

J. E. & E. ATWOOD.  
Machine for Doubling, &c., Strands of Fibrous Material.

No. 227,198.

Patented May 4, 1880.

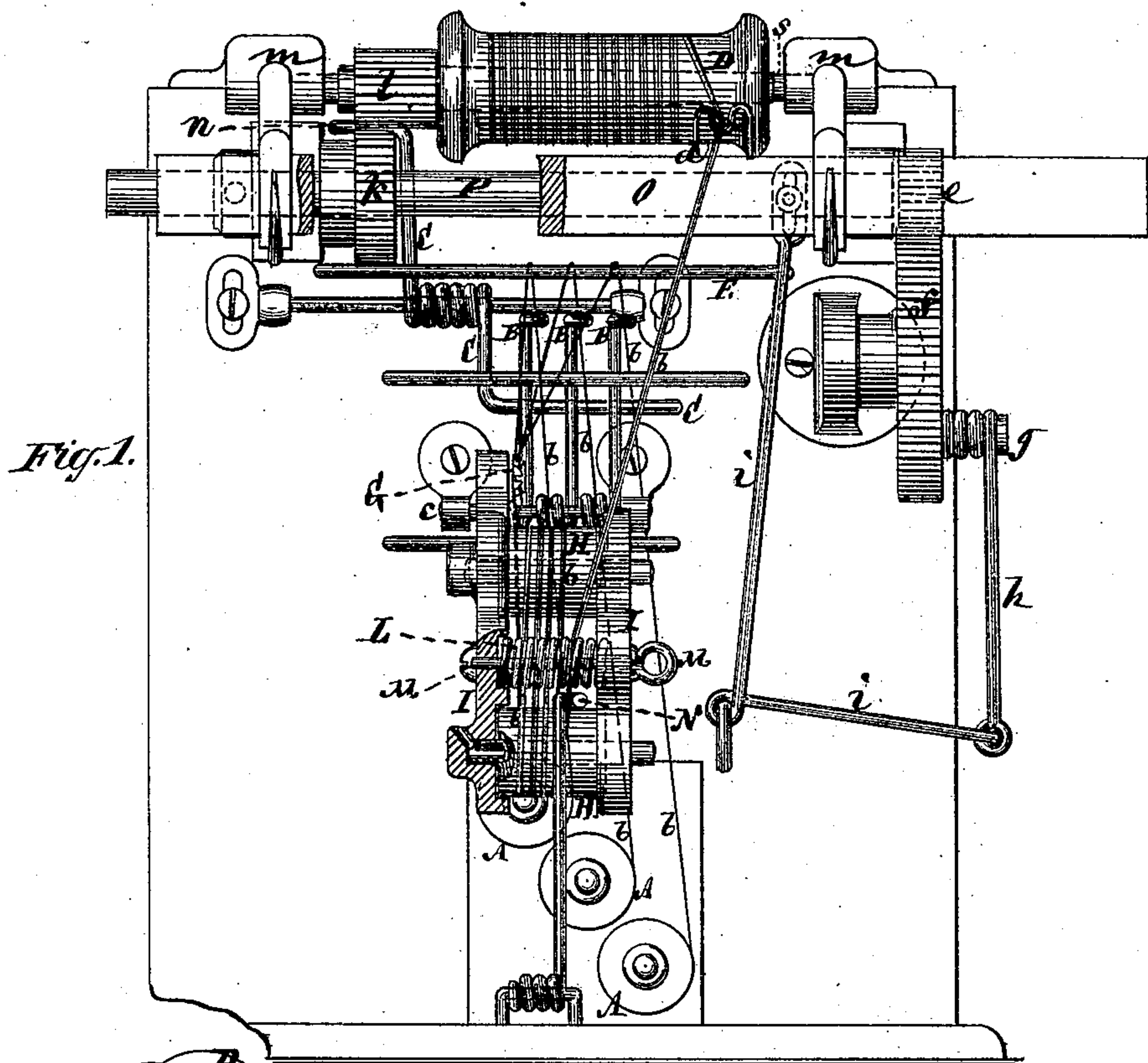


Fig. 1.

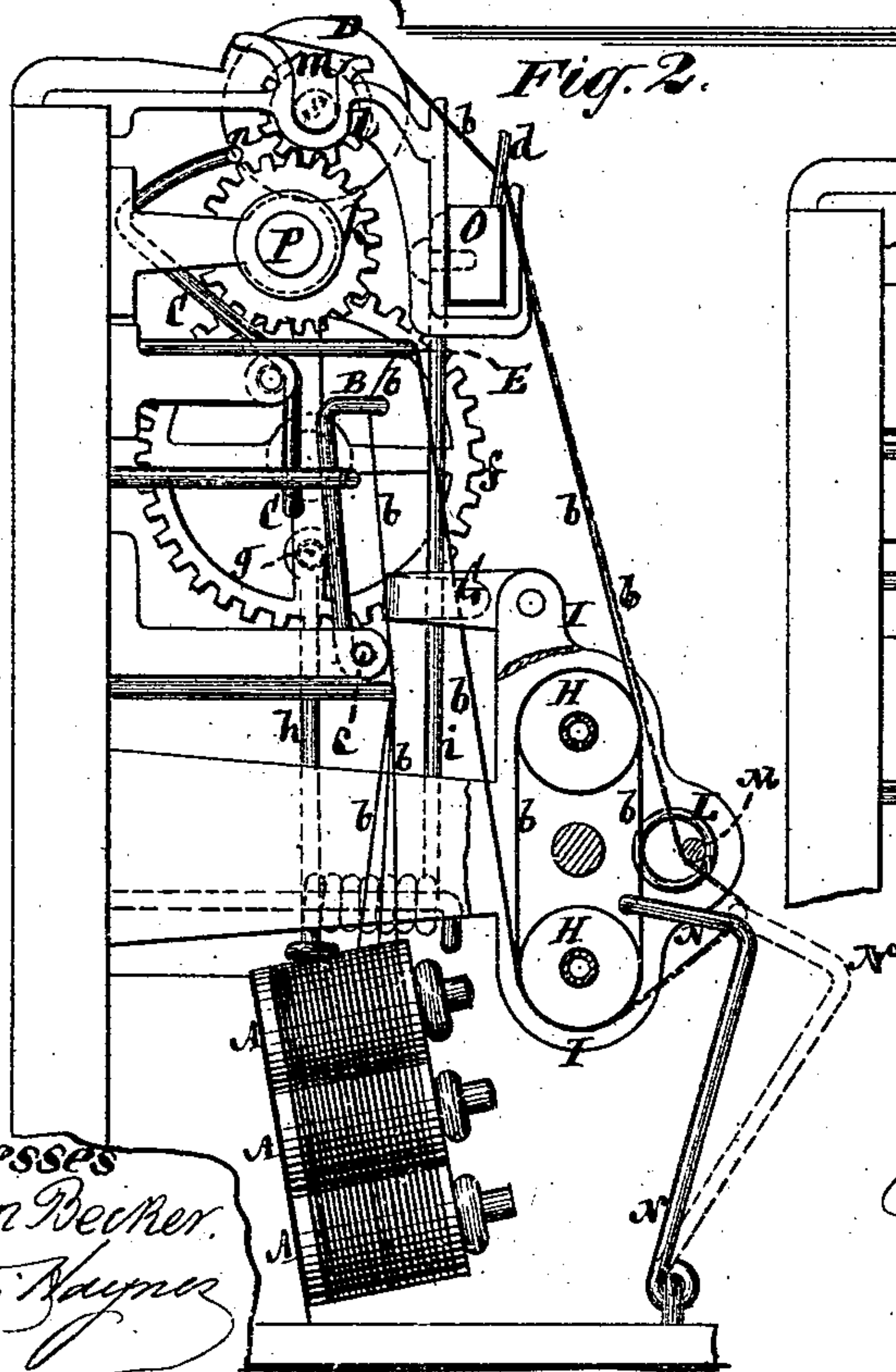


Fig. 2.

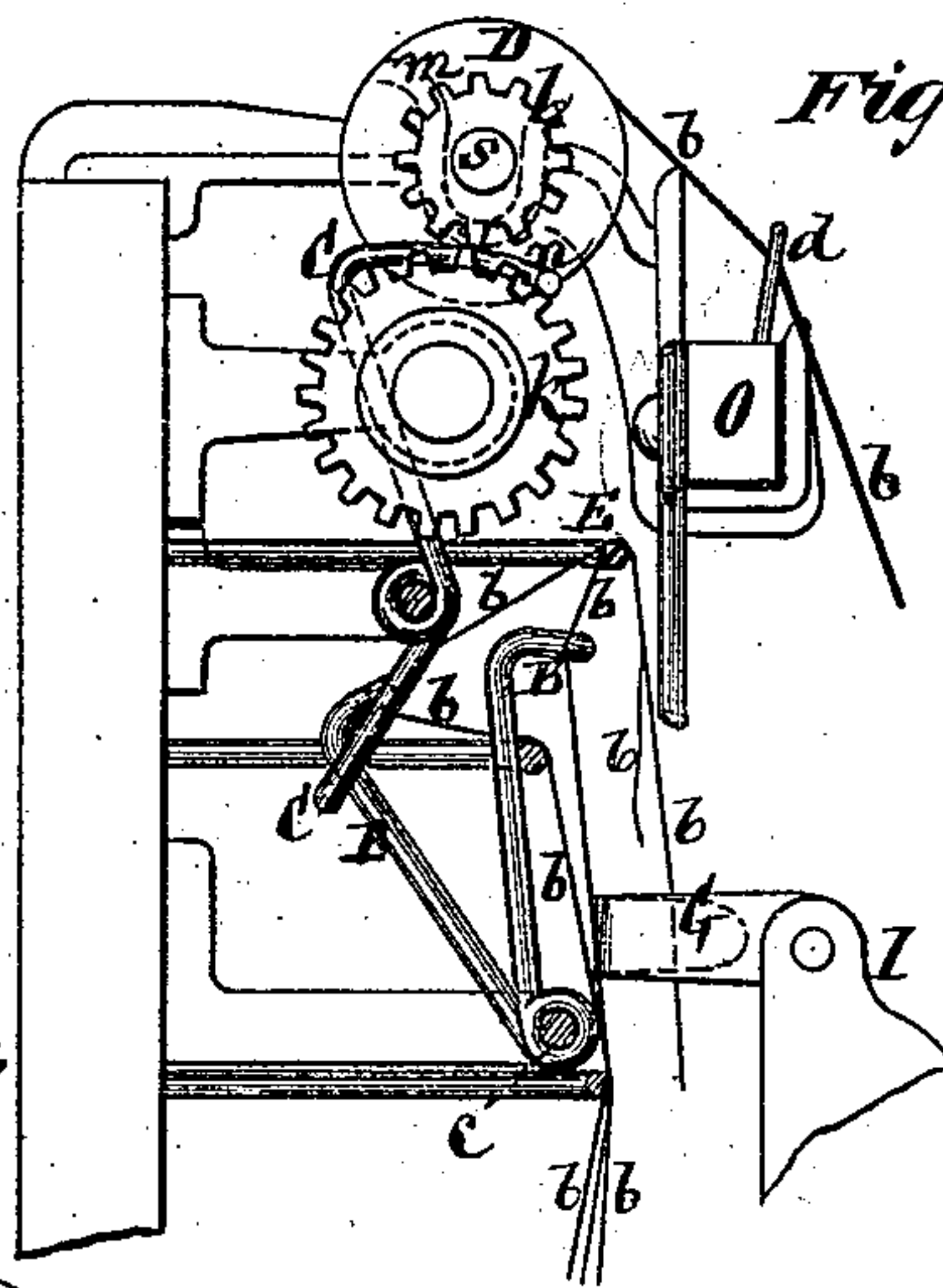


Fig. 3.

Witnesses  
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# UNITED STATES PATENT OFFICE.

JOHN E. ATWOOD AND EUGENE ATWOOD, OF STONINGTON, CONN.

## MACHINE FOR DOUBLING, &c., STRANDS OF FIBROUS MATERIAL.

SPECIFICATION forming part of Letters Patent No. 227,198, dated May 4, 1880.

Application filed September 12, 1878.

*To all whom it may concern:*

Be it known that we, JOHN E. ATWOOD and EUGENE ATWOOD, both of Stonington, in the county of New London and State of Connecticut, have invented certain new and useful Improvements in Machines for Doubling, Winding, and Equalizing Strands of Fibrous Material, of which the following is a description, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to machines for doubling, winding, and equalizing strands composed of various fibers or material; and it consists in certain combinations of devices for conducting the threads to and from the equalizing devices, and for preventing waste and snarling from slack threads when the winding-bobbin stops.

In the accompanying drawings, Figure 1 represents a front elevation of a machine for doubling, winding, and equalizing strands; Fig. 2, a side elevation of the same; and Fig. 3, a further partly-sectional side view in part, showing certain working devices, including a drop-lever, in a different position to that represented for them in Fig. 2.

A A are the bobbins or spools, of which there may be two or more, carrying the strands to be doubled, wound, and equalized. These spools are preferably arranged at or near the base of the machine, and the threads *b* from each spool are passed up through drop-wires B B, which are pivoted below at *c* and set inclining slightly backward, so that in case of the threads which pass through them breaking, or one or more of the spools A from below running off their product, the drop wire or wires of such thread or threads will fall against an upright stop-lever, C, and arrest the motion of the winding-bobbin D, in the manner shown in Fig. 3.

The course of the threads *b* after leaving the drop-wires is over a support or rod, E, and through a guide, G, within which they are doubled or collected, and from whence they pass to and several times around two equalizing-rolls, H, which are carried by an inde-

pendent stand, I, the guide G being arranged on one side of said stand, and serving to direct the doubled threads onto one end of the rolls H, from whence they are spread by their repeated passes over so much of the length of said rolls as may be necessary. These rolls H may be arranged at any suitable distance apart, one above the other, and are hung disconnected from each other within the stand I.

To keep the doubled strands or threads *b* in proper spread position upon the rolls H, said strands are run through or between a grooved separator, L, between the rolls H, and which may be formed of a spiral spring or coil having a pin, M, arranged longitudinally through it. The doubled threads *b*, after they make their final pass around the rolls H, are passed through a drop or take-up wire, N, which serves to prevent waste and snarling from slack threads when the take-up bobbin D stops. From this drop or take-up wire N the doubled strands *b* pass up through the separator L, back of the pin M, to and through a guide, *d*, on a traverse-bar, O, and from thence onto the take-up bobbin D.

P is the main shaft, which serves to give motion, by a pinion, *e*, to a wheel, *f*, that in its turn gives motion, by a crank or wrist pin, *g*, and rod *h* and lever *i*, to the traverse-bar O. Said shaft P also serves to give motion by pinions *k* and *l* to the spindle *s* of the take-up bobbin D.

We claim—

1. The combination of the thread or strand guide G, the equalizing-rolls H, and the grooved separator L, substantially as specified.

2. The combination, with the equalizing-rolls H, of the take-up wire N, substantially as and for the purpose specified.

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Witnesses:

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