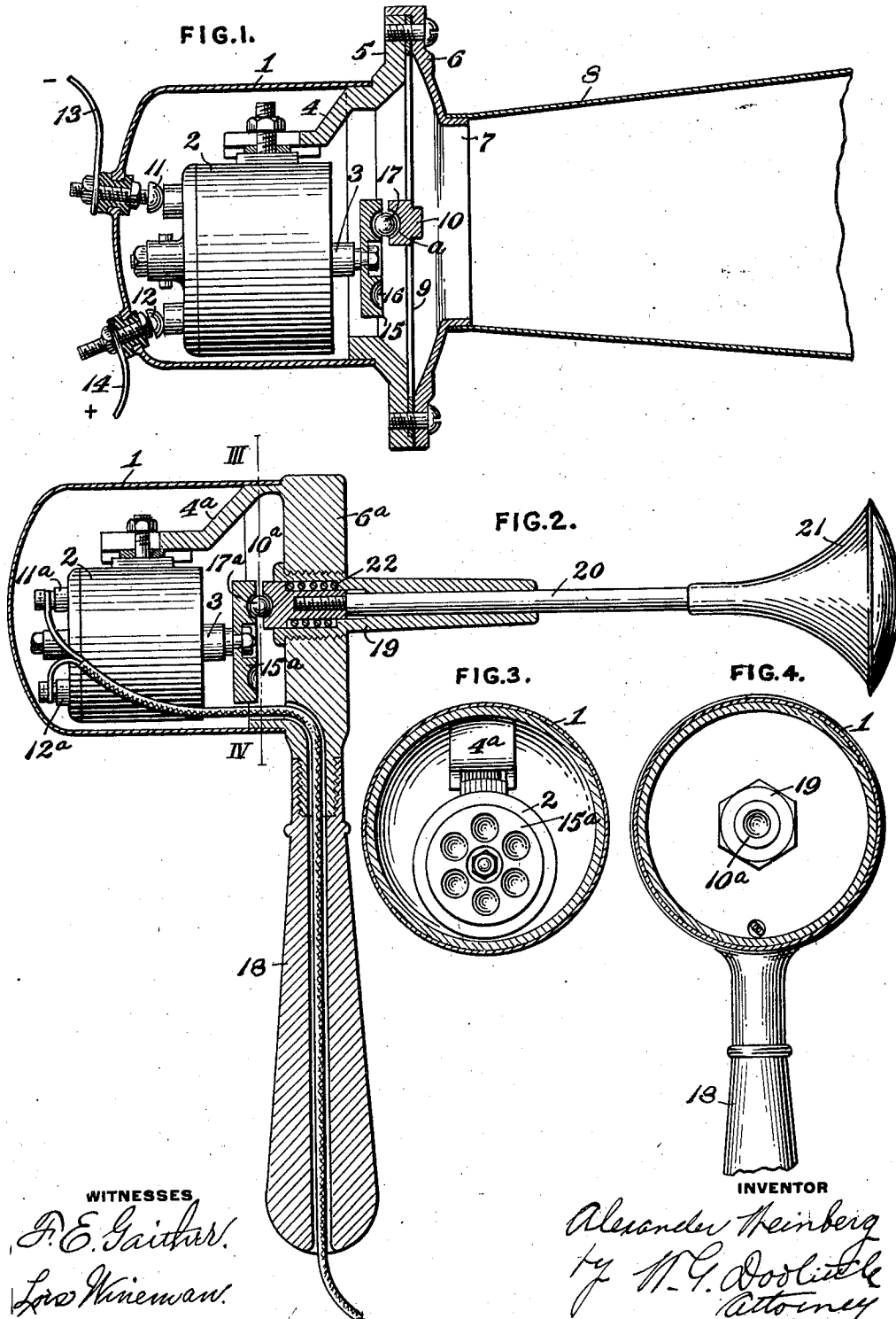


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 ACTUATING MECHANISM FOR SIGNALS, &c.
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1,102,619.

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ACTUATING MECHANISM FOR SIGNALS, &c.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ALEXANDER WEINBERG, of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Actuating Mechanism for Signals, &c., of which the following is a specification.

The prime object of the present invention is to provide new and improved operable means for actuating an impact member designed for receiving and transmitting power.

In the embodiments of my invention, as shown in the accompanying drawing, I show an alarm or signaling apparatus and an electric vibrator. Each apparatus, includes an impact member designed to coöperate with a rotary member mounted on a shaft of a motor and a free member interposed between the impact member and the rotary member and designed to be thrown by the rotary member into contact with the impact member, whereby power is received by the impact member and transmitted by the latter member to flex the diaphragm of the alarm apparatus or move the vibrating rod of the vibrator.

In the drawing, which illustrates applications of my invention, Figure 1 is a part longitudinal sectional view and a part elevational view of a signaling apparatus or alarm horn constructed in accordance with my invention; Fig. 2, is a part sectional and a part elevational view showing an embodiment of my invention in the form of an electric vibrator; Fig. 3, a section on line III—IV; and Fig. 4, a section on the line III—IV looking in the opposite direction from the direction of Fig. 3.

Referring to the drawing, and to both forms of my invention, as illustrated, 1 designates a hollow casing in which an electric motor 2 with its armature shaft 3 is disposed. The motor is retained in the desired operative position within the casing by a suitable frame.

Particularly referring to the form of Fig. 1, the motor securing frame 4 has an outwardly projecting annular flange 5, and secured to the annular flange 5 is a closure member 6 having a centrally disposed opening surrounded by an annular flange 7, the latter being designed to have attached thereto an amplifier or horn 8. 9 designates a flexible plate or diaphragm held in position between the closure member and the annular flange 5 of the frame. Secured centrally of

the diaphragm, I provide an impact member 10 adapted to receive power and transmit the same to flex the diaphragm. Impact member 10, as shown and as preferred, is provided with a circular depression *a*. 11 and 12 designate contact members entered in the casing, and are designed to be connected with circuit wires 13 and 14. Mounted on and movable with the armature shaft of the rotary electric motor is a rotary member 15. Rotary member 15 preferably consists of a circular plate or disk having a series of spaced circular depressions or pockets 16 formed in a forward flat face thereof. The armature shaft 3 is disposed parallel with the axis of the diaphragm, but located in a different horizontal plane than the axis of said diaphragm in order to permit the pockets 16 of member 15 to be successively brought into alinement upon the rotation of the member 15 with a free spherical member 17 interposed between the impact member and the rotary member, and into alinement with the depression *a* of the impact member. It will be readily understood that the rotation of the rotary member 15 coming into contact with the free member 17, disposed in operative position therewith and between the rotary member and the impact member 10, will cause member 17 to be projected or thrown forward against the impact member with sufficient force to flex the diaphragm. The reflex movement of the diaphragm will in turn cause the rebound of the free member back into one of the series of depressions or pockets 16 of the rotary member. The provision of the depressions or pockets arranged in the face of the rotary member 15, which latter is disposed in a plane at right angles to the line of projection of the free member and to the axial line of movement of the impact member, provides a construction by which friction between the parts is practically eliminated, thus requiring considerably less operative power than an apparatus in which a projection carried by the rotary member strikes an impact member carried on the diaphragm or strikes a member interposed between the diaphragm and the rotary member. By the employment of the depressions or pockets, I am enabled to provide a direct forward thrust of the free member as distinguished from a side impact or thrust as is the case when a projection or a projecting member is carried by the rotary member.

In the form of my invention as shown by Fig. 2, which illustrates an electric vibrator, I employ substantially the same operable means for actuating an impact member.

5 The impact member 10^a, however, in this latter form is utilized for transmitting power to a vibrating rod instead of flexing a diaphragm as in the form of Fig. 1. In this form, the motor sustaining frame 4^a is made integral with a closure member 6^a to which the casing 1 is secured. Closure member 6^a is provided with a hollow handle 18 through which circuit wires are led to the contact members 11^a and 12^a. Projecting centrally through the closure member 6^a is an externally threaded plug or sleeve 19 adapted to engage the internal threads of a central aperture formed in the closure member. The impact member is entered in the plug or sleeve 19 and is secured to a reduced end portion of a vibrating rod 20. Rod 20 has mounted on its outer end an applicator 21. 22 designates a spiral spring located in a cut-away space in the plug of sleeve 19 and designed to bear against the impact member 10^a and to exert pressure in the direction of the free member 17^a interposed between the impact member and the rotary member 15^a. The rotation of the rotary member 15^a will project the free member into contact with the impact member, which member in turn transmits power to the vibrating rod of the vibrator.

What I claim is:—

35 1. A device of the character described comprising an agitator member consisting of a motor driven rotary disk having a series of depressions in its face, a vibratory member mounted adjacent thereto, but spaced therefrom, and a transmitter member mounted between said agitator member and said vibratory member normally resting in a depression in said vibratory member and held therein solely by said disk and arranged in the path of the depressions in the disk of said agitator member, substantially as set forth.

50 2. A device of the character described comprising an agitator member consisting of a motor driven rotary disk having a series of depressions in its face arranged in a circular path surrounding its axis, a vibratory member adjacent to said disk to one side of

its axis, a member loosely interposed between said agitator member and said vibratory member resting in a depression in said vibratory member and retained therein solely by said disk and in the path of the depressions in said disk, substantially as set forth.

60 3. A device of the character described comprising a motor driven agitator consisting of a rotary disk having a face with alternate depressions and ridges, a vibratory diaphragm mounted adjacent thereto and having a central impact member laterally disposed in relation to the axis of said disk and spaced therefrom, a transmitter member loosely mounted in a depression in said impact member and retained therein solely by said disk and normally in contact with both, and means for operating said agitator member, substantially as set forth.

4. In a device of the character described the combination of a motor driven rotary disk having a face formed to impart motion to a spherical body supported in contact therewith, a vibratory member adjacent thereto, a spherical member loosely supported in a pocket in said vibratory member and retained therein solely by said disk, and means for adjusting the normal distance between said disk and said vibratory member, substantially as set forth.

5. A device of the character described comprising a motor driven disk, the face whereof is formed outside its axis with an annular roughened face adapted to impart motion to a member supported in contact therewith, a vibratory member adjacent thereto, a spherical member loosely supported in a pocket in said vibratory member in the path of the roughened face of said disk, and retained in position in said pocket solely by said disk, whereby said spherical member is permitted free revoluble motion in said pocket, but is retained in contact with said roughened surface of said disk, substantially as set forth.

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

ALEXANDER WEINBERG.

Witnesses:

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F. E. GAITHER.