J. O. TREANOR.

SIGNAL.

APPLICATION FILED DEC. 29, 1919.

1,357,915.

Patented Nov. 2, 1920.

Fig. 1.

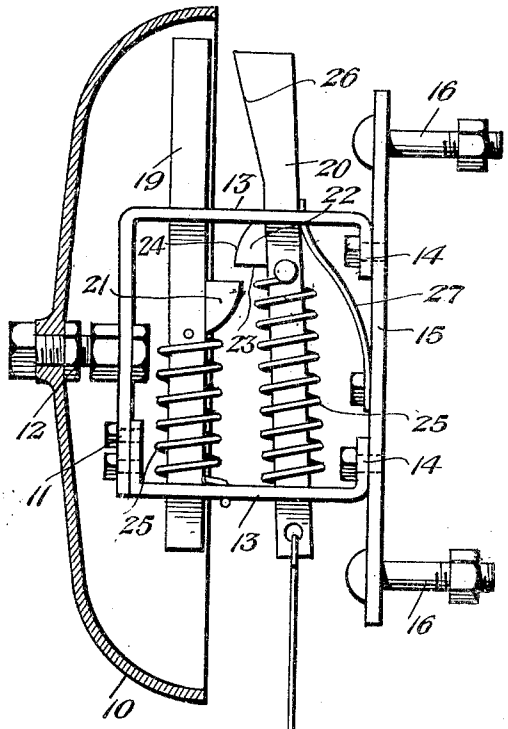
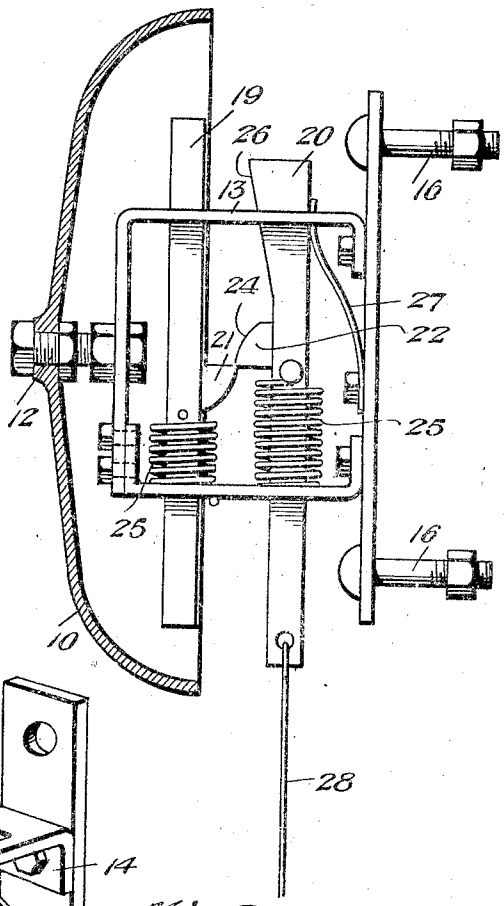


Fig. 2.



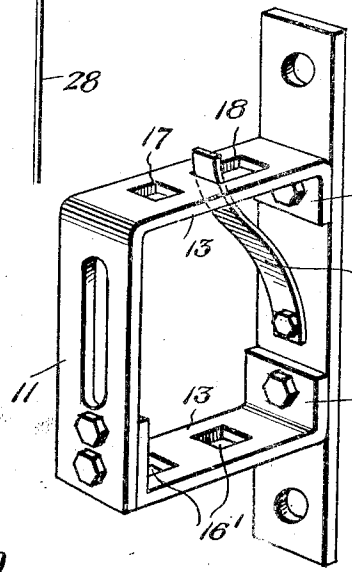


Fig. 3.

WITNESS:

Fra. Ackmann Jr.

James O. Treanor
INVENTOR.

BY

Victor J. Evans
ATTORNEY.

UNITED STATES PATENT OFFICE.

JAMES OMRI TREANOR, OF MIAMI, ARIZONA.

SIGNAL.

1,357,915. Specification of Letters Patent. Patented Nov. 2, 1920.

Application filed December 29, 1919. Serial No. 347,888.

To all whom it may concern:

Be it known that I, JAMES O. TREANOR, a citizen of the United States, residing at Miami, in the county of Gila and State of Arizona, have invented new and useful Improvements in Signals, of which the following is a specification.

This invention relates to audible signals, and has particular reference to a bell primarily designed for the use in mines, the invention residing in the means employed for sounding bells.

While the bell has been primarily intended for use in mines, it is also susceptible for use in other places, and embodies among other features a pair of spaced spring pressed plungers, one of which is adapted to be retracted, the plungers being designed to coöperate simultaneously for movement in one direction, and independent in an opposite direction when the plungers are released.

The nature and advantages of the invention will be better understood when the following detail description is taken in connection with the accompanying drawings, the invention residing in the construction, combination and arrangement of parts as claimed.

In the drawing forming part of this specification like numerals of reference indicate similar parts in the several views and wherein:—

Figure 1 is a side elevation with the bell partly in section, showing the normal position of the plungers.

Fig. 2 is a similar view showing the relative position of the plungers when retracted, just prior to the release of said plungers.

Fig. 3 is a perspective view of the frame for supporting the bell.

Referring to the drawings in detail, 10 indicates the bell which may be of any desired size, and which is supported upon the cross piece 11 of a substantially U-shaped frame. The bell 10 is mounted upon the frame by means of a fastening element 12 which is susceptible of adjustment for moving the bell toward and away from the frame, so that different size bells may be used in conjunction with the mechanism for sounding the bell to be hereinafter described. The parallel limbs 13 of the supporting frame have their terminals bent inwardly as at 14 to provide means whereby the frame may be secured to an attaching bar 15. The bar 15 projects beyond the opposite sides of the frame, and has associated therewith bolts 16 for securing the bar fixed to a support. One of the limbs 13 is provided with spaced openings to receive the corresponding ends of the spring pressed plungers, these openings being indicated at 16′, while the opposite limbs of the frame are provided with an opening 17, and an elongated slot 18, the opening and slots being alined with the openings 16 to receive the plungers above referred to.

The mechanism for sounding the bell embodies a pair of spaced parallel plungers 19 and 20 respectively, the plunger 19 being mounted to slide through the openings 16′ and 17 of said limbs while the plunger 20 is arranged to slide through the other opening 16′ and in the slot 18. The plunger 19 is formed with a lug 21 at a point in its length, the lug operating between the limbs 13 of the frame. Projecting from the plunger 20 is a lug 22, this lug projecting in the direction of the lug 21 and having a straight side 23 and an inclined surface 24. The inclined surface 24 co-acts with one edge of the slot 18 to control the position of the lugs 22 with relation to the lug 21. For instance, when the lug 22 is partly moved within the slot 18 under the influence of the spring 25 which surrounds the plunger, the inclined surface 24 co-acts with the adjacent edge of the slot 18 and forces the plunger 20 into a position parallel with the plunger 19, in which position the lug 22 lies in a plane wholly beneath the lug 21 of the plunger 19. A similar spring 25 also surrounds the plunger 19, these springs 25 normally holding the plungers in an extended parallel position. The forward end of the plunger 20 is also provided with an inclined surface, 26 for a purpose to be presently described. Terminally secured to the bar 15 is a leaf spring 27, the latter being obliquely disposed with respect to the bar and having its opposite end passed through the slot 18 engaging the adjacent side of the plunger 20. This spring functions to throw the plunger 20 to an inclined position with relation to the plunger 19, upon initial retraction of the plunger 20 whereupon the lug 22 is moved from within the slot 18. The spring 27 thus moves the plunger to a position wherein the lug 27 is arranged to engage the lug 21 of the plunger, when the plunger 20 is retracted.

In practice, the plungers 19 and 20 are normally positioned in a manner illustrated in Fig. 1, a cable 28 being secured to one end of the plunger 20 to retract the latter against the tension of the spring 25. When it is desired to sound the bell, the plunger 20 is retracted by pulling upon the cable 28, and immediately upon movement of the lugs 22 out of the slot, 18, the spring 27 functions to throw the plunger 20 to an inclined position with respect to the plunger 19, in which position the lug 22 is arranged to engage the lug 21 upon further movement of the plunger 20 to a retracted position. These lugs being brought into engagement, the plunger 19 is retracted with the plunger 20 both of the springs 25 being compressed and placed under tension. The plungers are thus disposed in this direction until the inclined surface 26 of the plunger 20 is brought into engagement with the adjacent end of the slot 18, whereupon the plunger 20 is depressed against the tension of the spring 27 to a position parallel with the plunger 19. Consequently the lug 22 is again placed in a position wholly beneath the lug 21 of the plunger 19, thus releasing the latter. As the plunger 19 is released, the spring 25 encircling the same functions to project the plunger 19 through the openings in the frame, forcibly throwing the plunger in contact with the bell 10 to sound the latter. The spring 25 surrounding the plunger 19 cushions the movement of the plunger incident to the rebound of the latter after sounding the bell. As the plunger 19 is being projected to sound the bell, the spring surrounding the plunger 20 simultaneously moves the plunger to its normal position.

While it is believed that from the foregoing description the nature and advantages of the invention will be better understood I desire to make it known that what is herein shown is merely illustrative, of one embodiment of the invention, to which I do not limit myself, and that such changes may be resorted to when desired as fall within the scope of what is claimed.

Having thus described my invention what I claim as new is:—

1. A signal comprising a bell, a pair of normally separated spring pressed plungers arranged side by side, means for retracting one of said plungers, coöperating means carried by said plungers for engagement, whereby the other of said plungers is moved by the first mentioned plunger to a retracted position, and means for separating the first mentioned plunger from the second mentioned plunger at a predetermined interval for independent movement to a projected position.

2. A signal comprising a bell, a pair of spring pressed plungers, means for retracting one of said plungers, normally spaced lugs projecting from the respective plungers and adapted to be engaged at a predetermined interval, whereby the other of said plungers is moved by the first mentioned plunger to a retracted position, means whereby the first mentioned plunger is separated from the other plunger while being retracted, to permit said plungers to move independently to a projected position.

3. A signal comprising a bell, a pair of spring pressed plungers, means for retracting one of said plungers, means for normally holding said plungers separated and parallel to each other, and permitting one plunger to assume an inclined position upon initial retraction thereof, coöperating means carried by said plunger and operable when said plunger is in an inclined position to connect said plungers for simultaneous movement to a retracted position, and means for separating said plungers at a predetermined interval, to permit the plungers to move independently to a projected position.

4. A signal comprising a bell, a pair of spring pressed plungers, means for retracting one of said plungers, means for normally holding said plungers separated parallel to each other, and permitting one of the plungers to assume an inclined position upon initial retraction thereof, resilient means for positively moving said plunger to an inclined position and means for separating said plungers at a predetermined interval whereby said plunger is moved independently to a projected position.

5. A signal comprising a bell, a frame associated therewith, a pair of spring pressed plungers slidably mounted upon the frame, lugs projecting from said plungers, means for retracting one of said plungers, one of said lugs coöperating with a slot in the frame for holding the plunger normally parallel to the other and separated therefrom, means for moving said plunger to an inclined position upon initial retraction thereof, whereby said lugs are disposed relatively to connect the plungers for movement simultaneously to a retracted position, and means for separating said plungers at a predetermined interval for independent movement to a projected position.

JAMES OMRI TREANOR.