April 23, 1929. M. H. FEDDERSEN 1,710,156

SOIL TEST OUTFIT

Filed Sept. 27, 1927

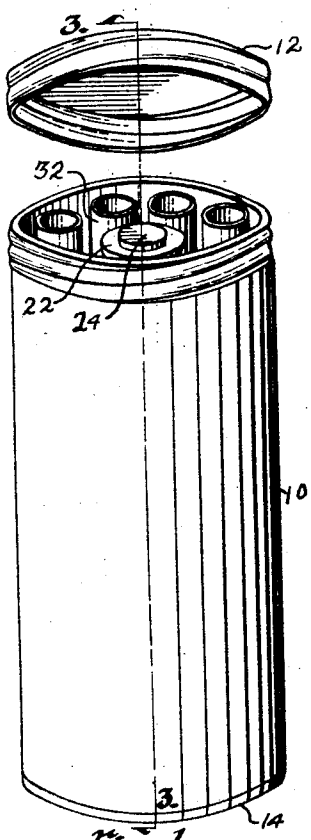


Fig. 1.

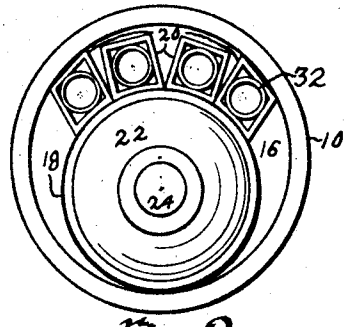


Fig. 2.

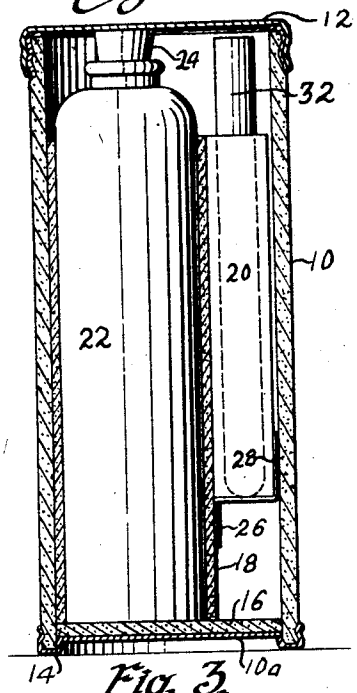


Fig. 3.

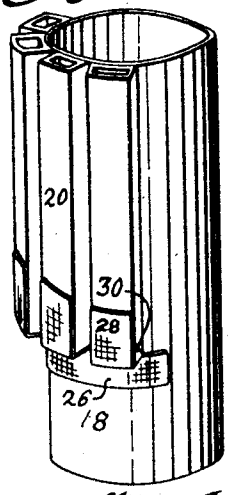


Fig. 4.

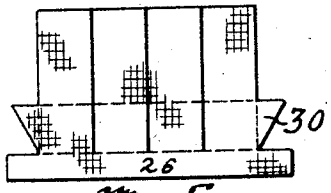


Fig. 5.

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UNITED STATES PATENT OFFICE.

MARVIN H. FEDDERSEN, OF DES MOINES, IOWA.

SOIL-TEST OUTFIT.

Application filed September 27, 1927. Serial No. 222,333.

The object of my invention is to provide a soil test outfit of simple, durable, and inexpensive construction.

More particularly it is my object to provide a soil test outfit including a container and means for mounting test tubes and a bottle of chemical in the container in a manner affording a package convenient for storage and for shipment.

With these and other objects in view, my invention consists in the construction, arrangement and combination of the various parts of my device whereby the objects contemplated may be attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which:

Figure 1 is a perspective view of a soil test outfit embodying my invention.

Figure 2 is a top or plan view of the same with the cover of the container removed.

Figure 3 is a detail sectional view taken on the line 3—3 of Figure 1.

Figure 4 is a perspective view of a filler and separator structure which is used in the container.

Figure 5 is a plan view of the member which forms the bottoms for the test tube holders.

It has in recent years become the general practice to test soils for acidity. Where an acid reaction is shown, limestone may be placed on the ground in a quantity depending upon the result of the test and the fertility and nature of the soil and the crop to be next planted. Ordinarily farmers are not equipped to make the necessary soil tests. It is my purpose to provide them with a simple and efficient outfit which can be shipped conveniently and with which adequate soil tests can be made.

In the drawings herewith whereby I have illustrated one form in which my invention may be embodied I have used the reference numeral 10 to indicate generally an ordinary cylindrical carton or container having a removable screw top 12. The container is preferably provided at its bottom with a peripheral downwardly projecting rib or rim 14. The bottom 10^a is thus spaced above any flat surface upon which the container may rest. I preferably provide in the interior of the container at the bottom a pad 16 of any suitable material. This container is intended to hold a bottle of testing solution and a plurality of test tubes. In order to hold the bottle and the test tubes in such manner that they will be properly spaced and protected I provide the following means: Inside the container 10 is placed a tubular spacer 18 which may be of card board somewhat shorter than the container. The spacer 18 is of substantially less diameter than the interior of the container 10. Secured to the outer surface of the container 10 at one side thereof I provide a plurality of tubular holders 20. These may be fastened to the spacer 18 by mucilage or the like. They extend from approximately the top of the spacer 18 to a point spaced above the bottom thereof. These holders 20 are preferably substantially square in horizontal cross section as shown in Figure 2. They fit snugly between the spacer 18 and the interior surface of the container 10. The spacer 18 and holders 20 thus form filler members. The filler 18 receives a bottle 22 which fits loosely therein. The bottle 22 is preferably provided with a cork stopper 24 which forms a cushioning means at the top of the container 10. For forming bottoms for the holders 20 any suitable means may be provided. As shown herein I may use a piece of adhesive tape the pattern of which is shown in Figure 5. This comprises a strip 26 having as many tongues 28 projecting therefrom as there are holders 20. The outer tongues preferably have triangular pieces 30 projecting from their lower ends adjacent to the strip 26. The strip 26 is pasted to the spacer 18 just below the holders 20 and the tongues 28 are extended below the respective holders 20 to form bottoms therefor and are then extended upwardly and pasted to the outer walls of the holders 10 as shown in Figure 4.

The triangular pieces 30 are pasted to the sides of the outer holders 20 to afford greater fastening service (see Figure 4). The holders 20 are adapted to receive test tubes 32 which project above the holders far enough to be conveniently grasped but not far enough to touch the top 12 of the container 10. When the device is assembled with the bottle and test tubes therein it will be seen that the bottle is protected by the spacer 18, the holders 20, the pad 16 and the cork 24. The test tubes 32 are protected by the spacer and the holders and are held above the bottom of the container and normally terminate a little below the top of the con-

tainer. The parts are so shaped that the test tubes are frictionally gripped in the holders 20. There is thus provided a package which can be shipped by express with safety to the contents.

Changes may be made in the details of the construction and arrangement of the parts in my improved soil test outfit without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claims, any modified forms of structure or use of mechanical equivalents, which may be reasonably included within their scope.

I claim as my invention:

1. In a soil test outfit, a tubular container, a tubular spacer therein of less diameter than the container, a bottle received in said spacer, a plurality of tubular holders supported on one side of said spacer and serving to hold the opposite side thereof against one side of the container, the holders being in contact with the opposite side of the container and test tubes in said holders.

2. In a soil test outfit, a tubular container, having a bottom and a removable top, a tubular spacer therein of less diameter than the container, a bottle received in said spacer of slightly less diameter than the spacer, a plurality of tubular holders angular in cross section secured to and supported on the outside of said spacer between it and the wall of the container for snugly holding the spacer against the container wall, said holders having bottoms spaced above the bottom of the container, a plurality of test tubes received in said holders with their upper ends normally spaced below the top of the container.

3. In a soil test outfit, a tubular container, a tubular spacer therein, a plurality of tubular holders secured to and supported on said spacer, said holders having bottoms comprising a piece of flexible adhesive material having a portion adhering to the wall of said spacer and tongues extending across the bottoms of said holders and then upwardly and adhering to the sides of said holders.

Des Moines, Iowa, September 13, 1927.

MARVIN H. FEDDERSEN.