

(No Model.)

E. & S. TWEEDALE & J. SMALLEY.  
THREAD GUIDE FOR SPINNING AND DOUBLING MACHINES.

No. 563,696.

Patented July 7, 1896.

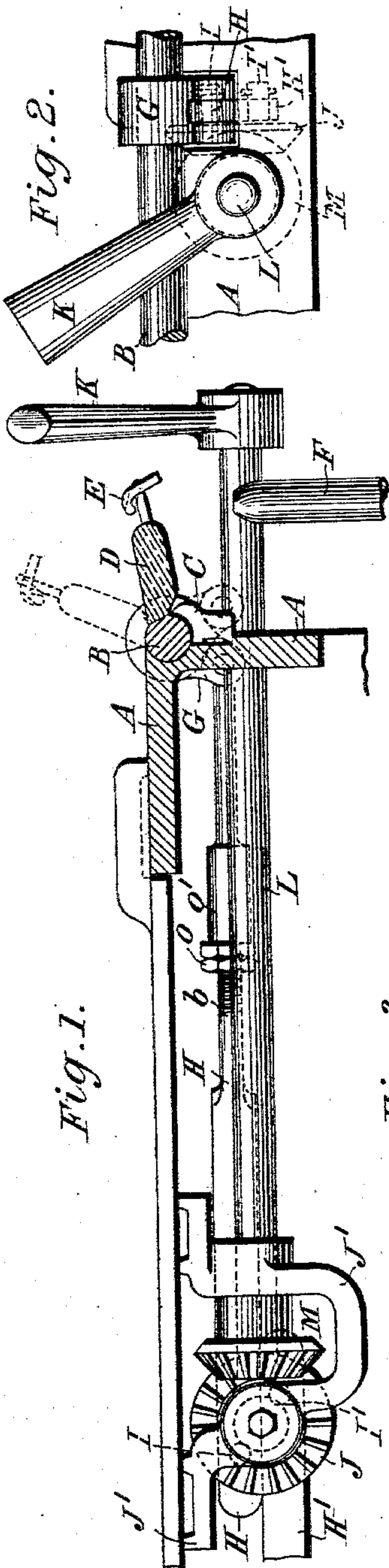
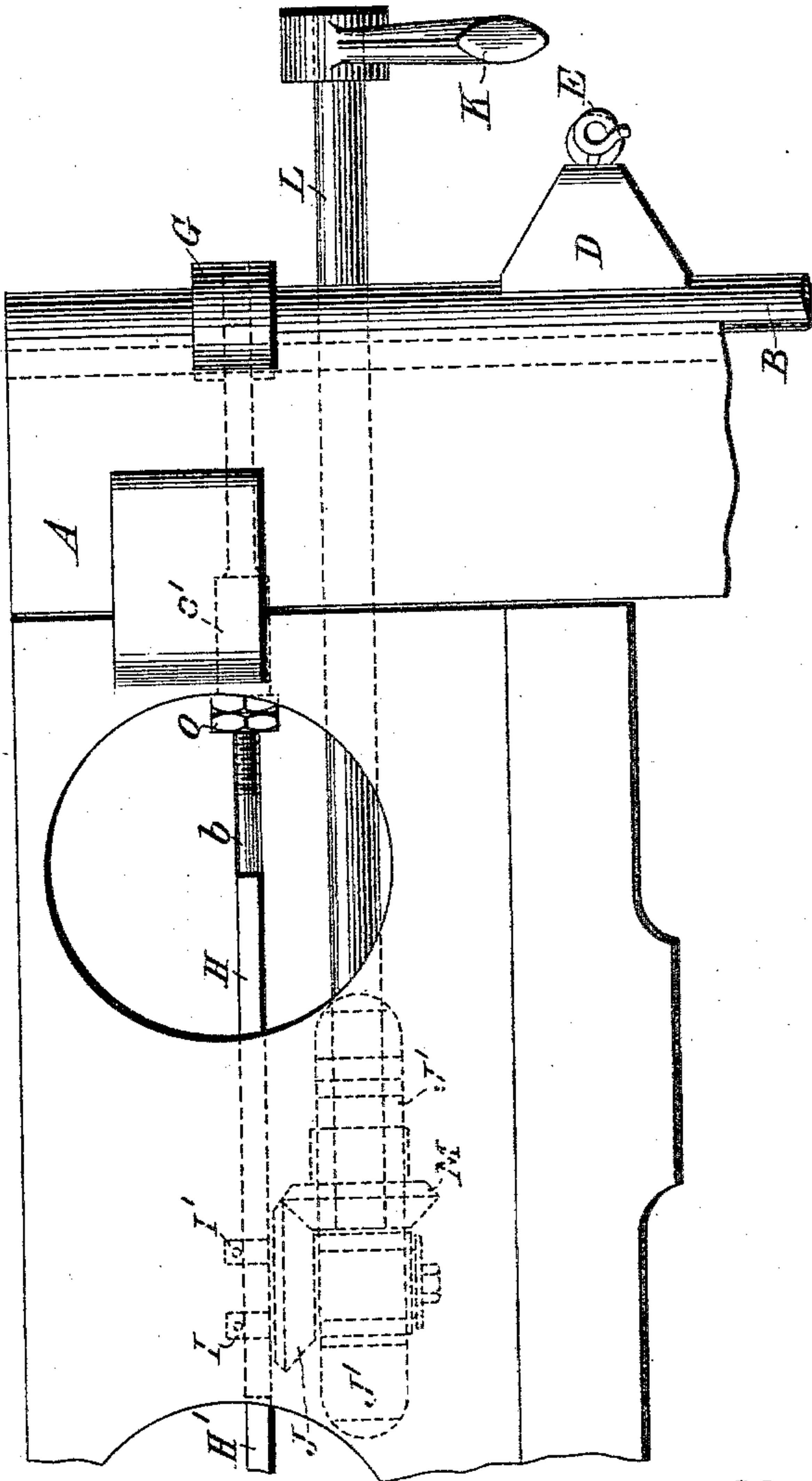


Fig. 1.

WITNESSES.  
Frederick A. Verity  
Samuel Jackson

Fig. 3.



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Edmund Tweedale  
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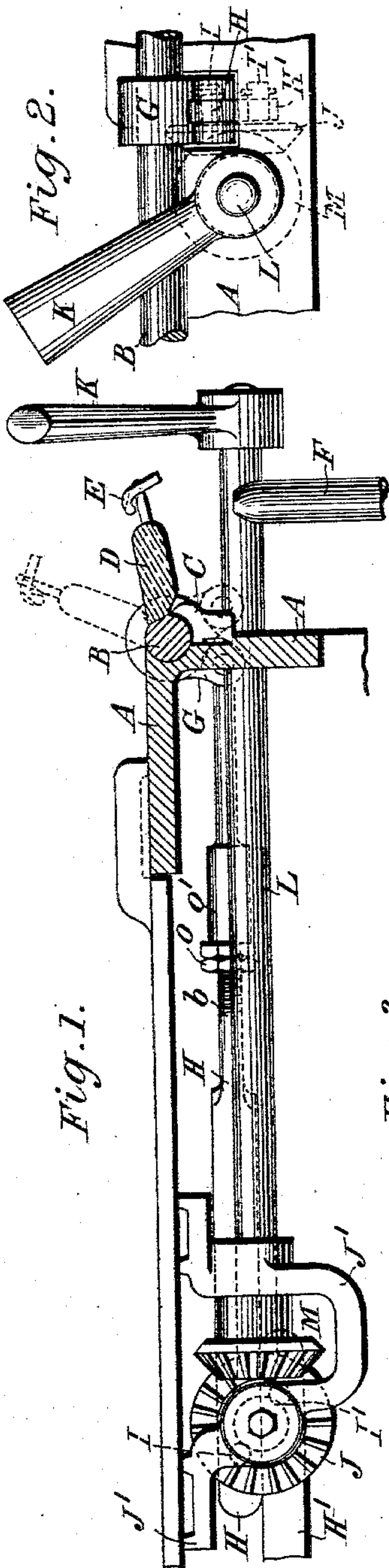


Fig. 2.

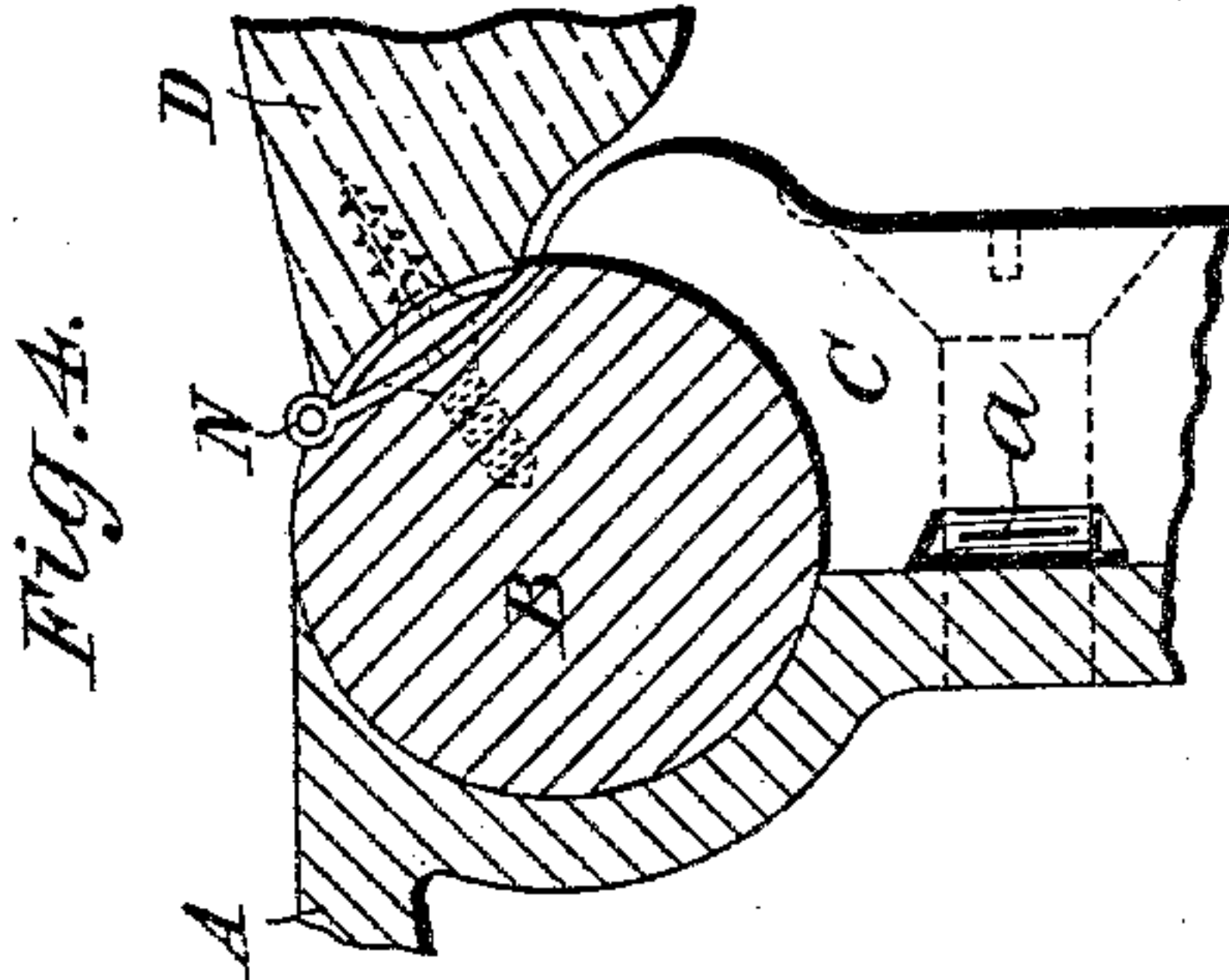


Fig. 4.



# UNITED STATES PATENT OFFICE.

EDMUND TWEEDALE, SAMUEL TWEEDALE, AND JOSEPH SMALLEY, OF  
MANCHESTER, ENGLAND.

## THREAD-GUIDE FOR SPINNING AND DOUBLING MACHINES.

SPECIFICATION forming part of Letters Patent No. 563,696, dated July 7, 1896.

Application filed March 7, 1896. Serial No. 582,289. (No model.) Patented in England October 3, 1891, No. 16,805.

*To all whom it may concern:*

Be it known that we, EDMUND TWEEDALE, SAMUEL TWEEDALE, and JOSEPH SMALLEY, subjects of Her Majesty the Queen of Great Britain, residing at Castleton, Manchester, in the county of Lancaster, England, have invented a certain new and useful Improvement in Mounting the Thread-Guides of Spinning and Doubling Machines, (for which we have obtained Letters Patent in Great Britain, under date of October 3, 1891, No. 16,805,) of which the following is a specification.

The object of our invention is to facilitate the raising of the thread-guides of spinning and doubling machines from the position they occupy when the machine is at work, so as to permit the bobbins to be easily doffed when a change is required; and our improvements consist in mounting the thread-guides onto a round shaft, in operating same, and also in arrangements for mounting this shaft in position on the roller-beam.

In carrying out our invention we form a longitudinal recess or groove in the front part of the roller-beam, into which groove we insert a round shaft. The flaps carrying the thread-guides are secured to the said shaft by a suitable form of hinge, and the shaft carrying the flaps and thread-guides is made to partially rotate by operating a hand-lever, the motion of which is transmitted to the opposite side of the machine by a suitable arrangement of levers and wheels for the purpose of raising the thread-guides on both sides of the machine simultaneously.

Referring to the accompanying drawings, Figure 1 is a cross-section of such portions of a spinning and doubling machine as is necessary to show the application of our improvements. Fig. 2 is end view of Fig. 1. Fig. 3 is a plan view of the same; and Fig. 4 is an enlarged detail of the round shaft, showing how it is supported and kept in position and the manner of hinging the thread-guide flaps thereto.

A represents the roller-beam, in the front edge of which we form a longitudinal groove or recess for receiving the round shaft B, which is made secure in the recess by suitable blocks or caps C, connected by set-screws *a*, Fig. 4,

to the front of the roller-beam A, the face of the blocks which abut against the shaft being shaped to correspond thereto.

The flaps D, which carry the thread-guides E, are secured to the shaft B by a suitable form of hinge, of which one is shown at N in Fig. 4. When the machine is at work, the flaps and thread-guides occupy the positions shown in full line in Fig. 1 immediately over the bobbin F, but for the purpose of doffing we oscillate the shaft B, so as to raise the flaps and thread-guides into the positions shown in dotted lines in Fig. 1, whereby the bobbins are free to be doffed.

The method of oscillating the shaft B is as follows: We mount on the shaft B cranks G, attached to the lower end of which is a connecting-rod H, made in two parts and adjustable in length by nuts O, which work on a screwed portion of one part, the part carrying the nuts being provided with a socket O', into which the screwed part *b* may enter. The opposite end of the rod H is attached to a crank pin or stud I, projecting from the back of a bevel-wheel J and suitably mounted in a bracket J'. Therefore when it is necessary to doff the bobbins the operative moves the hand-lever K at the front of the machine on the end of the shaft L, in doing which a bevel-wheel M at the end of the shaft, also supported in the bracket J', actuates the bevel-wheel J, the motion of which wheel, together with the crank-pin I, moving the connecting-rod H, whereby the crank G is placed into the position shown in dotted lines, and the flaps and thread-guides are raised accordingly. The reverse motion of the hand-lever K places the thread-guides back into their working position again.

The bevel-wheel J carries two crank-pins I and I', the latter being employed to operate a second connecting-rod H' for raising the thread-guides at the opposite side of the machine.

By the employment of means such as described for adjusting the length of the connecting-rods H or H' the working position of the thread-guides can be varied.

As indicated in Fig. 1, the two rods H and H' overlap at the end of their stroke in both



directions, whereby they become locked and act as stops to any further movement.

In the foregoing description it will be seen that the thread-guides on both sides of the machine can all be adjusted simultaneously and readily raised up and down for the purpose specified, and as the round shaft B fits into the recess all along the front of the beam A a neat joint is made which prevents the accumulation of dirt and loose fibers.

What we claim is—

1. In combination, the roller-beam, a shaft at the front edge of same, means for holding the shaft in position, flaps hinged to the shaft, thread-guides carried thereby, a bracket, a pair of engaging bevel-wheels carried thereby, a crank carried by the shaft, a crank-pin carried by one of the bevel-wheels, a connecting-rod between the crank and crank-pin, a shaft attached to the other bevel-wheel, and a handle carried by the shaft whereby the shaft

carrying the thread-guides may be rocked for doffing substantially as described.

2. In combination, a pair of roller-beams, a shaft at the front edge of each, means for holding the shafts in position, thread-guides carried by the shafts, a crank carried by each shaft, a connecting-rod attached to each crank and means for operating both connecting-rods simultaneously so that the thread-guides on both sides of the machine can be raised for doffing, substantially as described.

In testimony whereof we have hereunto set our hands in the presence of two subscribing witnesses.

EDMUND TWEEDALE.

SAMUEL TWEEDALE.

JOSEPH SMALLEY.

Witnesses:

FREDERICK A. VERITY,

SAMUEL JACKSON.