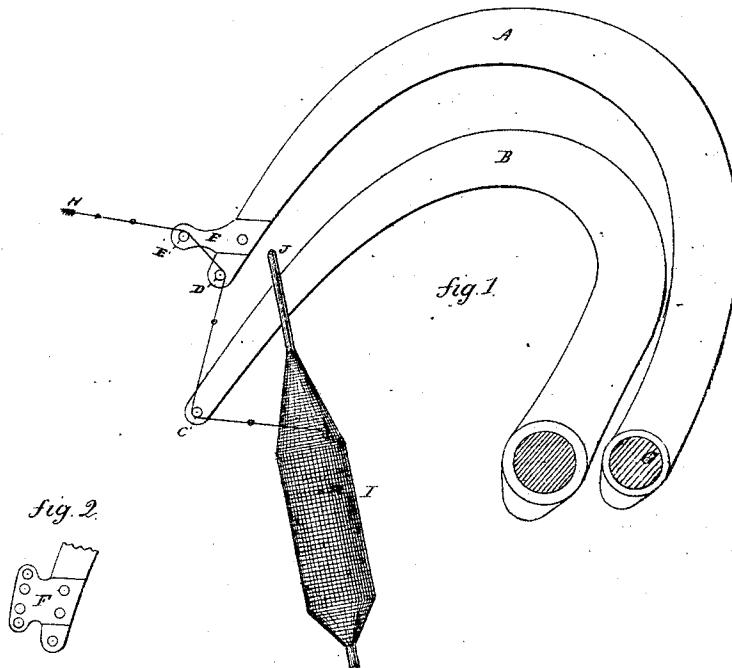


JOSEPH SMITH.

Improvement in Fallers for Spinning-Mules.

No. 114,059.

Patented April 25, 1871.



Witnesses.  
*J. H. Shumway*  
*A. J. Tibbitts*

*Joseph Smith*  
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# United States Patent Office.

JOSEPH SMITH, OF PRESTON, ENGLAND, ASSIGNOR TO THOMAS RAWSTHORNE, OF SAME PLACE.

Letters Patent No. 114,059, dated April 25, 1871.

## IMPROVEMENT IN FALLERS FOR SPINNING-MULES.

The Schedule referred to in these Letters Patent and making part of the same.

### *To all whom it may concern :*

Be it known that I, JOSEPH SMITH, of Preston, England, have invented a new Improvement in Sickles and Wires Connected with Mules for Spinning; and I do hereby declare the following, when taken in connection with the accompanying drawing and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawing constitutes part of this specification and represents in—

Figure 1, a building and under-faller or sickles in position when building a cop, showing arm F and extra wire E.

Figure 2, another form or modification of arm F.

### *General Description.*

My invention relates to an improved arrangement of the sickle-wires of under-fallers or sickles of spinning-mules, the object being to remove the excessive strain from the yarn at the point where it presses on the under-faller wire and divide such strain, in order that more weight may be put on and a firmer and better cop built.

This I do by adding the wire E in fig. 1 around or over which the yarn passes to the cop I.

I can use, instead of wire, any other shaped bar, or I may use the section of a tube, with the upper portion cut away, so as to form two flat surfaces for the yarn to pass over, or add two wires in place of the one at E, thus distributing the pressure or strain (formerly at one point or wire) over two or more points.

### *In fig. 1—*

A is the under-faller or sickle, showing the wires D and E.

D is the wire in ordinary use.

E is the wire I have shown to illustrate my improvements, fixed to the ordinary under-faller or sickle by a small arm, F.

I show a wire by preference; but I may, as before stated, use wires or other irregular surfaces.

The builder-faller or sickle B is not at all altered, but I prefer to have a larger wire, C, than at present is used, thereby increasing the friction surface at that point and reducing the liability to breakage of yarn.

Fig. 2 is simply a modified arm, F, to enable the minder, if desired, to alter the angle of the yarn by changing the extra wire from one hole to the other.

In the old method the yarn has to pass from the rollers over the wire D, which forms at that point an acute angle, the wire D having a knife-edge effect on the yarn; but, by the addition of the wire E, the angle is altered from an acute to an obtuse, and a very considerable amount of extra weight may be put on, consequently considerably more weight of yarn can be put on the same sized cop.

### *I claim—*

The under-faller or sickle, provided with two or more wires or other surfaces, arranged as herein described.

Witnesses:

THOMAS SMITH,  
THOMAS PARKER.

JOSEPH SMITH.