

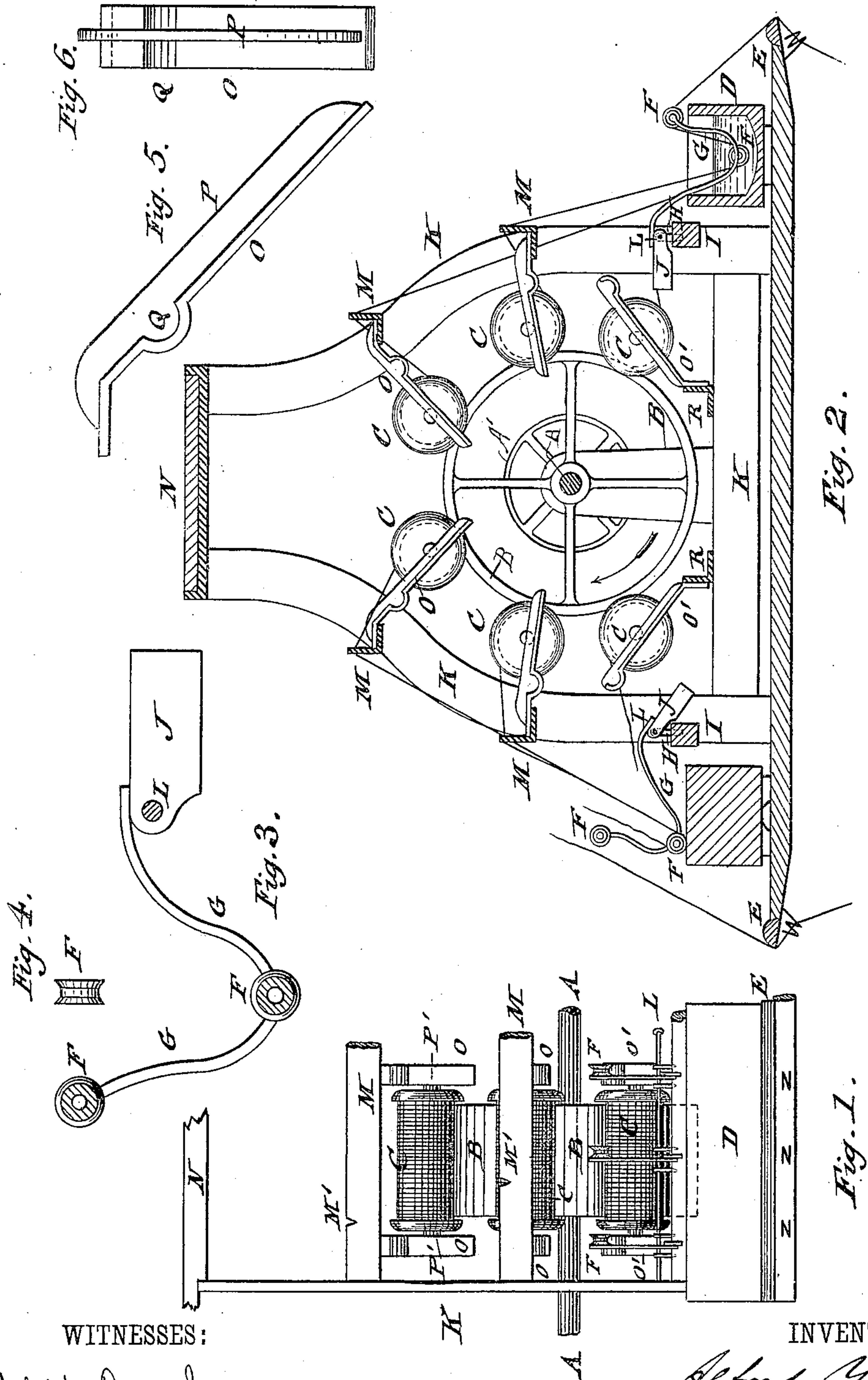
(No Model.)

A. YATES.

MACHINE FOR DOUBLING YARN.

No. 258,522.

Patented May 23, 1882.



WITNESSES:

for H. Rosenbaum.  
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INVENTOR

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BY Paul Geipel,  
ATTORNEY



# UNITED STATES PATENT OFFICE.

ALFRED YATES, OF TISSINGTON, COUNTY OF DERBY, ENGLAND.

## MACHINE FOR DOUBLING YARN.

SPECIFICATION forming part of Letters Patent No. 258,522, dated May 23, 1882.

Application filed February 4, 1882. (No model.) Patented in England September 16, 1881, No. 3,996.

*To all whom it may concern:*

Be it known that I, ALFRED YATES, of Tis-  
sington, in the county of Derby, England, have  
invented certain new and useful Improvements  
5 in Machines for Doubling Yarn, (for which I  
have obtained Letters Patent in Great Britain,  
No. 3,996, dated September 16, 1881,) of which  
the following is a specification.

This invention relates more particularly to  
10 what are known as "doubling-machines," and  
in which the thread or yarn is usually drawn  
by drawing-rollers from bobbins supported in  
a creel through the trough, and then delivered  
15 from the rollers through guide-eyes, and thence  
conducted to the spindle and flier. These roll-  
ers are expensive in fitting up and heavy to  
drive. They also form, when the thread breaks,  
what is known as "roller-laps," causing great  
20 waste, and necessitating delicate "detector  
mechanism" to stop such rollers in case of  
threads breaking. Besides, the yarn is often  
soiled by the oil or dirt on the roller-necks,  
thus greatly deteriorating its quality.

Now, my invention is designed to dispense  
25 with the aforesaid drawing-rollers; and it con-  
sists of the mechanisms hereinafter described  
and claimed for regulating the delivery of the  
thread or yarn in the creel itself.

In the accompanying drawings, Figure 1 is  
30 a front elevation of the upper part of a doub-  
ling-frame, showing the improvements consti-  
tuting my invention, the spindle, bobbin, ring  
and foot rails, gearing, &c., being omitted, as  
any approved form of the same may be used.  
35 Fig. 2 is a side view of the same; Fig. 3, an  
enlarged view of the thread-lever; Fig. 4, an  
enlarged view of a pulley of the thread-lever;  
Fig. 5, an enlarged side view, and Fig. 6 a  
front view, of one of the inclined slides, also  
40 enlarged.

Similar letters of reference indicate corre-  
sponding parts.

B is one of the pulleys or drums, keyed on  
a light shaft, A, running throughout the frame  
45 and supported by suitable brackets, K, at in-  
tervals, the number of drums varying with the  
length of the frame. The drums are preferably  
coated with a paint or resinous material. The  
shaft A is provided with a driving-pulley, A',  
50 or is otherwise actuated by any suitable means.

C are the creel-bobbins, which are support-

ed or which rest on the drums; D, the water-  
troughs, and E the thread-board, as usual.

F are the small pulleys or beads, of glass or  
other vitreous material, carried by the bent 55  
thread wires or levers G, which are pivoted on  
a rod, L, said rod passing through metal eyes  
H, driven into the framing, or in other conven-  
ient manner.

J is a piece of metal soldered or otherwise 60  
fastened to wires or levers G, acting as a coun-  
ter-weight.

The left-hand side of Fig. 2 shows the thread  
at the moment of breaking and the weighted  
lever rising out of the water, while the right- 65  
hand side shows the lever in the water. The  
thread passes at one side of the center of the  
drums from the top of the bobbins, and at the  
other side from the bottom of the bobbins, and  
then from the upper tiers of bobbins over the 70  
metal rails M, which are supported at inter-  
vals by the brackets K, and provided with  
notches M' M', as shown, through which the  
thread passes to the pulleys F, and from the  
lower tier of said bobbins directly to said pul- 75  
leys. These rails M act instead of creel-wires,  
and besides serve as a part of the frame to  
carry the inclined arms or slides O O'.

N is a shelf at the top of the brackets for  
bobbins which are not in use. 80

The slides O O' are adjusted at an incline  
toward the drum in order to hold the bobbins  
by gravity in contact therewith when the ma-  
chine is in operation, and provided with cen-  
tral ribs, P, which serve as guides for the bob- 85  
bins, and semicircular depressions Q, in which  
the skewers P of the bobbins rest when not in  
use. The horizontal upper ends of the slides  
are bolted or otherwise secured to the rails M,  
which latter are usually composed of angle- 90  
iron. The lower slides, O', are supported at  
the lower ends on angle-irons R, at the lower  
parts of the brackets, instead of at the upper  
ends, as the other slides. The shape and an- 95  
gle of the various slides are necessarily modi-  
fied, as shown, in order to bring the bobbins  
of the different tiers into the proper relative  
positions upon the drum. The slides may be  
cast in brackets; but I prefer the arrange-  
ments shown. 100

The thread, after passing through the hooks  
on the thread-board, goes to the spindle and



bobbin or spindle and flier, as usual. If a thread breaks, the thread-lever G is instantly raised by its weight out of the trough, and returned again into the same after the thread is tied, the lever being then held down by the tension of the thread. The thread is delivered by the action of the revolving drums on the bobbins, while the pull or drag of the spindle produces a regular tension on the threads without the use of drawing-rollers and other like mechanism.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of a cylindrical drum, means for rotating the drum, a series of downwardly-inclined arms arranged at different heights around the drum, in near proximity thereto, which are adapted to hold a series of bobbins in contact with the periphery thereof, a suitable supporting-frame for the drum and arms, and means for guiding the thread from the bobbins, substantially as described.

2. The combination of a cylindrical drum, means for rotating the drum, a series of downwardly-inclined arms arranged at different heights around the drum, in near proximity thereto, which are adapted to hold a series of bobbins in contact with the periphery thereof, said arms being provided with longitudinal guide-ribs, a suitable supporting-frame for the drum and arms, and means for guiding the threads from the bobbins, substantially as described.

3. The combination of a cylindrical drum,

means for rotating the drum, a series of downwardly-inclined arms arranged at different heights around the drum, in near proximity thereto, which are adapted to hold a series of bobbins in contact with the periphery thereof, said arms being provided with longitudinal guide-ribs and with notches or depressions near their upper ends, a suitable supporting-frame for the drum and arms, and means for guiding the threads from the bobbins, substantially as described.

4. The combination of a cylindrical drum, means for rotating the drum, a series of downwardly-inclined arms arranged at different heights around the drum, in near proximity thereto, which are adapted to hold a series of bobbins in contact with the periphery thereof, a suitable supporting-frame for the drum and arms, means for guiding the threads from the bobbins, tanks at the sides of the drum, and pivoted counterbalanced bent levers provided with suitable thread-guides, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

ALFRED YATES.

Witnesses:

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