

No. 888,260.

PATENTED MAY 19, 1908.

V. PLANCHON.

APPARATUS FOR THE MANUFACTURE OF COLLODION FILAMENTS.

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FIG. 1

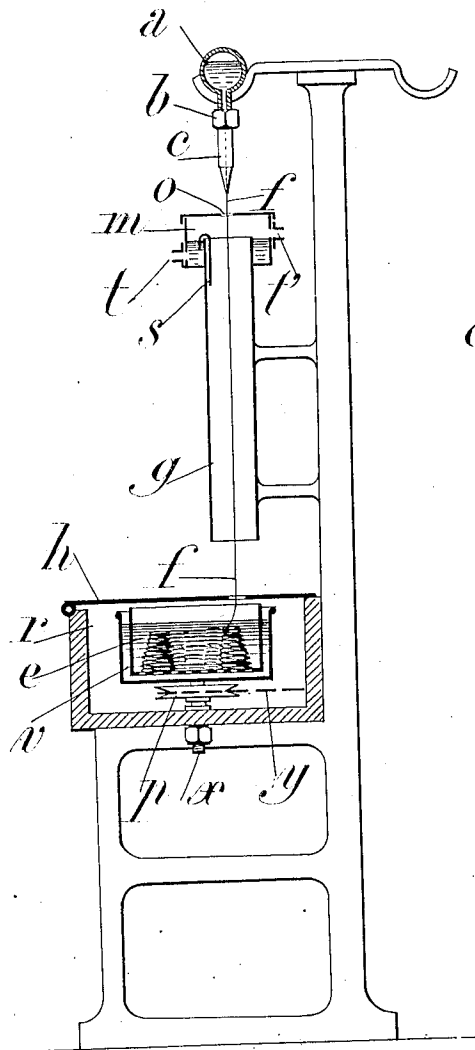
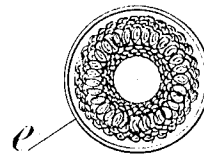


FIG. 2



FIG. 3



WITNESSES

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APPARATUS FOR THE MANUFACTURE OF COLLODION FILAMENTS.

No. 888,260.

Specification of Letters Patent.

Patented May 19, 1908.

Application filed January 23, 1907. Serial No. 353,749.

To all whom it may concern:

Be it known that I, VICTOR PLANCHON, a citizen of the French Republic, residing at Lyon, France, have invented certain new and useful Improvements in Apparatus for the Manufacture of Collodion Filaments, of which the following is a specification.

The present invention relates to improvements in apparatus for the manufacture of collodion filaments and the object is, to allow of simultaneously producing the filament and of coiling it for the purpose of producing regular cocoons, which allow of carrying out with great facility the final chemical operation of manufacture.

An embodiment of the invention is illustrated in the annexed drawing, in which

Figure 1 is a sectional elevation thereof. Figs. 2 and 3 are an elevation and plan-view respectively of the cocoon obtained.

Collodion from the pipe *a* is discharged at suitable pressure through the nozzle *c* connected to the pipe by the union *b*. From the nozzle the collodion descends by gravity in the form of a cylindrical thread *f*, which enters the receptacle *r* containing a suitable coagulating liquid. Before entering said receptacle *r* the filament traverses the cylinder *g* which contains air saturated with alcohol vapors. The cylinder *g* is of metal and open at both ends, and is lined with spongy material saturated with alcohol. The filament passes into the cylinder *g* through the orifice *o* in the cover of the box *m*. The annular space between the latter and the top of the tube contains alcohol, which enters the said space through the tube *t* and passes out through the tube *t'*. The siphon or siphons *s*, which may merely consist of strips of fabric, conduct alcohol to the spongy lining of the cylinder *g*.

The collodion filament passing through the cylinder *g* does not become dry but is merely slightly expanded and hardened. It enters the vessel *r* in a perfectly cylindrical state. The vessel *r* may be an ordinary bowl or the like containing the coagulating liquid but it is preferable to use an arrangement similar to that illustrated in the drawing. This arrangement comprises the cylindrical inner receptacle *v*, which is open at the top and contains the coagulating liquid and the sieve *e*, the bottom of the latter consisting of wide-meshed fabric or metallic gauze. The filament enters the sieve-bottomed vessel and the latter serves for removing it from the

liquid. During the entire operation the parts *v* and *e* are rotated by means of the horizontal pulley *p* and the cord *y*; *x* is the axle of the pulley.

The filament descends on to the sieve a certain distance from the center of rotation, so that during the working of the apparatus the spirals formed by the collodion at the moment of its contact with the coagulating liquid are not superposed on each other. These spirals overlap each other in the manner illustrated in Fig. 3 and after a certain length of time form a hollow, conical structure, as shown in Fig. 2. When this structure nearly fills the sieve-bottomed receptacle the latter is removed and replaced by a similar receptacle of the same kind. The filament can be very easily wound, being perfectly continuous and arranged in the manner of regular, overlapping rings. The length of the filament is only restricted by the capacity of the receptacle, and may attain several thousand meters without a joint.

The apparatus described is very easy to control. When the horizontal pulley has been started, and an empty sieve-bottomed receptacle has been placed in the coagulating liquid, the operation can be started by turning on a cock which controls the flow of the collodion solution. The filament of liquid descends by gravity through the alcohol vapor in the cylinder *g* and is solidified and coiled on the sieve as has been described.

A plurality of vessels and sieves may be simultaneously used, with a single driving cord or belt. The vessel *r* or the rotating receptacle is provided with a hinged cover *h* or other means for preventing or restricting the losses due to evaporation. The apparatus may be constructed of any suitable material, and the dimensions and details of construction may be varied indefinitely. In all cases, however, the collodion filament traverses by gravity a certain vertical distance before coming into contact with the coagulating agent, and descends on to a rotating sieve, so that it forms thereon a regular coil easy to unwind. This special arrangement of the filament allows of effecting, with great facility, all the final chemical operations of manufacture without removing the filament from the sieve-bottomed receptacle. The latter, with the coil therein, is first dipped into pure water to remove all the soluble substances contained therein, these substances being thus recovered. Thereupon

the receptacle is placed in baths containing suitable denitrating and decoloring agents of the kind commonly used. Then the filament is again dipped into water, and can be removed in a clean and incombustible state. These operations are performed without contact between the filament and the operator's hands. For commercial purposes the filament is wound into hanks, skeins, balls or

10 the like, which are dried by suitable means. The chemical operations described can either be effected by transferring the sieve-bottomed vessel into successive baths, in which it is placed with suitable care, or by successively introducing the liquids into a single
15 vessel in which the sieve-bottomed receptacle is placed.

What I claim as my invention and desire to secure by Letters Patent of the United
20 States is:—

1. In apparatus for the purpose set forth the combination with a discharge nozzle through which a filament is passed of a rotatable receptacle below said conduit and
25 adapted to contain a coagulating substance, the filament aforesaid descending into said vessel at a distance from the center of rotation thereof and means intermediate the nozzle and receptacle for treating the filament
30 with alcohol vapor.

2. In apparatus for the purpose set forth

the combination with a discharge nozzle through which a filament is passed, of a rotatable, double, sieve-bottomed receptacle below said nozzle and adapted to contain a co- 35 agulating substance, said vessel being so located that the filament descends thereinto at a distance from its center of rotation, and means intermediate the nozzle and receptacle aforesaid for treating the filament with 40 alcohol vapor.

3. In apparatus for the purpose set forth the combination with a discharge nozzle through which a filament is passed, of a rotatable, double, sieve-bottomed receptacle be- 45 low said nozzle and adapted to contain a coagulating substance, said vessel being so located that the filament descends thereinto at a distance from its center of rotation an open ended chamber intermediate the nozzle 50 and receptacle through which the filament passes, a lining of spongy material in said chamber and means for saturating said spongy material with alcohol substantially as described. 55

In witness whereof I have signed this specification in the presence of two witnesses.

VICTOR PLANCHON.

Witnesses:

THOS. N. BROWNE,
GASTON YEANNIANS.