

(No Model.)

2 Sheets—Sheet 1.

J. W. T. CADETT.

DEVICE FOR SETTING OR COOLING PHOTOGRAPHIC EMULSIONS.

No. 405,463.

Patented June 18, 1889.

FIG. 1.

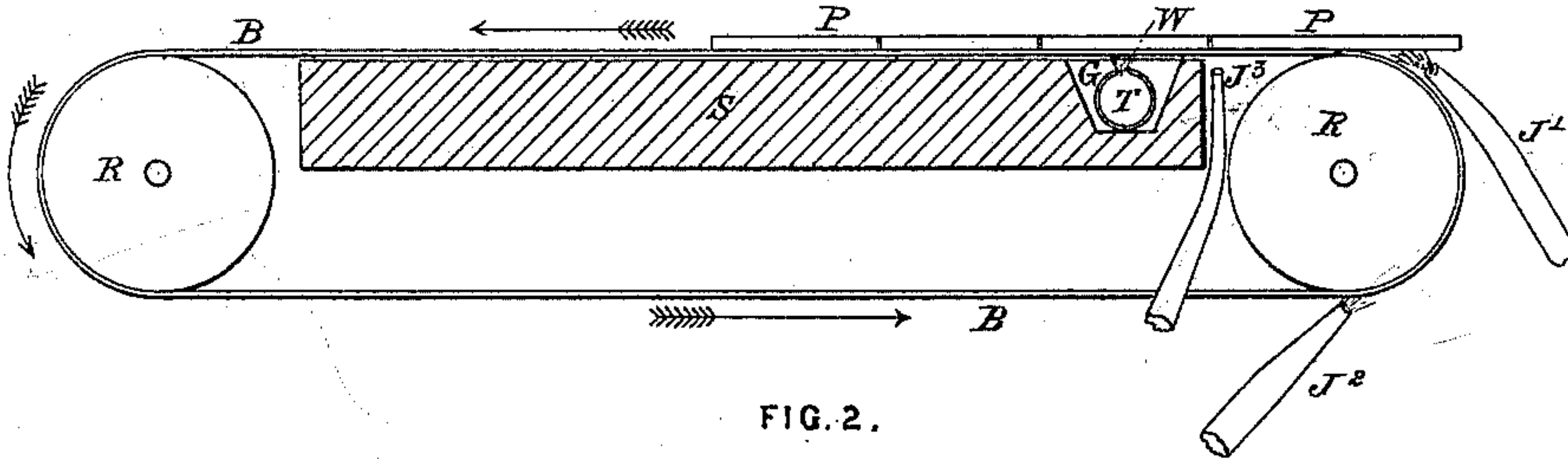


FIG. 2.

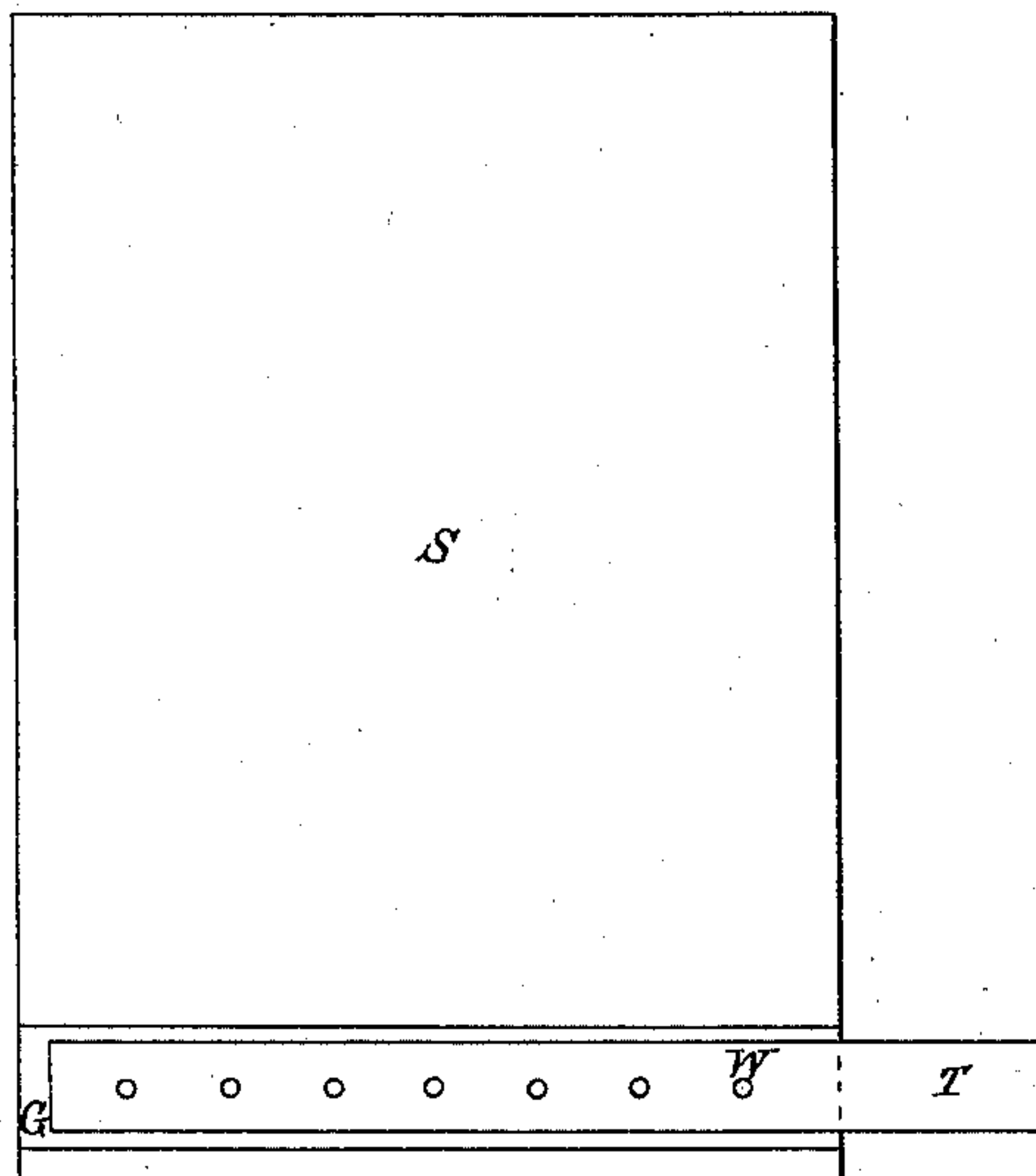


FIG. 3.

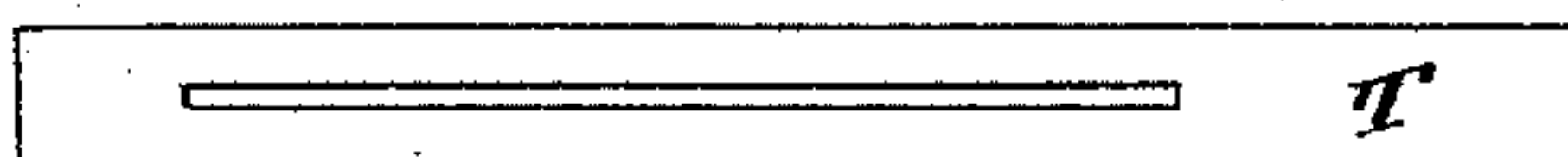
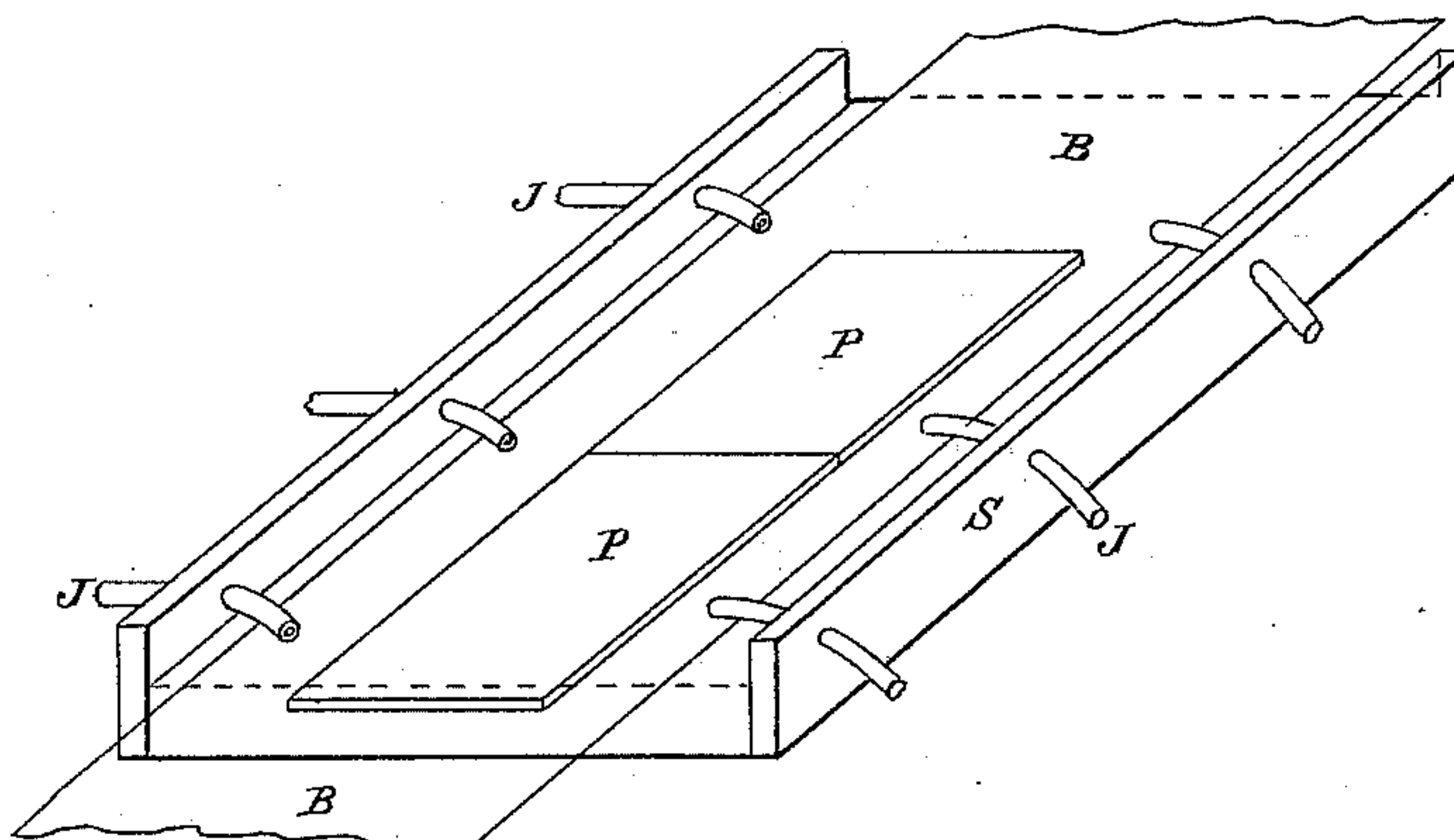


FIG. 4.



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FIG. 5.

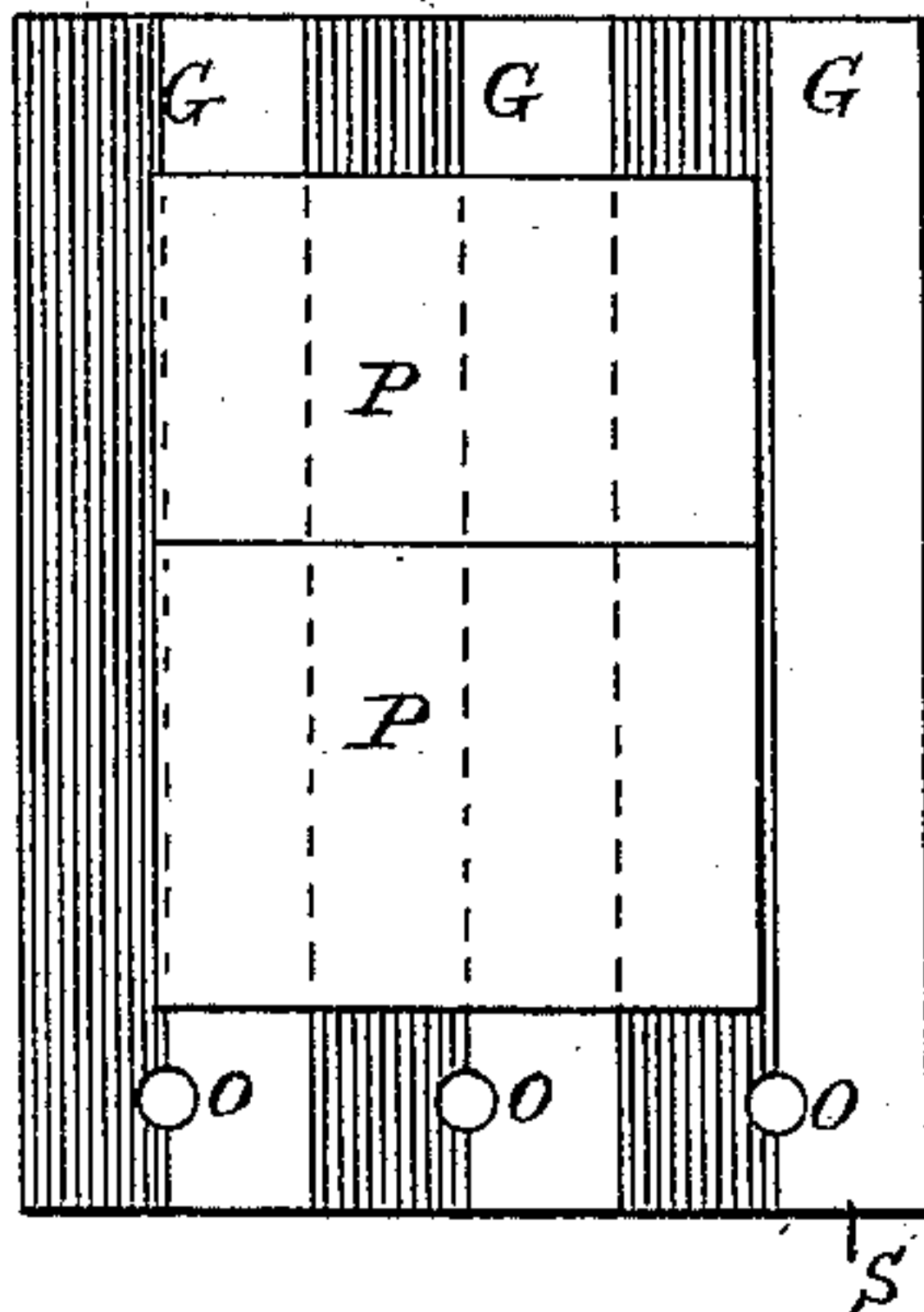


FIG. 6.

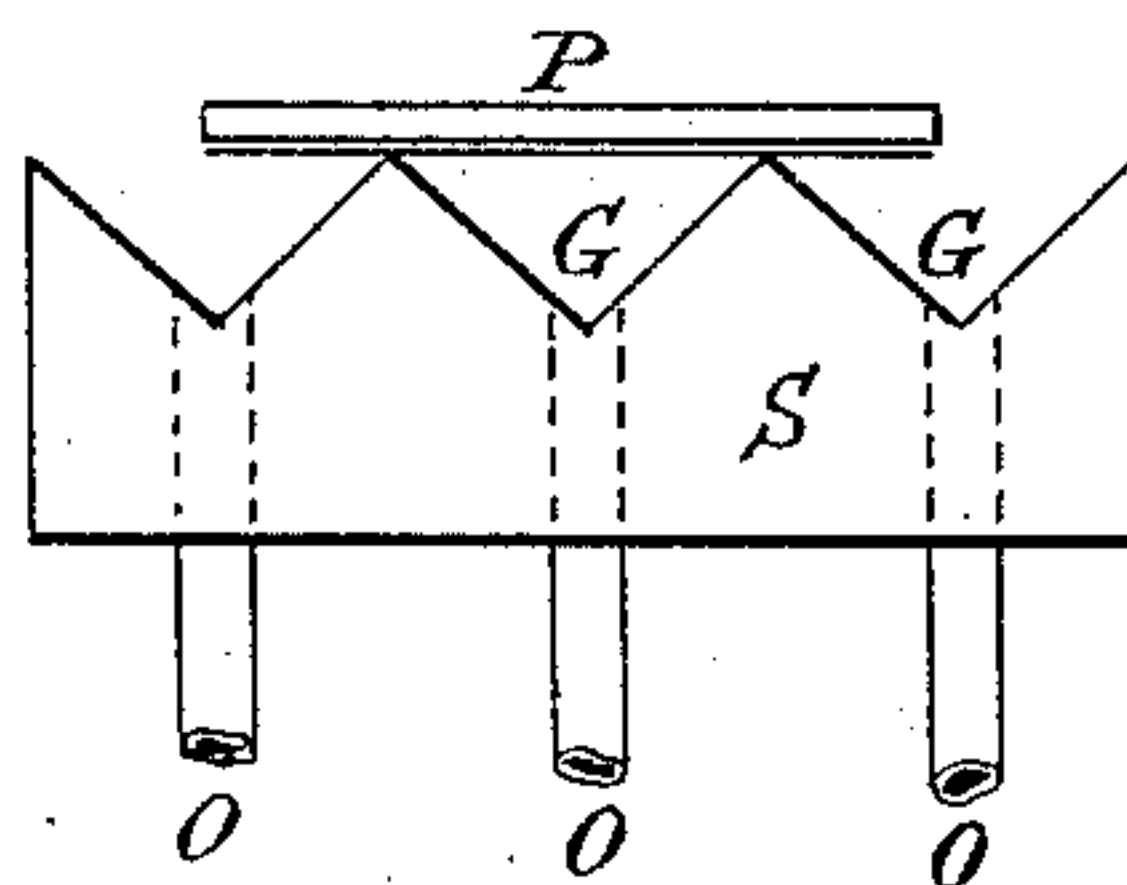
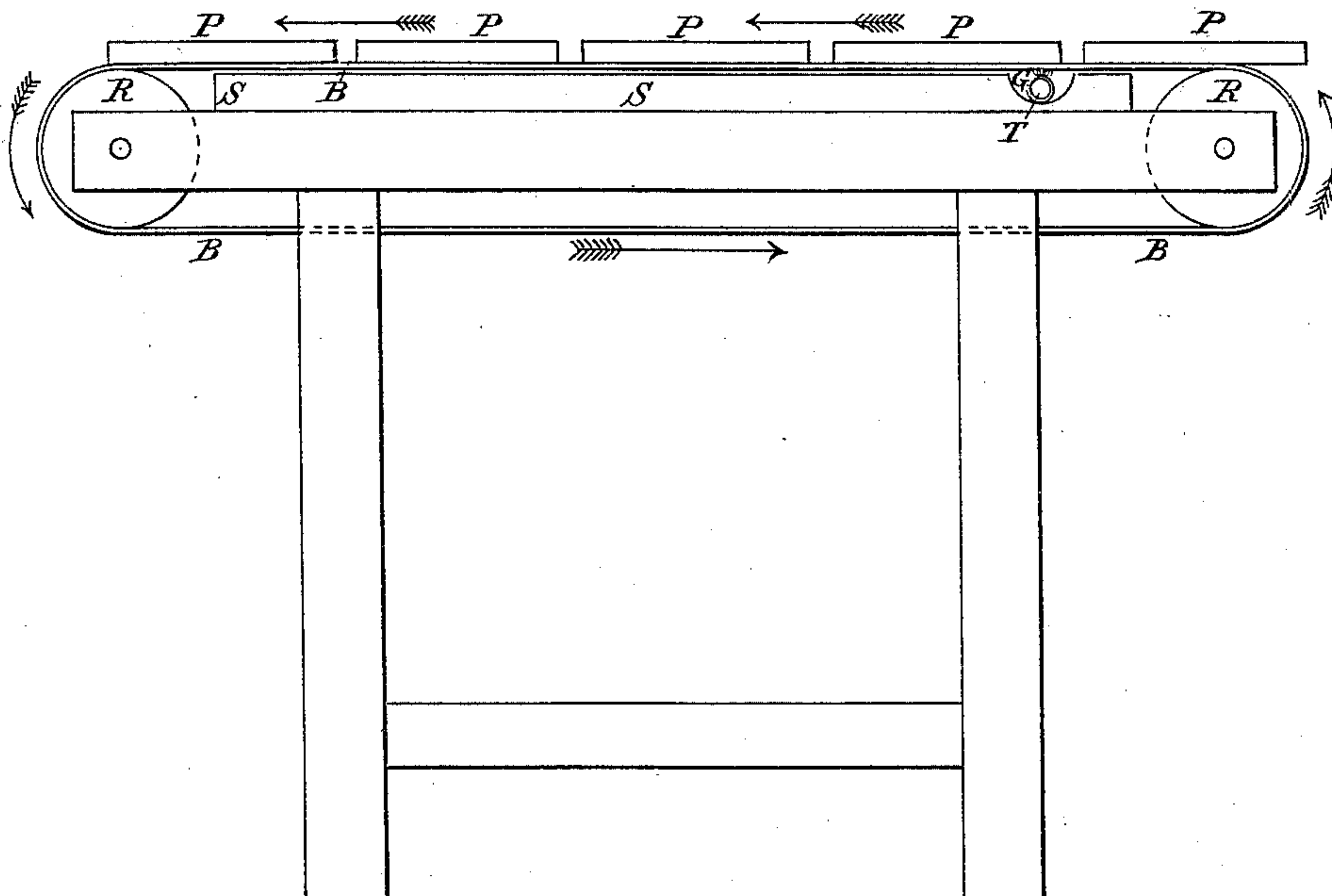


FIG. 7.



Witnessed

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UNITED STATES PATENT OFFICE.

JAMES WILLIAM THOMAS CADETT, OF ASHSTEAD, COUNTY OF SURREY,
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DEVICE FOR SETTING OR COOLING PHOTOGRAPHIC EMULSIONS.

SPECIFICATION forming part of Letters Patent No. 405,463, dated June 18, 1889.

Application filed November 20, 1888. Serial No. 291,399. (No model.) Patented in England October 10, 1887, No. 13,725.

To all whom it may concern:

Be it known that I, JAMES WILLIAM THOMAS CADETT, a subject of the Queen of Great Britain, residing at Greville Works, Ashstead, Surrey, England, have invented a new and useful Improvement in Devices for Setting or Cooling Photographic Emulsions, (for which I have obtained a patent in Great Britain, No. 13,725, bearing date October 10, 1887,) of which the following is a specification.

The object of this invention is to readily and effectually cool and set photographic emulsions when placed on glass or other suitable surfaces by the active application of cold water in jets or streams either to the under sides of such surfaces or to the bands or other carrying arrangements whereon such surfaces travel, or to both, whereby I insure the proper cooling and setting of the emulsion or emulsions on such surfaces. Hitherto such operation has been effected by the passive application of cold water to the carrying-bands, which have been caused to pass through a tank of cold water placed beneath the slab or table of a photographic emulsion-coating machine. The disadvantage of this method, however, is that the quantity of water taken up by the bands in passing through such tank is inadequate to sufficiently lubricate the bands and to chill the plates or other equivalent surfaces so as to insure the proper cooling and setting of the emulsion thereon. This disadvantage I effectually obviate by my invention, which consists in applying cold water to the under side of the plates or other surfaces which are coated with the emulsion or to the bands or other carrying arrangements whereon such plates or surfaces travel, or to both the plates or other surfaces and the bands or other carrying arrangements, through one or more perforated or slotted tubes or pipes which are fitted to or in close proximity with the slab or table of the coating-machine in any convenient manner, and whereby the water is thrown onto such plates and bands or their equivalents in jets or streams of sufficient force and quantity to insure perfect lubrication and the proper cooling and setting of the emulsion thereon. The only advantage of employing a slotted instead of a perforated tube or pipe

is that a more copious jet or stream of water is delivered therefrom than from a perforated tube or pipe; or the slab or table itself may be perforated and have one or more tubes or jets fitted therein, through which the water can be delivered onto the bands and plates or their equivalents. Such tubes or jets are connected to the water-main or to any other convenient and suitable water-supply, so that a proper and ample supply can be obtained. Preferably the bands are made of any suitable porous fabric or material—such as canvas—which will readily allow the water to pass through it. If, however, the bands be made of a denser and consequently less porous material, I inject the water onto the band at a point where it passes over the roller, so as to insure its proper lubrication by bringing a sufficient quantity of water between the under sides of the plates or other equivalent surfaces and the bands. When the bands are made of a material that is impervious to water, I apply water to both sides of the bands to insure their proper lubrication.

In lieu of the perforated or slotted tubes or pipes above mentioned, I may form suitable grooves or channels in the face of the slab or table over which the plates or other equivalent surfaces are moved, and fill or flood such grooves or channels with water, which is conveyed thereto by means of pipes or tubes connected with any suitable water-supply, so that the under sides of the plates or other equivalent surfaces and the bands whereon the same are carried come in contact with the cold water contained in such grooves or channels, thus chilling the plates or other equivalent surfaces and cooling and setting the emulsion thereon. This modification of my invention is more particularly applicable where the plates or other equivalent surfaces are carried by cords or narrow bands or chains, or are moved forward by hand. Or I may use a grooved or channeled slab or table, such as that hereinbefore described, in combination with one or more delivery tubes or pipes or nozzles, as hereinbefore mentioned, so as to obtain a more copious supply of water, and thus flood both the bands and likewise the under sides of the plates or other equivalent

surfaces, thereby securing increased lubrication of the bands, and a more speedy chilling of the plates or other equivalent surfaces and cooling and setting of the emulsion or emulsions thereon.

In the drawings, Figure 1 shows a view in sectional elevation of the slab or table of an emulsion-coating machine, made and fitted according to my invention. B is an endless band traveling over rollers R in the direction indicated by the arrows. S is the slab or table over which such band passes. P are the plates or other equivalent surfaces resting on the endless band. G is a groove or channel in the slab or table, preferably made at the rear end thereof, where the endless band first comes in contact therewith, and fitted with a perforated or slotted delivery tube or pipe T, through which the water passes, as indicated at W. One or both ends of this delivery-pipe is or are connected to a suitable water-supply in any well-known manner. J' J² J³ are jets, which can be arranged so as to deliver the water either onto the endless band or between the same and the under side of the plates or other equivalent surfaces, as indicated at J'. In practice I find that a single delivery tube or pipe is quite sufficient for the purposes of my invention; but it is obvious that several delivery-pipes and also several grooves or channels may be employed, if desired. In this figure the supports for the table or slab S and for the rollers R are not shown, as they may be made in any well-known manner.

Fig. 2 shows a plan of the slab or table S, fitted with a perforated delivery tube or pipe T.

Fig. 3 shows a detail view of a slotted tube or pipe instead of a perforated one.

Fig. 4 shows a view in perspective of a slab or table S, the sides whereof are fitted with jets or pipes J, through which water is delivered in jets or streams onto the endless band B. The jets or pipes are connected to any suitable cold-water supply.

Fig. 5 shows a plan, and Fig. 6 an end elevation, of a slab or table S, having grooves or channels G formed therein, as hereinbefore mentioned. These grooves or channels are fitted with pipes O or their equivalents, which are connected with any suitable water-supply and through which water is fed into the grooves or channels, so as to fill and flood the

same. The plates P or other equivalent surfaces, as they travel over the table, pass over such flooded grooves or channels, and as their under surfaces come in contact with the water therein they are chilled and cooled, thus causing the emulsion or emulsions with which their upper surfaces are coated to quickly cool and set thereon.

In every case the surplus or waste water can flow over the sides of the table or slab and be carried away by a waste-pipe or in any other convenient and well-known manner. Fig. 7 shows the application of my invention to an ordinary coating-table.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a cooling-machine, the combination, with a table having one or more channels in its surface, of the revoluble rollers journaled at the ends of the table, the carrier-belt passing over said table and around the rollers, and one or more pipes delivering water within the said grooves in the table for cooling the under side of the belt, substantially as and for the purpose set forth.

2. In a cooling-machine, the combination, with a table having one or more channels in its surface, of the revoluble rollers journaled at the ends of the table, the carrier-belt passing over said table and around the rollers, one or more pipes adapted to deliver water upon the upper surface of the belt, and one or more pipes delivering water within the said grooves in the table for cooling the under side of the belt, substantially as and for the purpose set forth.

3. In a cooling-machine, the combination, with a table having a transverse groove on its surface near its rear end, of the revoluble rollers journaled at the ends of the table, the carrier-belt passing over said table from rear to front, and a pipe provided with one or more openings for delivering water within the said groove in the table and cooling the under side of the belt, substantially as and for the purpose set forth.

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