

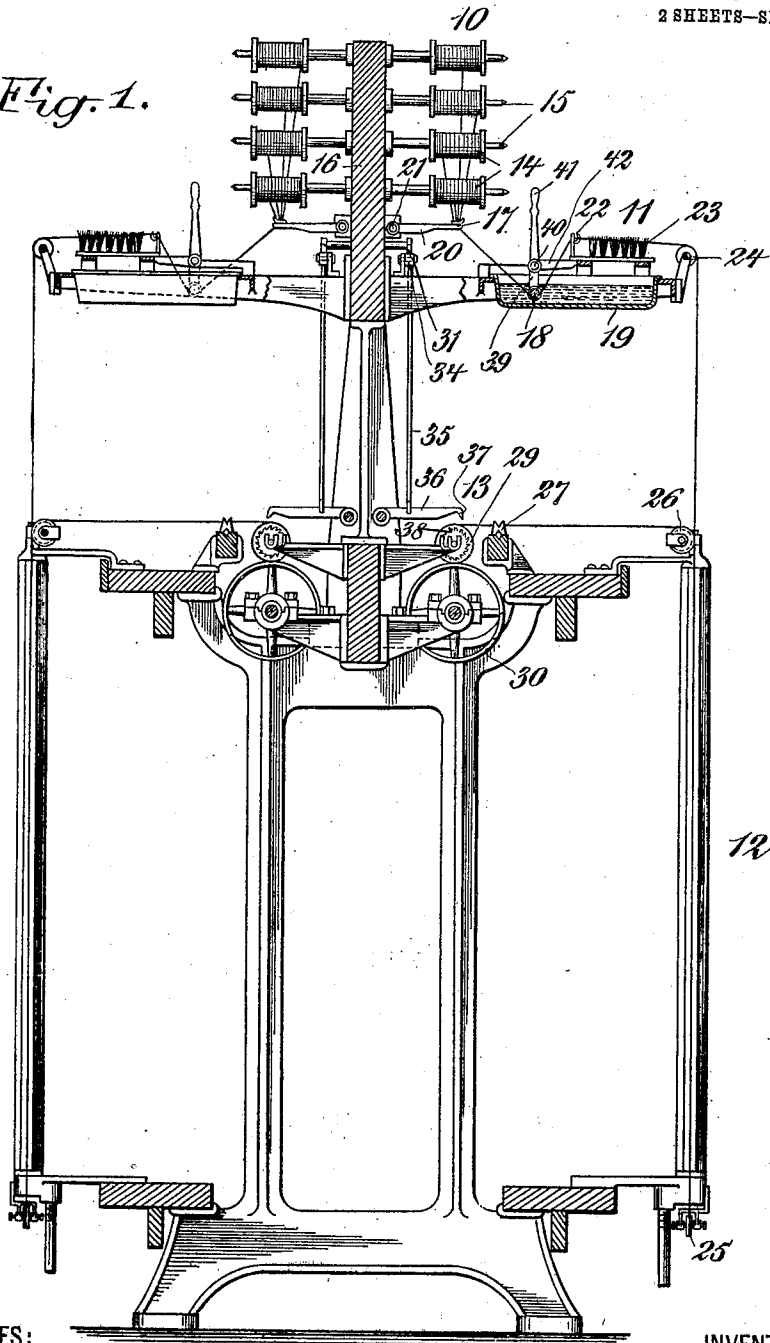
E. POHL.
SILK THREAD FINISHING MACHINE.
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920,776.

Patented May 4, 1909.

2 SHEETS—SHEET 1.

Fig. 1.



WITNESSES:

Sydney S. Andrews.
George L. Blume.

INVENTOR

Edward Pohl

BY

Chapin Raymond
HIS ATTORNEYS

UNITED STATES PATENT OFFICE.

EDWARD POHL, OF NEW YORK, N. Y.

SILK-THREAD-FINISHING MACHINE.

No. 920,776.

Specification of Letters Patent.

Patented May 4, 1909.

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To all whom it may concern:

Be it known that I, EDWARD POHL, a citizen of the United States of America, and a resident of New York, county and State of New York, have invented certain new and useful Improvements in Silk-Thread-Finishing Machines, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to silk thread finishing machines and particularly to the type of machine in which a finishing or lustering solution is first applied to the threads, and the threads thereafter ironed and polished by being drawn over a heated contact surface.

My present invention consists in means whereby a plurality of threads may be assembled in close parallel relation either after or before a finishing and lustering solution has been applied thereto, whereby the threads will be grouped together as a single thread comprising a plurality of filaments, the threads being ironed and polished in this condition and finally taken up upon spools as single threads. A thread comprising several filaments as so described will differ essentially from the usual form of spun thread having several filaments, in that in the latter form of thread, the filaments are twisted into substantially rope form, while in the former, the threads lie side by side in parallel straight lines.

My invention also consists in certain details of construction and combinations of parts including a means whereby the breaking of a single filament will stop the take up means for the thread of which that filament forms a component part, and a novel form of movable guide for forcing the threads to pass through the bath containing the finishing and lustering solution.

In order that my invention may be fully understood I will now proceed to describe an embodiment thereof, having reference to the accompanying drawings illustrating the same, and will then point out the novel features in claims.

In the drawings: Figure 1 is a view in transverse section of a machine embodying my invention. Fig. 2 is an enlarged detail

view in front elevation of the upper portion of one element of the machine, including the means for applying the finishing and lustering solution to a plurality of filaments to form a single thread, the take up means for the thread, and the stop motion, the heated contact member being removed. Fig. 3 is a detail view of certain parts of the stop motion showing the same in their tripped position. Fig. 4 is a top view of the same and showing also part of the means for applying the finishing and lustering solution to the threads. Fig. 5 is a detail view in transverse section of parts of the winding or take up means showing also the stop lever therefor.

The machine comprises generally a group of supports 10 for the filaments or threads to be treated, means 11 for applying a finishing and lustering solution to a group of filaments to form a single thread, a heated contact member 12 for the thread and winding or take up means 13 for the thread after it has been ironed and polished. The particular machine shown is designed for treating a number of groups of threads or filaments to form a number of individual threads, each individual thread to be formed having its own solution applying means, its own heated contact member, and an individual winding device. As various groups of parts are similar throughout, I will describe a single set of such parts just as if the machine were designed for producing but a single thread, it being understood that the same explanation would serve for the large number of similar groups of mechanism which I ordinarily employ in one machine.

The filaments to be treated are mounted on the machine on four bobbins 14 located upon spindles 15 which are supported by a central plate 16 formed as a part of the frame of the machine. The said filaments pass through individual guiding elements 17 and thence beneath a guide rod 18 located in the bath which forms a part of the solution applying means 11. The guides 17 are formed in the end of a plurality of levers 20 which are loosely strung upon a shaft 21, the said levers being supported wholly by the filaments whereby they are free to drop in case any

filament breaks. The filaments in passing under the guide rod 18 are compelled to pass through the solution contained in the bath 19 wherein they each pick up a modicum of the solution, and thereafter they pass through a common guide 22 wherein they are caused to run together to form a single thread. This thread then passes over or through a brush 23 by means of which the surplus moisture is removed, thence over a guide roller 24, thence downward along one face of the heated contact member 12, thence under and around a guide roller 25, thence upward along the opposite faces of the heated contact member 12, thence over a guide roller 26 at the upper end of the heated contact member 12, thence over a traversing guide 27 and thence around a take up spool 28. The take up spool is provided with the usual pulley or whirl 29 which is arranged in contact with a drive pulley 30 and by which the bobbin is frictionally rotated to take up the thread. This taking up of the thread upon the bobbin 28 is what causes the feed of the thread throughout the entire machine, the individual filaments being drawn from their bobbins 14 thereby, carried through the bath, formed into a single thread, and then drawn over the heated contact member so as to receive the ironing and polishing.

In order that the take up may be stopped should any one of the individual filaments break, I provide a stop means common to all of the filaments of any one group which operates upon the take up bobbin to prevent its further movement whenever the stop motion be tripped. This stop motion comprises a lever 31 which extends beneath all four of the levers 20 which carry the guides 17 for the individual filaments, the said lever 31 being normally just overbalanced by means of a counter-balancing weight 32. The said lever is provided with a catch 33 which normally engages the end of an arm 34 as is shown in Fig. 2, the said arm 34 being connected by means of a link 35 with a stop lever 36. The said stop lever 36 has a tooth 37 at the end thereof which, when the said lever is dropped, is adapted to engage with the teeth 38 of a ratchet wheel which is secured to rotate with the bobbin 28. Normally the stop lever is held in such a position that its tooth will be cleared of the teeth of the ratchet wheel as is shown in Figs. 2 and 5, but should any one of the levers 20 fall, consequently upon the breaking of the filaments which it guides, it will so fall upon the lever 31, and the weight thereof, resting upon the lever 31, will rock the said lever upon its pivotal support so as to release the catch 33 from engagement with the arm 34. The arm 34, link 35, and stop lever 37 will now be free to drop, and in so dropping the said stop

lever will engage the ratchet wheel 38 whereby to hold the spool or bobbin 28 against further rotation. To re-set the stop motion, it is only necessary to lift the guide lever 20 and then to again cause the arm 34 to be engaged by the catch 33. By the foregoing means, it will be seen that if any one of the individual filaments for any threads break, the take up means for that particular thread will be stopped, but that the stop motion will in no way affect any other part of the machine, so that the rest of the machine will be free to continue to operate as before.

In order to facilitate the threading up of the machine when first starting, and to permit the threads to be readily moved out of the solution contained in the bath 19 if the machine be stopped for any cause, I have mounted the guide 18 so that it may readily be moved into and out of the solution contained in the said bath. The guide 18 is supported by carrier arms 39 which are pivotally mounted at 40 in bearings upon opposite sides of the said bath 19. A manual operating member 41 is secured to the carrier whereby it may be readily operated by hand, and a stop 42 also connected with the said carrier limits the movement of the carrier in one direction, *i. e.* in the direction of travel of the thread. By this means, the travel of thread itself tends to keep the guide in its position in the bath, but if for any reason it is desired to remove the guide from the bath, it is only necessary to swing the hand lever in the opposite direction as will be well understood by reference to Fig. 1 of the drawings.

What I claim is:

1. In a silk thread finishing machine, the combination with means for applying a finishing and lustering solution to a plurality of filaments, of means for assembling the filaments in close parallel relation to form a single thread, and means for drying, ironing and polishing the thread comprising the several filaments substantially as set forth.

2. In a silk thread finishing machine, the combination with means for applying a finishing and lustering solution to a plurality of individual filaments, of means for assembling the filaments in close parallel relation to form a single thread, means for drying, ironing and polishing the thread, a take up means for the thread, and means operated by the breaking of any one of the individual filaments for stopping the take up means.

3. In a silk thread finishing machine, the combination with means for applying a finishing and lustering solution to a plurality of individual silk filaments, means for assembling the filaments into close parallel relation to form a single thread, means for ironing and polishing the thread so formed, a take up

means for the thread comprising a bobbin
and frictional means for rotating the same,
a plurality of guiding levers supported by the
individual filaments, a stop lever adapted to
5 engage the bobbin to stop the same from fur-
ther rotation, a catch for normally holding
the stop lever out of engagement with the

bobbin, and tripping means common to each
of the several guide levers for causing the
catch to release the stop lever.

EDWARD POHL.

Witnesses:

D. HOWARD HAYWOOD,
LYMAN S. ANDREWS, Jr.