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54 **Tablet dispenser.**

57 A tablet dispenser is disclosed comprising an elongate hollow member (1) defining a chamber open at one end for holding a stack of tablets (5); releasable restraining means (12) adapted normally to prevent passage of a tablet from the opening of the chamber; a body member (6) axially rotatable relative to the hollow member; and a piston (3) actuated to move along the chamber towards the opening by the relative rotational movement of the hollow and body members so that when the chamber contains a stack of tablets, one tablet at a time can be dispensed past the restraining means. The dispenser may also comprise indicia (17) for relating the periodicity or number of tablet dispensation to the relative movement of the hollow and body members, with the proviso that when the indicia are absent then the piston lies wholly within the chamber.

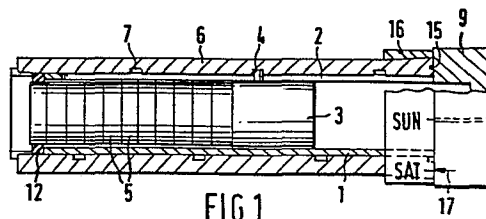


FIG. 1

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This invention relates to a tablet dispenser, in particular to a tablet dispenser facilitating dispensation of a single tablet at a time. In a preferred aspect the invention relates to a tablet dispenser
5 facilitating sequential dispensation of pharmaceutical tablets in a programmed course of administration, with indicia provided to assist in maintaining the schedule. The term tablet is intended to include pills, capsules and the like.

10 According to the present invention there is provided a tablet dispenser comprising an elongate hollow member defining a chamber open at one end for holding a stack of tablets; releasable restraining means adapted normally to prevent passage of a tablet
15 from the opening of the chamber; a body member axially rotatable relative to the hollow member; a piston actuated to move along the chamber towards the opening by the relative rotational movement of the hollow and body members so that when the chamber contains a stack
20 of tablets, one tablet at a time can be dispensed past the restraining means, and indicia for relating the periodicity or number of tablet dispensation to the relative movement of the hollow and body members.

The releasable restraining means can be in the
25 form of an inert resilient material protruding into the chamber which grips the endmost tablet when present thereby holding it and the other tablets in the chamber. After the tablet is dispensed the resilient material provides resistance to the expulsion of the next tablet.
30 Preferably the restraining means comprises at least two lugs, disposed diametrically opposite each other in the chamber. The lugs may be integral with the walls of the hollow member. Most preferably the restraining means is situated a small distance below the opening so that the
35 portion of the body member between the opening and the

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restraining means serves to shield to some extent the endmost tablet in the chamber.

Conveniently the piston lies wholly within the hollow member or the chamber defined by the hollow member which
5 makes the design of the dispenser very compact. For example, a preferred arrangement for effecting movement of the piston along the chamber utilizes a piston having a projection which can slide along a longitudinal slot in the elongate hollow member whilst
10 being seated in a spiral channel formed in the body member. Alternatively the projection on the piston can slide along a spiral slot in the hollow member whilst being seated in a longitudinal channel in the body member.

15 To assist the user in determining when the tablet supply is nearing exhaustion it is preferred to make the hollow and body members of transparent material, e.g. crystal polystyrene, or to provide a window or slit through which the tablets can be seen.

20 The dispenser of the present invention is particularly useful where a course of tablets of differing composition must be taken by the user in the correct sequence. Charging the dispenser with the tablets in the correct order will achieve the desired
25 result.

The device of this invention comprises indicia so that information is provided to the user regarding the frequency for dispensation of one or more tablets, such as the date on which a particular tablet is to be
30 taken and/or the number of tablets used.

Preferably the indicia comprise co-operating indications associated with each of the elongate hollow member and the body member. Conveniently the elongate hollow member can be provided with date markings showing
35 for example the days of the week and the rotatable body member can be provided with an indicator. Tablet

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thickness and piston movement can be designed so that rotation between consecutive day positions dispenses one or more tablets as desired. Preferably indications associated with one or other of the elongate hollow or
5 body members can be moved or adjusted before fixing so that any particular day may be chosen on which to start treatment. Preferably one complete rotation of one of the members is sufficient to dispense seven
10 tablets from the dispenser. It is further preferred that the hollow and body members each have irregularities in the form of knobs or depressions which are arranged to co-operate so that the two members may be rotated stepwise. If indicia are present then the stepwise rotation should be in phase with changes in the marked
15 positions. Most preferably the rotation of the body member is restricted to only the direction which expels tablets from the dispenser, for example by using ratchet means between hollow and body members.

Other features and advantages of this invention
20 will be apparent from the following description of one embodiment thereof, given by way of example only, with reference to the accompanying drawings, in which:-

Figure 1 is a part section side view of a
25 tablet dispenser according to the present invention containing a number of tablets;

Figure 2 is a part sectional side view of the
body member forming part of the dispenser;
and

30 Figure 3 is a sectional side view of the elongate hollow member forming part of the dispenser.

Figures 4 and 5 are sectional views of one end of additional embodiments of the elongate hollow member.

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With reference to Figures 1 to 3, a tablet dispenser has a tubular elongate hollow member 1 open at one end with a longitudinal slot 2. Slidably disposed within hollow member 1 is a cylindrical piston 3 having on its side a lug 4 protruding through the slot 2. Figure 1 also shows a stack of tablets 5 contained by the member 1. Rotatably disposed about the hollow member 1 is a tubular body member 6 having a spiral groove 7 on its inner surface into which lug 4 slidably locates. Body member 6 is prevented from moving longitudinally relative to hollow member 1 by abutment with a rim 8 at one end of hollow member 1 and a base 9 at the other end. Elongate member 1 is provided with a groove 10 which is deep enough on two sides to form two diametrically opposed openings 11 to the member 1. Figure 1 shows restraining means 12 made of an inert elastic material which is easily deformable, e.g. rubber, located in groove 10 and which protrudes through openings 11 to grip the endmost tablet. The base 9 of hollow member 1 has an inner face 13 with a raised projection 14 which co-operates with a series of seven indentations 15 in the body member 6 so that the hollow and body members can be rotated stepwise. Force fitted to the body member 6 is a collar 16 bearing seven weekday indications. A corresponding marker 17 is provided on the base 9. Diametrically opposed slits 18 are made in hollow member 1 so that rim 8 is compressible when hollow member 1 is inserted through body member 6 during assembly of the dispenser. In operation the body member 6 shown in Figure 1 is held by the user and the base member is rotated clockwise. This movement drives the lug 3 on the piston along groove 7 so that the piston gradually moves towards the opening of the dispenser; displacing the stack

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of tablets ahead of it. Restraining means 12 gradually releases its grip on the endmost tablet at which moment the tablet is dispensed, with the next tablet moving to be gripped by the restraining means 12. On stopping
5 relative rotational movement of body member 6 and hollow member 1, the stack of tablets in the hollow member 1 is held in place by the restraining means preventing the endmost tablet from falling out of the opening.

10 Conveniently the pitch of the spiral groove 7 is such that seven tablets are dispensed for each complete revolution of hollow member 1 relative to body member 6. The indicia can then be the days of the week as shown in Figure 1. Where a course of treatment is to be
15 started on a particular day, collar 16 can be force fitted or locked onto the filled dispenser so that indicator 17 points to the appropriate day. Alternatively indicator 17 could be applied, e.g. by pen marking, to base 9 in the appropriate position for
20 starting the treatment. It will be apparent that the positions of the indicia may be reversed with the days of the week shown on base 9 and the pointer on collar 16.

A preferred additional feature is to provide a ratchet means between part of the adjacent surfaces of
25 hollow member 1 and body member 6 so that the relative rotation of members 1 and 6 is allowed only in the 'dispensing' direction. This will ensure that in the charged dispenser the stack of tablets remains compressed between piston and restraining means,
30 thereby preventing the possibility of excessive tablet movement and displacement of one or more tablets transversely to the axis of the dispenser. Transverse tablet displacement would alter the calibration of the dispenser and a displaced tablet might not be retained
35 by a restraining means designed for axially aligned tablets.

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Two further examples of resilient restraining means are shown in Figures 4 and 5. In Figure 4 two deformable webs 19 are formed integrally with the hollow member and constrict the diameter of the hollow member. In Figure 5 the outermost portion 20 of the hollow member is tapered and has slits 21 provided which allow deformation to release a tablet.

A further aspect of this invention provides a tablet dispenser comprising an elongate hollow member defining a chamber open at one end for holding a stack of tablets; releasable restraining means adapted normally to prevent passage of a tablet from the opening of the chamber; a body member axially rotatable relative to the hollow member; a piston lying wholly within the chamber and actuated to move along the chamber towards the opening by the relative rotational movement of the hollow and body members so that when the chamber contains a stack of tablets, one tablet at a time can be dispensed past the restraining means.

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CLAIMS

1. A tablet dispenser comprising an elongate hollow member defining a chamber open at one end for holding a stack of tablets; releasable restraining means adapted normally to prevent passage of a tablet from the opening of the chamber; a body member axially rotatable relative to the hollow member; a piston actuated to move along the chamber towards the opening by the relative rotational movement of the hollow and body members so that when the chamber contains a stack of tablets, one tablet at a time can be dispensed past the restraining means, and indicia for relating the periodicity or number of tablet dispensation to the relative movement of the hollow and body members.
2. A tablet dispenser according to Claim 1 in which the indicia comprises co-operating indications associated with each of the elongate hollow member and the body member.
3. A tablet dispenser according to Claim 2 in which indications associated with one or both of the hollow and body members can be moved before fixing.
4. A tablet dispenser according to any one of Claims 1 to 3 in which the releasable restraining means comprises inert resilient material protruding into the chamber from the chamber wall and adapted normally to grip the endmost tablet when present sufficiently to hold it and the other tablets in the chamber.
5. A tablet dispenser as claimed in Claim 4 in which the restraining means comprises at least two lugs, disposed in the chamber a small distance below the opening.

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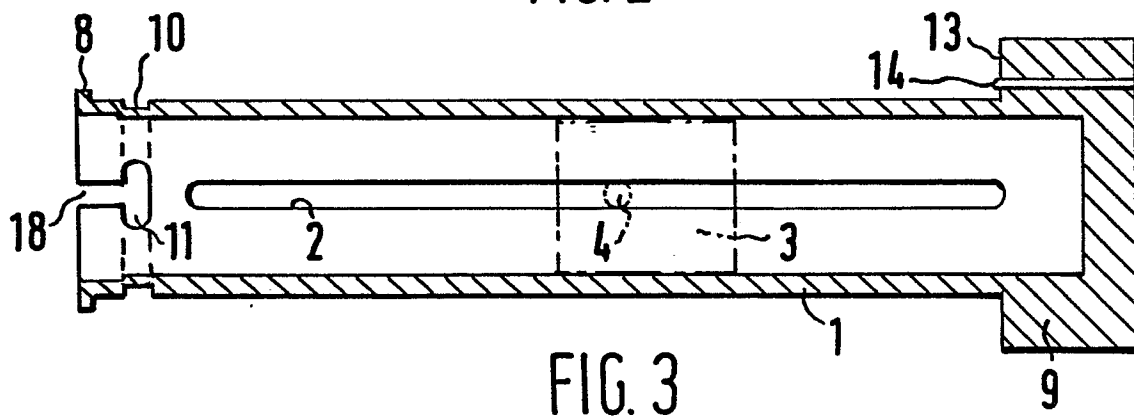
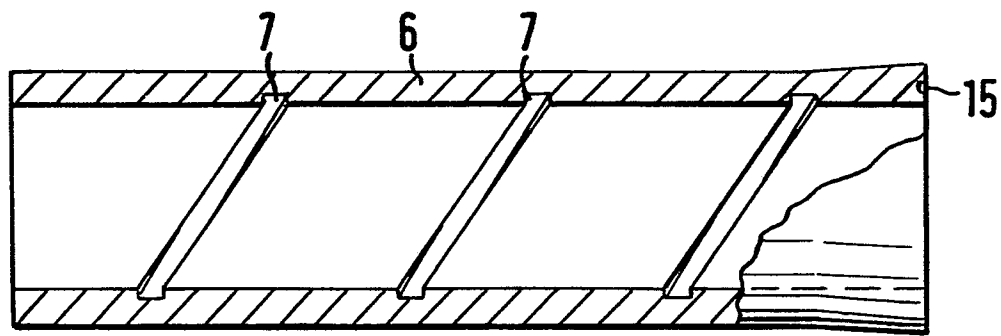
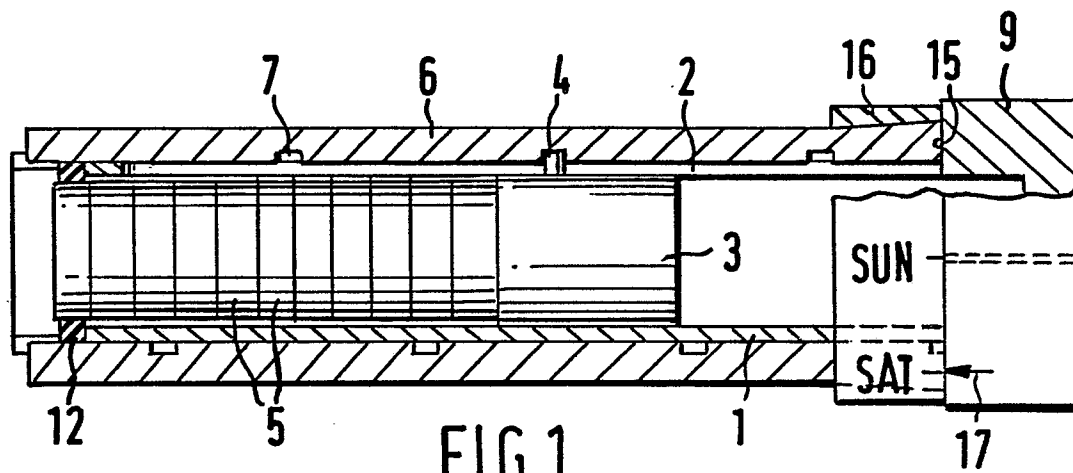
6. A tablet dispenser as claimed in any one of Claims 1 to 5 in which the piston lies wholly within the hollow member or the chamber defined by the hollow member.
7. A tablet dispenser according to any one of Claims 1 to 5 in which the piston has at least one projection which can slide along a longitudinal or spiral slot in the elongate hollow member whilst being seated in a spiral or longitudinal channel respectively in the body member.
8. A tablet dispenser according to any one of Claims 1 to 7 in which one complete rotation of one of the members is sufficient to dispense seven tablets from the dispenser.
9. A tablet dispenser according to any one of Claims 1 to 8 in which the hollow and body members each have irregularities in the form of knobs or depressions which are arranged to co-operate so that the two members may be rotated stepwise.
10. A tablet dispenser according to any one of Claims 1 to 9 in which the relative rotation of the hollow and body members is restricted to only the direction which expels tablets from the dispenser.
11. A tablet dispenser comprising an elongate hollow member defining a chamber open at one end for holding a stack of tablets; releasable restraining means adapted normally to prevent passage of a tablet from the opening of the chamber; a body member axially rotatable relative to the hollow member; a piston

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lying wholly within the chamber and actuated to move along the chamber towards the opening by the relative rotational movement of the hollow and body members so that when the chamber contains a stack of tablets, one tablet at a time can be dispensed past the restraining means.

12. A tablet dispenser according to Claim 12 in which the piston has at least one projection which can slide along a longitudinal or spiral slot in the elongate hollow member whilst being seated in a spiral or longitudinal channel respectively in the body member.

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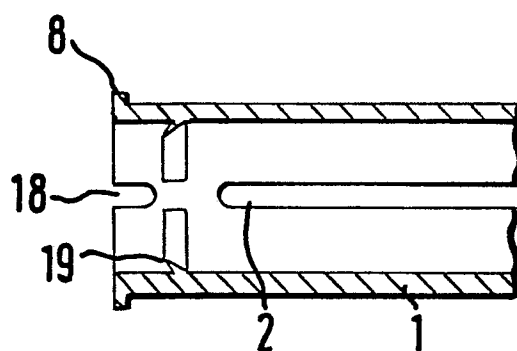


FIG. 4

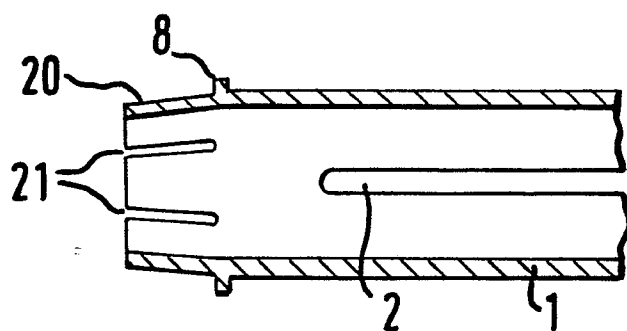


FIG. 5



European Patent
Office

EUROPEAN SEARCH REPORT

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Application number
EP 81305179.4

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int. Cl. ³)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
A	<u>CH - A - 548 327</u> (ARTUSI) --	1,4,7, 8,10- 12	B 65 D 83/04
	<u>US - A - 2 294 001</u> (RITTER) --	1,6,8, 11	
	<u>US - A - 2 885 110</u> (TREGILGAS) --		
	<u>US - A - 3 854 625</u> (KUEBLER) --	1,6,8, 10,11	
	<u>US - A - 4 174 048</u> (VOLPE JR.) ----	1,6,7, 10-12	
			B 65 D 83/00 B 65 D 85/00
			CATEGORY OF CITED DOCUMENTS
			X: particularly relevant A: technological background O: non-written disclosure P: intermediate document T: theory or principle underlying the invention E: conflicting application D: document cited in the application L: citation for other reasons
X	The present search report has been drawn up for all claims		&: member of the same patent family, corresponding document
Place of search VIENNA		Date of completion of the search 01-02-1982	Examiner MELZER