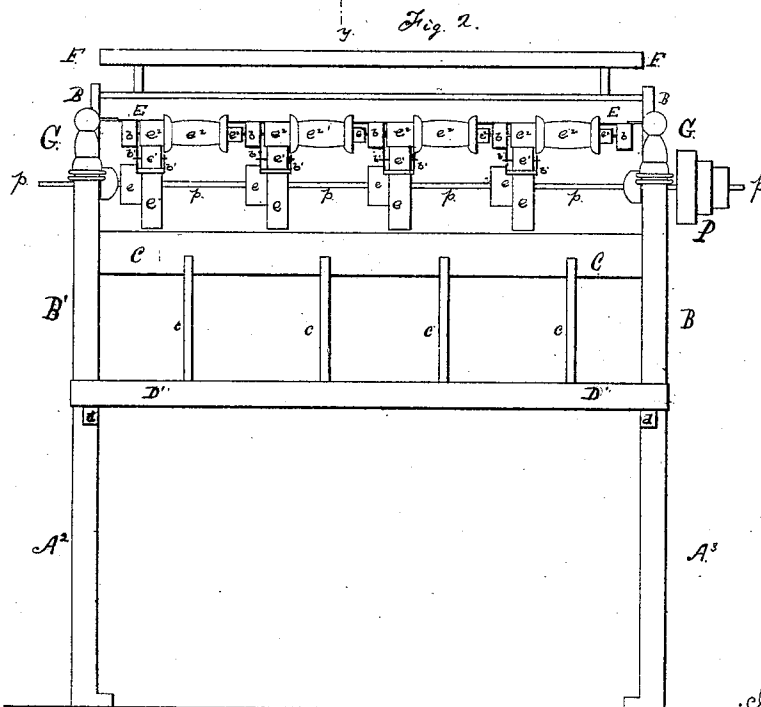
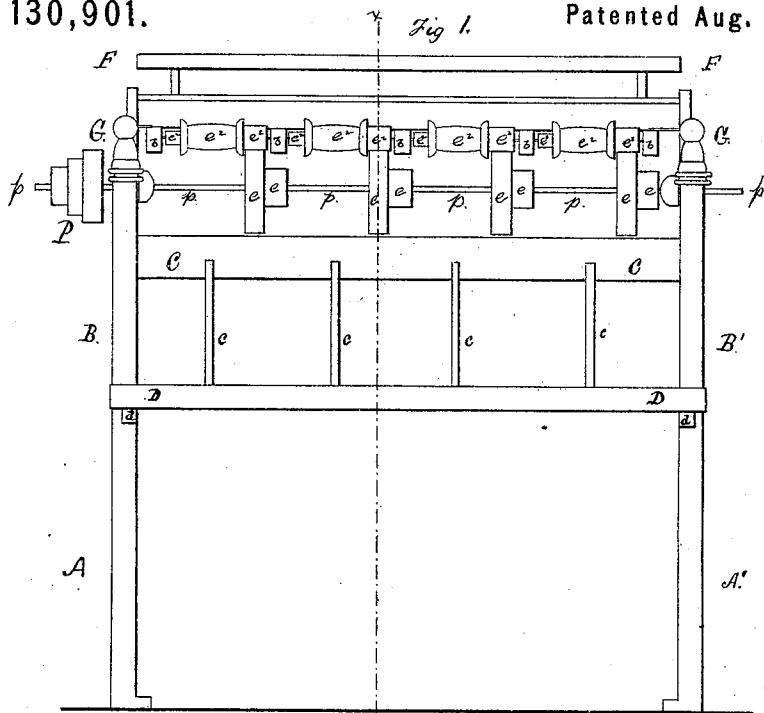


J. W. COX.
Silk-Winding Machines.

No. 130,901.

Patented Aug. 27, 1872.



Witnesses:

J. Graydon
J. D. Graydon

Inventor:

James W. Cox.
per H. L. Hildreth and Phillips
his attorneys in fact.

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Fig. 3.

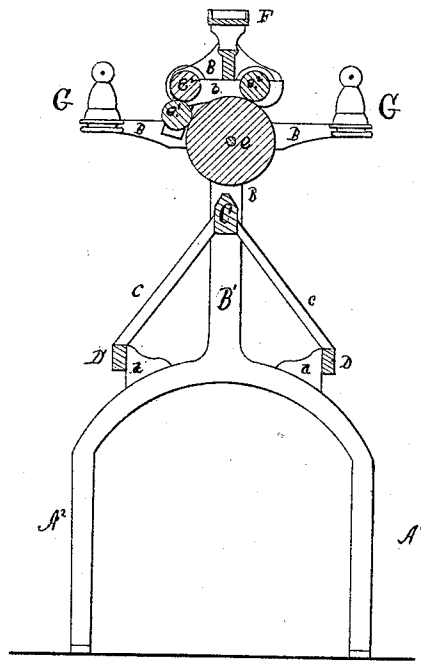
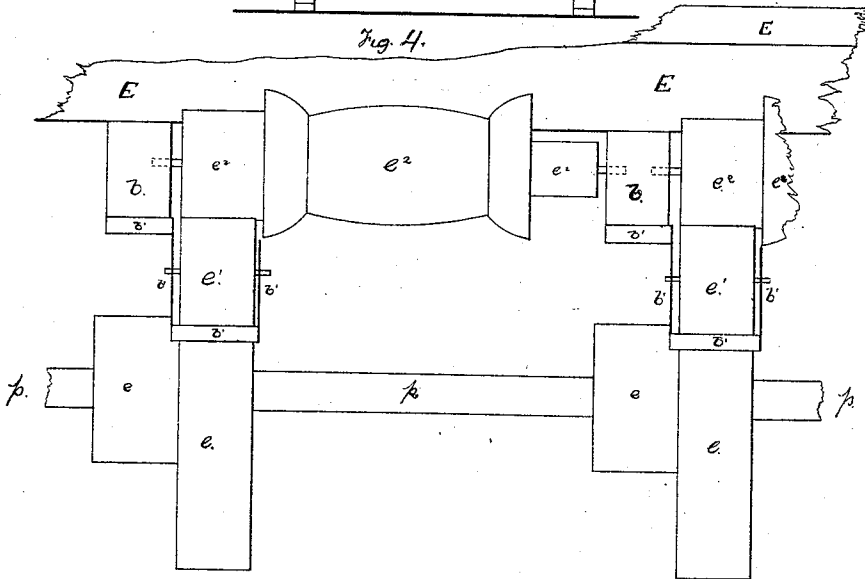


Fig. 4.



Witnesses.

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Inventor

James W. Cox.

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his Attorneys in fact.

UNITED STATES PATENT OFFICE.

JAMES W. COX, OF PATERSON, NEW JERSEY.

IMPROVEMENT IN SILK-WINDING MACHINES.

Specification forming part of Letters Patent No. 130,901, dated August 27, 1872.

SPECIFICATION.

To all whom it may concern:

Be it known that I, JAMES W. COX, of Paterson, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Silk-Winding Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon, which form a part of this specification.

My invention has for its object the improvement of silk-winding machines in such a manner that there is a greater economy in the width of the frame over frames ordinarily used and a greater reduction in the first cost, while the effectiveness of the machine remains the same. This is accomplished by using a single shaft instead of the two or three shafts formerly used, said shaft carrying a number of driving-pulleys, the peripheries of which are tangent to the peripheries of the pulleys attached to the bobbins that are on one side of the machine, and on the other side of the machine the peripheries of the driving-pulleys are tangent to the peripheries of the intermediate pulleys, which, in turn, are tangent to the peripheries of the pulleys attached to the bobbins on that side of the machine.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, whose similar letters of reference indicate corresponding parts, and in which—

Figure 1 is a front elevation of a machine such as I propose to use for this purpose. Fig. 2 is an elevation on the side opposite to the side shown in Fig. 1. Fig. 3 is a sectional elevation on the line *x y* of Fig. 1; and Fig. 4 is an elevation on an enlarged scale of a portion of Fig. 2, and shows a driving-pulley, intermediate pulley and its support, and bobbin with pulley attached.

The frame of this machine consists of the four end legs $A A^1 A^2 A^3$, terminating in the uprights $B B'$, all being strongly braced and secured by the cross-beams $C, D, D',$ and E . When the machine is of a sufficient length more legs will be added. About half way be-

tween the cross-beams C and E the uprights branch off at right angles and form a rest for the ornamental heads $G G$. These support the rods over which the silk passes, (see Fig. 3.) At the upper portion of the uprights the shaft p is journaled, carrying the cone-pulley P and the driving-pulleys $e e$. Attached to the under side of the cross-beam E are the hangers $b b$. These hangers support the bobbins with the pulleys attached, or, as they may be called, the pulley-bobbins $e^2 e^2$, in suitable bearings on each side of the cross-beam, and they also support the intermediate pulleys $e^1 e^1$ by means of a strap fastened thereto and having an intermediate pulley journaled in the perpendicular sides of each of said straps. The pulley-bobbins are provided with a shaft; likewise the intermediate pulleys with which they are journaled in their respective bearings. The driving-pulleys are placed at a convenient distance from each other on the shaft, and the number used will be one-half of the number of pulley-bobbins used, as two pulley-bobbins receive motion from the same driving-pulley. The pulley-bobbins on one side of the cross-beam receive motion direct from the driving-pulleys by their peripheries being tangent, and the pulley-bobbins on the other side of the cross-beam receive motion indirect from the driving-pulleys, as the peripheries of both driving-pulleys and pulley-bobbins are tangent to the peripheries of the intermediate pulleys, so that when the driving-pulleys revolve they cause the pulley-bobbins on both sides of the cross-beam to revolve in the same direction by friction. The pulley-bobbins are placed in their respective bearings, those on one side of the cross-beam with the pulley part of each in contact with the intermediate pulley and those on the other side with the pulley part of each in contact with the driving-pulley. Suitable motive power is applied to the cone-pulley and the various pulleys commence to revolve with it. The operators in attendance cause the silk (which is upon reels attached to the parts lettered $c c$, the reels not being shown, as they only enter indirectly into this invention) to be reeled or wound upon the pulley-bobbins, and as fast as a bobbin is filled it is removed and an empty one substituted from the spool-box F .

These machines can be manufactured at a saving of twenty-five to thirty per cent. upon

the cost of machines that are used at present for the same purpose, while an equally-effective machine is produced. These machines are more compact than the ones now in use, as three machines using a single shaft each occupy the same space as two machines using two or three shafts, while the distance between each single-shafted machine is the same as the distance between double or treble shafted machines.

When the silk is very heavy there is a tendency for the different pulleys to slip. This can be obviated by having them geared into each other.

This invention applies not only to such silk-machines as are used in the winding of soft silk, but to "cleaning" and "doubling" ma-

chines, and all other machines of a like construction.

Claim.

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

In a winding-machine the combination of the friction or driving pulleys *e*, pulley-bobins *e*², and intermediate pulleys *e*¹, arranged and operated substantially as shown and described.

JAMES W. COX.

Witnesses:

CHARLES DICKSON,
WHEELER W. PHILLIPS.