(No Model.)

# D. M. SOMERS.

## INSECT POWDER GUN.

No. 326,600. Patented Sept. 22, 1885.

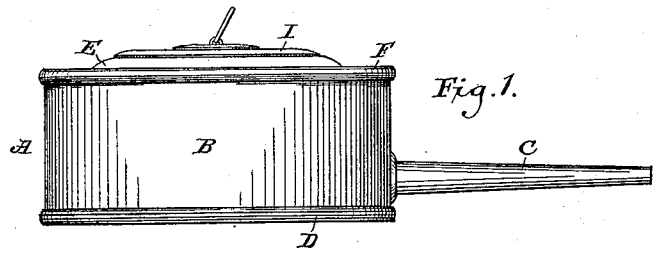
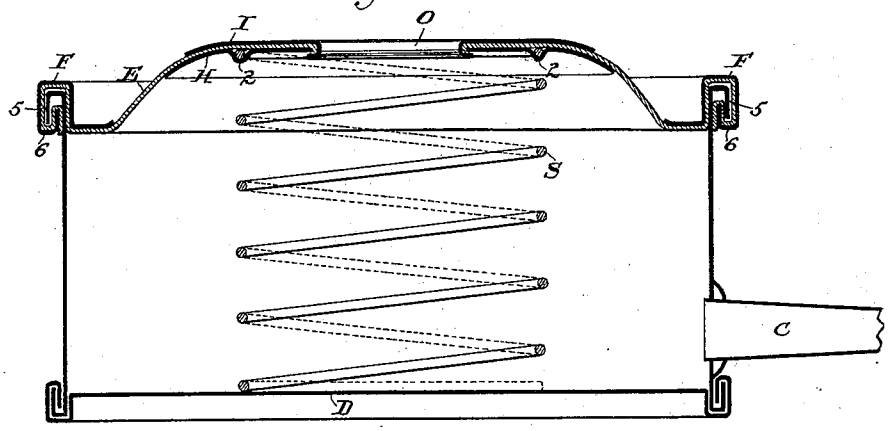



Fig. 1.

Fig. 2.



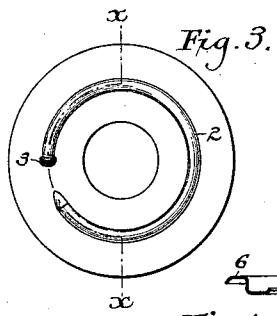




Fig. 3.

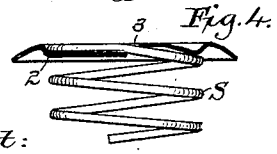



Fig. 4.

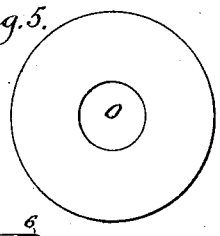



Fig. 5.

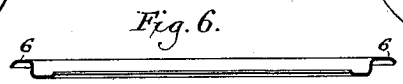
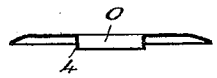



Fig. 6.




Attest:
A. T. Jasbera
James J. Kennedy

Inventor,
Daniel M. Somers
by Munson & Philipp
Attys.

N. PETERS. Photo-Lithographer. Washington, D. C.

# UNITED STATES PATENT OFFICE.

DANIEL M. SOMERS, OF BROOKLYN, NEW YORK.

## INSECT-POWDER GUN.

SPECIFICATION forming part of Letters Patent No. 326,600, dated September 22, 1885.

Application filed February 29, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, DANIEL M. SOMERS, a citizen of the United States, residing in the city of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Insect-Powder Guns, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

These instruments, designed as powder-distributers, operate by forcibly expelling a powder by means of a blast of air, and they hence require to be constructed with tight joints that render their bellows action perfect. Inasmuch as they are commonly given away, or sold at an inconsiderable sum to the purchaser of an insect-exterminating compound, they must be produced at a minimum cost, and hence the efforts of the manufacturer are directed to the cheapening of the structure of the parts themselves and to reducing the operations necessary to attach them together.

The improvements effected by this invention, whereby a simple, cheap, and effective gun is obtained, consist in a structure of parts whereby the spring is attached without soldering or swaging or riveting the same in place in a structure whereby the securing of the spring, the thumb-plate, and flexible diaphragm are simultaneously secured and a breech-loading opening is formed.

The improvements are illustrated in the accompanying drawings, in which is shown, by Figure 1, a side elevation of the insect-gun; Fig. 2, an enlarged vertical sectional elevation thereof; Fig. 3, a view of the under side of the inner plate; Fig. 4, a sectional elevation of the same taken on the line *x x;* Fig. 5, an outside view and sectional elevation of the outer plate, and Fig. 6 a sectional elevation of the clamping-ring before being attached.

The body A of the gun consists of a short cylinder, B, from which extends the pipe C, a metal-plate bottom, D, secured to the cylinder by a turned lapped seam, and a flexible top or diaphragm, E, secured by a clamping-ring, F, that is attached to the cylinder by a turned lapped seam that embraces a fold of said diaphragm, and thus effectually holds it against displacement. This diaphragm carries the plates H I, which constitute a thumb-piece, and whereby is secured one end of the spring S, whose other end bears against the inside of the bottom D, which plates are perforated to provide the breech-loading opening O.

Of course, though the cylinder is shown as circular and with parallel sides, any other shape may be given to it.

The plates H I that secure the diaphragm and the spring are peculiar. The inside plate, H, slightly concavo-convex, is perforated with a central hole with a plain edge, and has raised from its outer surface, so as to project from its inner surface, a bead, 2, that is concentric with its outer edge and said central hole. Communicating with this bead is a perforation, 3, large enough to admit the passage of the end of the wire spring through it, and the said bead is of a size that will form a recess of dimensions suited to receive nearly one coil of said wire spring, and said bead vanishes as its one end approaches said perforation 3, or, in other words, stops short of reaching said perforation, so that the end of the bead communicating therewith and depressing one side of said perforation will provide a suitable entrance for the spring, and thus will not require it to be given a determined bend in order to properly enter the perforation and lie in the bead. The coil passed through this plate lies snugly in the said bead, as appears in Figs. 2 and 4, and does not practically protrude above the surface of said plate. The outer plate, I, is also slightly concavo-convex, and is provided with a central opening having a flanged edge, 4, as seen in Figs. 2 and 5.

When the end coil of the spring has been arranged in the plate H, as shown in Fig. 2, the centrally-perforated flexible diaphragm E is laid thereon, the plate I is placed upon the whole, so that the flange 4 of its central opening will enter through the opening in the plate H, and then said flange is turned down and swaged onto the face of the plate H. This causes the two plates H I to be firmly and securely united together and the diaphragm E to be embraced and clamped between the two, and the swaging down of the flange 4 at the same time provides the breech-loading opening with a doubled edge that adapts it to receive its plug and permit its withdrawal without abrading.

The attaching of the diaphragm to the cylinder B is accomplished as follows: The up-

per edge of said cylinder is first formed with a right-angular outwardly-projecting flange, 5. The diaphragm is laid upon this, and the ring F, in the shape shown in Fig. 6, is laid upon the whole. This causes the extreme portion of the diaphragm to be bent, so as to lie against the flange 6 of the ring F, and when the tool is used to turn said flange 6 under the flange 5 and carry all down parallel with the sides of the cylinder B it causes the material of the diaphragm to be embraced between the flanges 5 and 6 and to be bent with them against the sides of the cylinder. The diaphragm thus gets a double bend that forms an air-tight joint, and one that may not easily be injured by extensive use of the gun.

The provision of the breech-loading opening O at the top of the gun is of great convenience and usefulness. It enables the gun to be charged without being turned over, and when the gun is charged and put to use the said opening is at the top, while the powder rests upon the bottom, and hence the liability of the powder being expelled through the opening is greatly lessened.

This mode and structure for the attaching of a spring may be applied to any other instrument requiring such a device, and it is to be observed that the same may be applied when the two plates are held together by riveting or at their edges, and whether with or without the central opening.

The flange 4 it is obvious may be provided on the plate H instead of on the plate I; and, furthermore, the flange might be omitted and an eyelet be inserted within the opening formed in the two plates and be flanged upon the upper and lower plates, so as to unite them together and still provide the opening O, and secure the end of the spring between them, as can be readily seen.

What is claimed is—

1. The combination, with a spring-supporting plate, H, having a curved recess and a perforation communicating therewith, and provided with a central opening, of a second plate, I, provided with a central opening, both of which plates are adapted to be united at said openings, so that the end of the spring is embraced between them and securely held therein, substantially as described.

2. In a powder-gun, the combination of the spring S with the plate H, having curved recess 2, perforation 3, and central opening, and plate I, having central opening, and attaching-flange 4, substantially as described.

3. In a powder-gun, the combination, with the flexible diaphragm, of the plate H, having central opening, and the plate I, having central opening and attaching-flange, whereby the diaphragm is secured to its thumb-piece and the breech-loading opening is formed, substantially as described.

4. The combination of the plate H, having the curved recess 2, perforation 3, spring S, plate I, having central opening and attaching-flange 4, and the flexible diaphragm, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

DANIEL M. SOMERS.

Witnesses:
A. N. JASBERA,
T. H. PALMER.