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DEVICE FOR SPINNING VISCOSE SOLUTIONS WHILE APPLYING LONG PRECIPITATING DISTANCES

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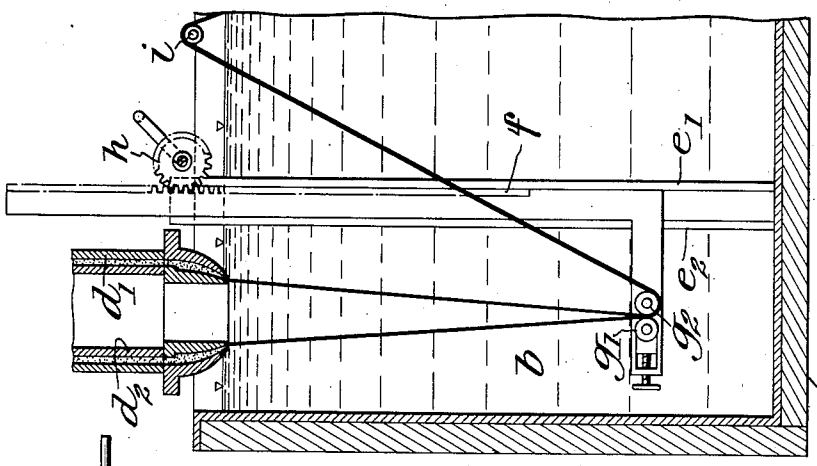


Fig. 3.

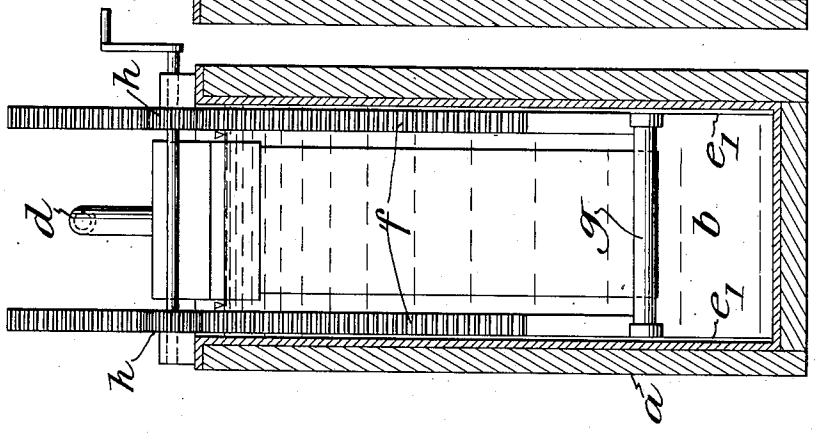


Fig. 2.

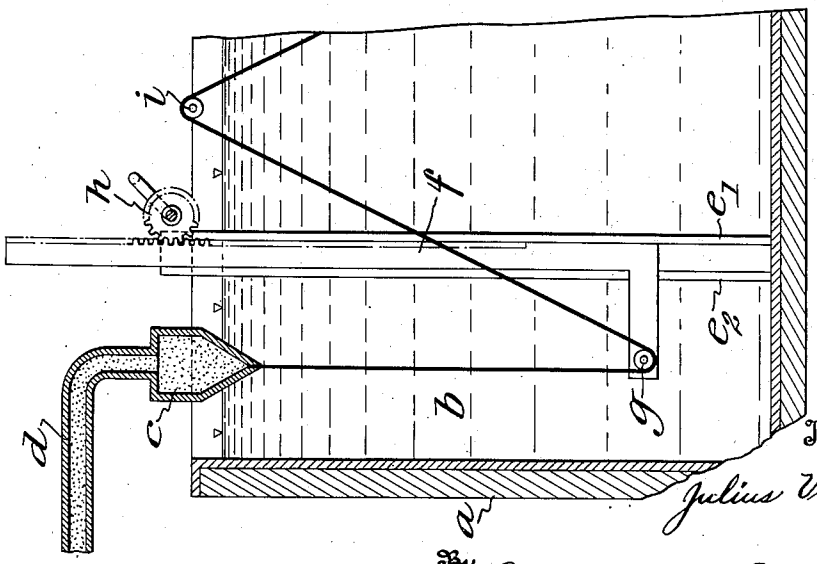


Fig. 1.

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UNITED STATES PATENT OFFICE

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DEVICE FOR SPINNING VISCOSE SOLUTIONS WHILE APPLYING LONG PRECIPITATING DISTANCES

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2 Claims. (Cl. 18—15)

The present invention relates to a device for spinning viscose solutions while applying long precipitating distances.

Broad articles from regenerated cellulose, such as tubular bodies, bandlets or films have hitherto usually been prepared by passing the viscose which has been pressed from the suitably formed nozzle into the precipitating bath through the said bath for a distance of 40–50 cm., whereby the viscose is converted, according to the kind of precipitating bath used, more or less into cellulose or cellulose xanthogenate of ammonium. It has hitherto technically been impossible to use long precipitating distances which would have enabled a farther-reaching coagulation and consequently a more careful treatment and preservation of the material, because the delivery rollers by which the film is uniformly discharged from the nozzle have to be easily handled by the workman; they, therefore, have to be adjusted not much more than 40–50 cm. underneath the nozzle. Otherwise the spinning start would meet with considerable difficulties.

Now I have found that these difficulties encountered at the spinning start can be overcome by fixing the delivery rollers not tightly inside the spinning vessel, but placing them under the spinning nozzle adjustably in height and distance from the opening of the nozzle. At the spinning start the delivery rollers are approached as far as possible to the nozzle, for instance to 30 cm., so that no difficulties arise to pass the film or tubular body around the delivery roller. The discharging rollers are then gradually lowered and withdrawn from the nozzle. When preparing tubular bodies, said bodies are discharged by means of two rollers the distance of which may be adjustable by means of a micrometer-screw. Thus a spinning distance of one meter and above is obtained.

The accompanying drawing illustrates two methods of executing the process in question and of which drawing:

Fig. 1 is a detail vertical longitudinal section; Fig. 2 is a transverse vertical section showing the structure of Fig. 1 as viewed from the right, and

Fig. 3 is a section similar to Fig. 1 of a modified form.

1. *Preparation of films*

In the spinning vessel *a* covered with lead is the precipitating bath *b*, for instance ammonium sulfate. The viscose in form of a band is pressed into the precipitating liquid through the inlet pipe *d* and the spinning funnel *c*; the viscose solidifies in said liquid so as to form a film. When starting the spinning process the frame *f* which runs in the guides *e*1 and *e*2 and the delivery roller *g* are caused to ascend as much as possible by turning the crank *h*; the film is then drawn out of the nozzle *c*, conducted round the driven roller *g* to the roller *i* by which it is conveyed onward. The frame with the delivery roller is then gradually lowered until it reaches the bottom of the vessel. Spinning distances of more than one meter are thus easily obtained. In the drawings 1 and 2 the frame is illustrated half way lowered.

2. *Tubular bodies*

The tubular bodies are prepared as a matter of principle according to the same process. The tubular bodies are, however, discharged from the nozzle by two rollers *g*1 and *g*2 (drawing 3) the distance of which is adjustable by means of a micrometer-screw. With precipitating distances of a sufficient length damage of the tubular body is avoided by means of the squeezing effect of the rollers.

I claim:

1. In an apparatus for spinning broad articles from regenerated cellulose by entering a viscose solution through a nozzle into a precipitating bath, a delivery device comprising two rollers, the said device being adjustably mounted inside the precipitating bath under the spinning nozzle and displaceable in the direction of spinning for altering the distance between the nozzle and the delivery device.

2. In an apparatus for spinning broad articles from regenerated cellulose by entering a viscose solution through a nozzle into a precipitating bath, a delivery device being mounted inside the precipitating bath under the spinning nozzle and displaceable in the direction of spinning for altering the distance between the nozzle and the delivery device, the said device comprising two rollers the distance of which can be altered by a micrometer-screw.

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