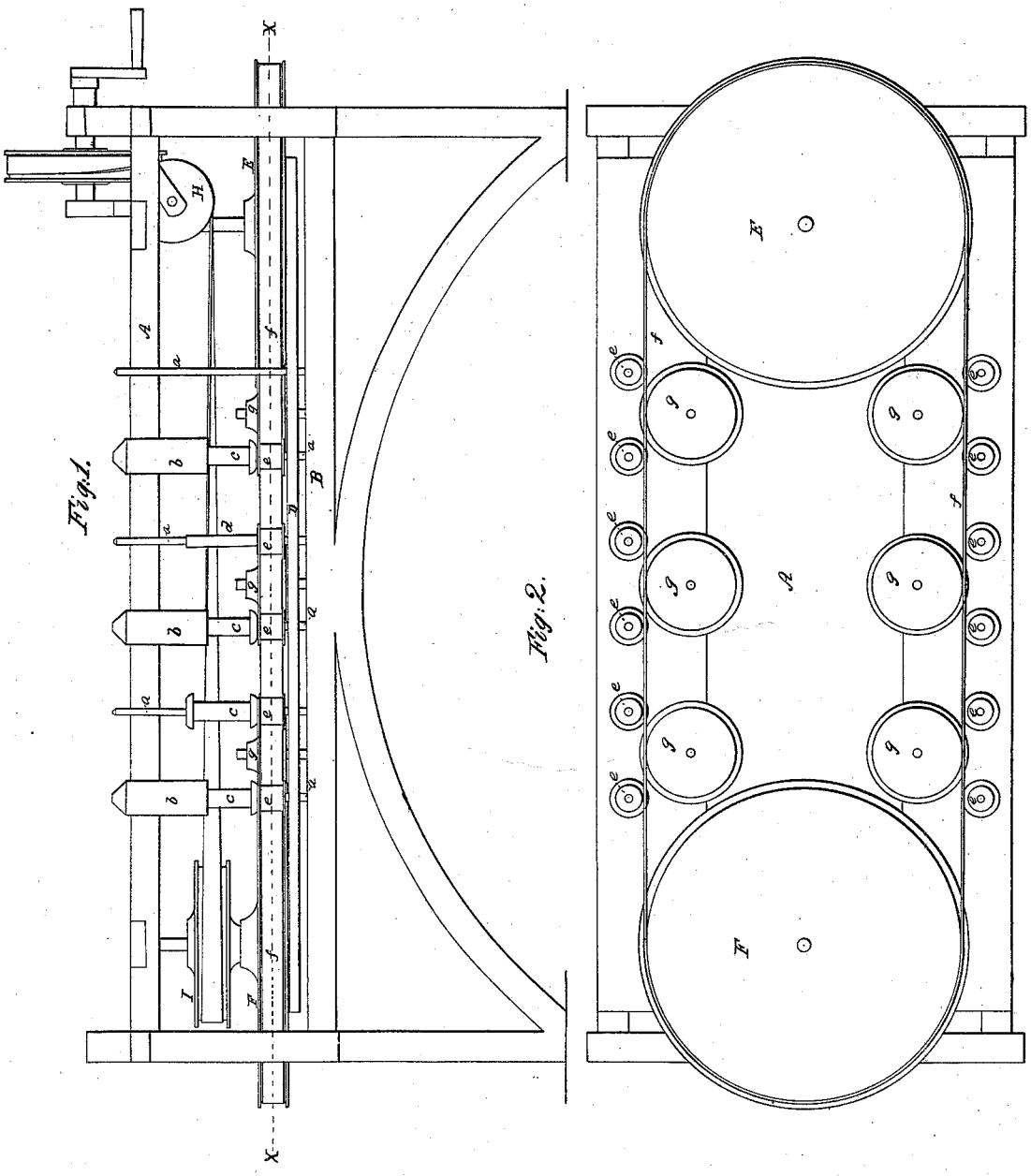
W. Baxter.
Spinning Mach.

No. 4,215. Patented Sep. 30, 1845.



UNITED STATES PATENT OFFICE.

WM. BAXTER, OF PATERSON, NEW JERSEY.

MODE OF DRIVING BOBBINS IN SPINNERS.

Specification of Letters Patent No. 4,215, dated September 30, 1845.

To all whom it may concern:

Be it known that I, WILLIAM BAXTER, of Paterson, in the county of Passaic and State of New Jersey, have invented a new and useful Improvement in Methods of Driving the Spindles or Bobbins of Spinning-Frames, and that the following is a full, clear, and exact description of the principle or character thereof, which distinguishes it from all other things before known, and of the manner of making, constructing, and using the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a front elevation, and Fig. 2 a horizontal section, taken at the line (X, X) of Fig. 1.

The same letters indicate like parts in all the figures.

No part of the operation of spinning has been attended with so much difficulty as that of driving the flier, spindle or the bobbin on account of the great velocity required and the delicate texture of the fibers under operation; for high velocities tend to produce vibrations in the rotating body, (particularly if not made perfectly true), which break the threads, and thus retard the operation, and render the spinning of fine threads impracticable. Cog-wheels have long since been considered inapplicable to the driving of spindles or bobbins under high velocities, and belts applied as heretofore, tend, by the necessary strain required to prevent slipping, to increase—nay, to produce unsteadiness of motion, and much friction and consequent wear of the parts, soon resulting in unsteadiness of motion, and in a waste of power. Efforts have been made to overcome these great practical difficulties by resting the edge of the bobbin, or warve of the spindle on the periphery of a wheel, or on a round belt; but when thus driven great velocities tend to lift or throw up the bobbin or spindle, there being no provision for preventing so injurious an effect.

The object of my invention is to remove all these difficulties by means of arrangements which consist in driving bobbins or spindles by a belt which is embraced by two flanges on the warve, the belt being so arranged as not to press against the periphery of the warve, but merely to hold the bobbin or spindle in suspense by the two flanges, the space between which is equal to the width of the belt to prevent any vertical movement.

In the accompanying drawings, my improvement is represented as being applied to a cap spinner. (A) is the frame with the dead spindles (a,) and caps (b, b) connected with the bar (B) of the frame. The bobbins or spools (c, c) fit on to the tubes (d) that turn on the dead spindles and rest on the bar (D) of the traverse motion, in the usual manner.

The warves (e) of the tubes (d) are made with two flanges that embrace the driving belt (f), the two edges of which should be as nearly parallel as possible, and of such width, relatively to the space between the flanges, as to hold the warves suspended, and carry them by the weight of the warves, tubes, and bobbins or spools resting and bearing on the upper edge thereof, and yet prevent them from flying up. This belt is carried by two horizontal drums (E,) (F,) situated one at each end of the traverse frame, and moving with it, so as to carry two sets of tubes, one on each side; and between these drums the belt is guided by flanged pulleys (g), placed at such distances apart as to have one, two, three or more spindles between any two of them, at the discretion of the constructor. These guide pulleys are, in like manner as the drums (E,) (F), attached to, and moved with the traverse frame, their peripheries should be on a line with the belt when stretched from drum to drum, and the peripheries of the warves (e) so as not to touch the belt; and in this manner the bobbins are carried entirely by the flanges to avoid making pressure by the belt on the peripheries of the warves which would tend to produce vibrations, and thus avoid the pressure of the tube on the spindle and its consequent evils.

The drums (E,) (F) may be driven by any of the known methods of communicating motion to a traversing drum, but I have adopted the one represented in the accompanying drawings, which consists in carrying a long belt from the vertical band wheel (G) around two pulleys (H) (only visible) and thence to the pulley (I) on the shaft of the drum (F), so that in the length of the belt the small amount of traverse

motion of the drum will have no practical effect on its action.

It will be obvious that spindles and fliers can be driven by the same method as the bobbin tubes herein described and represented, this being sufficient to illustrate the application of my invention.

In the drawings some of the caps and bobbins or spools are removed to exhibit the tubes and the dead spindles.

I do not claim as my invention making the warves of spindles, fliers or tubes for carrying bobbins or spools, with flanges, nor the driving of these by a belt; nor do I claim driving spindles, fliers, bobbins or spools, &c., by resting them on a belt, as all these devices and methods have been known and used before, but not as I have applied and arranged them, and

Therefore, what I claim as my invention and desire to secure by Letters Patent, is—

Driving spindles, fliers, bobbins or spools, &c., by means of a belt with parallel edges equal (or nearly so) in width to the space between the flanges of the warves, and passing between them when these warves are so arranged as to be suspended thereon without the belt bearing against their peripheries, for the purpose and in the manner substantially as herein described.

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Witnesses:

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