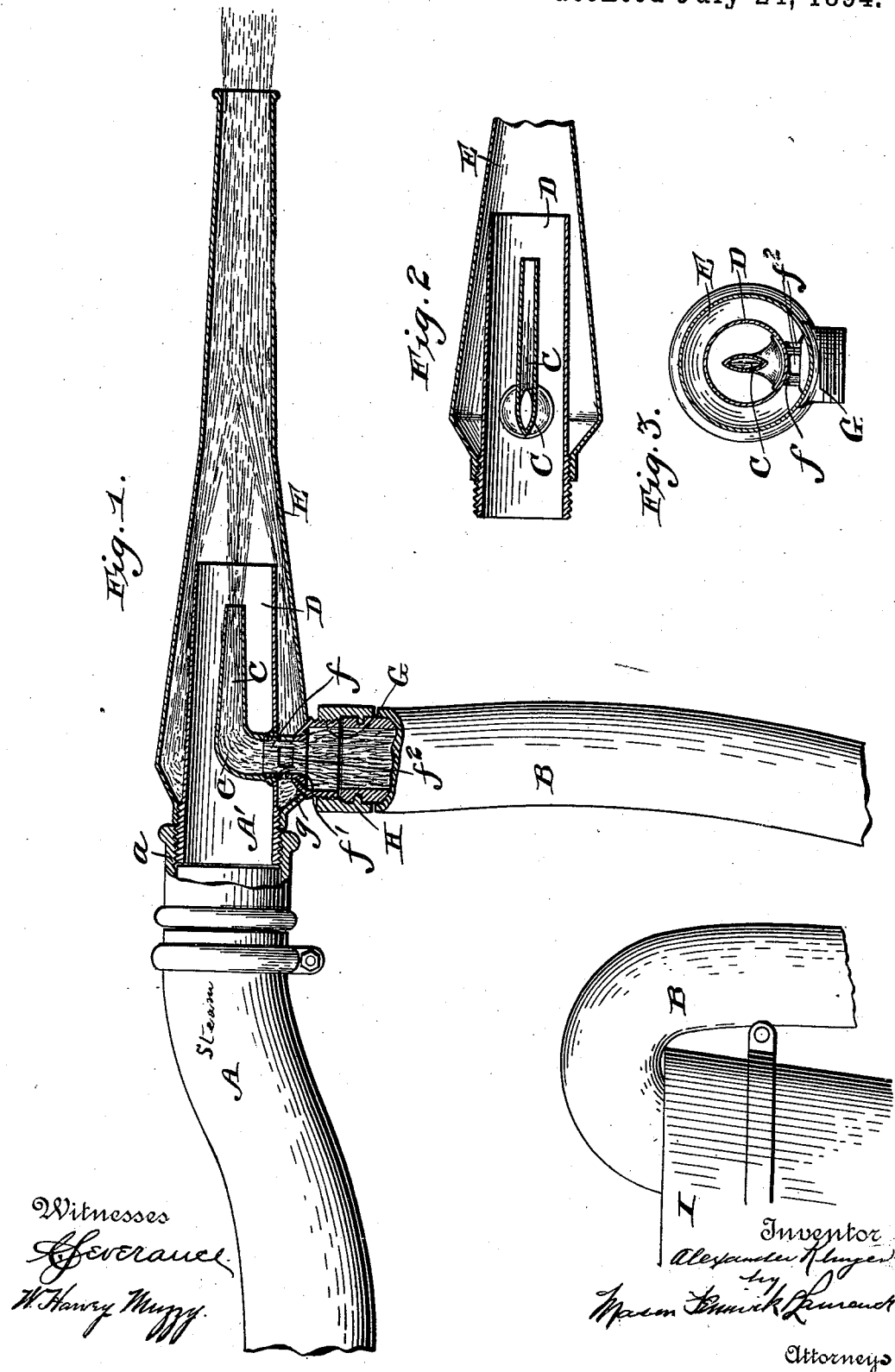


(No Model.)

A. KLINGER.
EJECTING APPARATUS.

No. 523,581.

Patented July 24, 1894.



UNITED STATES PATENT OFFICE.

ALEXANDER KLINGER, OF CALIFORNIA, MISSOURI.

EJECTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 523,581, dated July 24, 1894.

Application filed April 9, 1894. Serial No. 506,898. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER KLINGER, a citizen of the United States, residing at California, in the county of Moniteau and State of Missouri, have invented certain new and useful Improvements in Ejecting Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in ejectors or nozzles and it consists of an improved nozzle in which either water, steam, gas or air is employed and forced under pressure through said nozzle and draws the liquid or solid to be projected from an independent source of supply connected to the nozzle and forces it from said nozzle.

It also consists in the combination of the nozzle proper through which the water, steam, gas or air is forced under pressure, of a supplemental nozzle surrounding the first nozzle, and one within the same, the two latter nozzles being connected to an independent source of supply and having their contents drawn from them by the nozzle proper at the center and outer periphery of the latter.

My invention is more fully set forth in the following specification and the accompanying drawings, in which latter—

Figure 1. represents a central, vertical, longitudinal section of the devices embodying my invention with both center and peripheral or rim discharge of the liquid to be ejected, into the main discharging nozzle. Fig. 2. represents a detail top plan view of the same. Fig. 3. represents a transverse, vertical section through said devices.

A in the drawings represents the main power supply pipe for the water, steam, gas or air that is to be supplied under pressure; B the supply pipe for the liquid or solid which is to be supplied to the nozzle A' by the suction of the rapidly moving contents of said nozzle.

The nozzle A' as shown in Fig. 1. is composed of three parts, to wit, a central flat inner nozzle C, a cylindrical nozzle D surrounding the same and a funnel shaped nozzle E surrounding said cylindrical nozzle; the nozzle D having screw threads cut thereon to engage a sleeve *a* attached to the hose or pipe A. The nozzle E has its rear end contracted

and internally screw threaded so as to screw upon the threads of the nozzle A'. The nozzle C has its rear end seated about an opening cut in the bottom of the nozzle D, and as shown in Figs. 2 and 3, is elliptical in cross section so as to offer very little resistance to the liquid under pressure which is passing through the nozzle A'.

The nozzle C is kept in position by a screw threaded and apertured nipple *f* which engages the internal screw threads of said nozzle C at one of its ends and is formed with a flaring flange *f'* at its opposite end. This flaring flange rests under the contracted flange *g* of a nipple G which passes through an aperture in the bottom of the nozzle E and is screw threaded to engage a sleeve H attached to the supply pipe B.

The nipple *f* is provided with a series of apertures *f*² which open into the nozzle E and thus a portion of the contents of the pipe B passes into said nozzle E.

The nozzle E is much longer than the nozzle D so that the contents of both nozzles become thoroughly commingled in this extended portion before being discharged from the end thereof.

As the water, steam, gas or air is forced under pressure through the nozzle D it draws the liquid from the nozzle C and the nozzle E thus securing a central and peripheral discharge, of the liquid to be ejected, into the discharge from the nozzle D and thus the contents of all of the nozzles are thoroughly mixed before being discharged.

The supply pipe B is connected to a tub or reservoir I which contains the liquid to be drawn through and ejected from the nozzle.

When the device is employed to destroy insects or the like upon vegetation, a suitable liquid for that purpose is placed in the tub or reservoir and drawn therefrom as before described. When it is used as a fire extinguisher, a suitable chemical which will smother the flames is placed in the said tub or reservoir.

My invention might be employed to operate a magazine gun. In this application of my invention the power employed would be steam, air or gas under great pressure. Where steam is employed, it would be supplied from a suitable steam boiler which is connected to

the enlargement of a gun barrel by means of a connection pipe, which latter is provided with a regulating cock. A magazine tube extends through the rear end of the said enlargement of the gun and to within a short distance of the contracted portion of the same.

The operation of the gun would be as follows: The magazine tube is filled with any suitable projectiles, and the above mentioned cock opened permitting the steam to rush into the gun tube enlargement and finally into the gun tube. As the steam rushes past the opening of the magazine tube at the forward end of the same and on all sides, it draws the projectiles from the said magazine into the barrel of the gun K and when thus drawn out the steam behind said projectiles will force them from the barrel with great velocity. The projections are drawn successively from the magazine as long as the steam discharges, the steam about the mouth of the magazine forming a wall on all sides to carry the projectile straight ahead into the gun tube. The rear end of the magazine tube may be closed by any suitable door if desired. The gun tube is of the same diameter as the magazine barrel, and if for instance, this diameter was about one inch and the power of the steam about one hundred and fifty or two hundred pounds to the square inch, the velocity with which the projectile would be drawn out and the distance it would be thrown would be very great.

I contemplate constructing the projector of sufficient size and adapt it for propelling parcels or hollow projectiles or carriers containing letters, money or the like, and thus employing the invention as a rapid means for conveying such articles.

The device as shown in Figs. 1 and 4 is very

convenient for destroying insects on plants or other vegetation as the nozzle can be attached to any garden hose and the tub containing the destroying liquid placed in any convenient position. Now when the water is forced through the tube, it draws the liquid from the tub in a peripheral stream and thoroughly commingles it with itself and then ejects it upon the flowers or plants, or trees.

What I claim as my invention is—

1. In an ejector or nozzle the combination of the nozzle proper D, connected with one source of supply, an auxiliary nozzle E surrounding said nozzle D, another auxiliary nozzle C connected to another source of supply and passing through the nozzles D and E and discharging centrally within the nozzle D and provided with apertures by means of which a portion of its contents is fed into the nozzle E; said nozzle C being elliptical in cross section so as to offer less resistance to the passage of the contents of the nozzle D substantially as described.

2. In an ejector or nozzle the combination of the nozzle proper connected with one source of supply an auxiliary nozzle about said nozzle proper, another auxiliary nozzle connected to another source of supply and passing through the before mentioned nozzles and discharging centrally within the nozzle proper and provided with apertures by means of which a portion of its contents is fed into the before mentioned auxiliary nozzle surrounding the main nozzle, substantially as described.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

ALEXANDER KLINGER.

Witnesses:

RICHARD F. BENNETT,
BRAZELL R. MARTIN.