D. F. Smith.

Spinning Machine Flyer.

No. 23,868. Patented May 3, 1859.

Fig: 1.

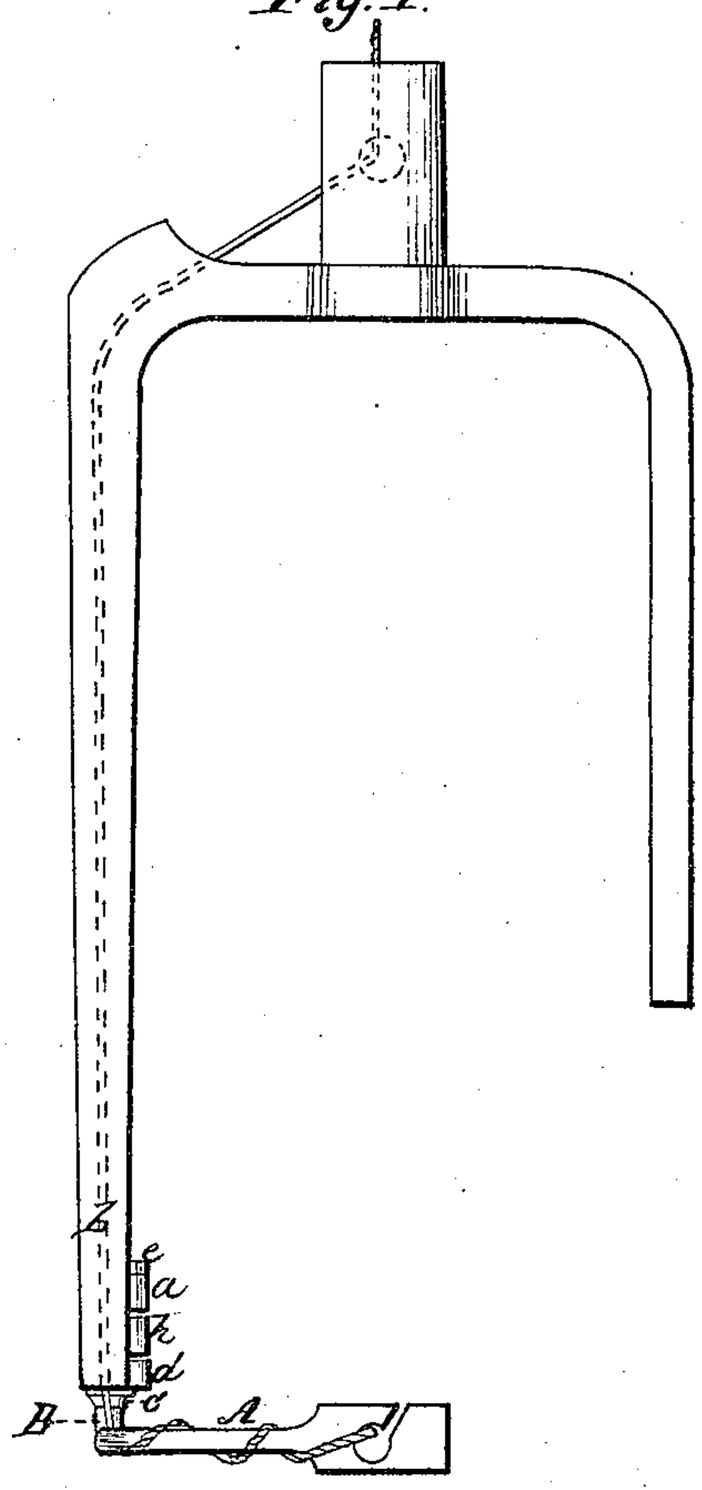


Fig: 2.

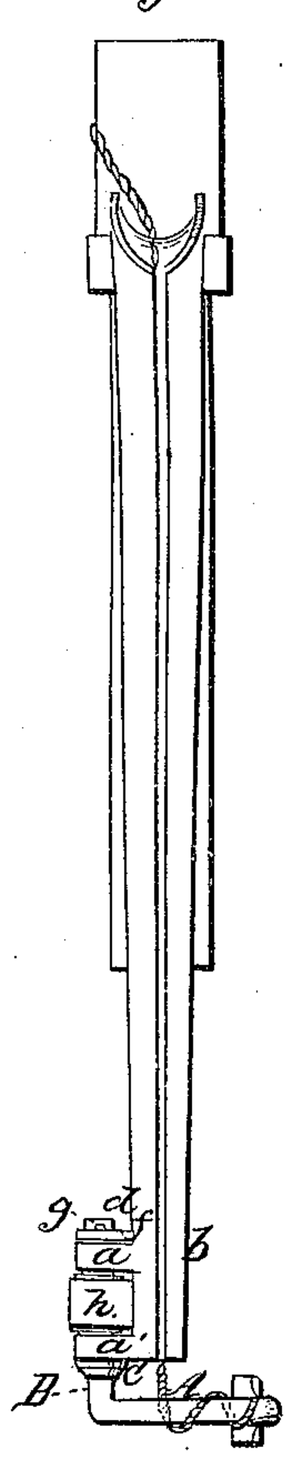


Fig: 3.

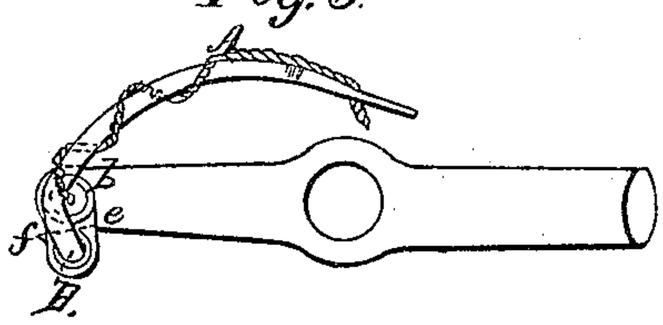


Fig: 4.

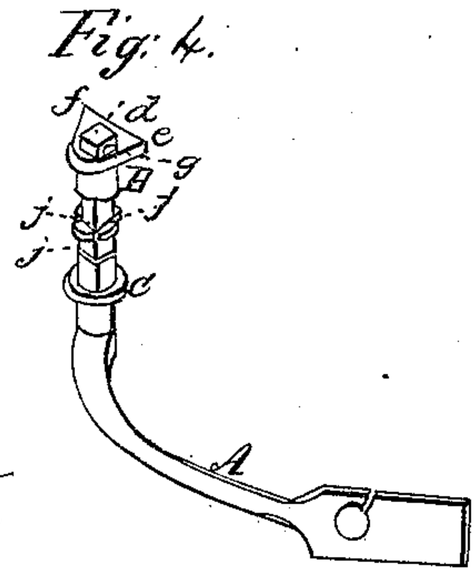
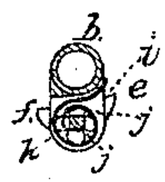


Fig: 5.



Witnesses.

A. B. Shattuck

M. J. Smith.

Inventor.

D. F. Smith.

UNITED STATES PATENT OFFICE.

D. F. SMITH, OF MANCHESTER, NEW HAMPSHIRE.

SPINNING-FLIER.

Specification of Letters Patent No. 23,868, dated May 3, 1859.

To all whom it may concern:

Be it known that I, DAVID F. SMITH, of Manchester, in the county of Hillsboro and State of New Hampshire, have invented certain new and useful Improvements in Fliers for Spinning Cotton and other Fibrous Substances; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figures 1 and 2 are elevations at right angles to each other of a flier with my improvement. Fig. 3 is a bottom view of the same. Fig. 4 is a perspective view of the compressor detached. Fig. 5 is a transverse section taken through the tube of the flier, the stem of the compressor and the compressor spring.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists in a certain construction of the compressor and method of applying its stop by which some important advantages are obtained as will be hereinafter explained.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

The flier to which my invention is to be applied may be made in all respects like the ordinary flier for cotton-spinning, except that the ears *a*, *a'*, by which the compressor is attached, are made or attached on the opposite side of its tube *b*, to that on which the arm of the compressor operates on the bobbin, instead of on the same side. and are arranged nearer to the bottom of the tube, all of which will be understood by reference to Figs. 2 and 3. The arm A, of the compressor is made of round form right up to its connection with the stem or pin B, which is made all in one piece with the arm, instead of being made of a separate piece and riveted thereto, as in the common flier; and said arm A, is so formed that it will occupy a position below the bottom of the tube as best shown in the inverted plan, Fig. 3, during its entire range of motion, in order that the roping (represented in red color) may pass directly from the mouth tube to the compressor, as shown in Figs. 1, 2, and 3, without being bent over the edge of the said mouth, or without more than a very slight bend in any position of the arm, instead of with a short bend as in the ordinary flier and all or most of the other fliers in use.

The compressor with its arm and stem or pin all in one piece may be made of wrought iron or steel. It has formed upon it a collar *c*, to fit up against the bottom of the lower ear *a'*, of the flier and is made with a square *d*, at the top to receive the stop *e*, *f*, which is made of a separate piece and put on after the stem B, has been inserted through the ears *a*, *a'*, from the bottom and then secured by passing a transversely inserted pin *g*, through the projecting extremity of the stem or by riveting the said extremity over it. The stop *e*, *f*, is thus made to secure the compressor to the flier tube. The inner corner *e*, of the stop, with my method of applying the flier, is caused to move outward from the center of the flier as the compressor moves outward with the increased fullness of the bobbin, and is thus prevented from interfering with the revolution of the full bobbin, which action of the stop is the reverse of what it is with the stop of the ordinary flier.

The spring *h*, of the compressor is applied in the manner shown in Fig. 5, to prevent the possibility of its binding against the tube as the compressor moves outward, the hook *i*, (Fig. 5) by which it is attached to the tube being on the same side of the tube as the ears *a*, *a'*, instead of on the opposite side as in the ordinary flier, the said hook being attached to the same piece of metal as that of which the two ears *a*, *a'*, are formed and which is brazed to the tube. This method of attaching the spring is also neater in its appearance than the old method. The other end of the spring engages with one of four notches *j*, (only three of which are visible in Fig. 4) on the stem of the flier. By providing two or more notches instead of only one as in the ordinary flier, facility is afforded for adjusting the pressure by changing the spring from one to another of the said notches, by which means the diffi-

culty which often arises from the difference in the strength of springs is obviated.

What I claim as my invention and desire to secure by Letters Patent is—

The construction of the arm and stem of the compressor of one piece, and the stop of a separate piece so applied as to confine the stem in the ears on the flier tube, as herein specified.

D. F. SMITH.

Witnesses:
A. B. SHATTUCK,
M. J. SMITH.