

June 9, 1931.

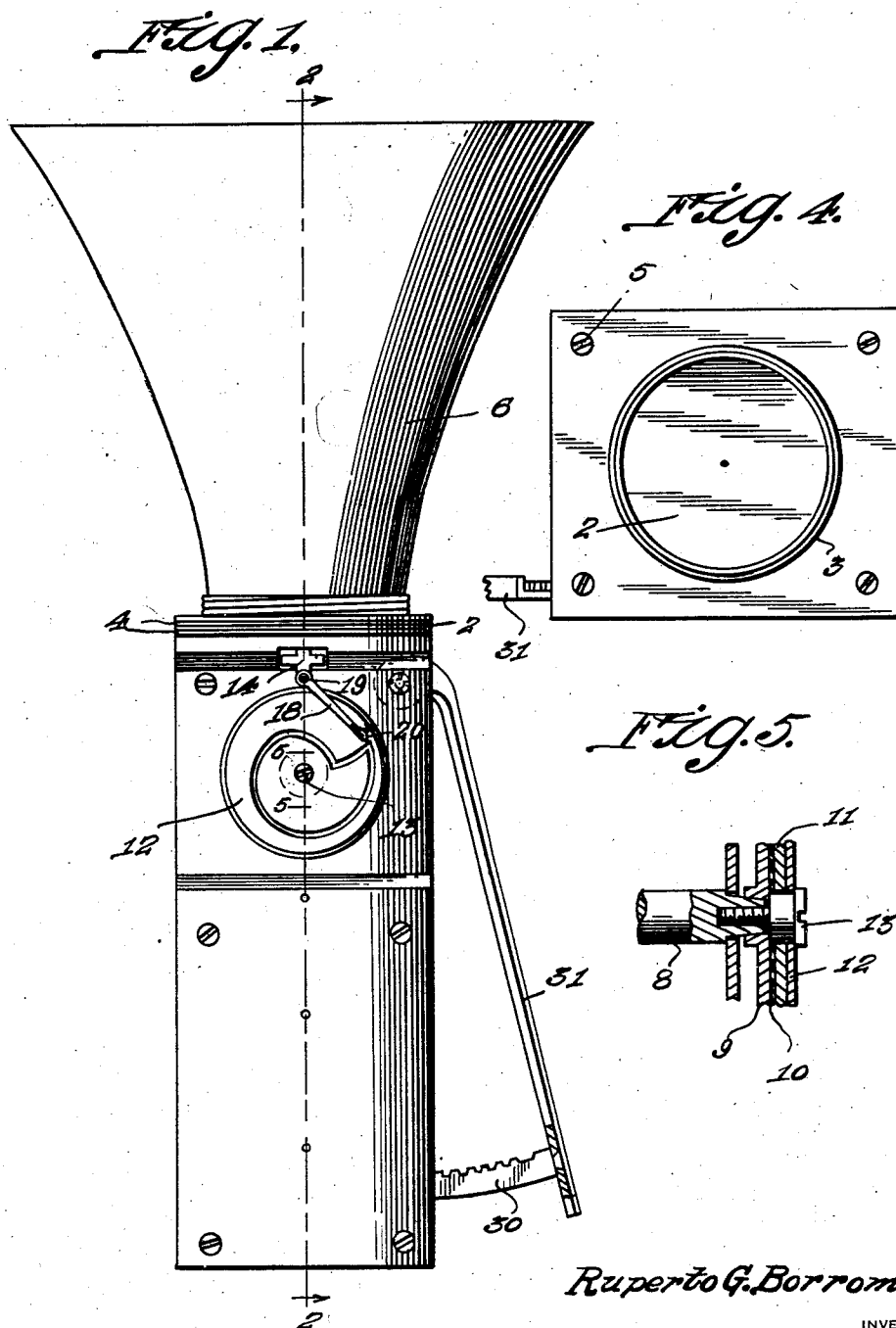
R. G. BORRAMEO

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SOUND PRODUCING DEVICE

Filed July 20, 1928

2 Sheets-Sheet 1



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INVENTOR

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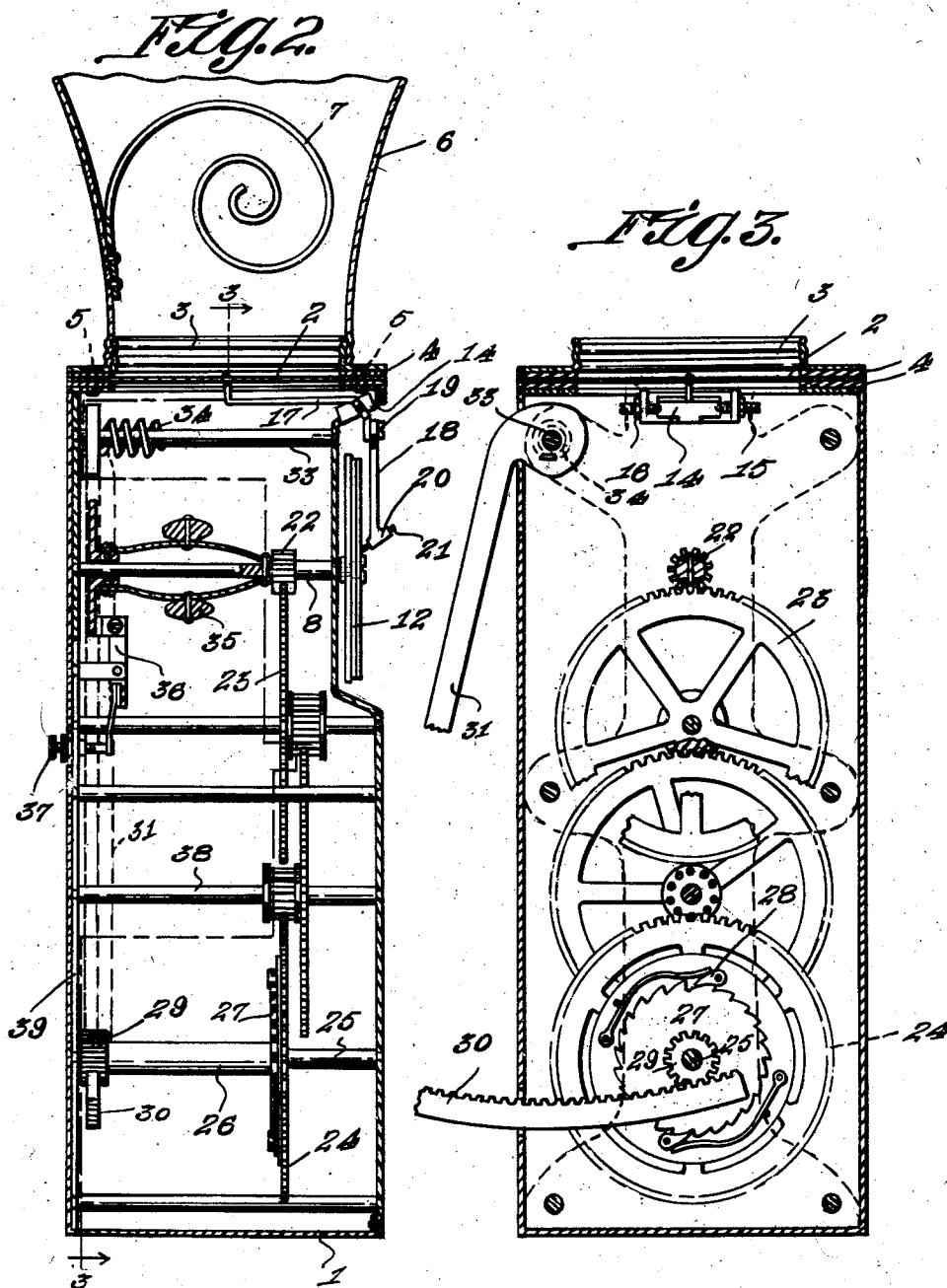
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WITNESS:

UNITED STATES PATENT OFFICE

RUPERTO G. BORRAMEO, OF SAMAR, PHILIPPINE ISLANDS

SOUND PRODUCING DEVICE

Application filed July 20, 1928. Serial No. 294,299.

This invention relates to a sound reproducing device, the general object of the invention being to so form the device that it can be used to give warnings when substituted for a motor vehicle horn and to give announcements, such as at ball games and the like, the general object of the invention being to provide a phonographic arrangement associated with a horn-like mouth piece so that the sounds reproduced by the phonograph will be intensified to a degree that they can be heard quite a distance from the device.

Another object of the invention is to provide means whereby the spring of the device can be wound up by the operation of a hand lever, with means actuated by the return movement of the hand lever for rotating the disk having the sound reproducing grooves therein.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claim.

In describing my invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:—

Figure 1 is an elevation of the device.

Figure 2 is a section on line 2—2 of Figure 1.

Figure 3 is a section on line 3—3 of Figure 2.

Figure 4 is a plan view with parts omitted.

Figure 5 is a section on line 5—5 of Figure 1.

In these views, 1 indicates a casing which has an opening in its top which is covered by a diaphragm 2, the diaphragm being held in place by the flange of a nipple 3, gaskets 4 being placed on each side of the diaphragm and engaging the top of the casing and the flange of the nipple. These parts are fastened together in any desired manner, such as by means of the screws 5. A horn-shaped mouth piece 6 is threaded to the nipple and

the said horn has one end of a spiral spring 7 fastened to its inner wall, said spring acting to improve the quality of the sounds passing from the horn. A rotary shaft 8 is journaled in the casing, with one end passing through the front of the casing, and this end carries the turntable 9 which has the usual strip of felt, shown at 10, for exerting friction on the record 11. All of these parts, together with a repeater 12, are held on the shaft by the screw bolt 13 which engages a threaded socket in the shaft.

A block 14 is pivotally supported in the upper part of the frame by the screws 15 engaging threaded openings in the ears 16 struck from the frame, the said block being capable of rotary movement about a horizontal axis and an arm 17 is connected to the said block and its other end is connected with the diaphragm. A stylus arm 18 is pivotally connected to the projecting end of the arm 17, as shown at 19, so that the said arm 18 can move about a horizontal axis and the lower end of this arm 18 carries the holder 20 for the needle 21 which engages the grooves in the disk 11. The disk has its reproducing grooves so formed that the needle arm is given a movement at right angles to the face of the record so that this movement will be communicated to the diaphragm by means of the block 14 and the arm 17. Thus the vibratory movements given the reproducing means by the reproducing grooves of the record will not be interfered with by the pivotal connection between the arms 17 and 18, though this pivotal connection will permit the arm 18 to move across the face of the record.

A pinion 22 is fastened to the shaft 8 and a train of gearing 23 connects the said shaft to a gear 24 which is rotatably mounted on a bar 25 forming part of the frame of the device and a hollow shaft 26 is rotatably mounted on the bar 25 and carries a ratchet wheel 27 at one end which is engaged by the spring pressed pawls 28 carried by the gear 24. A pinion 29 is fastened to the hollow shaft 26 and a curved rack bar 30 engages the said pinion. A lever 31 is pivotally connected to a bar 33 forming part of the frame of the de-

vice and has its lower end connected with the outer end of the rack bar. A coiled spring 34 has one end fastened to the bar 33 and its other end to the lever 31 so that the spring will be wound up when the lever is pushed inwardly and then when the lever is released, the spring will act to move the lever outwardly.

From the foregoing, it will be seen that as the lever is shoved inwardly, the spring will be wound up and the rack bar, engaging the pinion 29, will rotate the hollow shaft 26 so that the ratchet wheel 27 will be turned, but this movement will not be communicated to the gear 24 as the pawls 28 will simply ratchet over the wheel 27. However, when the lever is released and the spring starts to return it to normal position, the ratchet wheel 27 will be rotated in an opposite direction so that the movement of the said wheel will be communicated to the gear 24 through the pawls 28 and thus the train of gearing will be rotated to rotate the shaft 8 and thus the record disk will be revolved so that the reproducing means will be vibrated by the needle engaging the grooves of the record and the horn will amplify the sounds so reproduced.

A governor 35 is placed on the shaft 8 and a controlling lever 36 is arranged to control one of the flanges of the governor to either stop the device or to regulate the speed thereof. This lever is actuated by the hand screw 37 passing through a part of the casing. The bars 25 and 33 and the other bars 38 of the supporting frame of the device have their front ends fastened to the front part of the casing or to a cover plate at the front of the casing and to a base plate 39 at the rear of the casing.

When this device is to be substituted for an automobile horn, the record would contain the grooves for reproducing warning words for notifying pedestrians and others to make way for the passage of the vehicle. Of course, the device can be used for making announcements wherever desired and for other purposes.

After the needle has reached the end of the record, the repeater 12, which is of well known construction, returns the needle and its carrying arm to the starting point of the record so that the record is repeated again and again.

It is thought from the foregoing description that the advantages and novel features of my invention will be readily apparent.

I desire it to be understood that I may make changes in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claim.

What I claim is:—

A sound reproducing device comprising an upright casing having an opening in its top,

a horn connected with the top of the casing and surrounding the opening, a diaphragm closing the opening, the upper front part of the casing having an opening therein, a block fitting in said opening and supported for movement about a horizontal axis, an arm connected with the diaphragm and having a part adjacent its front end connected with the block, the front end of the arm depending downwardly, a stylus arm having its upper end pivoted to said depending end, a horizontal shaft supported for rotary movement in the casing and having its front end extending through the front wall of the casing, a turntable and record disk detachably connected with said front end of the shaft, a needle carried by the lower end of the stylus arm and engaging the record and means for rotating the shaft.

In testimony whereof I affix my signature.
RUPERTO G. BORROMEIO.