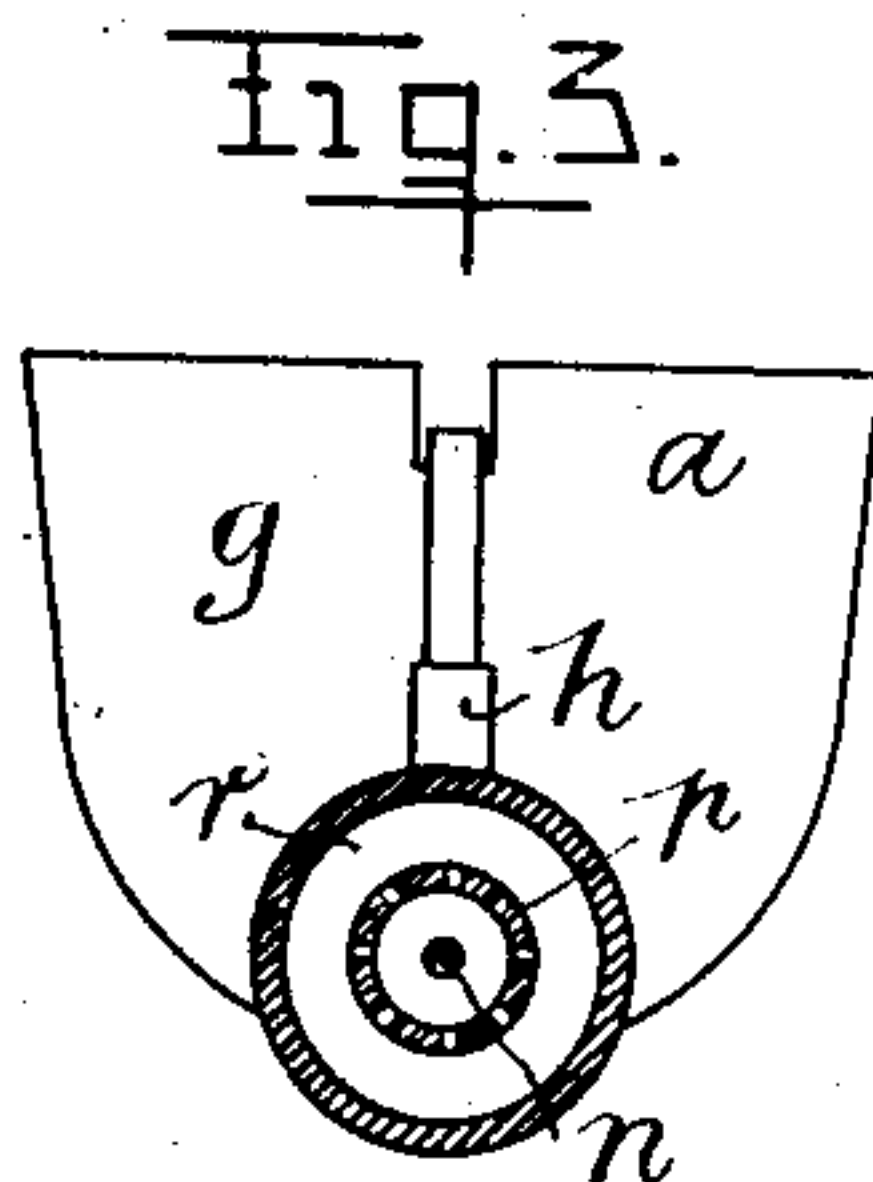
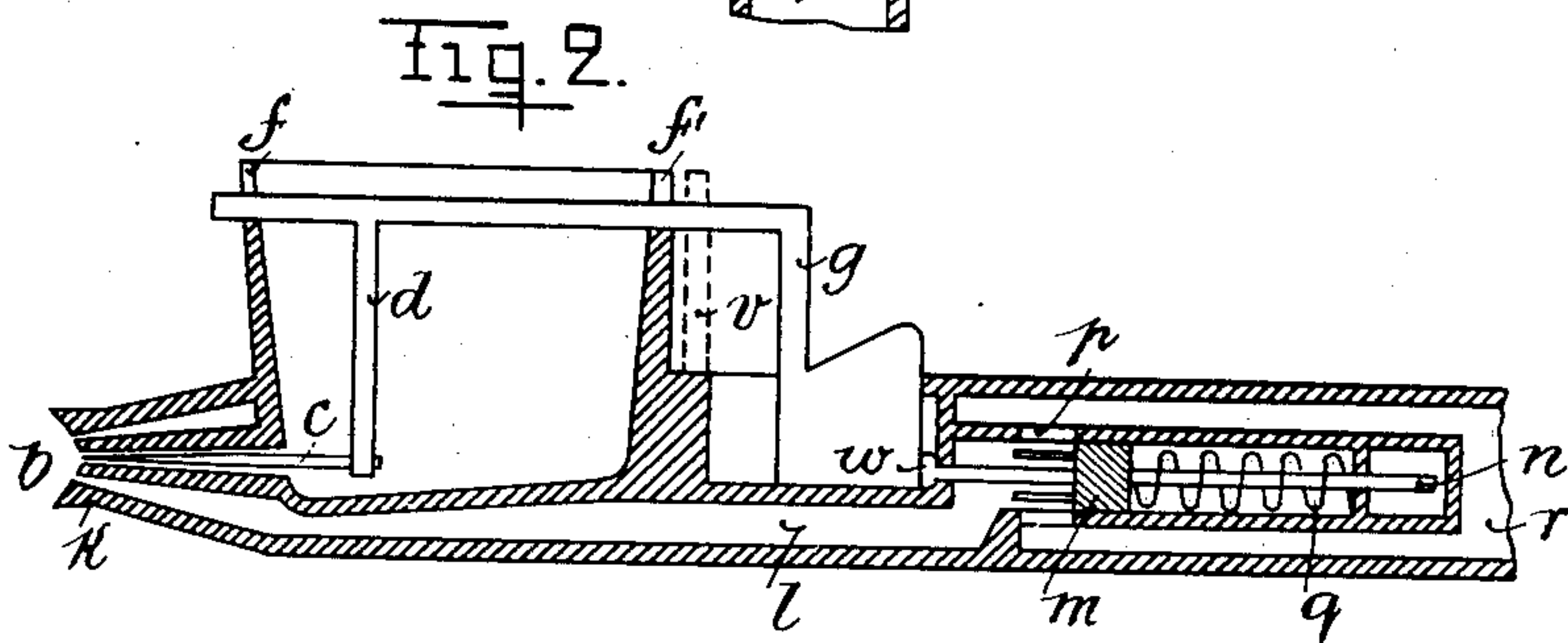
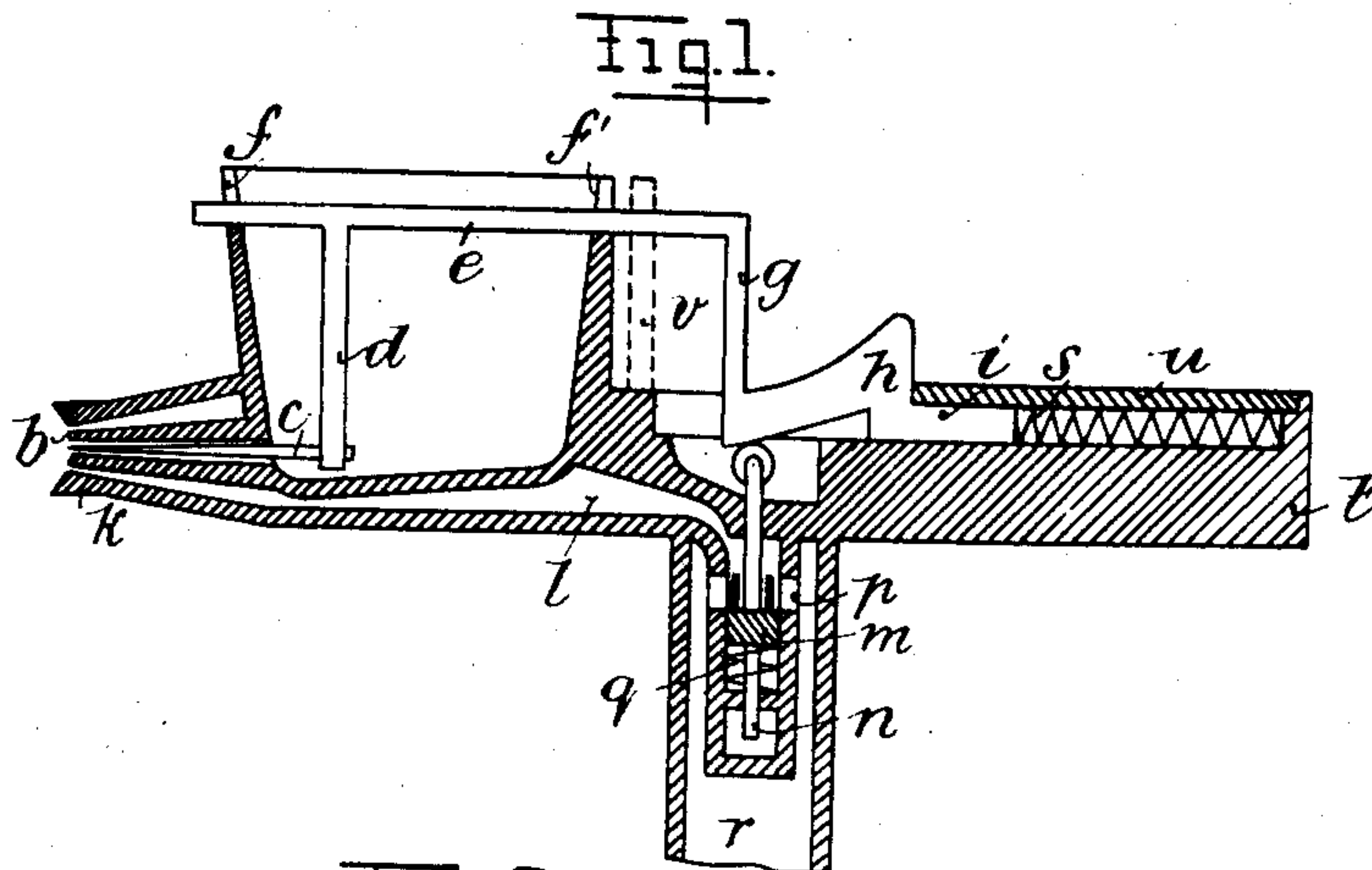


No. 814,218.

PATENTED MAR. 6, 1906.

A. KRAUTZBERGER.  
SPRAYING APPARATUS.  
APPLICATION FILED OCT. 3, 1903.

2 SHEETS—SHEET 1.



WITNESSES

*H. M. Kuehn*  
*John A. Perewé*

BY ATTORNEYS

INVENTOR

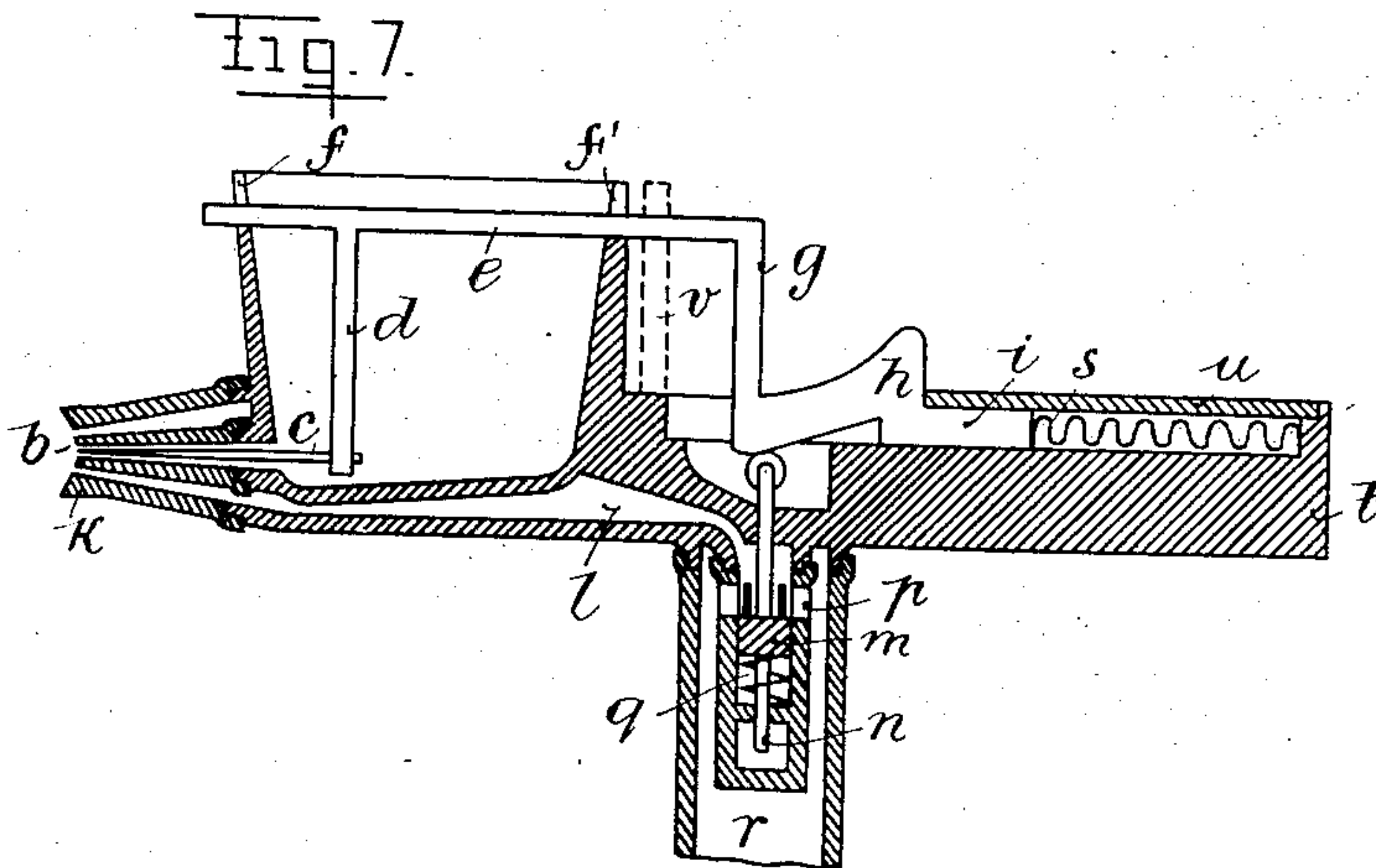
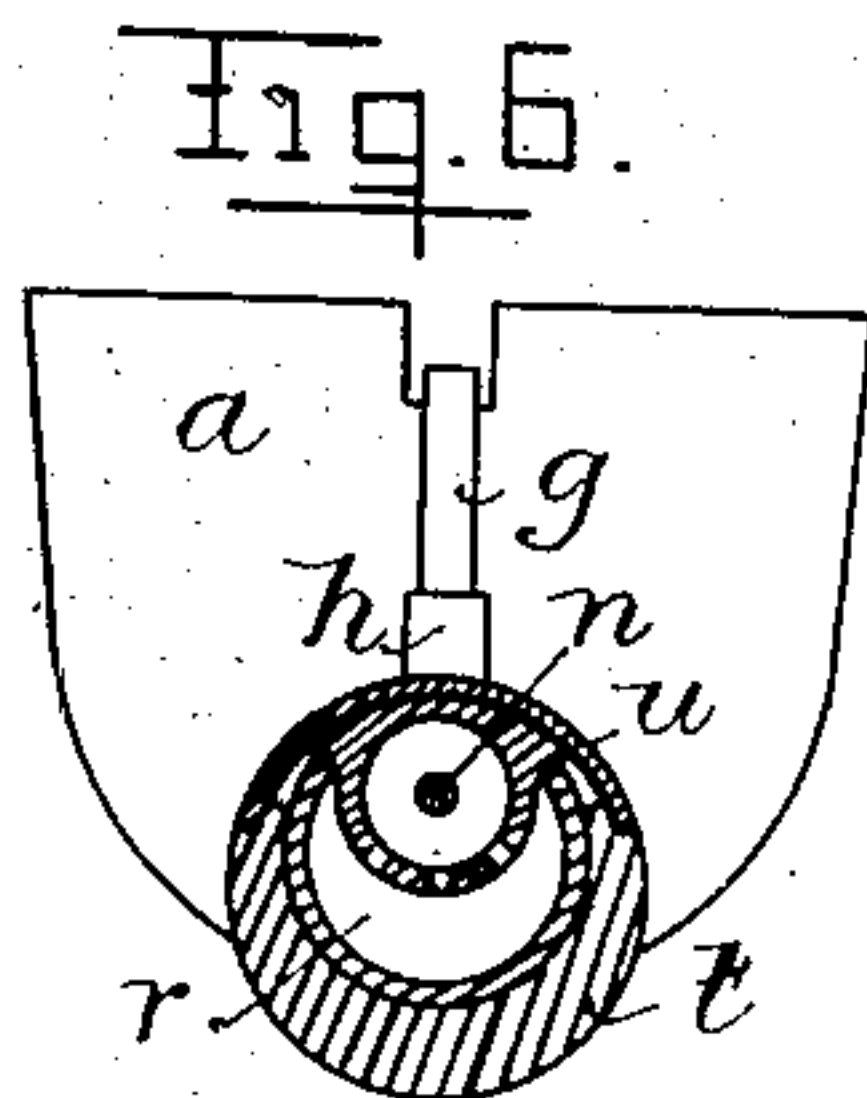
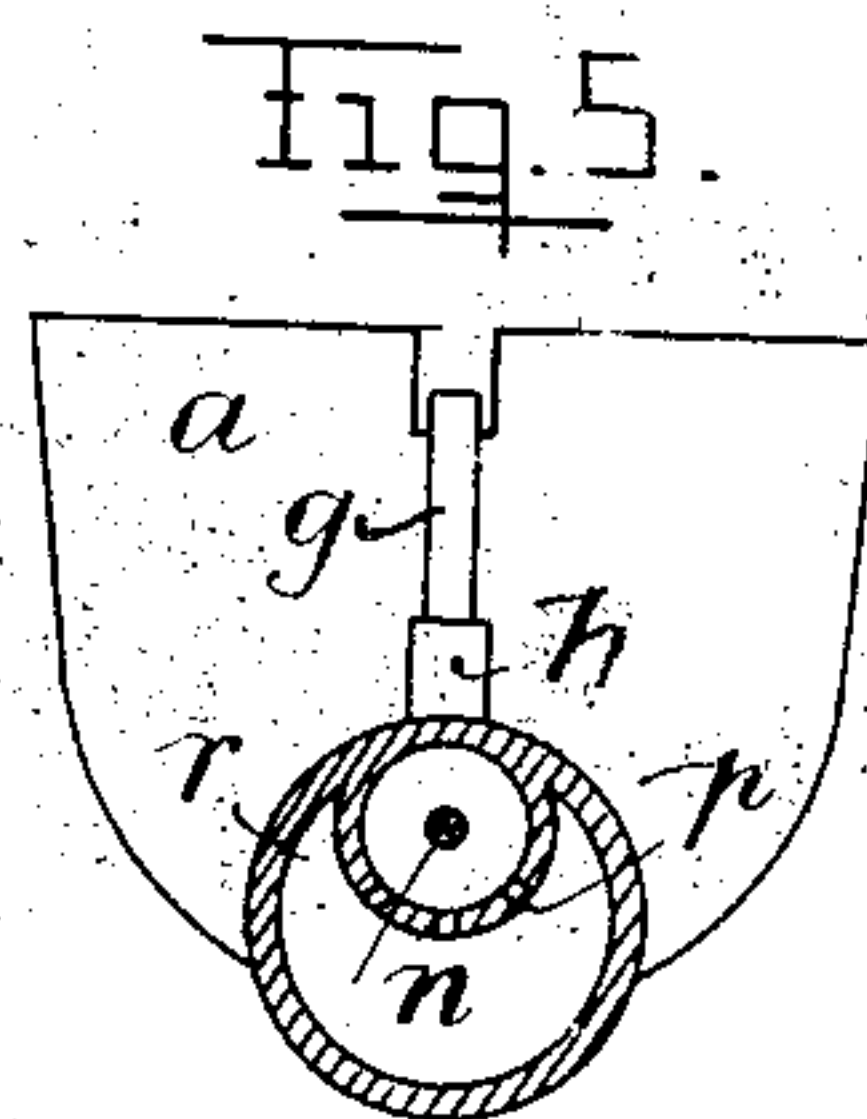
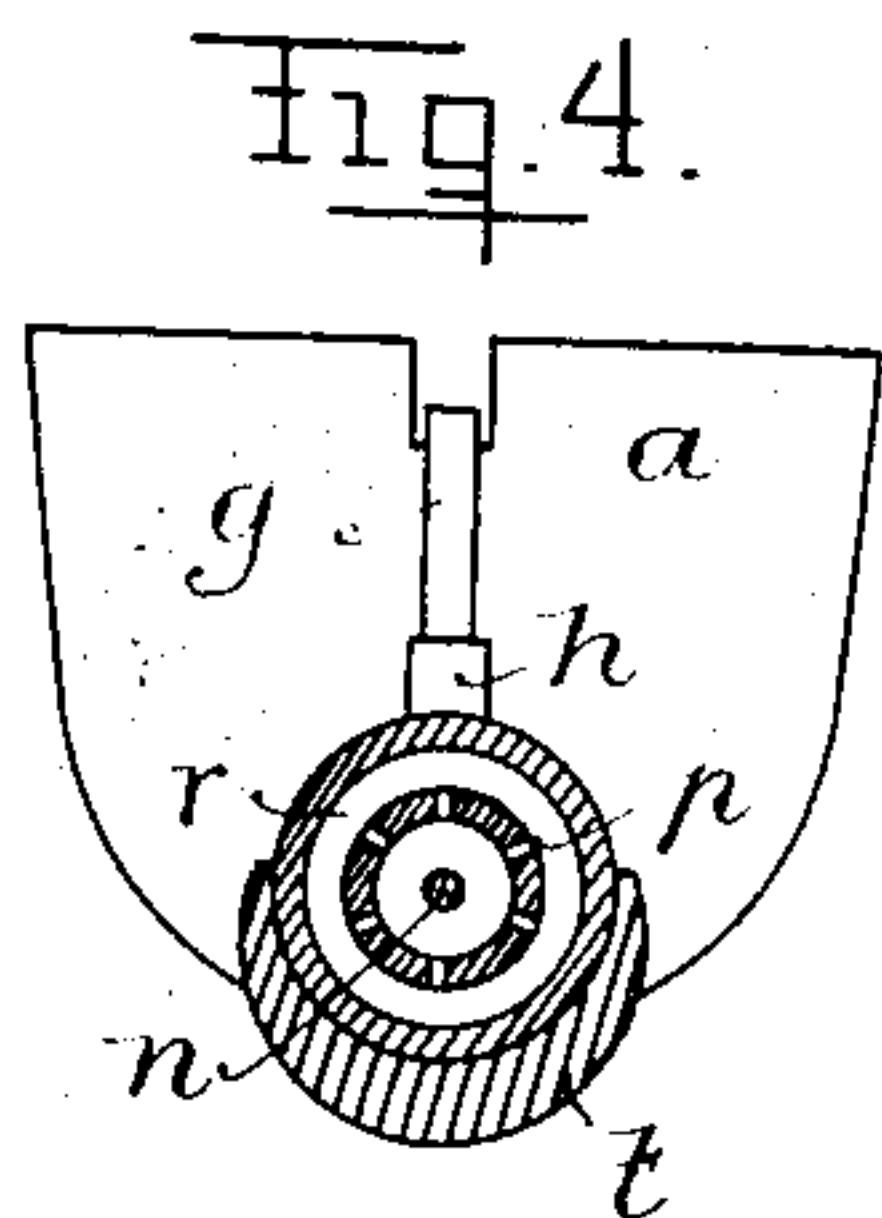
*Albert Krautzberger*  
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2 SHEETS—SHEET 2.



WITNESSES

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# UNITED STATES PATENT OFFICE.

ALBERT KRAUTZBERGER, OF FRIEDLAND, GERMANY.

## SPRAYING APPARATUS.

No. 814,218.

Specification of Letters Patent.

Patented March 6, 1906.

Application filed October 3, 1903. Serial No. 175,643.

*To all whom it may concern:*

Be it known that I, ALBERT KRAUTZBERGER, pattern-designer, residing at Friedland, near Breslau, Hof Göhlenau, in the Kingdom of Prussia, German Empire, have invented a new and useful Spraying Apparatus, (for which I have obtained patents in Germany, No. 144,518, dated October 9, 1902, and No. 145,728, dated December 11, 1902; in Great Britain, No. 858, dated January 13, 1903; in Belgium, No. 167,375, dated December 19, 1902, and for which I have made application in Austria, Sub. No. 30,591-02/I, dated December 15, 1902;) and I do hereby declare the nature of this invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement.

Apparatus for spraying paint by means of compressed air is already employed to a considerable extent—as, for example, in the pottery industry—for painting backgrounds. Such apparatus, however, as heretofore constructed is subject to the disadvantages that it is very complicated and that the parts intended for the reception of paint sooner or later become leaky and allow the paint to find its way into other portions of the apparatus, so as to clog them and render them useless. If the apparatus has been laid aside even for a short time, so that the paint in it has dried, these disadvantages become especially apparent. In apparatus of the kind heretofore been provided between the air-valve and paint-outlet valve such as to cause them to act simultaneously, and the operator in consequence of having to attend separately to two valves is apt to work with too great an air-pressure, whereby the paint is sprayed in too large a quantity and a great deal of it is wasted.

Now this invention has for its object to obviate the aforesaid disadvantages.

Figures 1 and 2 of the accompanying drawings illustrate examples of apparatus in accordance with this invention. Fig. 3 is a section of the apparatus shown in Fig. 2, and Figs. 4, 5, 6, and 7 are modifications.

Each of the apparatus shown comprises a paint-receptacle *a*, of somewhat cup-like shape, the bottom of which is preferably downwardly inclined toward the paint-outlet. This consists of a conical nozzle that tapers to a fine aperture *b* and contains a needle *c*, by which the aperture *b* can be more or

less closed or opened. The needle *c* is interchangeably attached to a rod *d*, which is in turn connected to a rod *e*, that can be moved to and fro on the upper edge of the cup, preferably in two notches *f* and *f'*, provided for the purpose. The rod *e* is connected by means of an intermediate piece *g*, which with a slide *h* can be moved to and fro by means of the finger so as to bring the needle *c* into any desired position. The slide *h* is preferably connected with a guide-piece *i*, with which there engages a spring device hereinafter referred to. The aperture *b* is surrounded by a second conical nozzle *k*, so as to form an annular aperture through which the air can flow outward and when the valve is open can draw out and spray the paint. The air enters the nozzle *k* from the chamber *l*, to which it is admitted through a slide-valve *m*.

The arrangement of the slide-valve *m* differs according as to the manner in which it is desired that the apparatus should be handled. If it be considered more convenient for working purposes to arrange the air-feed laterally in relation to the handle, the apparatus is arranged as shown in Fig. 1. In this case the air-valve *m* is secured to a rod *n*, that is adapted to be moved by the slide *h* in such a way that when the slide is drawn back and the aperture *b* opened the valve *m* is also opened. To this end the lower side of the slide *h* is downwardly inclined toward the front, and on the incline thus formed there runs when the slide *h* is moved a small wheel *o*, that is mounted on the upper end of the rod *n* and causes this rod to assume a position corresponding to that of the needle *c*. When the aperture *b* is open, the air passes through the openings *p* into the chamber *l*. The number of these openings can be varied as desired, and only one opening may in some cases be provided. While the valve *m* is opened solely by the movement of the slide *h*, its closure when the slide *h* is moved in the other direction is effected by a spring *q*, which tends to move it upward. The air enters the apparatus through a pipe *r*, which is connected with the air-reservoir, preferably by means of a tube. The closing of the aperture *b* can be effected by merely pushing the slide *h* forward with the finger. It is, however, necessary to supplement this by means of a spring in order to render the closure certain. The spring *s* is located in a cavity in the handle *t* and can be arranged in any manner desired—



for instance, in such a way that it engages on the one side with the rear wall of this cavity and on the other side with the hereinbefore-mentioned extension *i* of the slide *h*. It is then best to close this cavity by means of a hinged lid *u*, which reaches so far forward that the slide *h* comes exactly into contact therewith when the air and paint outlets are fully open. Usually it will, however, be found preferable to arrange the slide-valve *m* in the handle of the apparatus so that it will be unnecessary to produce a lateral movement of the air-outlet valve. The backward movement of the slide *h* for opening the paint-outlet valve can directly move the spindle of the air-valve, so as to open the latter valve. This arrangement is illustrated in Fig. 2, which shows the pipe *r* for supplying the air as forming the handle of the apparatus. In this case the spindle *n* of the valve *m* terminates, preferably, in a knob *w*.

In Fig. 2 the handle of the apparatus is shown entirely formed by the air-inlet pipe. Of course, according to the size of the apparatus, it may be preferable in some circumstances not to let the pipe *r* form the entire handle of the apparatus, but to place the pipe *r* in a large hollow handle. It is then preferable to place the pipe *r* not in the center of the handle, but close to its peripheral surface to admit of its being easily removed, as shown in Figs. 4 and 6. Neither is it of course absolutely necessary that the air-inlet valve be placed exactly in the center of the pipe *r*. It could be located laterally if the openings *p* were not arranged around the valve, but only on that side at which the air is to pass out, as shown in Figs. 5 and 6.

The operation of the apparatus is as follows: The receptacle *a* having been filled with paint, the apparatus is taken in the hand and a finger is laid on *h* in such a way that this slide can be moved at will. If *h* be then drawn back, the air and paint valves can be opened with perfect uniformity till they are as wide open as possible in the positions shown in the figures. If *h* be pushed forward or if *h* be let loose, then the valves will be closed again by the springs. If it be desired to clean the apparatus, the rod *e*, with all the parts attached thereto, can be removed with ease. It is then drawn back so far that the pin *c* can be removed from the connection *d*. In the example shown in Fig. 1 in order to do this the lid *u* must first be raised, so as to release the extension *i* of the slide *h* and enable the whole of it to be taken out with ease. When the lid *u* is open, the spring *s* can also be easily taken out, if necessary. In the example shown in Fig. 2 also *e* can be easily taken out, together with the parts attached thereto. Owing to the great simplicity of these movements, the removal of the needle *c* requires but extremely little time, which is a point all the more worthy of con-

sideration, because, as is well known, different paints consist partly of, relatively speaking, coarse ingredients, which greatly affect the needle *c*, so that it often requires changing. The needle *c* becomes exposed to special wear when glazes are used, so that it is advisable to have a stock of different interchangeable needles which can be inserted in *d* at any time. As the paint-receptacle *a* has no opening at all toward them, paint will be prevented from finding its way to the air-inlet valve and the springs. On the other hand, any entrance of the compressed air into the paint-receptacle is impossible. Furthermore, all the parts of the apparatus are simple and can be easily cleaned. For the latter purpose the air and paint nozzles, the pipe *r*, and the air-inlet-valve casing are preferably not made in one piece with the body of the apparatus, but are adapted to be screwed off, as shown in Fig. 7.

If it ever be desired to make the cup *a* as light as possible and not allow the weight of the rod *e* to rest thereon, there may be combined with the apparatus a special device *v* of suitable fork shape for carrying the rod *e*, as shown in dotted lines in Figs. 1 and 2. The notches *f* and *f'* are then made somewhat wider, so that *e* is only loosely guided therein.

Having now particularly described and ascertained the nature of the said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In an apparatus for spraying paint by means of compressed air, a cup-like receptacle open at the top and otherwise closed all around except for a single paint-outlet, a slide device suspended inside the receptacle for regulating said outlet, and means for supplying compressed air to said device, substantially as described.

2. In apparatus for spraying paint by means of compressed air, a cup-like receptacle open at the top and otherwise closed all around except for a single paint-outlet, a slide device suspended inside the receptacle for regulating said outlet, a compressed-air outlet surrounding the paint-outlet, means for simultaneously controlling the passage of compressed air and paint, substantially as described.

3. In an apparatus for spraying paint by means of compressed air, a cup-like receptacle for the paint open at the top and closed all around, an outlet-nozzle in the bottom of the same, a nozzle surrounding said first nozzle, connections from said second nozzle to a compressed-air supply, a valve in said connections controlling the supply, a slide device in said receptacle controlling the paint-outlet and means for controlling said device and valve simultaneously, substantially as described.

4. In an apparatus for spraying paint by means of compressed air, a cup-like receptacle for the paint open at the top and closed



all around, an outlet in the bottom thereof, a slide device suspended in the receptacle controlling said nozzle, a slide connected to said device, a second nozzle surrounding said first-named nozzle, means for supplying compressed air thereto, a valve controlling the supply of air, said valve being operated by the slide, substantially as described.

5. In an apparatus for spraying paint by means of compressed air, a cup-like receptacle for the paint open at the top and closed all around, a nozzle therein, a slide device controlling said nozzle, a second nozzle surrounding the first nozzle, means for supplying compressed air thereto, a valve controlling the supply of compressed air, means for simultaneously operating said sliding device and valve to allow paint and air to flow, and means for operating said parts to shut off the flow of paint and air, substantially as described.

6. In an apparatus for spraying paint by means of compressed air, a cup-like receptacle for the paint open at the top and closed all around, an outlet therefrom and compressed-air connections thereto, said connections forming the handle of the device, substantially as described.

7. In an apparatus for spraying paint, a cup-like receptacle for the paint open at the top and closed all around and outlet therefrom, and means for supplying compressed air

to said device, said receptacle having an inclined bottom sloping toward the outlet, substantially as described.

8. In an apparatus for spraying paint by means of compressed air, a cup-like receptacle for the paint open at the top and closed all around, an outlet therefrom, a device controlling said outlet, a support *v* for said device and means for supplying compressed air to the apparatus, substantially as described.

9. In an apparatus for spraying paint by means of compressed air, a cup-like receptacle for the paint open at the top and closed all around, an outlet therefrom, a device controlling said outlet, a slide *h*, connections from said slide to said device, a nozzle surrounding the outlet-nozzle, means for supplying compressed air to said second nozzle, a valve controlling the supply of air, a rod connected to said valve, said rod being operated on the backward movement of slide *h*, whereby the outlet-nozzle and the valve will be opened simultaneously and a spring for closing said valve whereby the rod will operate said slide *h* to close the outlet-nozzle, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

ALBERT KRAUTZBERGER.

Witnesses:

ERNST KATZ,

ALBERT SCHENCK.