

(No Model.)

A. B. ESCOURROU.
INJECTING DEVICE FOR PLANTS.

No. 318,609.

Patented May 26, 1885.

Fig. 1.

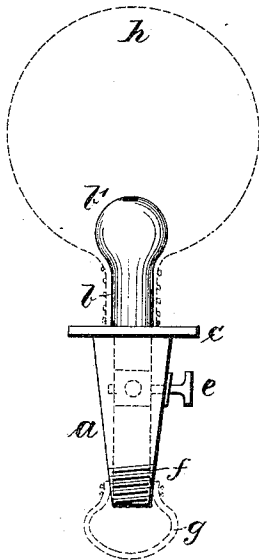


Fig. 2.

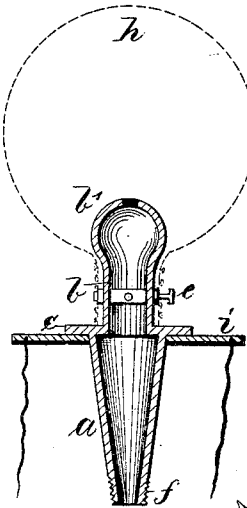


Fig. 3.

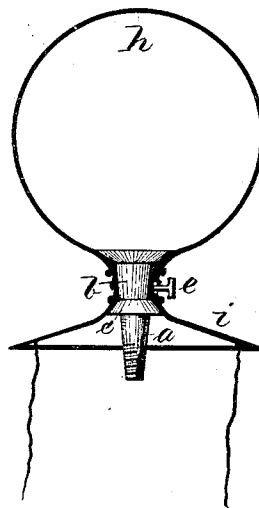


Fig. 7.

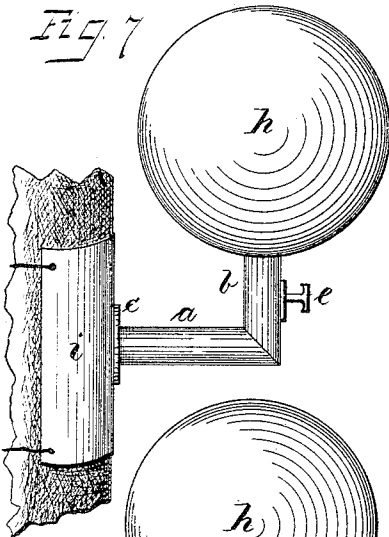


Fig. 8.

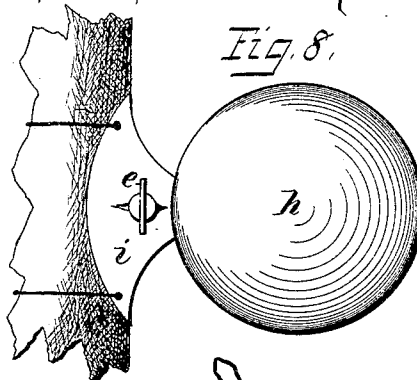


Fig. 6.

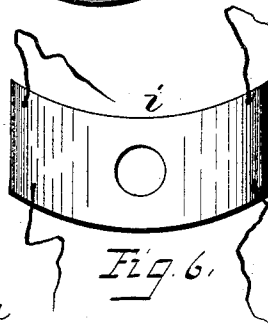


Fig. 4.

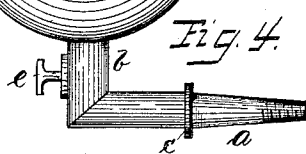
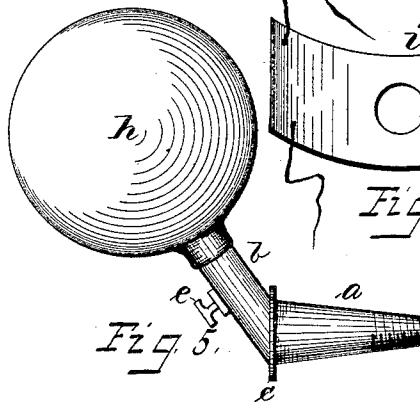


Fig. 5.



Witnesses:
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UNITED STATES PATENT OFFICE.

ANDRÉ BLAISE ESCOURROU, OF MOUX, FRANCE.

INJECTING DEVICE FOR PLANTS.

SPECIFICATION forming part of Letters Patent No. 318,609, dated May 26, 1885.

Application filed October 30, 1884. (No model.) Patented in France November 4, 1882, No. 151,877, and in England May 7, 1884, No. 7,386.

To all whom it may concern:

Be it known that I, ANDRÉ B. ESCOURROU, a citizen of the French Republic, residing at Moux, in said French Republic, have invented certain new and useful Improvements in Injecting Devices for Plants, (for which I have obtained Letters Patent in France, No. 151,877, dated November 4, 1882, and in England, No. 7,386, dated May 7, 1884;) and I do hereby declare the following to be a full, clear, and exact description of the same.

The present invention relates more particularly to that class of injectors adapted for use in the treatment of diseases of plants.

In two separate applications for patents filed on or about the 17th of March, 1883, and 5th of January, 1884, I have shown and described methods of and means for treating diseases of plants, and in the drawings thereto annexed I have also shown the injectors, hereinafter described, in their application for practical use. I will therefore limit the description of the present application to the construction of the injectors.

This invention consists more particularly in the construction of the injector, and in the combination therewith of a flexible bulb and an apron, substantially as hereinafter fully described, and as shown in the accompanying drawings, in which—

Figure 1 is an elevation of one form of injector. Fig. 2 is a vertical section thereof, showing the valve in a different position and the application of an apron. Fig. 3 is an elevation of another form of injector, showing the apron made integral with the bulb. Figs. 4 and 5 show injectors adapted for use on trees. Fig. 6 shows the apron detached; and Figs. 7 and 8 show the mode of using the injectors shown in Figs. 3, 4, and 5.

The injector is composed, essentially, of a conical discharge-pipe, *a*, an extension or neck, *b*, terminating in a nipple, *b'*, a flange, *c*, interposed between the two, and a valve or stop-cock, *e*. The lower end of the discharge-pipe is screw-threaded, as shown at *f*, for the reception of a rose-head, *g*, whereby the injector may be used as a sprinkler. Upon the nipple *b'* is secured a rubber bulb, *h*, to be

charged with the liquid or gas employed for treating the plants.

In the treatment of diseases of plants or of plants infected with insects that feed upon its sap, and where it is necessary to apply the remedy internally, so as to produce the absorption thereof by the sap of the plant, the injector is inserted into an incision or opening formed in the stem, trunk, or a root, and in order to prevent exudation or escape of the liquid or gas injected I combine with the injector an apron, *i*, either of rubber or other suitable flexible and impermeable material, said apron having an aperture for the passage of the discharge-pipe *a* of the injector, and being interposed between the stem, trunk, or root treated and the flange *c* of said injector, as shown in Figs. 2 and 7.

The discharge-pipe *a* of the injector may be arranged in the axial plane of the neck *b*, or at any desired angle thereto, according to the use made of the injector. For instance, when a liquid or gas is to be injected into the trunk of a tree or the stem of a plant it will be found more convenient to have the discharge pipe or nozzle of the injector arranged at an angle to the neck or inlet branch, as shown in Figs. 4, 5, and 7.

Under some conditions of use the valve or stop-cock *e* may be arranged in the nozzle *a* of the injector, as in Fig. 1; but when the injector is used for injecting a liquid or gas into the stem or trunk of a plant or tree it is preferable to have said valve or stop-cock arranged in the neck or inlet branch *b*, as shown in Figs. 2 and 3, as this arrangement facilitates the application of the apron *i*.

Instead of using a separate apron *i*, Figs. 2 and 7, the apron may be made integral with the bulb *h*, as shown in Fig. 3.

The valve may under some conditions of construction be dispensed with, in which case the inlet branch of the injector is formed of sufficiently-flexible material to adapt it to be compressed with the fingers, and the contents of the bulb prevented from being discharged until released from such pressure. I prefer, however, to employ the valve or stop-cock, as more convenient.

It will be seen that a liquid or gas may be stored under pressure in the bulb *b*, and afterward sprinkled upon or injected into a plant, and in the latter case the pressure of the contents of the bulb will be maintained until absorbed by the plant, the injector remaining attached thereto until the contents of the bulb have been absorbed by the sap.

It is obvious that by means of the construction shown and described I provide an injector adapted for general use in the treatment of plant-diseases, and that with such an injector not only liquids and gases, but also pulverulent substances—such as sulphur, &c.—may be applied to the plant.

Having now described my invention, what I claim is—

1. An injector especially adapted for use in treating diseases of plants, consisting of a conical injector-nozzle screw-threaded at the smaller end to receive a rose-head and terminating at the other end in a nipple, a collar or flange arranged at a point intermediate of the nipple and screw-threaded portion, and a valve or stop-cock arranged in the passage of the nozzle and adapted to be manipulated to open or close said passage, in combination with an expansible receiver for the substance to be injected, connected with the nozzle at the nipple portion thereof, for the purposes set forth.

2. An injector especially adapted for use in treating diseases of plants, consisting of a conical injector-nozzle having at one end a nipple, a collar or flange arranged at a point intermediate of the nipple and small end of the nozzle, and a valve or stop-cock in the passage thereof adapted to be manipulated to open or close said passage, in combination with an expansible receiver for the substance to be injected, and an apron arranged between the receiver and small end of the nozzle, as described, for the purpose specified.

3. An injector especially adapted for use in treating diseases of plants, consisting of a conical injector-nozzle terminating in a nipple at one end, a collar or flange arranged at a point intermediate of the nipple and the small end of the nozzle, and a valve or stop-cock in the passage thereof, adapted to be manipulated to open or close the said passage, in combination with an expansible receiver for the substance to be injected, and an apron integral therewith, formed around the orifice of the receiver, as described, for the purpose set forth.

4. An injector especially adapted for use in treating diseases of plants, consisting of an angular tapering nozzle terminating at one end in a nipple, a collar or flange intermediate of the nipple and the opposite end of the nozzle, and a valve in the passage of the latter, adapted to be manipulated to open or close said passage, in combination with an expansible receiver for the substance to be injected, applied to the nipple portion of the nozzle, as described, for the purpose set forth.

5. An injector especially adapted for use in treating diseases of plants, consisting of an angular tapering nozzle terminating in a nipple at one end, a flange intermediate of the nipple and small end of the nozzle, and a valve in the passage of the latter, adapted to be manipulated to open or close said passage, in combination with an expansible receiver applied to the nipple end of the nozzle, and an apron arranged between the receiver and small end of said nozzle, as described, and for the purpose specified.

In testimony that I claim the foregoing I have hereunto set my hand this 10th day of July, 1884.

ANDRÉ BLAISE ESCOURROU.

Witnesses:

CAMILLE CHARROPPIN,
EMILE KANTER.