No. 746,618. PATENTED DEC. 8, 1903.

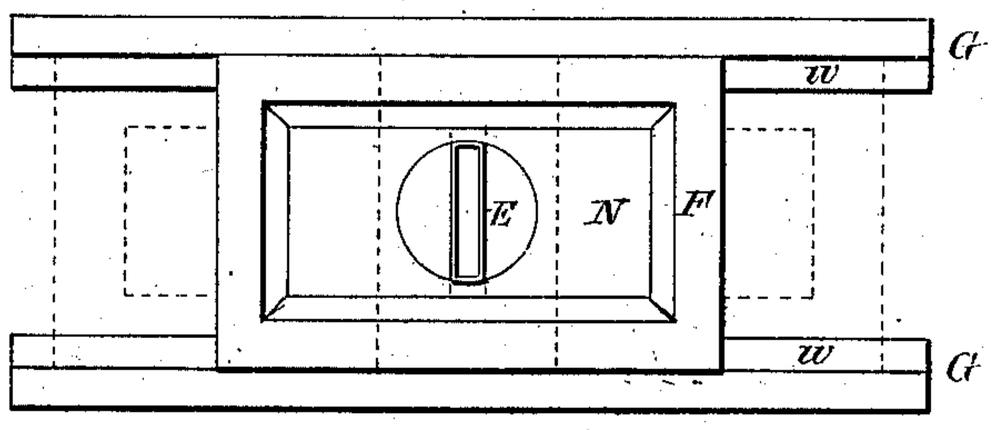
H. C. WHITE.

PHOTOGRAPHIC NEGATIVE CLEANER.

APPLICATION FILED OCT. 16, 1903.

NO MODEL.

FIG. 2.



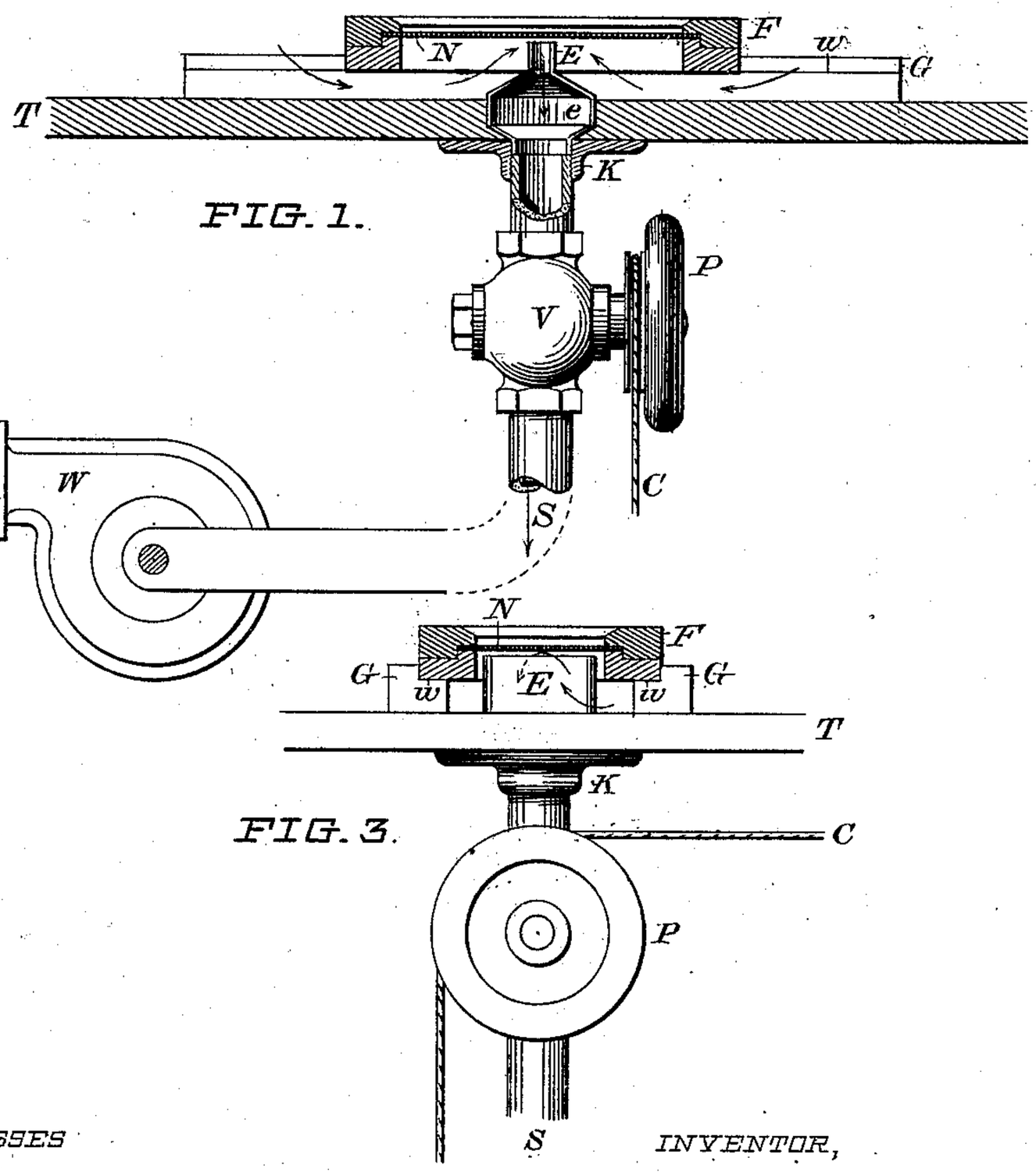


FIG. 1.

FIG. 3.

WITNESSES

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INVENTOR,

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BY HIS ATTORNEY,

Franklin Scott.

No. 746,618. Patented December 8, 1903.

UNITED STATES PATENT OFFICE.

HAWLEY C. WHITE, OF NORTH BENNINGTON, VERMONT.

PHOTOGRAPHIC-NEGATIVE CLEANER.

SPECIFICATION forming part of Letters Patent No. 746,618, dated December 8, 1903.

Application filed October 16, 1903. Serial No. 177,259. (No model.)

To all whom it may concern:

Be it known that I, HAWLEY C. WHITE, of the village of North Bennington, in the county of Bennington and State of Vermont, have invented certain Improvements in Photographic-Negative Cleaners, of which the subjoined description, in connection with the accompanying drawing, constitutes a specification.

It is well understood by practical photographers that in the ordinary process of photoprinting fine particles of dust which may be adherent to the face of the negative or may be floating in the atmosphere will get between the face of the negative and the paper and prevent perfect contact between the two surfaces at and immediately around this particle. These points of separation between the plate and paper produce in the finished print a defective spot, which requires to be retouched by an expert artist to correct the defect. Ordinarily this matter of retouching involves taste, skill, experience, and considerable expense and would be wholly avoided if these floating particles of dust, which are imperceptible in the air to the ordinary senses, could be excluded. Experience has shown that they will appear where the printing is carried on with the greatest care and precaution in a close chamber from which all dust which it was possible to remove or shut out has been excluded and from which all air-currents have been shut out. Wetting down the room does not seem to have much effect upon it. Therefore I have resorted to a process of cleaning the face of the plate by exposing it at the instant before the paper is introduced in the frame to an exhaust current of air, which sucks from the surface everything which is removable and carries it off through a conduit. It has been found that it will not thoroughly accomplish the object to direct an air-blast directly against the plate, for that is liable to and often does deposit on the surface as much as it removes; but an inverse blast or current which is directed away from the surface of the plate by induction draws after it all removable matter of every description and leaves the surface in its cleanest possible condition.

For carrying out this invention I provide a broad thin nozzle attached to the end of a suction-pipe through which a strong exhaust-blast is drawn, which nozzle is preferably fixed and opens upwardly. In connection with this are provisions for passing the negative back and forth over the mouth of the nozzle in close proximity thereto. The nozzle may be stationary and the plate movable over it, or the plate may be stationary and the mouth of the nozzle may be passed over the film-surface of the plate; but the former method of use is to be preferred, as the negative is turned face downward during the operation, which position protects the surface of the plate against the lodgment of flying or falling particles of dust which might be deposited thereon by gravity and at the same time it favors the dislodgment by gravity of loose particles from the plate.

For the purpose of carrying out this invention I have provided an exhaust-pipe S, the bottom end of which is connected with a pneumatic exhaust-fan W or other suitable engine and is called the "suction-pipe." In this pipe is a cut-off valve P of ordinary construction, the object of which is to admit or shut off the passage of the air-current through the mouth of the suction-pipe. These parts may be located below a table T, through which the suction-pipe passes, terminating in an upwardly-turned nozzle E, which is flattened, as shown, so as to produce a thin broad air-current as the air is drawn through it. The mouth of this nozzle is a little above the table, and on each side of it is a rabbeted frame-guide G, rabbeted, as at *w*, for the reception of the printing-frame F.

The printing-frame may be of any approved form of construction, provided the plane of the negative when confined in the frame is substantially parallel with the surfaces of the frame which ride on the ways *w w* when used therewith. The style of frame shown consists of two similar halves, of which the inner corner of one and the outer corner of the other are rabbeted, so that a male and female fitting between them is produced. The plate N is confined between them by any suitable clamping means, which are immaterial to the invention. The frame F is adapted to slide in the ways *w w* of the guides G G over the top of the nozzle E, with the under surface of the negative in close prox-

imity to it. The inner edges of the frame stand above the plane of the inserted plate, which thus is in the nature of a sunken panel. When laid in position over the mouth of the nozzle, the frame may be reciprocated back and forth over the suction-pipe to the extent shown in Fig. 2 in dotted lines, so that every part of the plate is subjected to the action of the suction-draft. The air is drawn from the outside through under the ends of the frame, as shown by the arrows in Fig. 1. The valve V may be operated by the hand-wheel P, or a stirrup attached to the band C may be used, so that it may be put under the control of the foot, it being immaterial by what means it is actuated.

The operation of the apparatus consists simply in inserting the plate in position in the frame with the coated side exposed in the right direction, placing the frame in position in the slideway in rabbets *w w*, turning on the exhaust-draft, and then quickly moving the frame two or three times over the nozzle. This operation will insure the detachment from the plate of every removable particle of dust or other impurity, all of which will be conveyed out of the operating-room through the suction-pipe to the outside. A reversed current will draw dust from the outside and deposit it on the plate, to which some particles will adhere when the plate is removed after the operation, and for this reason a direct current is unavailable.

I therefore claim as my invention, and desire to secure by Letters Patents, the following:

1. A photo-plate-cleaning apparatus consisting of a pneumatic suction-pipe, a plate-holder and a pneumatic exhausting device, combined and arranged to operate substantially in the manner and for the purposes specified.

2. A photo-plate-cleaning apparatus consisting of a pneumatic suction-pipe, a plate-holder and means for guiding one over the other and in close proximity therewith, in combination with a pneumatic exhausting device, all combined and arranged to operate substantially as specified.

3. A photo-cleaning apparatus consisting of a pneumatic suction-pipe provided with a check-valve, a plate-holder and a pneumatic exhausting device combined and arranged to operate substantially in the manner and for the purposes specified.

4. A photo-plate-cleaning apparatus consisting of a pneumatic suction-pipe provided with a broad thin nozzle-opening, a plate-holder and guides in which it is adapted to slide over and in close proximity to said nozzle-opening, and a pneumatic exhausting device, substantially as specified.

5. The combination in a photo-plate-cleaning apparatus, of a pneumatic suction-pipe provided with a broad thin nozzle-opening and a check-valve, a plate-holder and guides in which it is adapted to slide over and in close proximity to said nozzle-opening, and a pneumatic exhausting device, constructed and arranged to operate substantially as specified.

In testimony whereof I have hereunto subscribed my name in the presence of two witnesses.

HAWLEY C. WHITE.

Witnesses:
FRANKLIN SCOTT,
M. B. MIDDLETON.