

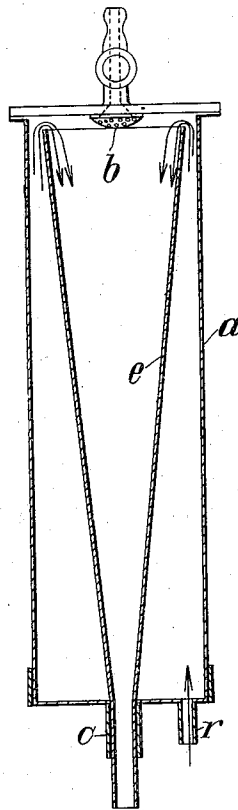
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SPINNING APPARATUS

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UNITED STATES PATENT OFFICE.

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SPINNING APPARATUS.

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United States Patent No. 957,460 characterizes a machine for the spinning of artificial silk by the feature that the thread, at the point where it leaves the spinning nozzle
5 is at first surrounded by a slowly flowing current of liquid and is only seized and carried forward by the rapid current of liquid after it has attained sufficient strength as a result of the solidifying process. In the constructional form of the machine described
10 there is indicated as the spinning vessel a cylinder in which is located a cone, the upper edge of which lies substantially—in practice from about 5 to 8 centimetres—below the spinning nozzle. As a result of this
15 there is, between the cone, in which a rapid movement of the precipitating liquid occurs, and the spinning nozzle, a cylindrical space in which only a very slow movement of the precipitating liquid takes place. This slow
20 motion arises as a result of the fact that either, as indicated by way of example in the patent specification, a small amount of liquid is admitted from above through a pipe *p*, or else owing to the fact that as a result of the rising current of precipitating
25 liquid which enters through the pipe at the bottom of the spinning apparatus and then flows away again through the cone, a small part persists in the rising motion, that is to say, it rises along the wall in the cylindrical upper part of the apparatus and is drawn downwards again in the centre with the thread.

It has now been discovered that equally good spinning is rendered possible if the cone extends right up to the spinning nozzle, or even a little above it, because even then there is another very slow current of precipitating liquid present surrounding the
40 threads, for the precipitation liquid, which flows in from outside or from below over the edge of the cone into the latter, does indeed fill up the cone but flows downwards only at the edge of the cone and allows a cone of only very slowly moving precipitating liquid to exist in the centre. Such a tranquil inner cone is nevertheless only present
45 if the precipitating liquid introduced from outside, from below, passes over the edge of

the cone into the latter. The tranquil cone cannot for example be obtained if the precipitating liquid enters the cylinder or cone from above. In the latter case the flow of the precipitating liquid in the cone is uniformly distributed over its cross section.
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In the accompanying drawing, spinning apparatus according to the invention is illustrated by way of example. The cylinder *a* is closed below by a bottom with a central
60 pipe union *c* and an eccentric pipe union *r*. In the central tubulure *c* stands the cone *e*, which extends up as far as the spinning nozzle *b*. Through the eccentric pipe union *r* enters the precipitating liquid.
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What I claim is:—

1. In a spinning apparatus for the manufacture of artificial silk by the stretch spinning process, the combination of a cylindrical vessel; a nozzle discharging into the upper end thereof; a spinning funnel arranged within the vessel, the upper edge whereof terminates in approximate alignment with the nozzle with the wall of the funnel spaced from that of the vessel; and means for admitting precipitating liquid to the vessel
70 outside of the spinning funnel and below the level of its upper end and for causing the entire stream of precipitating liquid to pass through said funnel, whereby the liquid
80 flowing inwardly over the upper edge of the funnel will follow, in the main, the inner face of the funnel as it passes downwardly leaving a relatively slow downwardly moving body of the liquid directly below and in
85 line with the discharge of the nozzle.

2. Spinning apparatus for the manufacture of artificial silk by the stretch spinning process, comprising a spinning nozzle, a cylindrical vessel below said nozzle, a spinning
90 funnel arranged within said cylindrical vessel, said spinning funnel extending upward, at least, to the spinning nozzle, and means for admitting precipitating liquid to the cylindrical vessel outside the spinning funnel
95 and below the level of its upper aperture and for causing the entire stream of precipitating liquid to pass through said funnel.

3. Spinning apparatus for the manufacture of artificial silk by the stretch spinning
100

process, comprising a spinning nozzle, a cylindrical vessel below said nozzle, a spinning funnel arranged within said cylindrical vessel, said spinning funnel extending upwards a little above the spinning nozzle, and means for admitting precipitating liquid to the cylindrical vessel outside the spinning funnel and below the level of its upper aperture and for causing the entire stream of precipitating liquid to pass through said funnel. 10

In testimony whereof I have signed my name to this specification.

HUBERT KEMPF.