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H. Y. HENNING
HAND SETTING DEVICE
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Fig. 1

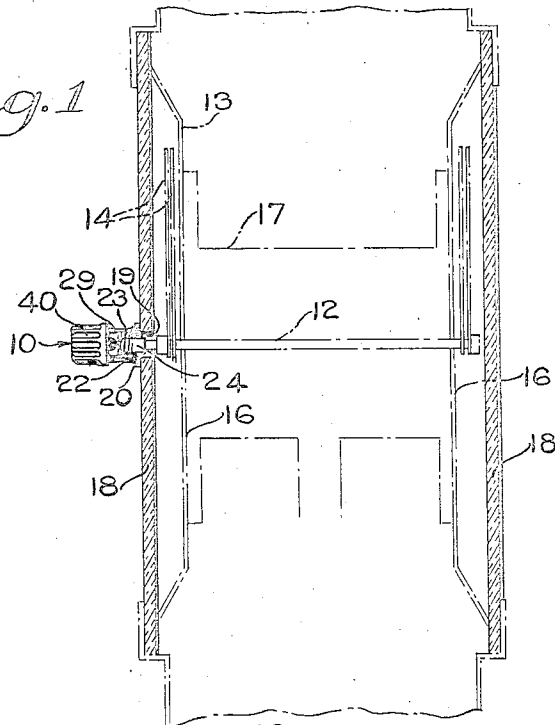
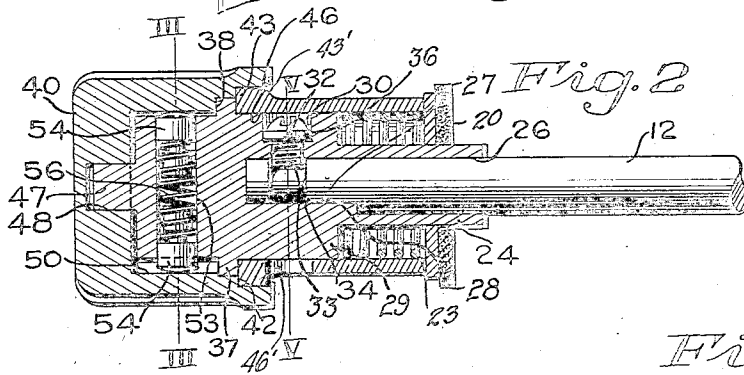


Fig. 3

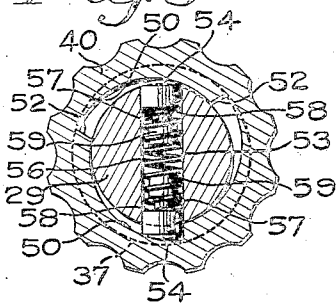


Fig. 4

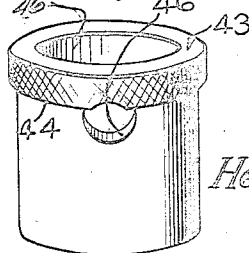
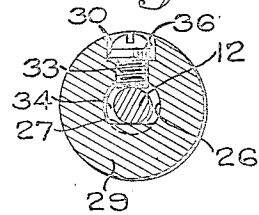


Fig. 5



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UNITED STATES PATENT OFFICE

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HAND SETTING DEVICE

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1 Claim. (Cl. 235—144)

This invention relates to hand or dial setting devices for liquid dispensing apparatus, and the like, and it has for one of its objects the provision of a hand setting device which can be permanently fixed to the operating element of a dispensing apparatus on which it is assembled in such manner as to be insured against accidental displacement of any of the parts thereof.

In dispensing liquids, such as gasoline, a meter driven registering mechanism is employed including a shaft having hands thereon that is driven about a graduated dial during the dispensing operation. After each dispensing operation it is necessary to reset the hands and it is one of the purposes of this invention to provide an improved construction which is positive in its manual operation to manipulate the hands in the direction opposite that in which they are turned during the dispensing of the liquid. It is equally important in such devices to prevent dishonest manipulation of the hands in the driven direction. For such reasons the present device is constructed so that it is extremely difficult to obtain access to the shaft. This construction is adapted to be manufactured as a unit and relatively rotatable mounting or fastening elements are provided which can be disassembled only at one position within the limits of their relative rotation.

For a better understanding of the invention reference may now be had to the accompanying drawing forming a part of this specification, of which

Fig. 1 is a cross-section of a portion of a liquid dispensing device having the invention embodied therein;

Fig. 2 is a longitudinal section, on a larger scale, illustrating the principal structural features embodied in the invention;

Fig. 3 is a cross-section taken substantially along the line III—III of Fig. 2;

Fig. 4 is a perspective of a ring embodied in the invention; and

Fig. 5 is a cross-section taken substantially along the line V—V of Fig. 2.

In one of the embodiments of the invention a hand setting device 10 includes a shaft 12 that is mounted horizontally in an upper portion 13 of a liquid dispensing device and is provided with radially mounted hands 14 for indicating upon a dial 16, mounted on each side of the dispenser, the amount of liquid that is dispensed. This shaft is so mounted as to be operated in one direction by a meter driven registering mechanism 17, which is of conventional construction, especially in gasoline dispensers and the invention is entirely

understandable without a detailed description thereof. Suffice it to say that the shaft 12 is driven during the dispensing operation and the hand moves rotatably about the face of the dial 16.

Suitable glass discs 18 are secured to the dial for enclosing the hands, and the shaft 12 extends outwardly through an opening 19 in one of the glass discs 18. Packing material 20 is placed against the glass about the opening 19 and about the shaft, and a washer 22 surrounding the shaft serves as an abutment for locating a coil spring 23 which also surrounds the shaft. A sleeve 24 spaces the spring from the shaft and is provided with an axial opening 26 which is formed with a flat inner wall portion 27 for engaging a flat outer end portion 28 of the shaft to provide a locking engagement that prevents relative rotation of the shaft and sleeve. The outer end portion of the sleeve is provided with an enlarged head 29 that has a radial socket 30 therein, and a radially disposed internally threaded opening 32 into which a set screw 33 is threaded opens outwardly into the socket. One end of the set screw normally engages the end of the shaft in a recess or groove 34 therein. The other end of the screw is provided with a head 35 fitted into the socket.

An annular rib 37 on an intermediate portion of the head fits into an annular recess 38 of a hollow knob 40. The outer portion of the recess 38 is defined by an annular shoulder 42 that is normally flush with the inner wall of the rib 37.

A retaining ring 43 that has a knurled or roughened outer circumferential raised surface 44 is forced or pressed into one end of the knob 40 flush with the surfaces of the rib 37 and the shoulder 42. The surface 44 is encompassed by the knob which may be peened as at 43' to connect the members. Thus the outer knurled surface of the ring and the peened portion of the knob insure a firm connection within the edge portion of the knob, whereas the ring 43, together with the knob, is firmly but rotatably mounted upon the head 29 about the rib 37. The aperture 46' is included for the purpose of providing means whereby the set screw head 36 can be screwed into the position shown by Fig. 2, and the set screw can be withdrawn to an inoperative position only when the head 36 registers with the aperture 46'.

The ring 43 extends beyond the head 29 of the sleeve 24 and houses and conceals such head and the coil spring 23. This adequately protects the otherwise exposed portions of the sleeve 24 against manipulation with a pliers or a like tool.

The outer end portion of the head 29 has a

bearing member 47 thereon which is disposed in a bearing recess 48 formed centrally in the outer end wall of the knob.

The inner circumferential portion of the knob is provided with ratchet teeth or cam surfaces 50 terminating in shoulders 52. A cylindrical opening 53 disposed diametrically through the head 29 is provided with oppositely disposed detents 54 which are urged in opposite directions by means of a coil spring 56 that has its ends secured in grooves 57 in the detent and abuts against opposed shoulders 58 therein. The detents are thus constantly urged outwardly against the cam surfaces. The spring is guided upon cylindrical detent end portions 59 that are enclosed within the convolutions of the spring.

By turning the knob 40 in a clockwise direction, as viewed in Fig. 3, one of the detents engages one of the shoulders 52, and hence the head together with the shaft carrying the hand 14 is rotated. Thus the hand can be set back to its starting location on the dial 15. However, by rotating the knob in a counter-clockwise direction the detents ride over the cam surfaces against the resiliency of the spring 56 and drop behind the shoulders 52 without offering appreciable resistance to the rotative movement of the shaft.

Accordingly, the hands can be set only in one direction of rotation of the rod, whereas the operating mechanism of the dispensing apparatus actuates the hand in the other direction of rotation to register upon a dial the amount of fluid that has been dispensed. It will be apparent that this kind of construction is particularly desirable in gasoline stations where insurance against dishonest manipulation is of primary importance.

Although only one form of the invention has been shown and described in detail, it will be apparent to those skilled in the art that the invention is not so limited but that various changes may be made therein without departing from the spirit of the invention or from the scope of the appended claim.

I claim:

A coupling device for connecting a setting mechanism and a shaft, comprising a head secured to the shaft, and formed with an annular rib, a knob having an internal shouldered portion mounted on said rib for rotating movement, a one way clutch connection between the knob and head, and a ring pressed into the shouldered portion of said knob and engaging said rib to retain the knob against axial movement.

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