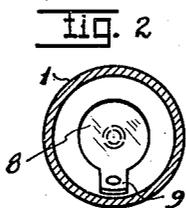
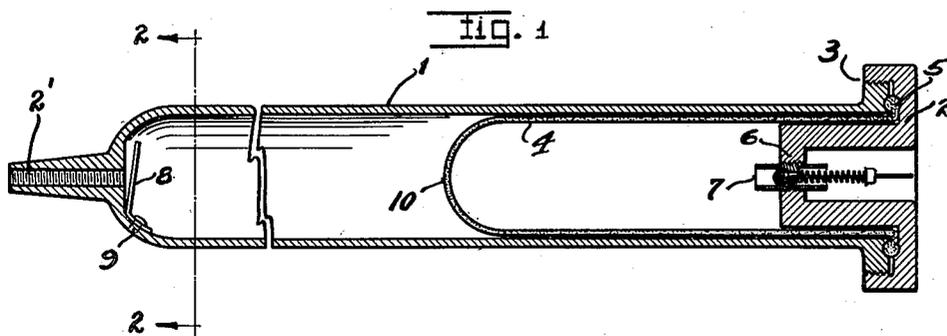


Oct. 16, 1923.

1,471,091

A. N. BESSESEN  
FLUID PRESSURE DEVICE  
Filed March 27, 1922



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# UNITED STATES PATENT OFFICE.

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## FLUID-PRESSURE DEVICE.

Application filed March 27, 1922. Serial No. 547,309.

*To all whom it may concern:*

Be it known that I, ALFRED N. BESSESEN, a citizen of the United States, and a resident of Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in a Fluid-Pressure Device, of which the following is a specification.

The main object of my invention is to provide in a fluid pressure device improved means for creating and maintaining pressure in the device by means of compressed air.

Another object is to provide an improved form of expansible air chamber.

Another object is to provide a flexible bag contained within the device and having means for admitting air to the interior thereof.

Another object is to provide means for preventing the bag from being ruptured by being forced through an aperture of the device under pressure within the bag itself.

With these and incidental objects in view, the invention consists of certain novel features of construction and combination of parts, the essential elements of which are hereinafter described with reference to the drawing which accompanies and forms a part of this specification.

In the drawing Figure 1 is a longitudinal section of my improved device and Figure 2 is a section taken on the line 2-2, Figure 1.

As shown in Figure 1 the barrel 1 has an interiorly threaded aperture 2' at one end thereof to which may be connected a hypodermic needle, a tube for connection to a hypodermic needle, or there may be connected thereto any device for which this particular construction of fluid pressure device is applicable.

The other end of the barrel 1 is closed by a cap 2 threaded to the barrel at 3.

Held between the barrel 1 and the cap 2 is a flexible bag 4 having a bead 5 about the perimeter of its open end.

The cap 2 is threaded at 6 to receive a check valve 7 of ordinary construction.

At the other end of the barrel a guard disk 8 is provided and this disk is mounted at 9 to the barrel 1 and has sufficient resiliency to normally maintain a position such as that shown in Figure 1, but is of such a strength that when the end 10 of the bag

4 impinges on the surface of the disk 8 when the bag 4 is expanded, the disk is forced down against the head end of the barrel and closes the aperture 2', thus preventing the bag 4 from expanding into the aperture 2' and thereby rupturing itself at that point.

In use the barrel 1 would be filled by fluid which was to be expelled under pressure. The end of the cap 2 is then placed over any suitable source of air pressure and the air therefrom is admitted to the interior of the bag 4 through the check valve 7, creating a pressure on the interior of the bag of a hundred pounds per square inch or whatever pressure may be desired, and it is evident that this pressure will be exerted against the liquid or fluid in the barrel 1.

When a portion of the fluid is allowed to escape through the aperture 2', the bag 4 will expand and fill up the space left by the escape of the fluid, and it is evident that if the bag 4 is of sufficient flexibility and resiliency and is properly proportioned with regard to the size of the barrel, all of the fluid may be expelled from the barrel under a considerable pressure, the bag 4 expanding so as to entirely fill the interior of the barrel 1.

The barrel 1 may be filled by placing the tip 2' into the liquid which is to be drawn into the barrel while the bag 4 is expanded, and then by releasing the check valve 7 the fluid will be forced into the barrel 1 by atmospheric pressure as the bag 4 diminishes in size on the decrease of the air pressure within.

When used as a part of or with a complete connected hypodermic syringe it is evident the desired pressure may be established in the barrel and that this pressure will be maintained almost indefinitely so the operating physician can have the instrument at hand and be certain as to its operating efficiency during an operation, and will also be certain that the device will expel up to the last drop of the fluid in the barrel without any action on the part of the operator except the releasing of the liquid by any suitable means through the aperture 2'.

While I have described my invention and illustrated it in one particular design, I do not wish it understood that I limit myself to this construction, as it is evident that the application of the invention may be

varied in many ways within the scope of the following claim:

In a fluid pressure device the combination of a barrel, a flexible bag having a bead around the perimeter of its open end, a cap for one end of said barrel, said cap clamping the bead of said bag against the

end of said barrel, a check valve leading from the exterior of said cap to the interior of said bag, and a guard positioned for closing an aperture in the opposite end of said barrel against the upper end of said bag when expanded. 10

ALFRED N. BESSESEN.