May 8, 1956 D. S. PATERSON 2,744,664

DISPENSING GUN

Filed July 26, 1950

Fig. 2

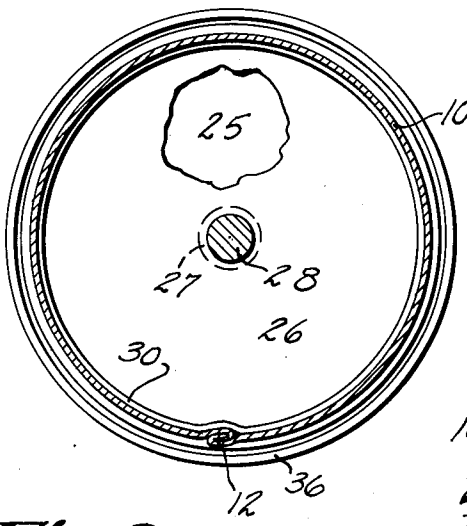


Fig. 1

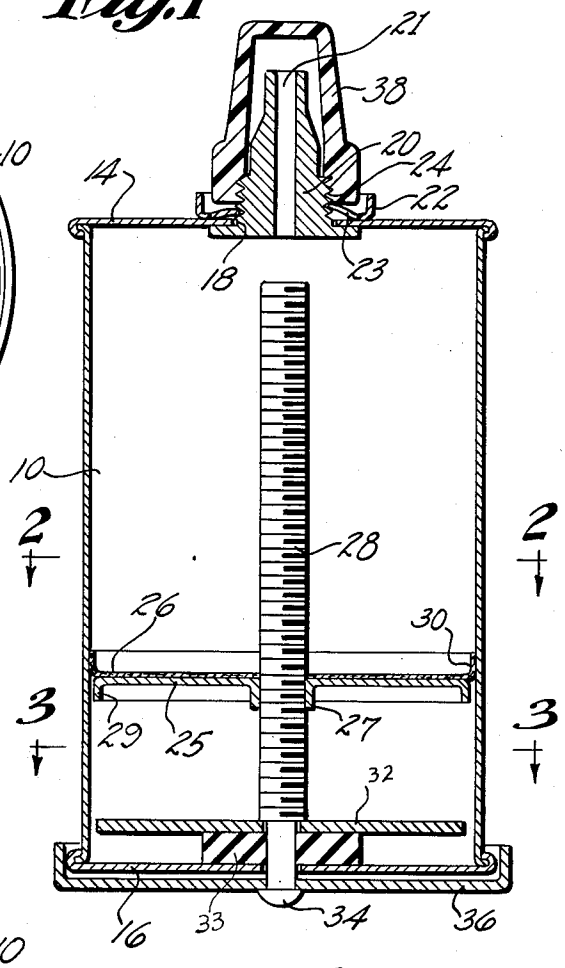


Fig. 3

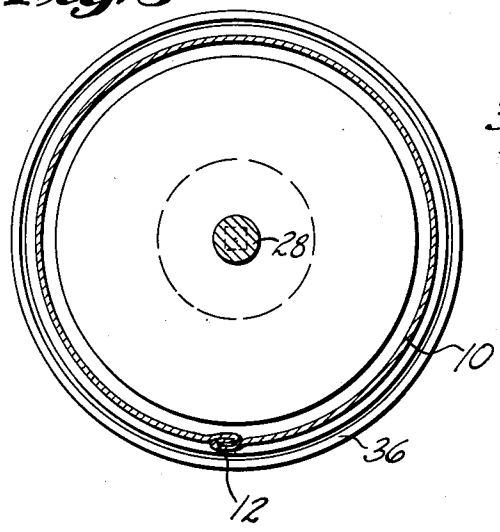
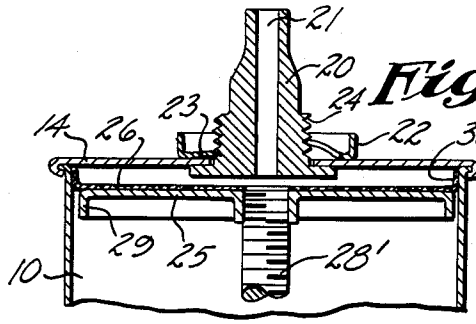


Fig. 4



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DISPENSING GUN

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1 Claim. (Cl. 222—326)

This invention relates to a dispensing gun of the type used for greasing, caulking, etc. and by means of which grease or caulking compound, or the like, may be extruded at will.

One object of the invention is to produce an improved gun of the type set forth.

The extrusion of grease, caulking compounds, or other viscous material requires the exertion of considerable pressure and, when the material is extruded by a reciprocable, trigger-actuated plunger, the application of the requisite force makes it difficult to hold the discharge end of the gun steadily at the point of application. In other words, in the absence of sufficient strength and skill, the discharge end of the gun tends to move away, or wobble, relative to the point to which the material is to be applied.

It is therefore a further object of this invention to produce an improved gun which permits the exertion of the requisite pressure, without great strength or skill, while minimizing, or entirely eliminating the tendency of the gun to move, or wobble, relative to the point of application during extrusion of the material.

Filling and refilling the barrel of a gun with the material to be applied is a wasteful, time consuming and messy procedure.

It is therefore a further object of the invention to devise an improved prefilled gun which is a light, simple, inexpensive and easy to use dispensing gun.

A dispensing gun of the types referred to includes a number of parts which are cast and which must be machined to acceptable tolerances and this increases the initial cost and the cost of maintenance.

It is therefore a still further object of the invention to produce a gun of this type which can be easily assembled from parts which can be inexpensively manufactured and assembled.

A still further object is to produce a gun of the type set forth which can be used as a non-refillable or throw-away gun or which, by a very small change, can be made into a refillable type of gun.

These and other objects are attained by my invention as set forth in the following specification and as illustrated in the accompanying drawings in which:

Fig. 1 is a vertical sectional view of a gun embodying my invention.

Fig. 2 is a section on line 2—2 on Fig. 1.

Fig. 3 is a section on line 3—3 on Fig. 1.

Fig. 4 is similar to the upper portion of Fig. 1 but showing another embodiment of the invention.

The gun shown includes a container having a cylindrical body **10** formed of flat sheet material the edges of which are seamed at **12**, a top **14** and a bottom **16**. The top **14** and bottom **16** are applied to the body **10** in the usual manner. In other words, except as hereinafter pointed out, the container is in the nature of an ordinary can. The top **14** of the container is provided with an opening **18** through which projects a nozzle **20**. The nozzle **20** has a discharge opening **21** and is held in

position by a lock nut **22** the spring prongs **23** of which engage a thread **24** formed on the exterior of the nut.

Within the container **10** is a plunger which is made of a rigid disc **25** and a flexible washer or gasket **26**. The disc **25** has a hub **27** which threadedly engages a screw **28** and has a peripheral pendent flange **29** which slides freely against the interior of the container. The gasket **26** has an upturned flange **30** which has a tight wiping action with the interior of the container and, when pressure is applied to force the contents of the can through the nozzle, the flange **30** is forced even more tightly against the interior of the can thus insuring against escape of the material past the plunger or toward the bottom of the can.

By this arrangement, when the screw is turned, the plunger will move longitudinally of the screw, and will expel the material in the container through nozzle **20**. The lower end of the screw **28** passes through a thrust plate **32**, through a packing **33**, and through the bottom **16** of the container **10**, and is riveted, as at **34** to a rotary cup-shaped member **36**.

A gun assembled from the parts shown will be simple, light, inexpensive and easily operated since the mere turning of the disc **36** in, one direction, causes the plunger to move toward the discharge end of the container and vice versa.

It will be noted that all of the parts of the gun can be mass-produced by inexpensive, well established manufacturing methods and that the assembly and loading of the gun are also easily accomplished. A removable cap **38** of standard construction, may be applied to nozzle **20** to close the latter when the gun is not in use.

The gun shown can easily be held so that the nozzle opening will register with the crack to be caulked or the bearing to be greased because the rotation of the disc **36**, unlike abrupt trigger or other reciprocating motion, does not tend to wobble the discharge end of the gun. Also, because of the relatively fine thread on the screw and because of the relatively large diameter of the disc **36**, a certain amount of mechanical advantage is obtained which further facilitates operation.

In the structure described thus far, the screw stops short of the top of the container to such an extent that by the time all of the material has been extruded, the plunger will ride off the upper end of the screw and, therefore, the gun can not be refilled.

If it is desired to make the gun refillable, the structure of Fig. 4 is used in which the screw **28'** is made so long that, if the screw is turned enough, the plunger will abut the top **14** of the container but will not ride off the upper end of the screw. To refill the container of Fig. 4, the screw **28'** is turned in a direction to cause the plunger to move down until it contacts the bottom **16** of the can and the material is introduced, either through opening **21**, or the lock nut **22** is removed to permit temporary removal of nozzle **20** so that the material may be introduced through large opening **18**.

An important feature of the invention resides in positioning the soft rubber washer **33** between the thrust plate **32** and the bottom of the can. By this arrangement as the plunger is moved, by rotation of the screw, towards the top of the container to expel the material, pressure is exerted by the shoulder of the screw against the thrust plate **32** which in turn compresses the washer **33** around the reduced, unthreaded stem of the screw and into the opening in the bottom **16** of the container through which the stem of the screw passes. In fact, the pressure on the thrust plate, and hence on the washer, is substantially equal to the pressure exerted by the plunger in expelling the material. Sinse grease and caulking compound, and the like are viscous, they will not, when the gun is not in use, flow past the washer and since the washer **33** is

under pressure as long as the container is in use, nothing can leak between the reduced stem of the screw and the bottom of the container, either when the container is full, or only partly full, and regardless of whether the gun is in actual use or is in storage.

What I claim is:

A dispensing gun comprising a disposable gun body in the form of a light weight sheet metal can having a cylindrical side wall and a top and a bottom permanently affixed by seaming to the ends of said side wall, said top being formed with an opening therethrough and a dispensing nozzle seated in said opening, a plunger mounted for longitudinal movement in said can and having its periphery formed for wiping engagement with the side wall thereof, a screw for actuating said plunger and extending throughout substantially the length of said can, said screw extending through said plunger and being threadedly engaged therewith, a stud of reduced diameter extending from the lower end of said screw and providing a shoulder at the end of the screw threaded portion, a plate within said can mounted on said stud and engaging said shoulder, a compressible gasket surrounding said stud and seated between said plate and the interior of the bottom of said can and engaged by said plate

and said bottom, said stud extending outwardly through the bottom of said can into a portion of non-circular outline and a cup shaped actuating member closely overlying the exterior of said bottom and having a side portion extending up past the seam between said bottom and body, said actuating member being formed with a non-circular opening therethrough mating with and receiving said non-circular portion of said stud and means for securing said stud and said actuating member together in fixed relation for joint rotation.

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