

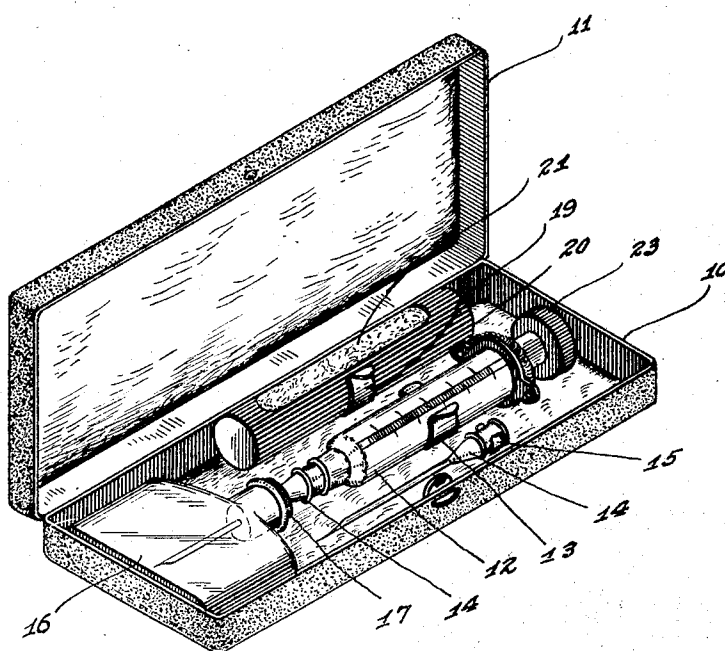
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HYPODERMIC KIT

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## UNITED STATES PATENT OFFICE.

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## HYPODERMIC KIT.

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In the treatment of certain diseases, as in the treatment of diabetes by insulin, it is necessary that the patient periodically receive hypodermic injections for an indefinite period; and in such cases the patient is usually instructed in the use of a hypodermic syringe and needle, so that he may give himself the necessary injections therewith. To this end, it is essential that he should use a surgically clean hypodermic syringe and needle, so that he will not run into the difficulties which would otherwise follow, as by infection. Yet it is difficult to get the layman, even the more intelligent layman, to appreciate what surgical cleanliness is; and, indeed, many physicians do not appreciate it.

Moreover, it is often inconvenient, both for the physician and for the layman, to provide heat sterilization for a hypodermic syringe and needle when and where it is necessary to use one.

It is the object of my invention to produce a hypodermic kit by which a hypodermic syringe and needle are maintained surgically clean, and are necessarily sterilized before each use; so that the user (physician or patient) of the hypodermic syringe and needle will be compelled to have them sterile. It is my further object to provide as part of the hypodermic kit a convenient means for sterilizing the skin-area where the needle is to be inserted. A still further object is to provide this in a convenient pocket kit, suitable for either physician or layman, and effective to produce and maintain sterilization of the hypodermic syringe and needle without the use of heat.

In carrying out my invention, I provide an operable case, within which there is a clip for holding the body of a hypodermic syringe and needle with the point of the needle inserted through the soft-rubber stopper of a small bottle also located in the case and containing a suitable antiseptic, such as alcohol. The alcohol may be of some suitable non-beverage variety, such as isopropyl alcohol, which is effective as an antiseptic but is unpalatable. Within the case there may be other clips, as for holding a cotton container, one or more extra needles, and (if desired) one or more bottles of the desired substance to be injected.

The accompanying drawing illustrates my invention: The single figure of such

drawing is a perspective view showing a hypodermic kit embodying my invention, with the covering of the case raised to show the arrangement of the interior.

The kit includes a case 10, which is desirably a thin flat case about the general size and shape of a spectacle case, with a hinged openable top 11. The various parts of the kit are mounted within this case 10. The principal one of these is the hypodermic syringe 12, the body of which is mounted in spring clips 13 rising from the base of the case 10. The hypodermic syringe 12 may be of any desired construction, usually with a graduated glass body having a removable needle 14. There may be one or more extra needles 14, if desired, for which purpose I provide one or more sets of needle-holding clips 15, located at one side where they will not interfere with the main needle 14. The clips 13 for the syringe 12 are arranged to support such syringe when the needle 14 thereof is located within a bottle 16 containing a suitable liquid antiseptic. This bottle 16 is desirably a flat bottle, of proper size to be received in one end of the case 10, and is provided with a rubber stopper 17, which closes its mouth and through which the needle 14 projects when the syringe and needle are in the case. This stopper 17 which is of the common type used for bottles containing liquids used hypodermically, is made of soft rubber with a thin wall through which the point of a hypodermic needle may be inserted; and the rubber automatically closes the needle hole when the needle is withdrawn. Tests have shown that with such a rubber stopper a needle may be inserted and withdrawn many times, frequently more than a hundred times, without impairing the ability of the soft rubber to close the hole upon the withdrawal of the needle. The bottle 16 is ordinarily sufficiently supported by its association with the needle 14 of the syringe 12 and the holding of the latter by the clips 13.

The bottle 16 contains some suitable liquid antiseptic, such as alcohol. I have found isopropyl alcohol very effective, because it serves as an efficient antiseptic, is uninviting as a beverage, and may be dispensed by druggists without restriction.

In addition to the clips 13 and 15, for the syringe 12 and for an extra needle or needles,

I find it desirable to provide clips 19 for holding a container 20 for a quantity of absorbent cotton 21.

When the hypodermic syringe 12 is not in use, it is carried within the case 10, with a needle 14 projecting through the stopper 17 into the bottle 16 and immersed in the antiseptic liquid contained in the bottle 16. This maintains the needle 14 constantly sterile. After the syringe has been used, it is returned to this location, with the needle 14 in the antiseptic liquid in the bottle 16; so that it is thus necessarily sterilized before each use.

When the syringe is to be used, it is merely necessary to lift out the syringe 12 and bottle 16 together, and withdraw the needle 14 through the rubber stopper 17. The needle hole in the rubber stopper closes upon such withdrawal. The needle 14 is now clean. A small amount of the liquid antiseptic in the bottle 16 should be drawn into the syringe 12 before the needle 14 is withdrawn from the bottle, by pulling out the usual plunger 23 of the hypodermic syringe. This washes and sterilizes the canal of the needle 14 and the inside of the syringe 12. Most or all of the antiseptic liquid thus drawn into the syringe may be forced back into the bottle 16; but a small amount is desirably retained in the syringe 12 until after the needle 14 has been withdrawn. This retained liquid antiseptic may be ejected from the needle on to the skin-area through which the needle is to be injected; or on to a piece of the absorbent cotton 21, so that such cotton may be used as a swab to clean the skin-area and the stopper of the bottle containing the liquid to be injected. After all the antiseptic liquid contained in the syringe 12 has been discharged through the needle, then the syringe and needle are sterile, and the needle may be inserted through the usual rubber stopper of such bottle and charged with the desired quantity of the liquid to be injected hypodermically, such as insulin; and then the needle is withdrawn from the bottle, and the hypodermic injection made, in the usual way. After the injection has been completed, the

needle 14 is again inserted through the stopper 17 into the bottle 16, to be sterilized by the antiseptic liquid therein; and the syringe 12 and the bottle 16 are returned to their normal position in the case 10, with the point of the needle 14 immersed in such antiseptic liquid.

I claim as my invention:

1. A hypodermic kit, comprising an openable case, a hypodermic syringe and needle, a flat bottle for holding a liquid antiseptic, said bottle being provided with a rubber stopper which permits the insertion of the needle point therethrough into the liquid antiseptic and automatically closes the needle opening upon the withdrawal of such needle point, and supporting means provided in said case for supporting said hypodermic syringe with the needle inserted through the stopper of said bottle.

2. A hypodermic kit, comprising an openable case, hypodermic syringe and needle, a bottle for holding a liquid antiseptic, said bottle being provided with a rubber stopper which permits the insertion of the needle point therethrough into the liquid antiseptic and automatically closes the needle opening upon the withdrawal of such needle point, and supporting means provided in said case for supporting said hypodermic syringe with the needle inserted through the stopper of said bottle.

3. A hypodermic kit, comprising an openable case, a hypodermic syringe and needle, a bottle for holding a liquid antiseptic, said bottle being provided with a rubber stopper which permits the insertion of the needle point therethrough into the liquid antiseptic and automatically closes the needle opening upon the withdrawal of such needle point, and spring clips mounted on said case on the inside thereof for releasably clipping said hypodermic syringe and holding it with its needle inserted through said stopper into said bottle.

In witness whereof, I have hereunto set my hand at Indianapolis, Indiana, this 20th day of November, A. D. one thousand nine hundred and twenty five.

ELI LILLY.