hammer.

From the foregoing description the operation will be obvious and further detailed
100 statement thereof is deemed to be unnecessary.

Although I have illustrated and described but one embodiment of my invention, it will be obvious that the latter is not strictly limited to the details thereof.
105

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

1. A signal bell, comprising a support, vertically alined bearings on the support, a rod 110

slidable in each bearing, said rods being polygonal in cross section, and fitting corresponding openings in the bearings, a sleeve releasably connected with the adjacent ends
5 of the rods, a counterbalance connected with the free end of the upper rod, a pull rope connected with the free end of the lower rod, a gong on the support above the gong, a normally horizontal arm pivoted to the support
10 and provided with a hammer for cooperating therewith, a resilient support for engaging the arm adjacent to the hammer whereby to normally retain the hammer out of engagement with the gong, a pawl hinged to the op-
15 posite end of the arm from the hammer, said arm end and pawl being provided with cooperating shoulders on the lower side of their pivotal connection for limiting their relative movement in a downward direction, said
20 sleeve being provided with a tappet for engaging the pawl whereby to swing the hammer arm, and a resilient cushion for limiting the upward swing of the arm.

2. A signal bell comprising a support, ver-
25 tically alined bearings on the support, a rod

slidable in each bearing, said rods being polygonal in cross section and fitting corresponding openings in the bearings, a sleeve provided with a tappet releasably connected with the adjacent ends of the rods, a counter-
30 balance connected with the free end of the upper rod, a pull rope connected with the free end of the lower rod, a gong on the support, a normally horizontal arm pivoted to the support above the gong and provided
35 with a hammer for cooperating therewith, a resilient support for engaging the arm adjacent to the hammer whereby to normally retain the hammer out of engagement with the support, means whereby the tappet will
40 swing the arm on the down stroke of the sleeve, and a resilient cushion for limiting the upward swing of the arm.

In testimony whereof I have signed my name to this specification in the presence of
45 two subscribing witnesses.

JAMES McKINNON CHAMBERS.

Witnesses:

C. J. SMITH,

E. WOLVERTON.