

No. 650,203.

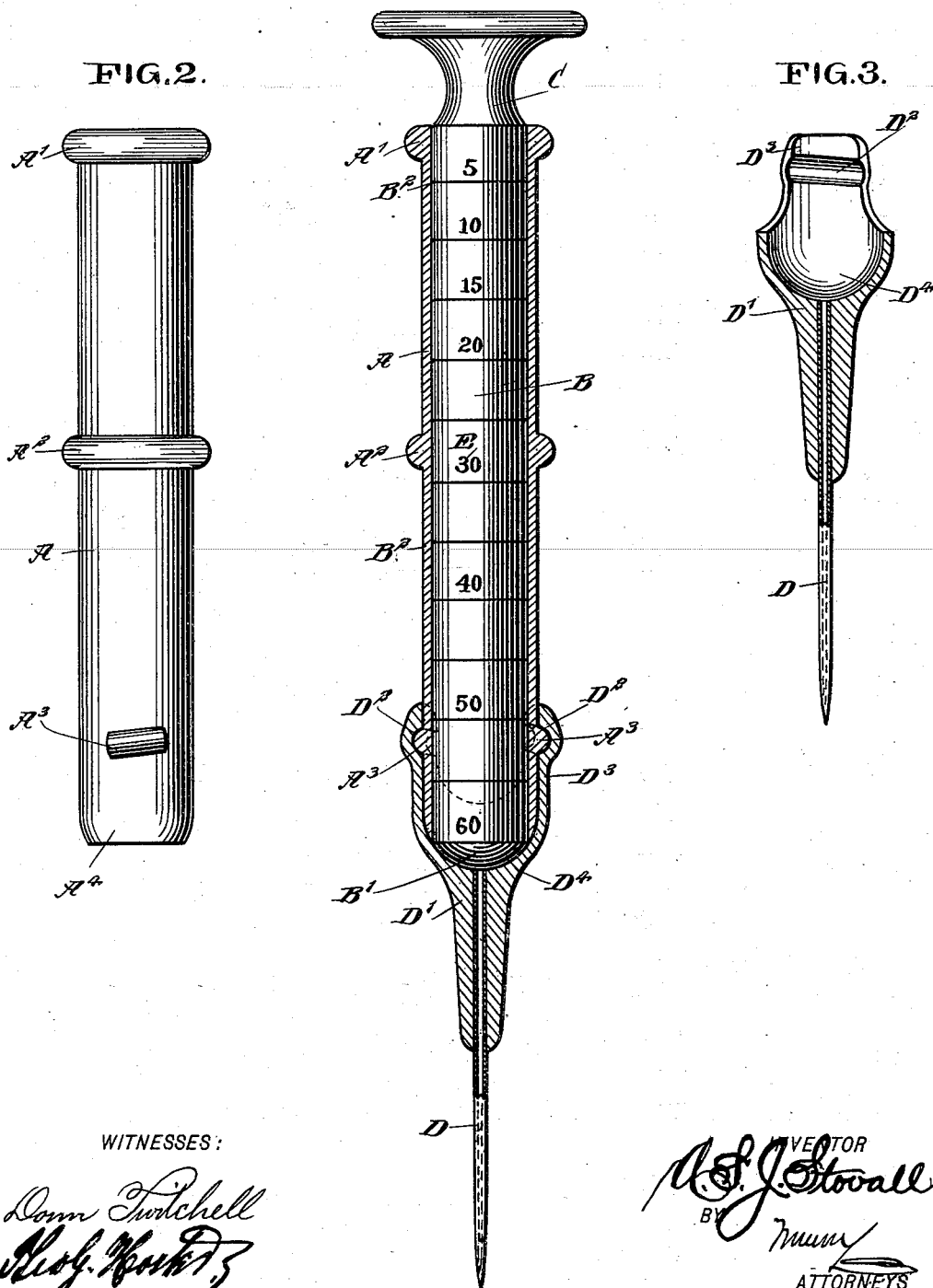
Patented May 22, 1900.

A. S. J. STOVALL.
HYPODERMIC SYRINGE.

(Application filed June 3, 1899.)

(No Model.)

FIG. 1.



WITNESSES:

Donn Twitchell
Prof. H. H. H.

INVENTOR
A. S. J. Stovall
BY *Mum*
ATTORNEYS

UNITED STATES PATENT OFFICE.

ALBERT S. J. STOVALL, OF ELBERTON, GEORGIA.

HYPODERMIC SYRINGE.

SPECIFICATION forming part of Letters Patent No. 650,203, dated May 22, 1900.

Application filed June 3, 1899. Serial No. 719,256. (No model.)

To all whom it may concern:

Be it known that I, ALBERT S. J. STOVALL, of Elberton, in the county of Elbert and State of Georgia, have invented a new and Improved Hypodermic Syringe, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved hypodermic syringe, which is simple and durable in construction, not liable to get out of order, readily manipulated, arranged to insure the administering of an accurate predetermined dose, and composed of few parts, which can be readily separated to permit of thorough sterilization to render and keep the syringe completely aseptic.

The invention consists of novel features and parts and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

A practical embodiment of my invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a sectional side elevation of the improvement. Fig. 2 is a side elevation of the barrel, and Fig. 3 is a sectional side elevation of the needle.

The improved hypodermic syringe illustrated in the drawings is preferably made of metal and is provided with a barrel A, having a uniform smooth bore throughout its length, and in said bore is snugly fitted a plunger B, formed at its outer end with a handle C, adapted to be taken hold of by the operator to reciprocate the plunger in the barrel. On the lower end of the barrel A is removably held a needle D, provided with a head D', adapted to be locked to the lower end of the barrel A, as hereinafter more fully described. On the barrel A are formed or secured external beads A' A², placed a suitable distance apart and serving to form hand-holds for securely holding the barrel while the device is used by the operator. Near the lower end of the barrel A and on diametrically-opposite sides are arranged spiral lugs A³, adapted to engage correspondingly-shaped grooves D², formed on the inside of prongs D³, projecting from the head D' of the needle. The extreme lower end A⁴ of the barrel A is spherically beveled to fit into a spherical

socket D⁴, formed in the head D', and which socket leads centrally to the opening in the needle D. The extreme lower end B' of the plunger B is likewise rounded off to snugly fit into the socket D⁴ at the time the plunger is pushed to its full extent into the bore of the barrel A.

On the peripheral surface of the plunger B are formed annular grooves B² for forming air-packing spaces with the inner surface of the barrel A, said grooves being placed a proper distance apart to receive graduation-marks E for indicating the space in the lower end of the barrel A and socket D⁴ when the plunger B is drawn partly out of the barrel, as will be readily understood by reference to Fig. 1. For instance, if the plunger is drawn outward in the barrel A until the first groove B, marked "5," coincides with the upper edge of the barrel then the amount of liquid drawn in through the needle D into the lower end of the barrel and the socket D⁴ is five minims. When the plunger B is pushed inward to its full extent, then the entire amount of liquid in the barrel and socket is forced out of the same through the needle D and injected into the part into which the needle was inserted. Thus an accurate predetermined dose can be readily administered by the operator.

By constructing the head D' with the prongs D³ and spiral grooves D² it is evident that the said head can be readily fitted upon the lower beveled end A⁴ of the barrel, the prongs first extending between the lugs A³, and then by giving a quarter-turn to either the barrel or the head the lugs A³ are brought into engagement with the grooves D², and as said lugs and grooves are spirally arranged it is evident that the head is firmly drawn lengthwise upon the barrel A, thereby insuring a tight fit between the end A⁴ and the socket D⁴, besides locking the two parts securely together.

As the extreme lower end of the plunger B is rounded off to fit the corresponding portion of the socket D⁴, it is evident that none of the liquid drawn into the said socket and barrel upon withdrawing the plunger remains in said socket when the plunger is pushed in, so that the entire contents are discharged by way of the needle. It is further evident from the foregoing that the syringe is composed of but few parts, which can be readily separated by

drawing the plunger out of the barrel and by giving a quarter-turn to the head D', to unlock the head and the barrel and allow of separating the same in an instant. Thus the separated parts can be readily sterilized and thereby rendered and kept completely aseptic.

The construction of the barrel and the head of the needle is such that the two can be readily connected with each other to form a very tight joint, so as to completely prevent leakage when the plunger is reciprocated in the barrel A. It is also evident that by drawing the head D' upon the end A⁴ of the barrel the socket-wall presses against the said reduced end to such an extent as to fit the end firmly upon the needle-head, so as to prevent leakage between the barrel and the needle-head at this point.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A hypodermic syringe, comprising a barrel provided near its lower end with integral external spiral lugs and having its lower end spherically beveled, a plunger fitting the

head of the barrel and having its inner end rounded off, and a needle having a head formed with a spherical socket for engaging said end of said barrel, and adapted to be engaged by the rounded-off end of said plunger, said needle-head being provided with prongs formed with spiral grooves at the inside to be engaged by said spiral lugs, for drawing the head firmly upon the barrel and securely locking the head to the barrel; substantially as shown and described.

2. A syringe, having a barrel formed with an open lower end spherically beveled, a needle having a head formed with a spherical socket embracing the lower end of the barrel and conforming with the spherical bevel thereat, and a plunger working in the barrel and having a spherically-formed lower end capable of fitting snugly into the spherical socket of the head of the needle.

ALBERT S. J. STOVALL.

Witnesses:

JAMES MCINTOSH,
JACKSON MOSS.