

(No Model.)

J. SHAW.

SPINNING FLIER AND ATTACHMENT THERETO.

No. 506,947.

Patented Oct. 17, 1893.

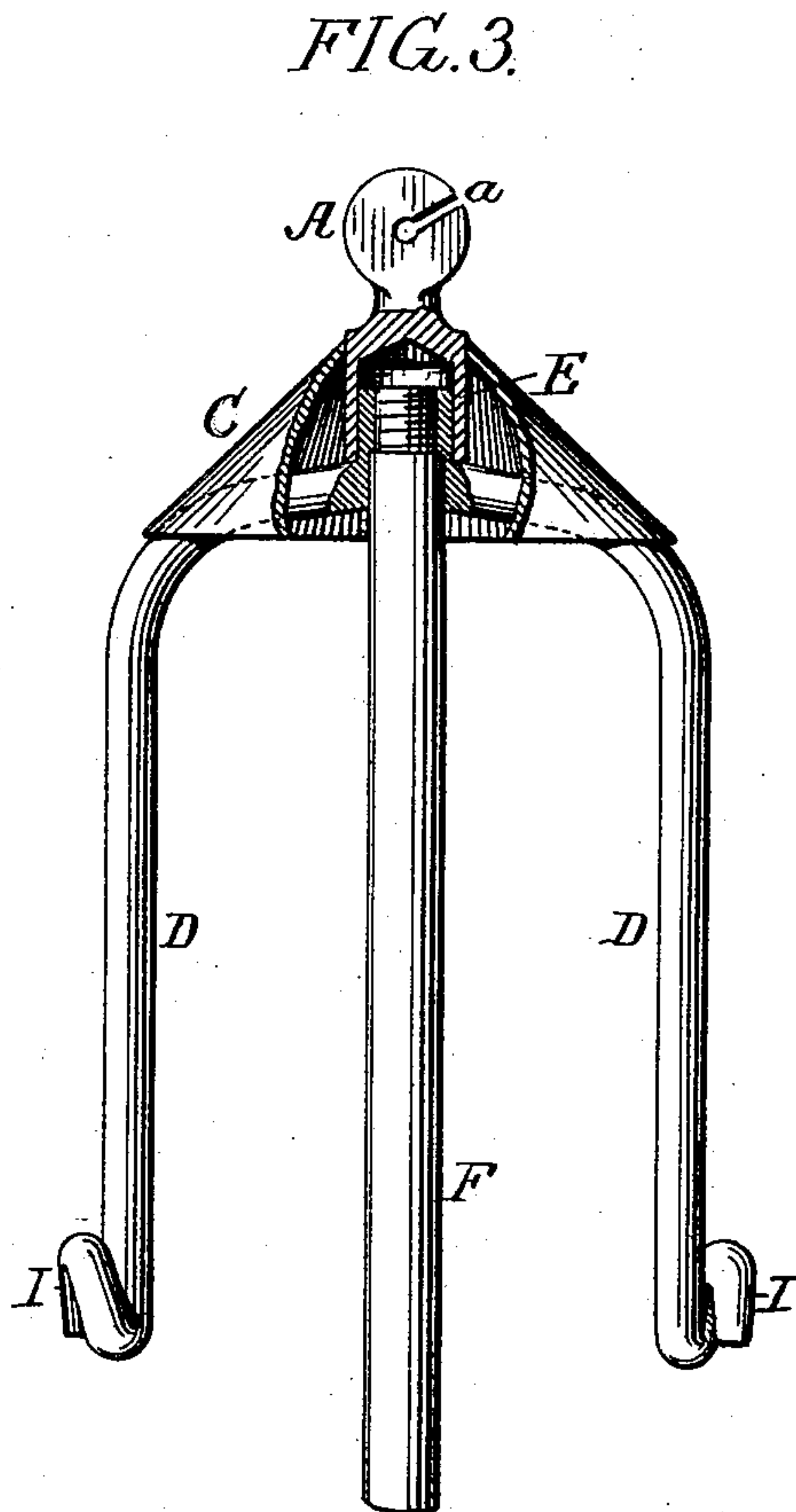
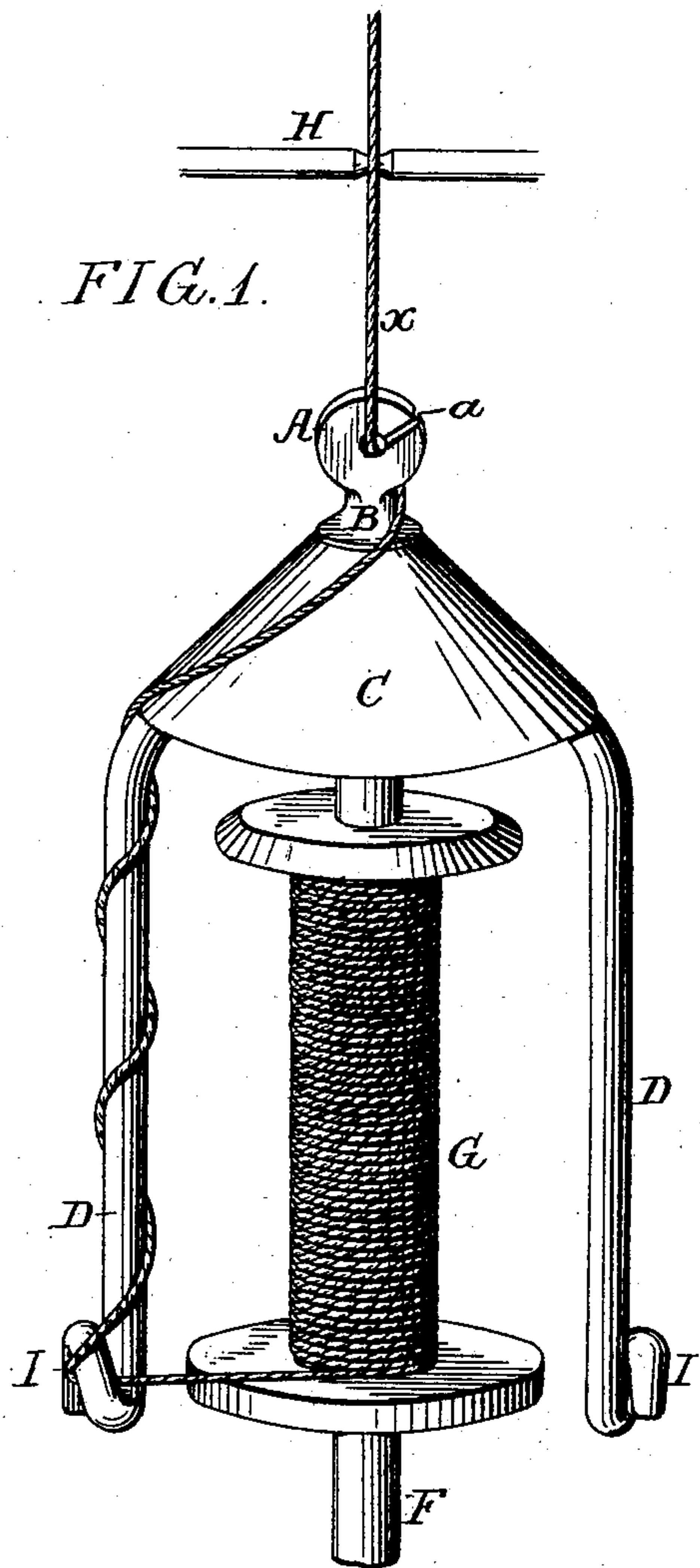


FIG. 2.



FIG. 4.

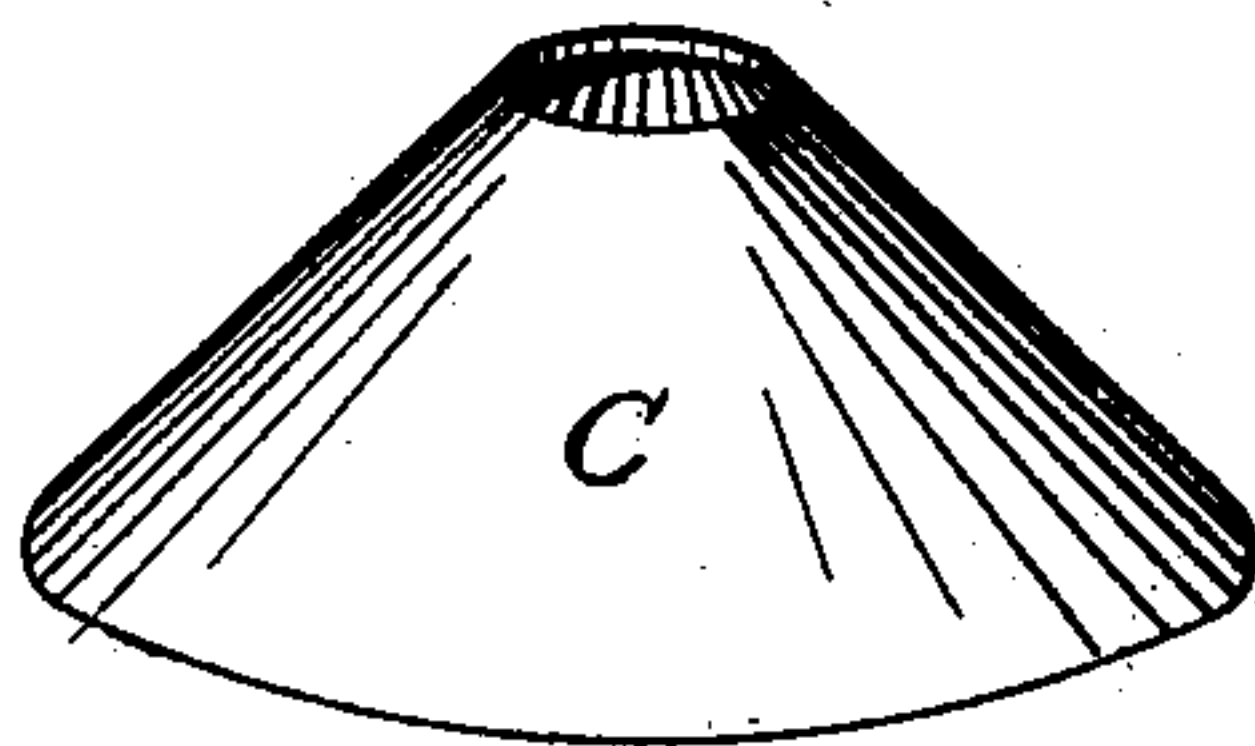
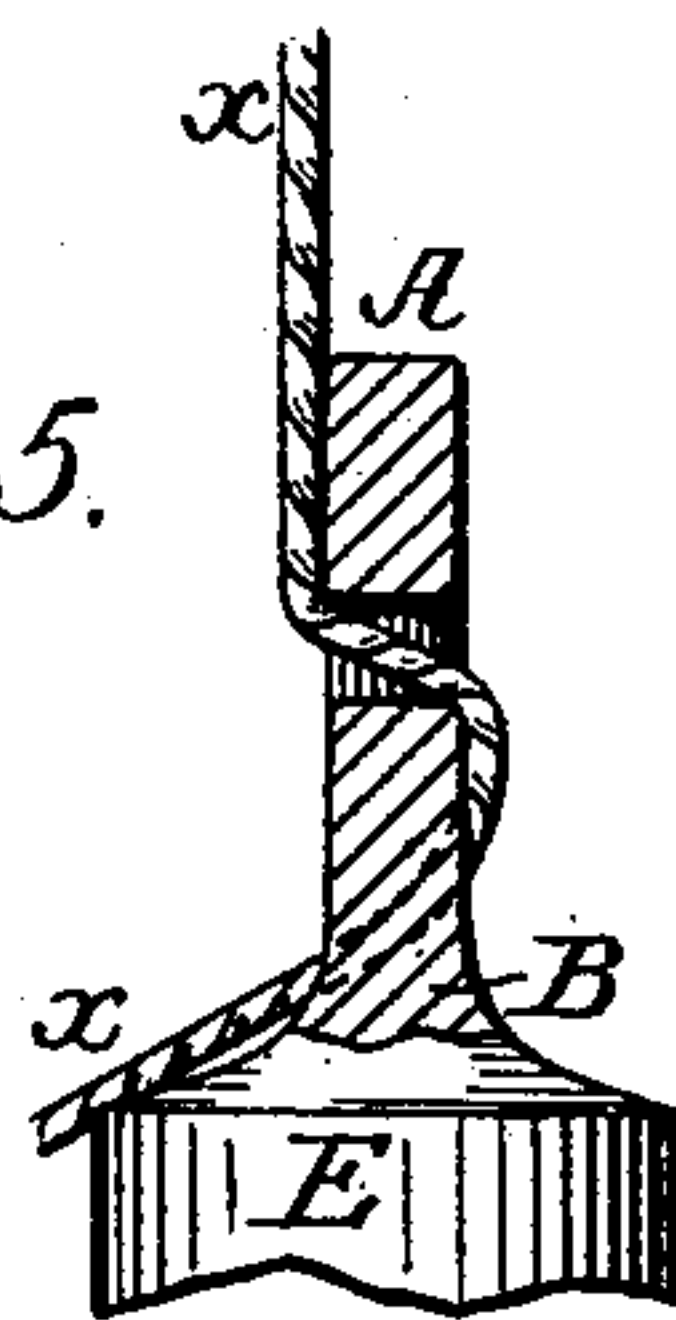


FIG. 5.



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UNITED STATES PATENT OFFICE.

JOHN SHAW, OF BRADFORD, ENGLAND.

SPINNING-FLIER AND ATTACHMENT THERETO.

SPECIFICATION forming part of Letters Patent No. 506,947, dated October 17, 1893.

Application filed October 31, 1888. Serial No. 289,587. (No model.) Patented in England July 10, 1888, No. 9,406.

To all whom it may concern:

Be it known that I, JOHN SHAW, of Bradford, in the county of York, England, residing at present in the city and county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Spinning-Fliers and Attachments Thereto, (for which I have obtained British Letters Patent, No. 9,406, dated July 10, 1888,) of which the following is a specification.

The main object of my invention is to provide a spinning flier with a device whereby the fibers or threads will be spun or twisted in line with the center of the spindle, or approximately within the thread's circumference and between the said device and the nip or bearing of the delivery roll or rolls, a positive twist being imparted to the fibers or threads and the twisted strand passed continuously onto the bobbin, tube or other recipient, without losing twist, and in such a manner that the vibration of the fibers or threads is reduced to a minimum, if not completely, and the projecting fibers or strands are caused to lie down upon the main thread so as to render the latter smooth and even.

With this object in view my invention comprises a special construction of disk located above the top of the spinning spindle and having a horizontal eye for the passage of the thread, and also the combination of such disk with a conical guide and guard extending from the bottom or neck of the disk to the upper ends of the depending arms of the flier, all as hereinafter fully set forth.

In the accompanying drawings:—Figure 1, is a perspective view of a spinning flier provided with my improved spinning or twisting device, the bobbin and part of the spindle and delivery roller also being shown. Fig. 2, is a side view of said spinning device. Fig. 3, is a view in elevation, and partly in section, showing the spindle and flier with the spinning device, and a guide and guard attached to the flier. Fig. 4, is a perspective view of the guide and guard; and Fig. 5, is an enlarged diagram illustrating the action of my improved spinning device.

In Figs. 1 and 3, D represents an ordinary form of flier secured to the upper end of the spindle F as usual, and having depending arms with guide eyes I at their lower ends, and G

is an ordinary form of bobbin mounted on the spindle F, so as to be free to rise and fall thereon to properly lay the spun or twisted threads from one end of the bobbin to the other.

Mounted upon the top of the flier is a conical cap C, and above the same is a disk A, having above the cap a neck B, and having also in the center, a horizontal eye; and extending from the latter to the periphery of the disk at one side of the same is a slot *a*. The center of the eye formed in the disk A is directly above the center of the spindle F and directly below the point of contact of the strands or threads *x* with the delivery roller H.

In spinning or twisting the strands or threads the latter pass downward directly from the delivery roller along and in contact with one flat side of the disk A above the center eye, thence laterally through said eye, and thence downward and in contact with the disk on the opposite flat side of the same, passing either directly over the conical cap C, or first part way around the neck B and then over the cap, as shown in Figs. 1 and 5. Owing to the fact that the thread is held closely in contact with each side of the disk A, and passes by a sharp bend through the eye in said disk, the strands or threads are practically nipped at said eye. Hence all of the twist is imparted to the strands between the eye and the bearing point or nip of the delivery roll above it, no additional twist being imparted to the threads or strands as they pass downward beyond the eye, but said threads or strands, after leaving the eye, passing downward without any loss of twist.

As the threads or strands, while being twisted, are not substantially deflected from a right line, it follows that the said threads or strands are practically twisted within their own circumference, as in mule spinning, but the spinning operation proceeds continuously, and the spun or twisted strands or threads are wound continuously on the bobbin, tube or other recipient, as in ordinary flier, cap or ring spinning.

In passing from the eye of the spinning disk A to the eye I at the bottom of the depending flier arm, the spun or twisted strands or threads are caused to lie closely against the side of the disk and its neck and against the

surface of the cap C, and the flier arm D, the thread being if desired, caused to take one or more turns around said arm before reaching the delivery eye of the same, as shown in Fig.

5 1. The thread is thus held in intimate contact with these surfaces during its passage, and any loose or projecting fibers or strands are pressed down onto the surface of the thread so that the latter is rendered smooth
10 and uniform.

The cap C not only serves as a guide for the thread but also as a guard to prevent said thread from coming into contact with the upper flange or head of the bobbin G.

15 The slot *a* provides for the ready insertion of the thread into the eye of the disk A without threading the same, and hence facilitates the operation of piecing up the broken threads, but as said slot *a* extends laterally
20 from the eye, the edges of the slot cannot come in contact with and cut the thread during the rotation of the spinning device.

Within the cap C is a depending tube E which provides for the ready and convenient
25 attachment of my improved spinning device to the flier, so that said device can be applied at very slight expense to ordinary fliers, no change whatever in the construction of the spinning machine being required in carrying out my invention.
30

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

35 1. The combination of the spindle and delivery roller of a spinning machine with an attachment, consisting of a disk located at or above the top of the spinning spindle, and having a horizontal eye, the center of which is in line with the axis of said spindle and
40 with the bearing point of the thread on the delivery roller, said disk presenting flat bearing surfaces for the thread on each side of the

eye whereby the twist is imparted between said eye and the bearing roller, and also having below the eye, a reduced neck around
45 which the thread passes, substantially as specified.

2. The combination of the spindle and delivery roller of a spinning machine with an attachment consisting of a disk mounted at
50 or above the top of the spinning spindle, and having a horizontal eye, the center of which is in line with the axis of said spindle and with the bearing of the thread upon the delivery roller, said disk having a slot extending laterally from said eye to the periphery
55 of the disk, and also having, below the eye, a reduced neck around which the thread passes, substantially as specified.

3. The combination of the spindle, delivery
60 roller and flier, with a spinning device consisting of a disk located at or above the top of the spindle and having a horizontal eye, the center of which is in line with the axis of the spindle and with the bearing of the
65 thread on the delivery roller, said spinning device also having a conical guide and guard extending from the bottom or neck of the disk to the upper ends of the depending arms of the flier so as to form a bearing for the
70 thread in its passage from the eye of the spinning device to the arm of the flier, substantially as specified.

4. The combination of the spindle and its flier, with the spinning device comprising the
75 disk having a horizontal eye and conical guide and guard extending from said disk to the upper ends of the flier arms, and an internal depending tube adapted to the upper end of the flier, substantially as specified.

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