

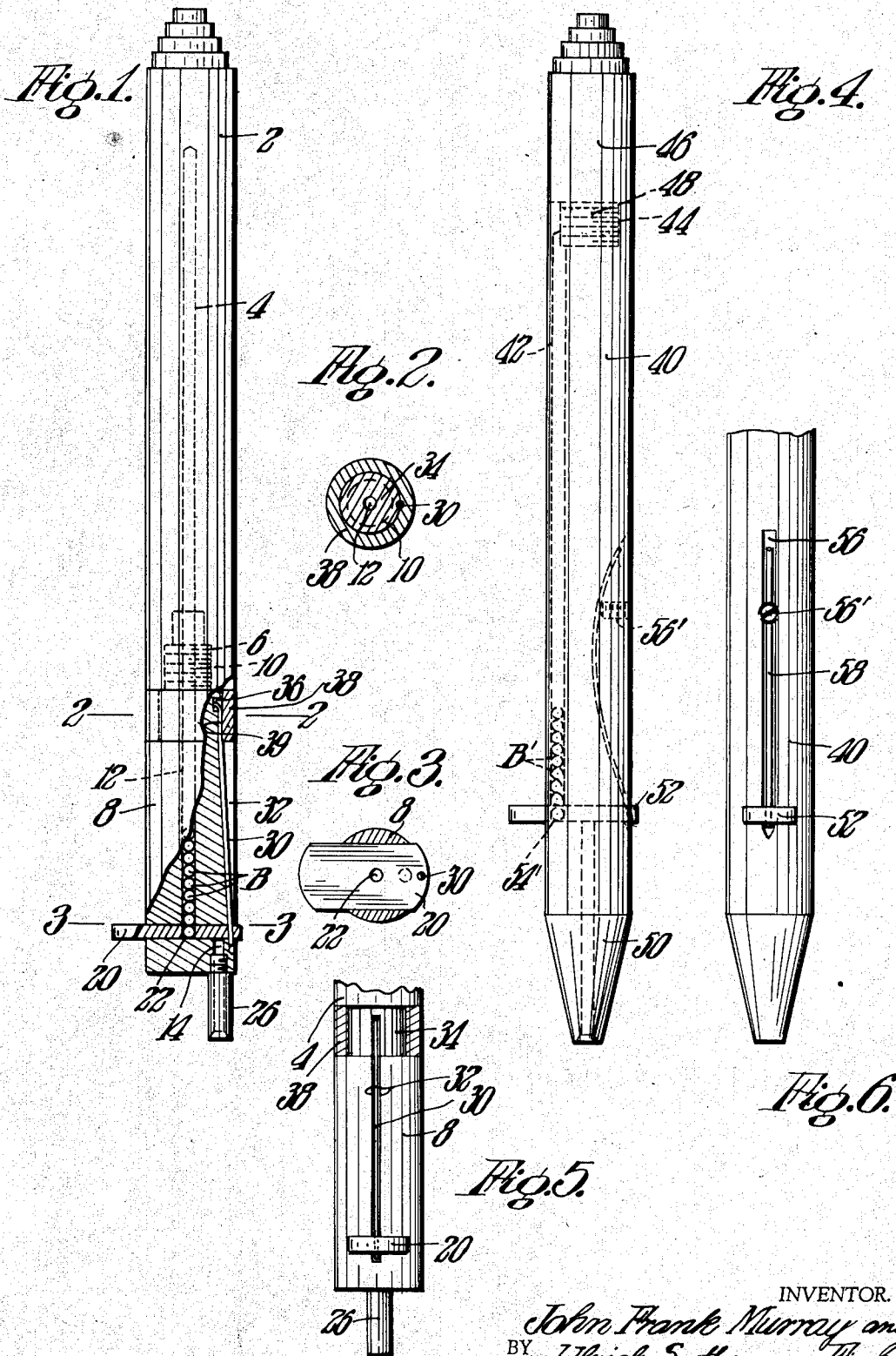
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DISPENSING DEVICE

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DISPENSING DEVICE

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2 Claims. (Cl. 206—42)

This invention relates to improvements in dispensing or ejecting devices and more particularly to a device for containing and discharging such small spherical objects as the metal balls that are commonly employed in the bearings of electric meters and the like.

It is a principal object to provide a novel device for dispensing small balls one at a time in such a way that accidental ejection of more than one ball at a time is prevented. The spheres or balls that are used in the refined bearings of an electric meter are extremely small and difficult to handle and it is desirable, for best results, that they be discharged into their bearings without being manually touched.

Special features of the invention are the provision of a distinctively-constructed dispensing container adapted to prohibit the entrance of foreign matter such as dust or the like and a relatively transparent ball-containing chamber so that the balls are visible whereby it may be readily seen when the chamber needs refilling. As will be seen, the construction of the device is simpler than prior art devices so as to be more economical to manufacture and easier to handle, yet it is efficient in operation.

With the foregoing and various other novel features and advantages and other objects of our invention as will become more apparent as the description proceeds, the invention consists in certain novel features of construction and in the combination and arrangement of parts as will be hereinafter more particularly pointed out in the claims hereunto annexed and more fully described and referred to in connection with the accompanying drawing wherein:

Fig. 1 is a side elevational view partly in section of one form of device embodying the features of the invention;

Fig. 2 is a sectional view on the line 2—2 of Fig. 1;

Fig. 3 is a sectional view on the line 3—3 of Fig. 1;

Fig. 4 is a side elevational view of a modified form of the invention;

Fig. 5 is a partial front elevational view of what is shown in Fig. 1 with a part removed for clearness; and

Fig. 6 is a partial front elevational view of what is shown in Fig. 4.

Referring now to the drawing more in detail, the invention will be fully described.

In a general way, the device of the invention includes a container having a longitudinal bore for a supply of objects and an outlet bore in

offset relation with respect thereto with a gate member slidable transversely between the bores. This gate has an opening which is registerable with one of the bores, according to its position, and is adapted to transfer an object from one of the bores to the other, the objects thus being dispensed from the outlet bore one at a time.

According to the form shown in Figs. 1-3 inc. and 5, there is a container member 2 having a longitudinal bore 4 and a threaded socket 6 in one end thereof, the bore and socket being in communication as shown. The container member 2 is preferably formed of a transparent material such as plastic, glass or the like so that objects within the bore may be seen from without.

A body member 8 has an externally threaded nipple 10 for threadedly engaging in socket 6 and a longitudinal bore 12 for aligning with bore 4 when the parts are assembled as shown. The member 8 is also provided with a separate, longitudinal bore 14 and this is offset with relation to bore 12 so as to be out of alignment therewith.

What may be called a gate member 20 is provided for sliding transversely in part 8 between the lower end of bore 12 and the upper end of bore 14. This is provided with an opening 22 therethrough which will be in alignment with bores 12 and 14 when the gate is in the position shown and with bore 14 in another position of the gate.

It will be appreciated that when the gate is in the first-named position, one of the supply of objects, shown as small balls B, drops into the opening 22 while the gate closes off the upper end of bore 14. When the gate is slid to the right of the position shown, the said ball B in opening 22 is carried therewith until the opening registers with bore 14 into which it drops, the gate then shutting off the lower end of bore 12 and preventing the other balls from dropping down.

That is to say, the opening 22 and the gate are of such sizes that only one ball at a time is allowed to be carried from the supply bore to the outlet bore 14. There is preferably a delivery spout member 26 extending from the part 8 having a bore in communication with the bore 14 so that the little balls may be efficiently seated during operation of the device.

Spring means is provided for urging the gate member to the position shown in Fig. 1. This may obviously vary in form but here includes a length of spring metal 30 having its main portion

seated in a longitudinal groove 32 in the front face of part 8.

The lower end portion of the spring engages the gate as by passing through an opening therein. The upper end portion of body 8 below nipple 18 may be reduced to provide a neck 34 and the latter has a sprocket or seat 36 for receiving the upper end portion of the spring as shown.

A sleeve or collar member 38 may slip over the neck 34 and embrace the spring, there preferably being a groove 39 in the collar 38 for receiving the same as shown. In any event, as will be understood, when the parts are assembled, the threaded engagement of parts 2 and 8 holds the collar firmly therebetween with the spring normally holding the gate in ball-receiving position or non-ejecting position.

Ordinarily, when not in use, the device will be carried in an inverted position from that shown in Fig. 1 and, if desired, there may be a pencil-clip of usual construction associated with the dispenser for facilitating its being carried in a vest-pocket or the like. When in use, it will readily be seen that the operator may hold the device in one hand and manually slide the gate to ejecting position since said gate is purposely formed to have a finger-engageable part extending outwardly beyond the plane of the sides of the part 8.

The device is loaded, of course, by unscrewing the parts 2 and 8 and dropping a supply of the objects into the bore 4 while the part 2 is in inverted position. After screwing the parts together, the device is ready for use.

According to the form shown in Figs. 4 and 6, there is a body 40 having a longitudinal bore 42 with an internally threaded socket 44 in its upper end, there being a passageway connecting the bore and socket as shown. A cap member 46 has a threaded lower end 48 for threading into socket 44 after the supply bore 42 has been filled with the objects B'.

The bore 42 terminates short of the lower end of the body 40 and below said bore is another bore 50. The latter is offset, or out of alignment, with respect to bore 42 in the same manner as bores 8 and 14 previously described.

A gate member 52 having an opening 54 is slidable between the bores so that opening 54 may be either in the ball-receiving position shown or in register with bore 50. When in the latter position, the ball will, of course, drop downwardly and out through the open end of the device.

The spring means for urging the gate to ball-receiving position is similar to that described in connection with Figs. 1 and 5 and includes a groove or slot 56 provided in the front face of the body 40 and a curved length of spring wire 58 seated therein as shown. The upper end portion of member 58 is anchored to the body as by a screw 56' extending into the groove and engaging the spring while its lower end portion extends through an opening in the gate.

The invention may be embodied in other specific forms without departing from the essential characteristics thereof. Hence, the present em-

bodiments are therefore to be considered in all respects merely as being illustrative and not as being restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing description, and all modifications and variations as fall within the meaning and purview and range of equivalency of the appended claims are therefore intended to be embraced therein.

What it is desired to claim and secure by Letters Patent of the United States is:

1. A dispensing device of the class described comprising in combination, a container having a longitudinal supply bore for a supply of objects provided with a closed upper end and a threaded socket at the lower end of the bore, a body part having its upper end portion threaded into said socket and a reduced neck portion therebelow, said body being provided with a bore in alignment with said supply bore and an outlet bore disposed in offset relation with respect to the first-named bore and a longitudinal groove in its face, a spring wire in said groove, a collar member around said neck portion and engaging the upper end portion of said spring wire, and a gate member slidable transversely between the outlet bore and the bore of the body in alignment with that of the container and below said collar member and having an opening registerable with one of said bores according to the position of said gate member for transferring an object from one of said bores to the other, the lower end portion of said spring wire engaging said gate member and urging the same in one direction.

2. A device adapted to be held in the hand for dispensing successive relatively small objects, an elongated structure having an upper axial bore for a supply of objects to be dispensed and a lower axial bore offset relative thereto for receiving and discharging objects, a gate slidable in the structure transversely of and between adjacent inner ends of said bores between discharging and non-discharging positions having an object receiving opening therethrough for receiving a single object registerable with said bores accordingly as it is in one position or the other, an extension of said gate projecting outwardly of the structure in the non-discharging position of the gate for manual engagement by the thumb when the device is held in the hand whereby the gate may be moved to discharging position to close the upper bore and transfer an object in the opening thereof received from the upper bore to the lower bore for discharging the same, and spring means associated with the gate and structure acting on the former to return the same to non-discharging position when released by the thumb engageable with the elongated structure to limit return movement of said gate, said extension of the gate projecting outwardly of the structure being such that when the gate is moved to discharging position by the thumb the opening in the gate is aligned with the lower discharge bore as the thumb abuts the side of the structure.

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