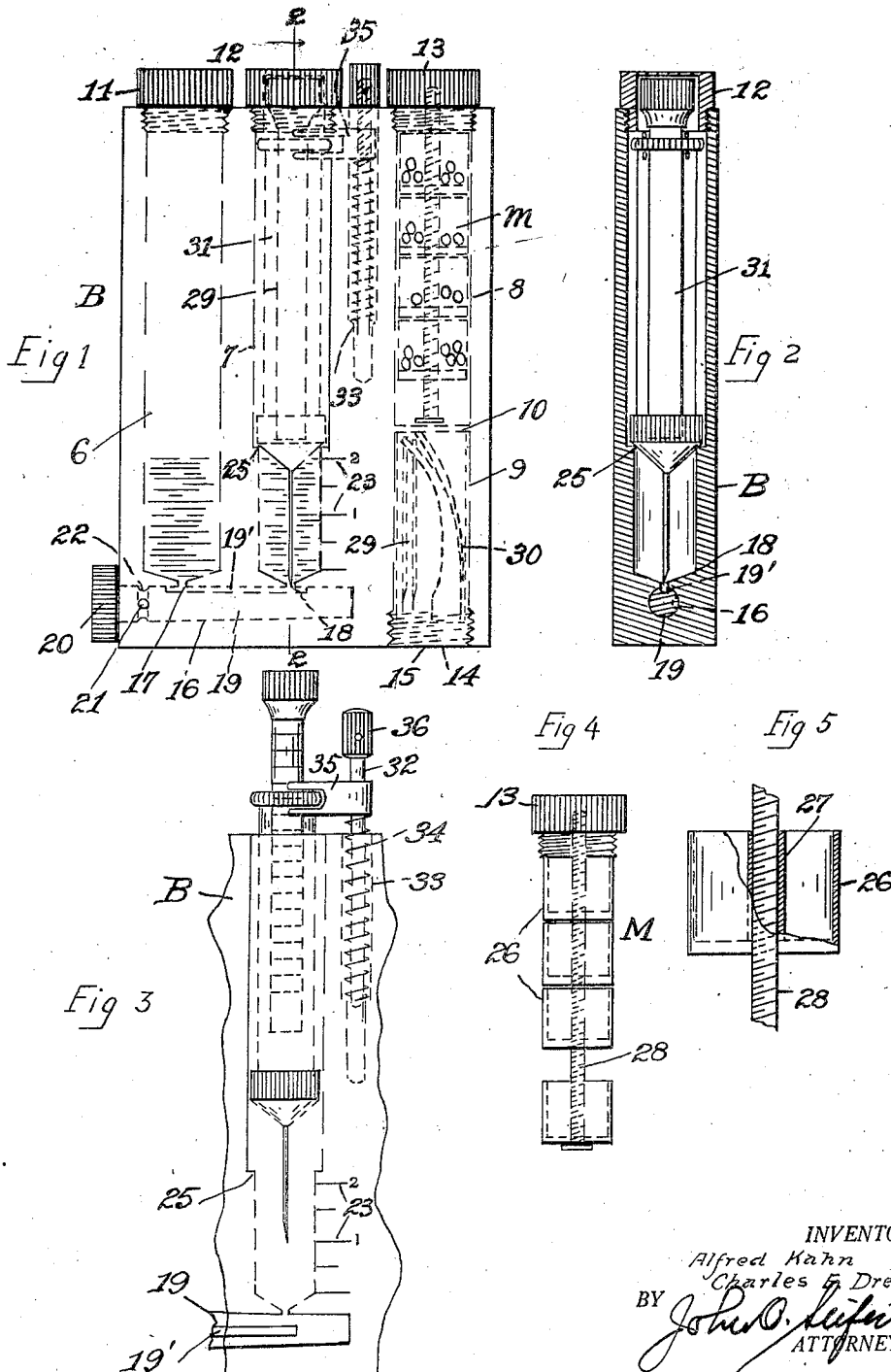


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A. KAHN ET AL
POCKET MEDICAL CASE
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UNITED STATES PATENT OFFICE.

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POCKET MEDICAL CASE.

Application filed March 21, 1921. Serial No. 454,079.

To all whom it may concern:

Be it known that we, ALFRED KAHN and CHARLES E. DRESSLER, citizens of the United States, and residents of the borough of Manhattan, in the city, county, and State of New York, have invented certain new and useful Improved Pocket Medical Cases, of which the following is a specification.

This invention relates to medical pocket cases, and it is the object of the invention to provide a case of this character which is particularly adapted as a hypodermic case being arranged with a series of chambers to carry various medicaments in separated condition and in which to mix the medicaments as well as to carry a hypodermic syringe and appurtenances to such a syringe.

It is a further object of the invention to provide a medical pocket case of this character constructed of transparent and non-frangible material whereby the various articles carried thereby may be readily observed from the exterior of the case, and the mixing chamber of which is arranged with graduations whereby the volume of a mixture of a medicament may be readily graduated and observed.

It is another object of the invention to provide in a medical pocket case of this character means to releasably retain the barrel of a syringe in the medicament mixing chamber while withdrawing the plunger of the syringe to draw the medicament from the mixing chamber into the syringe barrel.

It is a further object of the invention to provide an improved medicament carrier whereby various medicaments may be carried in a separated condition, and to provide a carrier for this purpose which is compact and novel in structure, cheap to manufacture and highly efficient in use.

Other objects and advantages will hereinafter appear.

The purpose of the present invention is to provide a means to facilitate the giving of a hypodermic. In the procedure of giving a hypodermic as now practiced difficulty is not only experienced in procuring a sterile solution or water but also sterile needle both of which are essential for the prevention of infection. A tablet is then taken usually from an extremely small vial,

often with difficulty, lack of surgical cleanliness and at the expense of time. The tablet is then usually placed in a teaspoon to which water is added to dissolve the tablet; the syringe is then taken from its case, the needle is taken from the case and secured in the syringe and the solution drawn from the spoon by the syringe.

It is the object of the present invention to overcome the above procedure by providing means whereby a sterile liquid is always ready at hand, a predetermined quantity of such liquid released, a tablet readily applied to such released liquid and dissolved therein, and so arranged that the same may be readily drawn into the syringe for use.

We have shown an embodiment of our invention in the drawing accompanying and forming a part of this specification in which Figure 1 is a side elevation showing in dotted lines the arrangement of the different chambers and the articles carried therein.

Figure 2 is a longitudinal sectional view taken on the line 2—2 of Figure 1 looking in the direction of the arrow.

Figure 3 is a fragmentary view of the case in side elevation showing means for holding a syringe barrel in one of the chambers while withdrawing the syringe plunger to draw liquid from such chamber into the syringe barrel, and for withdrawing the syringe barrel from the chamber.

Figure 4 is a side elevation of a medicament carrier arranged to be inserted and carried in one of the chambers of the case; and

Figure 5 is an enlarged view, partly in section, to show the construction and arrangement of the mounting of a carrier shown in Figure 4.

Similar characters of reference designate like parts throughout the different views of the drawing.

In carrying out the invention we have shown an embodiment of the same in the drawing in which a case is provided comprising a block of material B, preferably transparent and non-frangible. This block is arranged with a series of chambers 6, 7, 8, and 9 extending in parallel relation into the block with the chambers 8 and 9 in alignment with a separating wall 10 between the same. Each of the chambers

has an opening from the exterior of the block which are closed by removable closures in the form of threaded plugs 11, 12, 13 and 14, the closures 11, 12 and 13 being arranged with a knurled head to provide a finger grip to readily remove the closure. The closure 14 is threaded into the opening for the chamber 9 to be flush with the outer wall of the block and arranged with a slot 15 for the engagement of an instrument, which may be a coin, to remove the closure.

The chamber 6 is adapted to carry a liquid, such as water, which has been sterilized and connected to the chamber 7 by a passage 16 extending through the outer wall into the block and communicating with the chambers 6 and 7 through ports 17 and 18, said passage being controlled to open and shut off communication between the chambers by a plug valve 19 having a longitudinal groove 19' which is adapted to be placed into communication with the ports 17 and 18 by the rotation of the valve, said valve having a knurled head 20 at the outer end to facilitate the manipulation of the valve. To prevent accidental withdrawal of the valve 19 a pin or screw 21 passing through the block engages in an annular groove or recess 22 in the valve.

The chamber 7 is in the nature of a medicament mixing chamber. By opening communication between said chamber and the chamber 6 by the manipulation of the valve 19 the volume of the water in the chamber 7 may be controlled, and the volume of the liquid in the mixing chamber 7 indicated by graduations 23 arranged on the block B adjacent the lower portion of said chamber, as clearly shown in Figures 1 and 3.

A hypodermic syringe of transparent and non-frangible material is adapted to engage and be carried in the mixing chamber 7, as indicated in a general way at 24 in Figure 1. To limit the movement of the syringe into the mixing chamber said chamber is arranged with two diameters forming a shoulder 25 as a seat and stop for the engagement of the end of the syringe.

A medicament carrier is adapted to be carried in the chamber 8 as indicated in a general way by M in Figures 1 and 4. This medicament carrier is arranged and constructed to carry different medicament in a separated condition, and as shown in Figure 4 comprises a series of cups 26 of transparent and non-frangible material having a central internal threaded tubular portion 27, said cups being threaded in superposed relation upon a threaded stem 28 secured in the closure plug 13 for the chamber 8, the uppermost one of said cups being adapted to be adjusted on the stem to lie contiguous to said closure plug and the latter serve as a

closure for such cup, the bottom of the superposed cups being adapted to serve as closures for the next adjacent lower cups, as clearly shown in Figure 4. To remove the medicament from one of such cups it is adjusted on the stem to spaced relation to the next adjacent upper cup, as shown in Figure 4 in which the lowermost cup has been adjusted to position to permit of the removal of the medicament therefrom. It will be obvious that upon a removal of the closure 13 from the chamber 8 that the medicament carrier is removed therewith. Hypodermic needles 29 and other implements, such as tweezers 30 may be carried in the chamber 9.

To permit withdrawing of the syringe plunger 31 from the syringe barrel without withdrawing of the entire syringe from the chamber 7 to withdraw the mixture from such chamber into the syringe barrel, means are provided to retain the syringe barrel in said chamber and to facilitate the removal of the barrel from the chamber after the plunger has been drawn out sufficiently to draw the medicament from the chamber 7 into the syringe barrel as shown in Figure 3. The embodiment of this means shown in the drawing comprises a rod or plunger 32 loosely engaging in a bore 33 in the block B and normally urged in an outward direction by a spring 34. An arm 35 fixed on said rod and extending laterally has a bifurcation in the end for the engagement of a bead at the upper end of the syringe barrel as clearly shown in Figure 3. This arm with the rod in its innermost position engages in a slot cut through the wall between the chamber 7 and the bore 33 as clearly shown in Figure 1, and the rod is retained in its innermost position against the action of the spring together with the syringe barrel in the chamber 7 by the screwing of the closure 12 to the opening of chamber 7. In use in order to draw the syringe barrel outward without withdrawing the syringe barrel from the chamber 7 the finger is placed upon a head 36 of the rod 32 thereby holding the rod from withdrawal from the bore 33, and due to the engagement of the bifurcated end of the arm 35 with the barrel also retains the barrel in the chamber 7. After the liquid from the chamber 7 has been drawn into the syringe barrel by the outward movement of the plunger the pressure of the finger upon the rod is removed when the spring 34 will move the plunger and therewith the syringe barrel outward as shown in Figure 3 when the syringe barrel may be readily grasped and removed from the chamber 7.

The chamber 6 is normally filled with sterile water, which is sufficient for several hypodermic injections and the syringe, medicament carrier, and needles and tweezers are placed in the chambers 7, 8 and 9 respectively of the block or case forming a

compact structure which may be placed in the pocket to take up a minimum amount of room, and in which the articles contained within the case may be readily observed from the exterior thereof.

To utilize the case to give a hypodermic injection the closure 14 is removed from the opening of the chamber 9 and the tweezers taken from said chamber. The valve 19 is then adjusted to open communication between the liquid carrying and mixing chambers until the desired volume of liquid enters the latter chamber which may be determined by the graduations 23 when the valve is again adjusted to shut off communication between said chambers. The syringe is removed from the chamber 7. The medicament carrier is now removed from the chamber 8, a tablet carrying cup adjusted on the stem 28 to remove a tablet from the desired cup by the tweezers, which tablet is dropped into the medicament mixing chamber 7 when the medicament carrier and syringe are replaced. After the tablet is dissolved in the liquid in the chamber 7 a pressure of the finger is applied to the finger piece 36 of the plunger 32 and the syringe plunger 31 withdrawn from the syringe barrel to draw the liquid from the chamber 7 into the syringe barrel, after which the pressure of the finger on plunger 32 is removed permitting the outward movement of said plunger and therewith the syringe barrel as shown in Figure 3 when the syringe may be readily grasped and removed. After the injection has been given all that is necessary is to replace the syringe in the chamber 7 and retain the same therein by screwing the closure 12 to the opening of said chamber. While we have shown in the drawing an embodiment for carrying out our invention it will be obvious that various changes may be made in shape and proportion of the case, and that the respective chambers may have a different arrangement than that shown without departing from the scope of the invention, and that portions of the invention may be used without others and come within the scope of the invention.

Having thus described our invention we claim:

1. In a medical pocket case, a block of material arranged with recesses extending from the exterior to within the body of the block, removable closures for the open ends of the respective recesses to provide chambers within the block, constituting a liquid carrying chamber, a medicament mixing chamber having a connection with the liquid carrying chamber and arranged to carry a syringe therein, and a medicament carrying chamber, means in the connection of said liquid carrying and mixing chambers to shut off and open communication between

said chambers, and a medicament carrier connected to and removable with the closure for the medicament carrying chamber.

2. In a medical pocket case, a block of transparent material arranged with a pair of chambers therein to constitute liquid carrying and medicament mixing chambers, said latter chamber having two diameters the portion of less diameter providing a seat for and limiting the engagement of a hypodermic syringe into said chamber, a passageway from the exterior to the interior of the block to connect said chambers within the block, means in said passageway to open and shut off communication between the chambers, graduations arranged on the exterior of the block to indicate the volume of liquid in the medicament mixing chamber, and removable closures for the open ends of the chambers.

3. In a medical pocket case, a block having connected liquid carrying and medical mixing chambers, the latter being arranged to carry a hypodermic syringe therein; a valve in the connection between the chambers operable to open and shut off communication between the chambers; means to releasably retain the barrel of the syringe in the medicament mixing chamber during the withdrawal of the plunger from the barrel of the syringe, comprising a rod engaging in a bore in the block, said rod having a laterally projecting arm to extend through a slot cut through the walls of the bore and medicament mixing chamber and engage the end of the barrel.

4. In a medical pocket case, a block having connected liquid carrying and medicament mixing chambers, the latter being arranged to carry a hypodermic syringe therein; a valve in the connection between the chambers operable to open and shut off communication between the chambers; means to releasably retain the barrel of the syringe in the medicament mixing chamber during the withdrawal of the plunger from the barrel of the syringe, comprising a rod engaging in a bore in the block, a spring urging said rod outward from the bore, an arm extending laterally from the rod and through a slot cut through the walls of the bore and medicament mixing chamber and arranged to hold the syringe barrel in said latter chamber while holding the rod against the action of the spring and adapted to move the syringe outward from the medicament mixing chamber through the action of the spring when pressure is released from said rod for the purpose specified.

5. A medicament carrier comprising a threaded rod and a series of cups threaded concentrically on to said rod in superposed relation with the bottom of one cup serving as a closure for the adjacent cup.

6. A medicament carrier comprising a

plug, a threaded stem carried by said plug, a series of cups threaded concentrically in superposed relation on to said stem, said plug being adapted to serve as a closure for
5 the uppermost cup and the bottoms of the cups serving as closures for adjacent lower cups.

7. In a medical pocket case having a chamber, a closure for said chamber, and a
10 medicament carrier combined with said closure and adapted to be placed into and removed from the chamber in the block by said closure.

8. In a medical pocket case, a block of
15 material having a chamber therein with an opening from the exterior of the block, a

closure for said chamber opening, and a series of medicament carrying cups carried by said closure and adapted to be placed into and removed from the chamber in the
20 block by said closure, comprising a threaded stem fixed in said closure, a series of cups threaded concentrically on to said stem whereby said closure is adapted to serve as
25 a closure for the uppermost cup and the bottoms of the cups to serve as closures for the next adjacent lower cups.

Signed at the city of New York, in the county of New York, and State of New York, this 15th day of March, 1921.

ALFRED KAHN.

CHARLES E. DRESSLER.