Dec. 9, 1958 W. F. BETHARD ET AL 2,863,572

DEVICE FOR COUNTING PILLS

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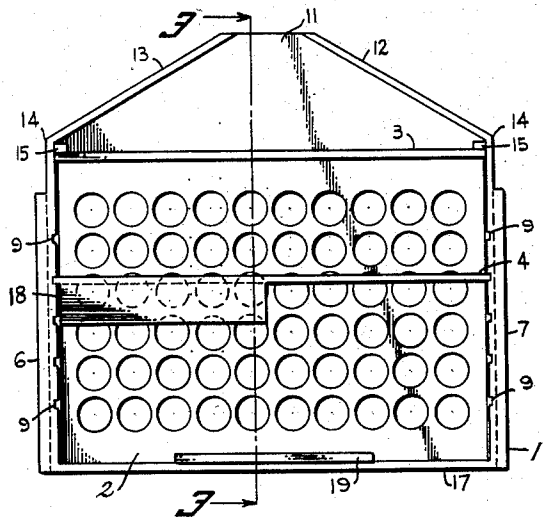


fig-1

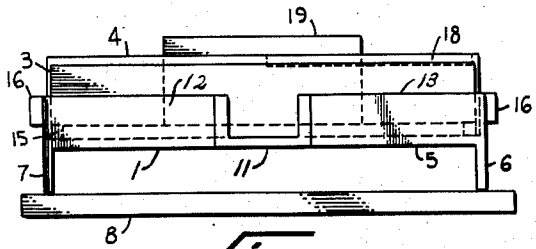


fig-2

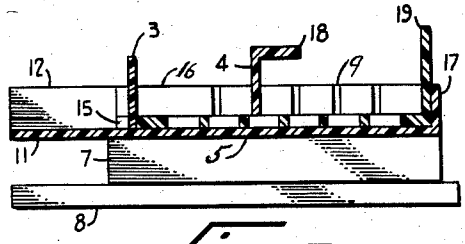


fig-3

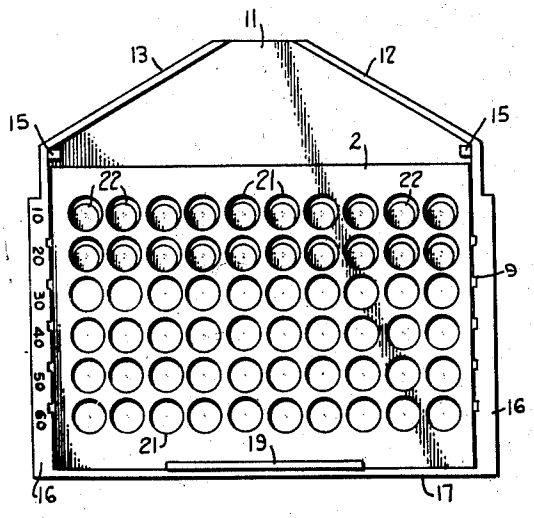


fig-4

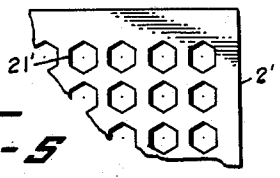


fig-5

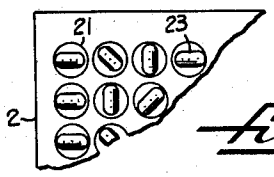


fig-6

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DEVICE FOR COUNTING PILLS

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3 Claims. (Cl. 214—1)

This invention relates to a device for counting medicinal pills or capsules and discharging the counted articles into a bottle or other container.

It has been the practice for pharmacists to count out by hand pills or capsules and when lots of 50 or more are required, considerable time is consumed in the process. A main object of this invention is to count out the pills much faster than is possible by hand and thus effect a large saving in time for the pharmacist and cause him less fatigue.

Another object is to provide a device which will count out accurately a desired number of pills. There is thus less chance of mistake in counting with consequent loss in profit for the druggist.

A further object is to provide a movable member which can be adjusted so that the number of pills to be counted out may be varied as required.

Another object is to provide a device capable of counting out different sizes and shapes of pills and capsules.

A further object is to provide a converging outlet on the device for discharging the counted-out pills into an empty bottle or box.

Another object is to provide a device in which the pills to be counted out need not be touched by the operator's hands.

A still further object is to provide a counting device composed of few parts which can be easily cleaned or sterilized whenever desired and yet are inexpensive to manufacture.

Further objects will become apparent as the description of the device proceeds. For a better understanding of the invention, reference is made to the accompanying drawing, in which:

Fig. 1 is a top view of the counting device; with the fences in position ready to receive a charge of pills, the numerical graduation being omitted for clarity;

Fig. 2 is a rear view of the device of Fig. 1 also showing a supporting table;

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

Fig. 4 is a top view of the device after the fences have been removed and with the counted-out pills in position prior to being discharged;

Fig. 5 shows a portion of a counting plate apertured to receive pills of hexagon shape, and;

Fig. 6 shows a number of capsules in a portion of the counting plate of Fig. 4.

The counting device shown consists of four parts, namely, a main base **1**, a counting plate **2**, a rear fence **3** and a front adjustable fence **4**. Each of these parts may be made of rigid metal or thermosetting plastic resin and molded or cast to the required shape so that no machining is required in their manufacture, thus minimizing the cost of production. Base **1** comprises a flat plate **5** which is supported by a pair of side walls **6**, **7** adapted to rest on any flat table **8**. Side walls **6**, **7** extend

above plate **5** and their upper portions are provided with a plurality of vertical grooves **9**, each groove in wall **6** being in alignment with its opposite groove in wall **7** to receive the ends of front fence **4** when the latter is lowered into place as shown in Figs. 1 to 3. The rear end of plate **5** has a tapered portion **11** which has upwardly projecting converging side walls **12**, **13** whose front ends meet the rear ends of side walls **6**—**7** at **14**. Adjacent the regions **14** plate **5** has two short upwardly projecting lugs **15** adapted to engage the ends of rear fence **3** when the latter is lowered into position, as shown in Figs. 1 to 3. The top portions **16** of side walls **6**, **7** are wider than their bottom portions to provide room for the marking of the numbers 10, 20, 30 etc. thereon, as shown.

Instead of the numbers being marked directly on the top of one or both portions **16**, they may be printed on a narrow strip of paper and the strip cemented to the top of portion **16**. A front wall **17** connects the front ends of side walls **6** and **7** together. At its top front fence **4** has a horizontal projection **18** extending across approximately half its length for a purpose to be described.

Counting plate **2** is rectangular and adapted to be lowered into position on plate **5** between side walls **6**, **7**. At its front end plate **2** has an upstanding rectangular portion serving as a handle **19**. Plate **2** is provided with a plurality of openings **21** extending vertically therethrough, each opening in the form shown in Figs. 1 to 4 being circular and of a diameter sufficient to freely receive a pill **22** in the usual form of a disc. The thickness of plate **2** is preferably equal to or slightly greater than the thickness of the pills to be counted. Openings **21** are arranged in rows of ten, as shown, to facilitate the counting and although only six rows are shown, it will be understood that ten rows may be used when 100 pills are to be counted out at one time or still more rows if desired. If each opening is $^{15}/_{32}$ inch in diameter, plate **2** is capable of receiving and counting pills having a diameter of from about ¼ to $^{7}/_{16}$ inch. To count pills having a diameter of less than ¼ inch, a second plate similar in all respects to plate **2** is provided except that the diameter of each hole **21** will be about ¼ inch. If the pills are hexagonal in shape, then a plate is made in which each opening **21'** is hexagonal as shown in Fig. 5, each opening being large enough to freely receive a pill. Or the openings may be square or triangular to accept pills of these shapes. Plate **2** with circular openings is also capable of counting capsules **23** (Fig. 6) of the type in common use and of generally cylindrical shape, as shown. Each capsule must be large enough so that only one will fit in each hole **21**, as shown.

To use the device counting plate **2** is lowered onto plate **5** and rear fence **3** lowered into position so that it contacts the rear end of plate **2** and the lugs **15** as shown. Front fence **4** is then lowered into position, its ends sliding in the proper pair of aligned grooves depending on the number of pills to be counted out. If 10 pills or a multiple of 10 are to be counted, fence **4** is inserted so that its projection **18** is on top as shown, the illustrated position being for counting 20 pills. A supply of pills is then poured directly from the container in which they were shipped by the manufacturer onto plate **2** in the region between fences **3** and **4**, this supply being several more than the number to be counted out. The entire assembly is then shaken in a substantially horizontal plane until a pill has dropped into each of the holes **21** between the fences. This will leave several pills on top of plate **2** which have not entered holes therein. Rear fence **3** is now raised and removed and the rear end of portion **11** held over the pill shipping container. The front end of the assembly is now raised enough to cause the excess pills to slide off plate **2** and

tapered portion 11 and be returned to the container. The assembly is then leveled and front fence 4 removed. This leaves the counted-out pills 22 in the holes 21 as shown in Fig. 4. By grasping handle 19, the operator raises and removes counting plate 2 from base 1. The box or bottle into which the pills are to be dispensed is now placed under the rear end of plate portion 11 and the front end of base 1 raised. This causes the pills to slide off plate 5 into the box or bottle, the converging side walls 12—13 guiding the pills to the discharge opening at the rear.

In the drawing fence 4 is shown in position for counting out 20 pills. If 15 were desired, fence 4 would be reversed and lowered into the same two grooves 9 so that its projection 18 rested on top of plate 2 and covered up five adjacent holes 21 therein so that no pills could enter these five holes when the supply of pills was placed on plate 2. Otherwise the method for counting out 15 pills is the same as that described. It will be obvious that by inserting fence 4 in other aligned pairs of grooves 9, thirty, thirty-five, forty or more pills can be counted out. If the discharge opening provided by the converging walls 12—13 is too large, a smaller spout (not shown) can be made on this portion of base 1. It will be observed that the scale graduations 10, 20, 30 etc. on top of walls 16 assist the operator in placing fence 4 in the proper grooves to count out a desired number of pills.

Other modifications of the construction may be made by those skilled in the art without departing from the scope of our invention as covered by the following claims. What we claim and desire to secure by Letters Patent is:

1. A device adapted to count a number of pills or the like comprising, in combination: a one-piece base having a rectangular imperforate front portion and an imperforate rear portion with converging sides, the top face of said base being flat; a pair of parallel side walls projecting up from the opposite sides of said front portion and integral therewith; a pair of converging side walls projecting up from said converging sides and integral therewith, the front ends of said converging side walls merging with the rear ends of said parallel side walls and the rear ends of said converging side walls being spaced apart to provide a discharge opening therebetween, said parallel side walls being provided with a plurality of pairs of aligned vertical grooves; a rectangular detachable counting plate whose thickness is substantially equal to the thickness of the pills to be counted, said counting plate being adapted to freely slide along said parallel side walls as it is lowered between said side walls onto the rectangular portion of said base, said counting plate being provided with a plurality of similar sized openings extending from top to bottom therethrough, said openings being arranged in rows of ten and the openings in each row being in alignment with each other in a vertical plane normal to said side walls; a detachable plate resting on the front portion of said base and in contact with the rear face of said counting plate and having its ends in contact with the inner faces of said parallel side walls, said plate extending a substantial distance above the top face of said counting plate; and a thin fence whose ends are adapted to be lowered into two aligned grooves of either of said pairs of grooves to guide said fence downward until it rests on top of said counting plate.

2. A counting device as claimed in claim 1, in which said fence has an integral shelf projecting at right angles from the top end thereof, said shelf terminating a short distance from the left hand end of the fence and having a length such that it covers five aligned holes in said counting plate when the fence is turned upside down and its ends lowered into two aligned grooves until said shelf rests on said counting plate.

3. A counting device as claimed in claim 1, in which the top face of one of said parallel side walls is inscribed with the numbers 10, 20, 30, 40, and 50 in succession, number 10 being disposed opposite the row of holes in said counting plate nearest to said detachable plate and the succeeding numbers being disposed in succession opposite the remaining rows of holes.

References Cited in the file of this patent

UNITED STATES PATENTS

663,726	Carlen	Dec. 11, 1900
2,664,224	Winneberger	Dec. 29, 1953
2,771,198	Danchig	Nov. 20, 1956
2,812,076	Mistretta	Nov. 5, 1957

FOREIGN PATENTS

19,326	Great Britain	Sept. 15, 1908