

Jan. 5, 1932.

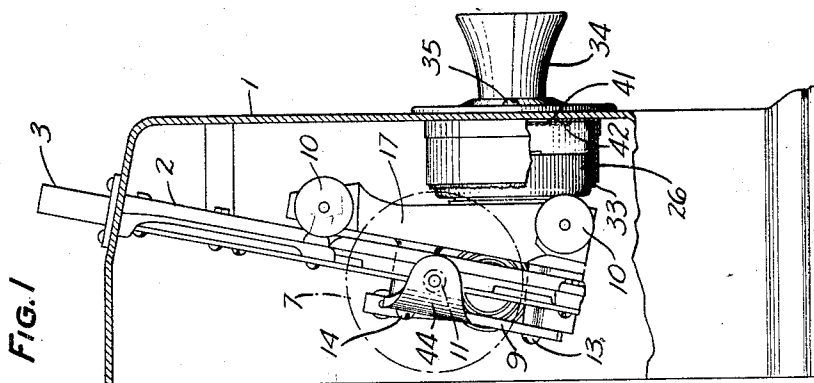
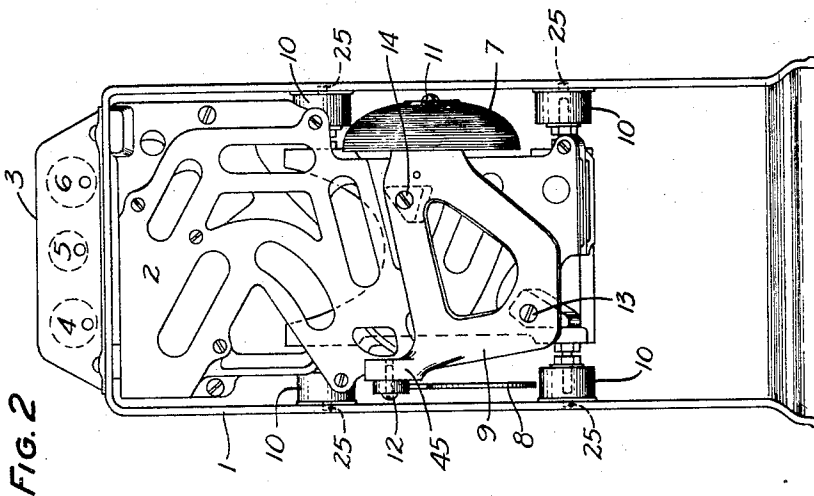
C. H. WHEELER

1,840,144

COIN COLLECTOR

Filed April 17, 1930

2 Sheets-Sheet 1



INVENTOR
C. H. WHEELER
BY *E. W. Adams*
ATTORNEY

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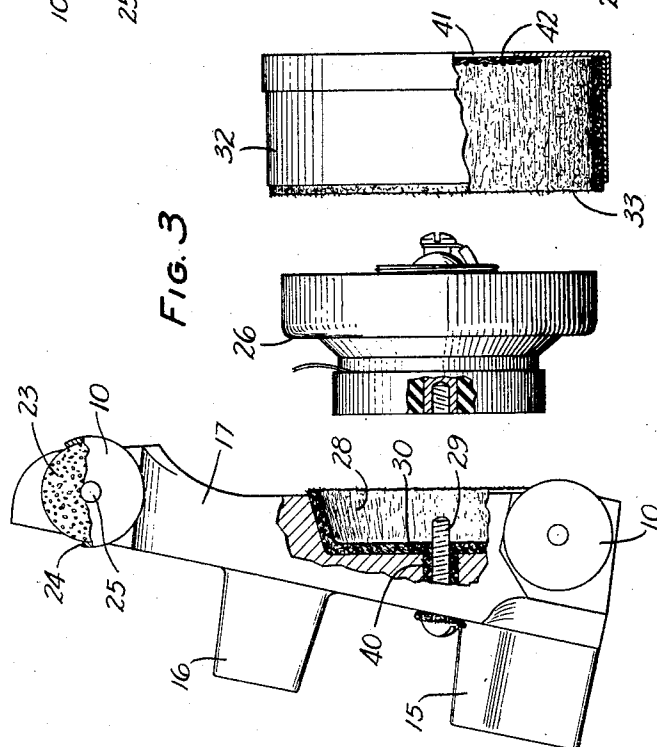
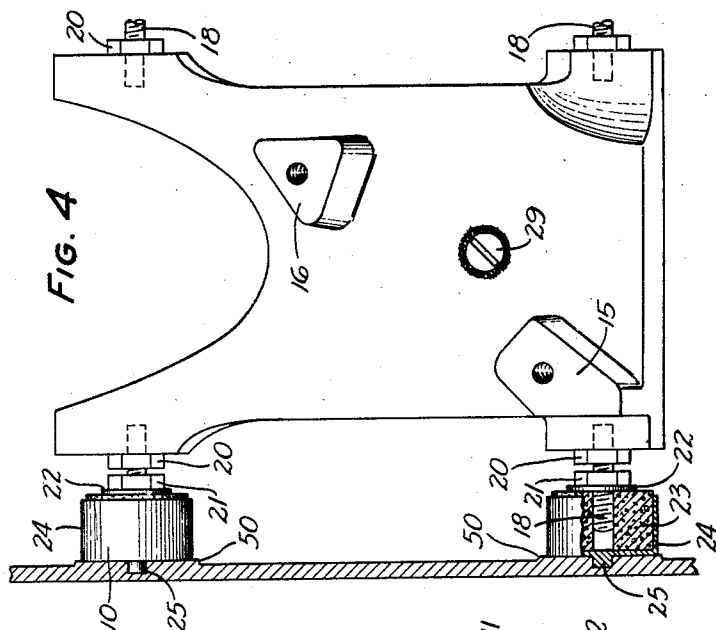
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UNITED STATES PATENT OFFICE

CLYDE H. WHEELER, OF WORTENDYKE, NEW JERSEY, ASSIGNOR TO BELL TELEPHONE LABORATORIES, INCORPORATED, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK

COIN COLLECTOR

Application filed April 17, 1930. Serial No. 445,081.

This invention relates to coin operated devices and more particularly to coin operated signaling devices such as used in telephone pay stations.

5 A common form of signaling apparatus used in telephone pay stations or the like comprises a housing with a plurality of apertures, each adapted to accommodate a coin of one denomination and coin chutes and signal gongs within the housing. The signal gongs are usually mounted on the inner walls of the housing. When a coin is deposited in one of the apertures, it travels along the chute determined by the denomination of the coin, and strikes a signal gong. The sound thus produced is carried through the medium of the surrounding air and through the housing itself to the transmitter and thence transmitted to the operator at a distant central office. When the operator hears the sound, she is informed that the required coin has been deposited.

15 An object of this invention is to prevent fraudulent manipulation of the signal gongs.

Another object of the invention is to eliminate acoustic coupling between the transmitter and the housing,

30 A further object of the invention is to greatly reduce the microphonic characteristics of the coin collector as a whole and thereby decrease its susceptibility to extraneous noises and disturbances.

35 In accordance with this invention the signal gongs in common with the transmitter are mounted upon a relatively heavy inertia member which in turn is supported within the housing by cushioning members. The cushioning members establish a non-acoustic coupling between the housing and the transmitter, between the transmitter and the coin chutes, and effectively prevent the actuation of the signals by blows struck on the housing. The transmitter is separated from the relatively heavy inertia member by means of a washer of non-acoustic material, the thickness of which may be varied so that the degree of acoustic coupling between the two may be adjusted. A non-acoustic coupling also connects the transmitter to the mouth-

piece opening in the housing in order to further eliminate the passage of external noises to the transmitter through the housing and also disturbing noises caused by coins traveling along the chutes.

Referring to the drawings:

Fig. 1 is a side elevation of a coin collection device embodying this invention with the side wall of the housing partially removed.

Fig. 2 is a rear elevation of the same device with the backboard of the housing removed.

Fig. 3 is a side elevation of the transmitter, the main portion of the relatively heavy inertia member and the coupling members, partially exploded and partially in section.

Fig. 4 is a rear elevation of that portion of the inertia member shown in Fig. 3 looking from the back of the coin collection device and two of the coupling members partially in section, shown attached to a wall of the housing.

Similar numerals refer to similar parts throughout the several views.

For the purpose of illustrating the invention it is shown as applied to a coin collector of the type disclosed in Patent 1,043,219 to O. F. Forsberg wherein the coin chute 2 depends from the upper wall of the housing 1 and is associated with the usual coin gauge 3 mounted on the outside thereof.

Mounted within the metallic housing 1 by means of coupling members 10 is a relatively heavy inertia member comprising parts 9 and 17 (see Figs. 1 and 2). For the sake of brevity, part 17 shall hereafter be referred to as "inertia member 17" and part 9 as "frame 9", although it should be kept in mind that parts 9 and 17 together constitute the relatively heavy inertia member.

Inertia member 17 which is disposed in front of the coin chute 2 and spaced therefrom is a relatively heavy metal casting in the front of which (see Fig. 3) is a circular depression 28. Mounted within depression 28 and attached to the inertia member 17 by a screw 29 is a transmitter 26. The transmitter thus mounted is removed from the

front of the housing to a point where it is out of possible contact with the exterior (see Fig. 1). Lining 30 and washer 40 (see Fig. 3) of felt or other similar material separate the transmitter 26 and the screw 29 respectively from the inertia member 17. The separation of the transmitter 26 and the inertia member 17 may be varied by loosening or tightening the screw 29 and thus also varying the thickness of the lining 30. By this arrangement there is provided a variable coupling between these two members whereby the degree of acoustic coupling between the two may be varied thereby adjusting the volume and overhang of the transmitter gong tone.

On the rear of inertia member 17 (see Figs. 3 and 4) are two bosses 15 and 16 which project to the opposite side of the coin chute 2 to support the frame 9 out of contact with the chute. Frame 9 is made of material similar to inertia member 17 and together they constitute the relatively heavy inertia member. Frame 9 possesses two extensions 44 and 45 (see Figs. 1 and 2) which are adapted to support the signal gongs 7 and 8 respectively by means of machine screws 11 and 12.

The coupling members 10 which support the inertia member 17 within the housing are attached to said inertia member by means of threaded members 18 which are screwed into the inertia member 17. Lock nuts 20 hold the threaded members 18 in place. Other nuts 21, spaced apart from nuts 20 serve as stops for washers 22. Adjacent the outer side of washers 22 on threaded members 18 and extending beyond the ends of said members are members 23 of sponge rubber or other shock absorbing material. Enclosing said rubber members 23 are metal casings 24. On the back of the casings 24 are studs 25 (see Fig. 4) which fit into depressions in bosses 50 on the inner walls of housing 1. Nuts 21 on the threaded members 18 are so adjusted that the inertia member 17 is suspended properly within the housing. By means of this arrangement the sponge members 23 are the only connecting links between the inertia member 17 and the housing 1 thus eliminating the acoustic coupling between the housing and the signal gongs and thereby amply protecting the gongs against manipulation by blows struck on the housing irrespective of where the blows may be directed. Applicant however, does not limit himself to the specific means of suspending the inertia member, shown in the drawings, for it is obvious that a great many workable modifications may be used.

In Figs. 1 and 3 the cap 32 into which the transmitter 26 fits snugly is shown lined with a layer 38 of felt or other similar material. The cap 32 has a hole or opening 41 which is approximately the same size as the open-

ing in the housing 1 over which the mouth-piece 34 is secured by means of screw members 35 which are also used to attach the cap 32 to the housing 1. In this way the acoustic coupling between the transmitter and the housing is further eliminated and also practically all the circuit noise which results from the insertion of coins in the chutes and their subsequent travel down the chutes. Mounted across the hole 41 in the cap 32 is a screen 42 to prevent the introduction of devices through the transmitter entrance in the front of the housing 1.

In a telephone pay station (see Figs. 1 and 2) embodying this invention, the transmitter 26 is acoustically insulated from the housing and the coin chute and has a variable acoustic coupling with the signal gongs. A coin inserted in its proper slot in the coin gauge 3 mounted on the upper portion of the housing 1 travels down its proper channel in the coin chute 2 and operates either gong 7 or 8 depending upon its denomination. The vibrations set up by the gong travel through the inertia member to the transmitter 26. The lining 30 which separates the transmitter 26 from the inertia member determines the volume and overhang of the transmitted gong tone. Coupling members 10 prevent any of these vibrations from reaching the housing 1 through the inertia member. Also any extraneous noise or vibrations caused by striking the housing 1 will be prevented from traveling to the inertia member by means of these couplings thus preventing fraudulent operation of the gongs by such means.

While the invention for the purposes of illustration is shown in conjunction with a multi-coin telephone pay station of well known type, and the inertia member is shown in two parts for convenience in mounting therein so that the coin chute does not make contact with it, obviously, for other devices the inertia member may be integral or have any other form as required. The invention therefore is directed broadly to the use of an inertia member as a supporting member for the transmitter and the signal gongs, the entire unit being resiliently supported within a suitable housing.

What is claimed is:

1. A telephone coin collector comprising a housing, an inertia member therein, means for resiliently supporting said inertia member within said housing and a transmitter and a signal gong adapted to be operated by a deposited coin supported in operative relation on said inertia member.

2. A telephone coin collector comprising a housing, an inertia member therein, means comprising shock absorbing members of non-metallic material for supporting said inertia member within said housing and a transmitter and a signal gong adapted to be oper-

ated by a deposited coin supported in operative relation on said inertia member.

3. A telephone coin collector comprising a housing, an inertia member therein, means comprising cushions of sponge rubber for resiliently supporting said inertia member within said housing and a transmitter and a signal gong adapted to be operated by a deposited coin supported in operative relation on said inertia member.

4. A telephone coin collector comprising a housing, an inertia member therein, means for resiliently supporting said inertia member within said housing, a transmitter and a signal gong adapted to be operated by a deposited coin, means rigidly supporting said gong on said inertia member, and means comprising sound absorbing means for coupling said transmitter to said inertia member.

5. A telephone coin collector comprising a housing, an inertia member therein, means for resiliently supporting said inertia member within said housing, a transmitter and a signal gong adapted to be operated by a deposited coin supported on said inertia member and means for adjusting the acoustic coupling between said transmitter and said inertia member.

6. A telephone coin collector comprising a housing, an inertia member therein, means for resiliently supporting said inertia member within said housing, a transmitter and a signal gong adapted to be operated by a deposited coin supported on said inertia member, said transmitter supporting means comprising a depression in said inertia member, a lining of sound absorbing material therefor, and means for adjusting the acoustic coupling between said transmitter and said inertia member.

7. A telephone coin collector comprising a housing, an inertia member therein, means for resiliently supporting said inertia member within said housing, a transmitter and a signal gong mounted on said inertia member, a cap for said transmitter, said cap being supported on said housing, and means acoustically insulating said cap from said transmitter.

8. A telephone coin collector comprising a housing, an inertia member therein, means for resiliently supporting said inertia member within said housing, a transmitter and a signal gong mounted on said inertia member, a cap for said transmitter, said cap being lined with felt, and means for supporting said cap on said housing.

9. In a telephone coin collector having a housing and a coin chute, an inertia member comprising two parts, means securing said parts together in spaced relation, means resiliently supporting said inertia member within said housing, said chute depending from one wall of said housing between said parts of said inertia member and out of con-

tact therewith, and a transmitter and a signal gong mounted on said inertia member, said gong being so disposed with respect to said chute as to be operated by a coin or check traveling in said chute.

10. Telephonic apparatus comprising a housing, a mouthpiece mounted thereon, a relatively heavy inertia member within said housing, a transmitter and signal gongs mounted on said inertia member, means to vary the acoustic coupling between said transmitter and said gongs and means connecting said transmitter to said mouthpiece, said means comprising means to prevent the transmission of vibrations through said housing to said transmitter.

11. A telephone coin collector comprising a housing, a transmitter and signal gongs within said housing and means supporting said transmitter and said signal gongs in acoustical relation to each other and in non-acoustical relation to said housing.

12. A telephone coin collector comprising a housing, an inertia member therein, means for resiliently supporting said inertia member within said housing and a signal gong rigidly supported on said inertia member.

In witness whereof, I hereunto subscribe my name this 15th day of April, 1930.

CLYDE H. WHEELER.

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