

No. 864,784.

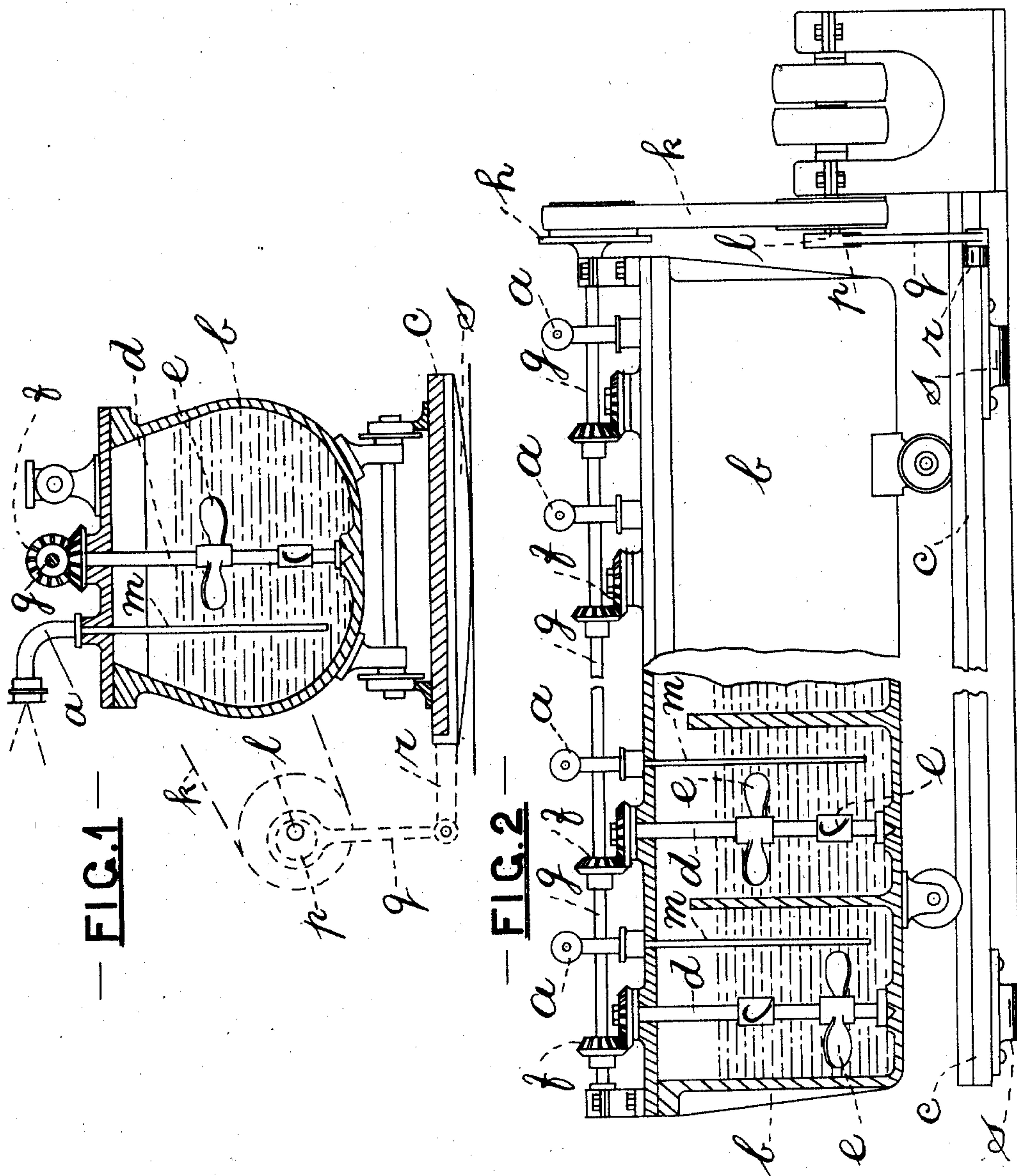
PATENTED SEPT. 3, 1907.

C. A. HANITZSCH.

DEVICE FOR SPRAYING FLUID UPON THE SURFACES OF PAPER,
TEXTILE FABRICS, OR THE LIKE.

APPLICATION FILED OCT. 1, 1906.

2 SHEETS—SHEET 1.



Witnesses.

Arthur Gadd.
George Frederick Gadd.

Inventor.

Curt Adolf Hanitzsch.
per: William Gadd.
Attorney.

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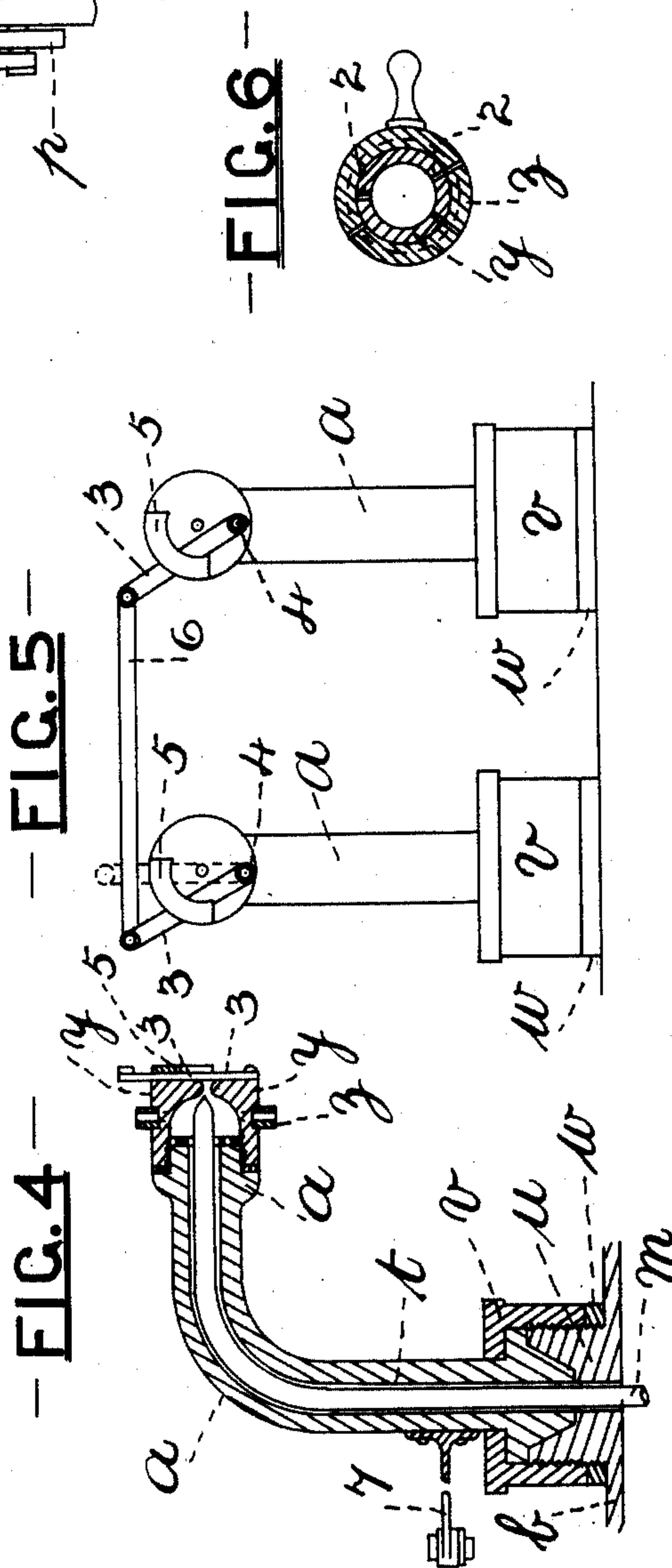
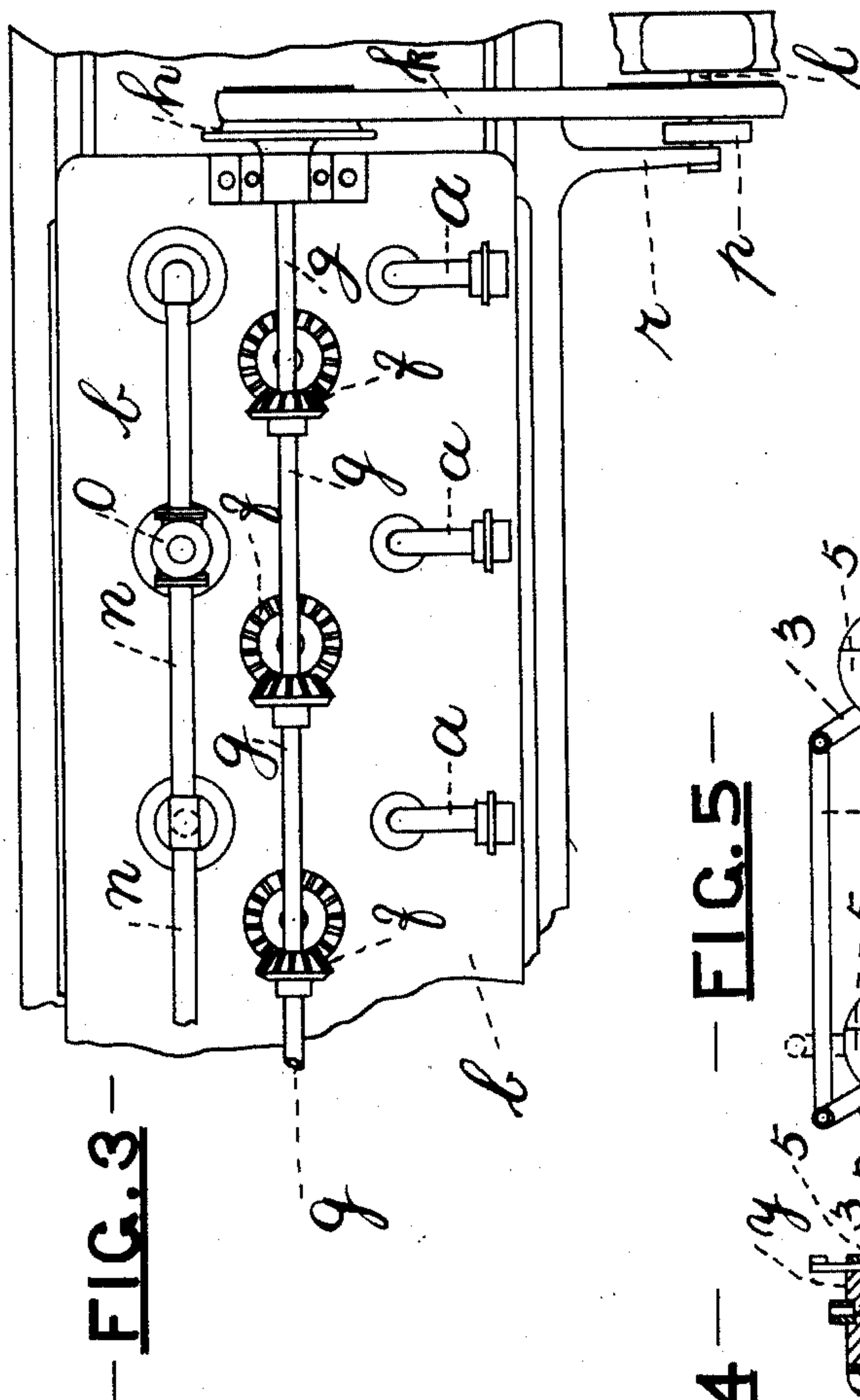
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2 SHEETS--SHEET 2.



Witnesses.

Arthur Good.

George Frederick Gadd.

Inventor.

Curt Adol. Hamitzsch
per: William Gadd.
Attorney.

UNITED STATES PATENT OFFICE.

CURT ADOLF HANITZSCH, OF MANCHESTER, ENGLAND.

DEVICE FOR SPRAYING FLUID UPON THE SURFACES OF PAPER, TEXTILE FABRICS,
OR THE LIKE.

No. 864,784.

Specification of Letters Patent.

Patented Sept. 3, 1907.

Application filed October 1, 1906. Serial No. 336,982.

To all whom it may concern:

Be it known that I, CURT ADOLF HANITZSCH, a subject of the Emperor of Germany, residing at 37 Dickinson street, Manchester, in the county of Lancaster, England, have invented a new and useful Improvement in or Relating to Devices for Spraying Fluid upon the Surface of Paper, Textile Fabrics, or the Like, of which the following is a specification.

The improvement relates to the production of effects or designs upon the surface of paper, textile fabrics, or the like, by means of a spray or sprays of fluid, and has for object to provide efficient means, as hereinafter described, whereby such fluid may be sprayed with more satisfactory results in the obtaining of such effects or designs. To accomplish this and to carry out my improvement, I provide apparatus, certain forms of which are illustrated in the accompanying drawings, wherein

Figure 1. is a cross section, Fig. 2. a front elevation, partly in section, and Fig. 3. a part plan, of a spraying machine suitable for producing designs upon wall-paper or textile fabrics, in conjunction with any convenient means for carrying or moving forward such paper or fabric, with or without stencil devices. Figs. 4. 5. and 6. show a vertical section, front elevation and cross section, respectively, of details of spraying nozzles. At any suitable part in the length of the fabric or paper to be decorated, I mount one or more spraying nozzles, such as *a*, in communication with color or other fluid supply. Figs. 1. 2. and 3. show a tank or container *b*. mounted on rollers so as to be capable of movement into or out of position, along the platform *c*. This container may be divided into compartments, as indicated in Fig. 2., to enable various colored fluids to be employed simultaneously.

To prevent the fluid settling and forming a sediment, I employ agitators or stirring devices mounted to revolve, reciprocate, or otherwise move within the body of the fluid. In the example shown vertical shafts *d*, carrying blades *e*, are mounted within the container *b*. and are caused to rotate by means of gearing *f*, connected by a shaft *g*, to which motion is given through a pulley *h*, mounted on the tank side, which pulley is driven by belt *k*, from any suitable motion shaft *l*. *m*, are tubes dipping into the fluid, and in communication with the spraying nozzles *a*. The said nozzles are shown mounted on the top of the container merely by way of example.

n, are pipes and connections for the supply of compressed air to the container, the junction piece *o*, being provided for connection to an air pump or other suitable means of supply.

In lieu of, or in addition to the agitators *e*, in the container, I may cause the container itself to rock, or otherwise move so as to sufficiently agitate the fluid. For example, the platform *c*, carrying the container may be

mounted so as to oscillate, by hand or power. In the drawing, an eccentric *p*, is mounted upon the motion-shaft *l*, the eccentric rod *q*, being connected to a projection or lever *r*, attached to the platform, which latter is mounted upon rockers *s*. Heat may be applied to the container when required, and an even pressure of air maintained within the same; also, the compartments of the container may be automatically supplied with fluid.

The spraying nozzles are shown in detail in Figs. 4. 5. and 6. Fluid is supplied from the container through the inner tube *m*, inclosed by an air tube *t*. This latter is formed with a conical plug extremity resting in a corresponding seating *u*, of the container *b*. A screw-cap *v*, and washer *w*, effect an air tight joint, the conical mounting at the same time permitting of free turn of the nozzle *a*. I provide the said nozzle with a screwed head *y*, which enables the distance between the fluid and air outlets to be adjusted, so as to regulate the fineness of the spray. Further adjustment of the spray may be provided by changing the nozzle head, substituting one with a wider or narrower final outlet, as may be desired. I also provide a perforated ring *z*, in the nozzle head, which may be turned to coincide more or less with openings *2*, in the head itself so as to provide an air vent which may be increased or reduced at will. Thus the air pressure within the head may be maintained, reduced, or destroyed, whereby the spray may be varied in fineness or even converted into an unbroken stream of fluid. The air pipes *n*, are capable of conveying large quantities of compressed air direct to the container, independently of the needs of the atomizers; and, whereas the outlet tubes *t*, are of comparatively small dimensions, it becomes practicable to vary the air pressure at the nozzles without materially affecting the pressure on the fluid in the container. To shut off the supply of fluid, I mount at the extremity of the nozzle head a lever *3*, pivoted at *4*, and free to be moved within a guide *5*, attached to the head, so as to cover or uncover the fluid passages. If these levers *3*, are connected together, such as by links *6*, a row of nozzles may be controlled simultaneously. The spraying nozzles being conically mounted, as described, may be oscillated to and fro, either automatically or by hand, through levers *7*, connected thereto. If these levers are coupled together, it is obvious that simultaneous oscillation of a row of nozzles may be effected. It is clear also that certain nozzles may be selected for simultaneous operation, whether in the same row or not. Oscillation of the nozzles during the spraying operation may be preferred in some cases where an equal distribution of fluid is desired.

I would have it understood that I do not broadly claim, as new, in spraying apparatus, either a fluid container provided with agitators and supplied with

compressed air, or the opening and closing of the outlets of spraying nozzles, or sprayers provided with means for reducing or removing air pressure therein.

I claim:—

- 5 1. Apparatus for spraying fluid, comprising a fluid container *b*, fluid agitators *c* mounted within the same; gearing for operating and connecting said agitators, mounted on the container; air supply pipes *n*, *o*, leading directly into said container; fluid outlet tubes *m*, projecting
10 through the upper part of said container; air outlet nozzle tubes *l*, surrounding said fluid tubes, and leading from the interior of said container, substantially as set forth.

2. In combination, a fluid container, a bored conical seating *u*, on same; a fluid tube *m*, passing through said bored seating; an air tube *t*, surrounding said fluid tube, 15 and having a coned surface fitting said conical seating; and a screw cap *v*, engaging said seating, and covering said coned surface, substantially as set forth.

3. In combination, a sprayer nozzle, having compressed air and fluid passages, a perforated head on said nozzle, 20 and a perforated ring mounted on said head, substantially as herein set forth.

CURT ADOLF HANITZSCH.

Witnesses:

KARL ALFRED DIETRICH,
GEORGE FREDERICK GADD.