To all whom it may concern:  
Be it known that I, EDWARD W. SERRELL,  
Jr., of the city, county, and State of New  
York, United States of America, temporarily  
residing at Chateauneuf, in the Department  
of Drôme, in the Republic of France, have  
vented a new and useful Improvement in Silk-  
Reeling Machines, of which the following is a  
specification.

Heretofore in reeling silk from cocoons by  
automatic machinery—such, for instance, as  
that shown in Letters Patent granted to me  
in France, No. 147,624, deposited February  
25, 1882, and granted May 9, 1882; in Austria,  
granted May 17, 1882, No. 10,629; and in  
Germany, Empire, March 28, 1882, No.  
19,885; and in my corresponding United States  
application, No. 129,196, filed April 25, 1884—  
the filaments of the cocoons, having first been  
brought together and passed through the agate  
in the tabular revolving filament-attaching  
device over the water-basin, and only parti-  
cally consolidated into a thread, were imme-  
diately passed around the feeding-drum,  
and afterward passed through the croisure  
or consolidating device during their passage  
to the reel.  

By proceeding in aforesaid manner it has been found  
that the threads upon the feeding-drum, being only partially con-  
solidated and quite wet, were apt to split and  
adhere to the drum and be wound upon it.  
It also happened that the unequal motion of  
the thread at the croisure or consolidating  
and drying device interfered with the action  
of the levers that control the action of the  
filament-supplying and stop-motion devices in  
the machines shown in such patents and appli-  
cations, in opening and closing the electric  
circuits embracing such levers, such unequal  
motion being caused by the two parts of the  
running thread not moving upon each other  
with the same freedom at all times in con-  
sequence of inequalities in the thread.  

The object of my invention is to prevent  
any unequal motion of the thread at the croi-  
sure affecting the levers that control the ac-  
tion of the filament-supplying and stop-mo-  
tion devices, and I accomplish this by consoli-  
dating and drying the thread at a croisure be-  
tween the filament-attaching device and the  
feeding-drum.

In the drawing I have represented my  
Improvement by a diagram.  

a represents cocoons in a water-basin, and  
the filaments from these cocoons pass to the  
55 lance-bout or filament-attaching device b,  
which consists of a revolving hollow cylinder  
containing a perforated agate, through which  
the filaments are passed.  

Upon the exterior of this cylinder there is a book that takes a 60  
 cocoon filament from a magazine of cocoons  
and wraps it around the running thread when- 

ever the latter falls below the standard size.  

In the aforesaid application and my applica-  
tion for patent, No. 129,021, filed April 23, 1884, 65  
this lance-bout and also the cocoon magazine  
and the means for operating them are fully  
shown and described, and also the electric-  
circuit connections and devices for stopping  
and starting the reel.  

My present invention 70 is available as an addition to the devices there-  
in set forth.

The endless cord 5, pulley 6, and cord 7 to  
the lance-bout b illustrate the driving de-  
VICES that may be employed to rotate the 75  
lance-bout from the drum D.

D represents the feeding-drum, around  
which the thread is passed one or more times,  
and from thence the thread is led around pul-  
leys upon the levers E, E', respectively, and 80  
then goes to the reel G, upon which it is  
wound.  

This reel G is revolved at a greater  
surface speed than that of the feeding-drum  
D, which produces a certain tension upon the  
thread, and if the thread is of the maximum 85  
size the tension of the thread keeps the lever  
E from its contact-point 8.  

If the size of the thread falls below the maximum standard,  
then the resistance of the thread is diminished,  
and the lever E falls upon its contact-point 8 90  
and closes an electric circuit, which brings into  
operation the devices that cause filaments to be  
added to the running thread until said thread  
is brought up to the required standard of size,  
at which time the resistance of the thread be-  
comes sufficient to move the lever E and  
break the circuit at 8.  

All the devices thus 95  
far described and their operation are the  
same as those set forth in my said applica-  
tions, and do not require to be repeated.

To accomplish the object of my present in-  
vention, I make the croisure 8 between the  

100
filament-attaching device and the drum D.
This croisure is made by passing the thread
from the filament-attaching device \( b \) up around
a roller, \( b' \), then down around a roller, \( b'' \), and
then twisting the free end of the thread a few
turns around the part of the thread passing
from \( b \) to \( b'' \), and then leading the free end of
the thread to and around the feeding-drum
D'; but this croisure might be made by twist-
ing the running thread around a stationary
thread or wire.
By making the croisure between the thread-
attaching device \( b \) and the feeding drum D,
any unequal motion of the thread at the croi-
sure does not affect the regulating-levers E F,
because the drum D, around which the thread
passes, is between the levers and the croisure,
and such unequal motion has only the effect
of slightly varying the tension of the running
thread between the croisure and the feeding-
drum D'. The lever F closes at \( c' \) an electric
circuit, if a thread breaks, to a magnet, that
brings into action devices for stopping the
reel, as set forth in my said applications.
H represents a pulley upon a continuously-
revolving shaft, which shaft may be the driving
shaft of the machine, and from this pulley mo-
tion is transmitted to the drum D and reel G
by means of belts \( H'H' \) and pulleys \( H''H'' \).
Although I have shown the circuit-closing 30
levers EF and their pulleys around which
the silk filament passes between the drum D
and the reel G, this present invention is avail-
able for rendering uniform the action upon
the thread in stretching the same between the
35 drum and reel, regardless of the devices em-
ployed in connection with the thread between
such drum and reel.
I claim as my invention—
The combination, with the revolving lance-
40 bout or filament-attaching device \( b \), of a feed-
ing-drum, D, for drawing the thread through
the croisure \( a \), a reel upon which the thread
is wound, and means, substantially as speci-
45 fied, for rotating the reel and feeding drum
and stretching the silk between the reel and
drum, substantially as and for the purposes
specified.

EDW. W. SERRELL, Jr.
Witnesses:
EDWARD P. MACLEAN,
CHARLES F. THIBION.