

(No Model.)

P. B. SANFORD.
YARN GUIDE, TENSION, AND CLEARER.

No. 605,918.

Patented June 21, 1898.

Fig. 1.

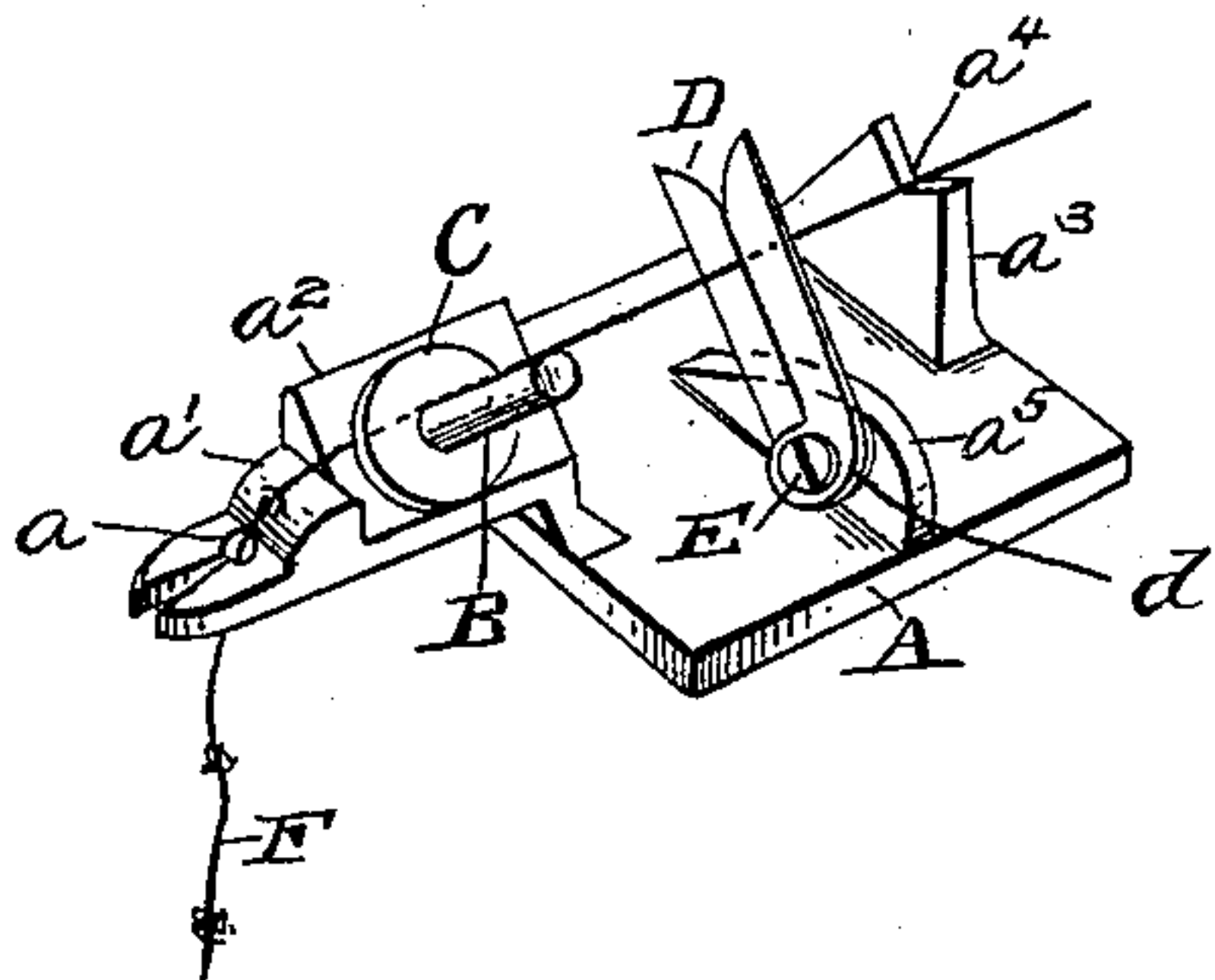


Fig. 2.

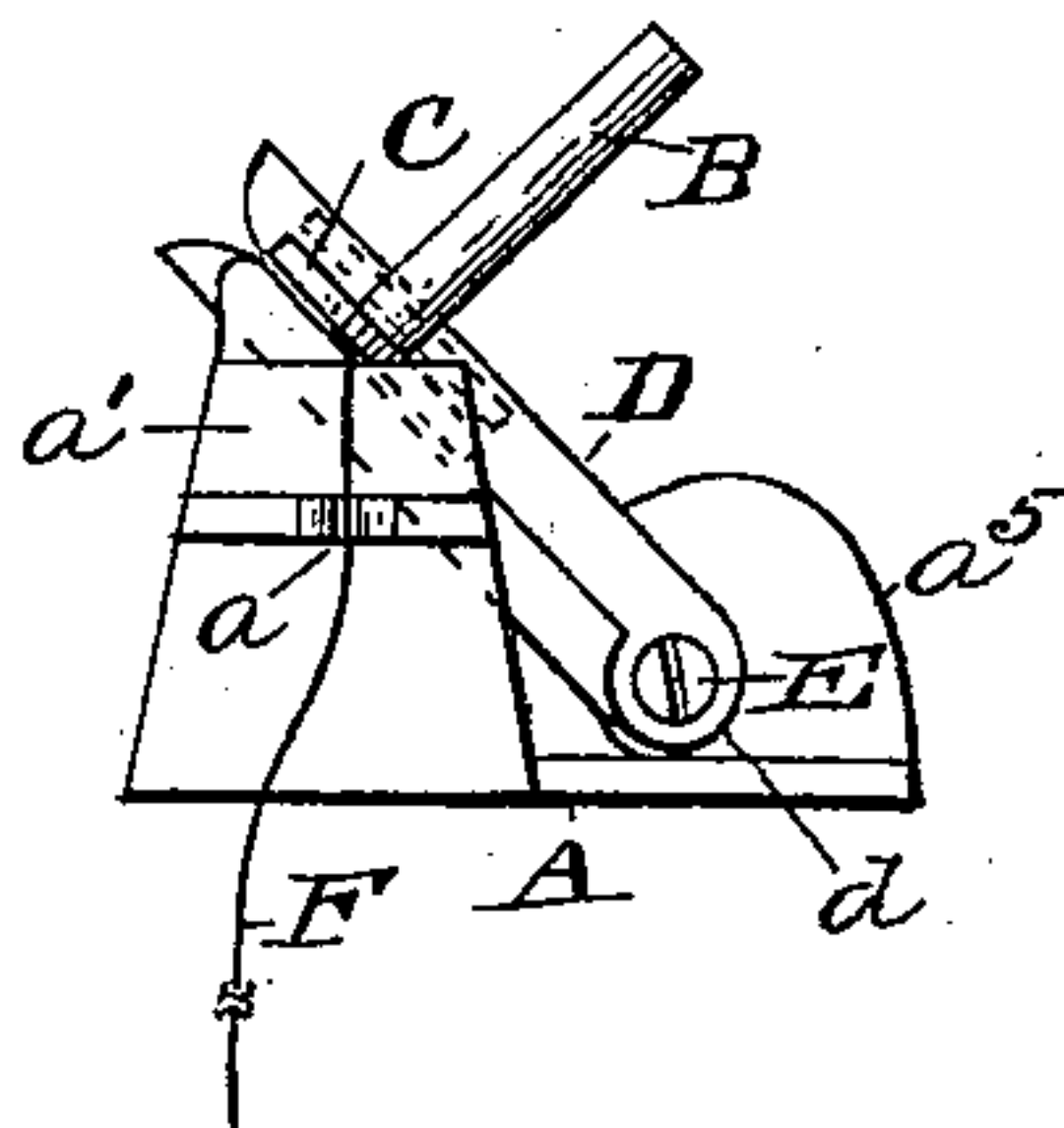


Fig. 5.

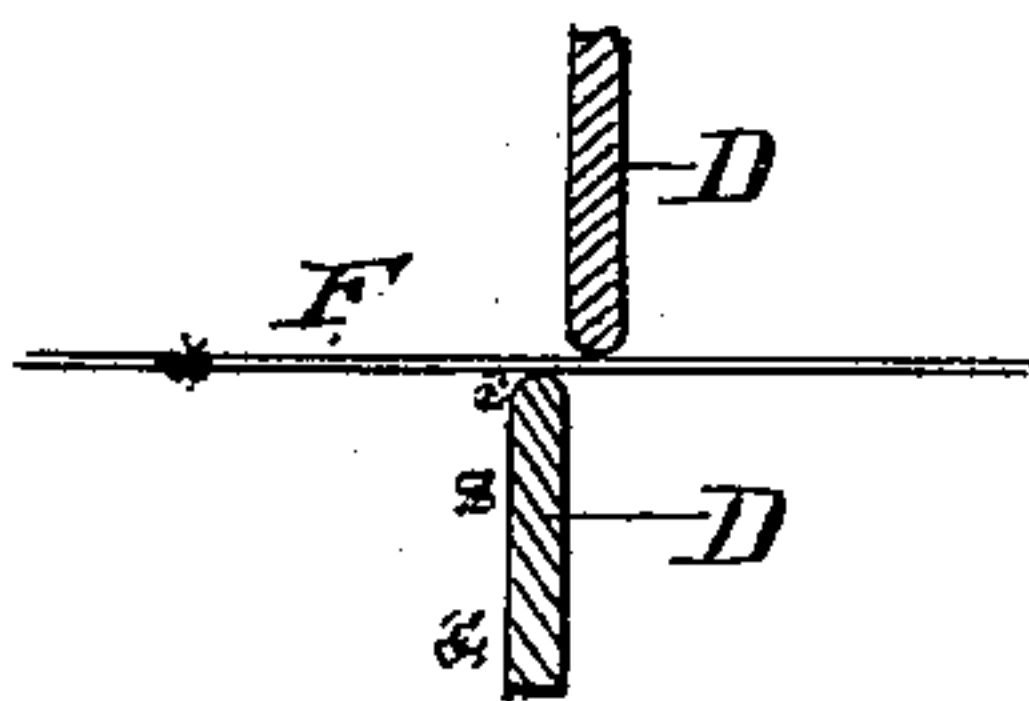


Fig. 3.

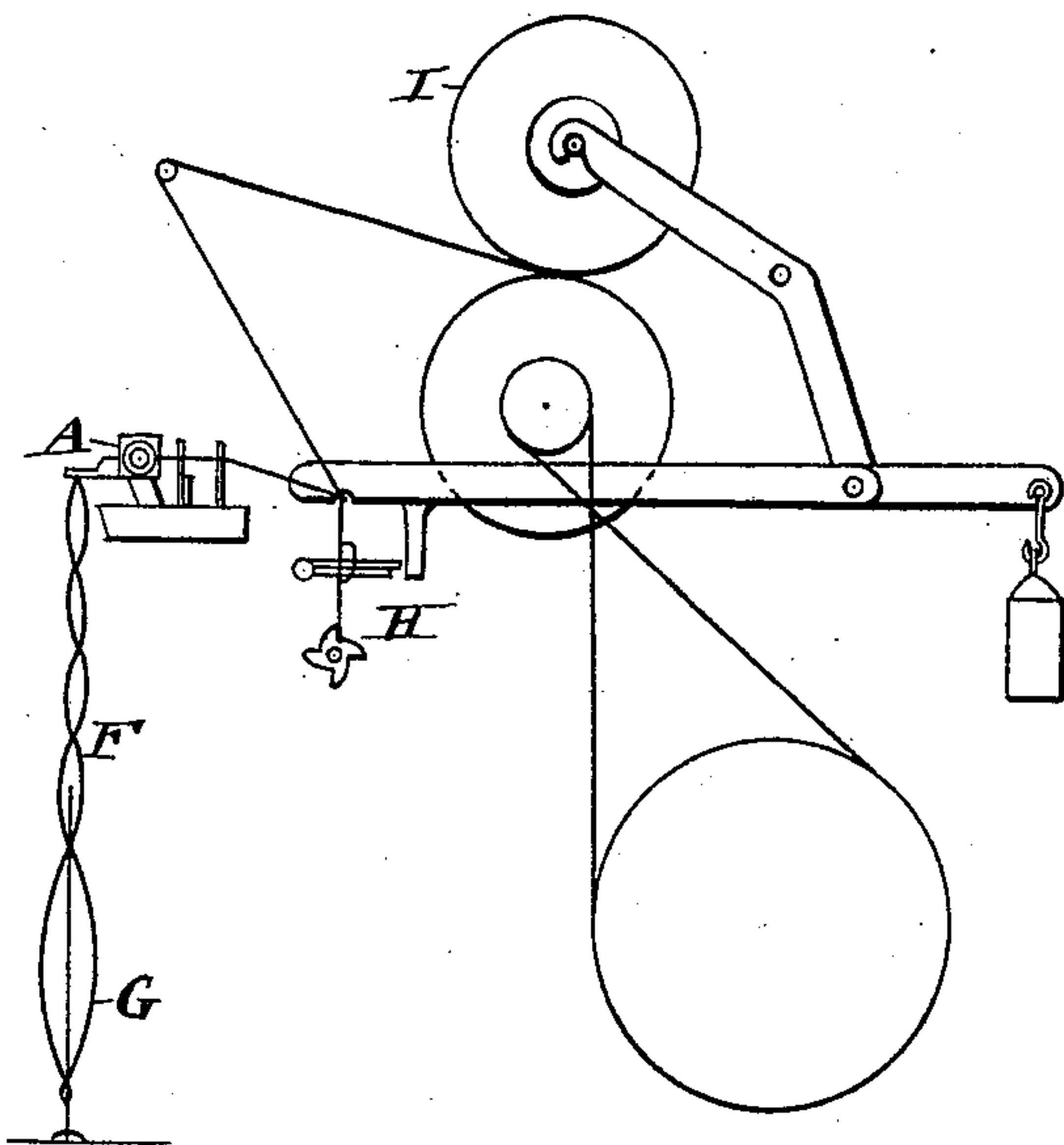
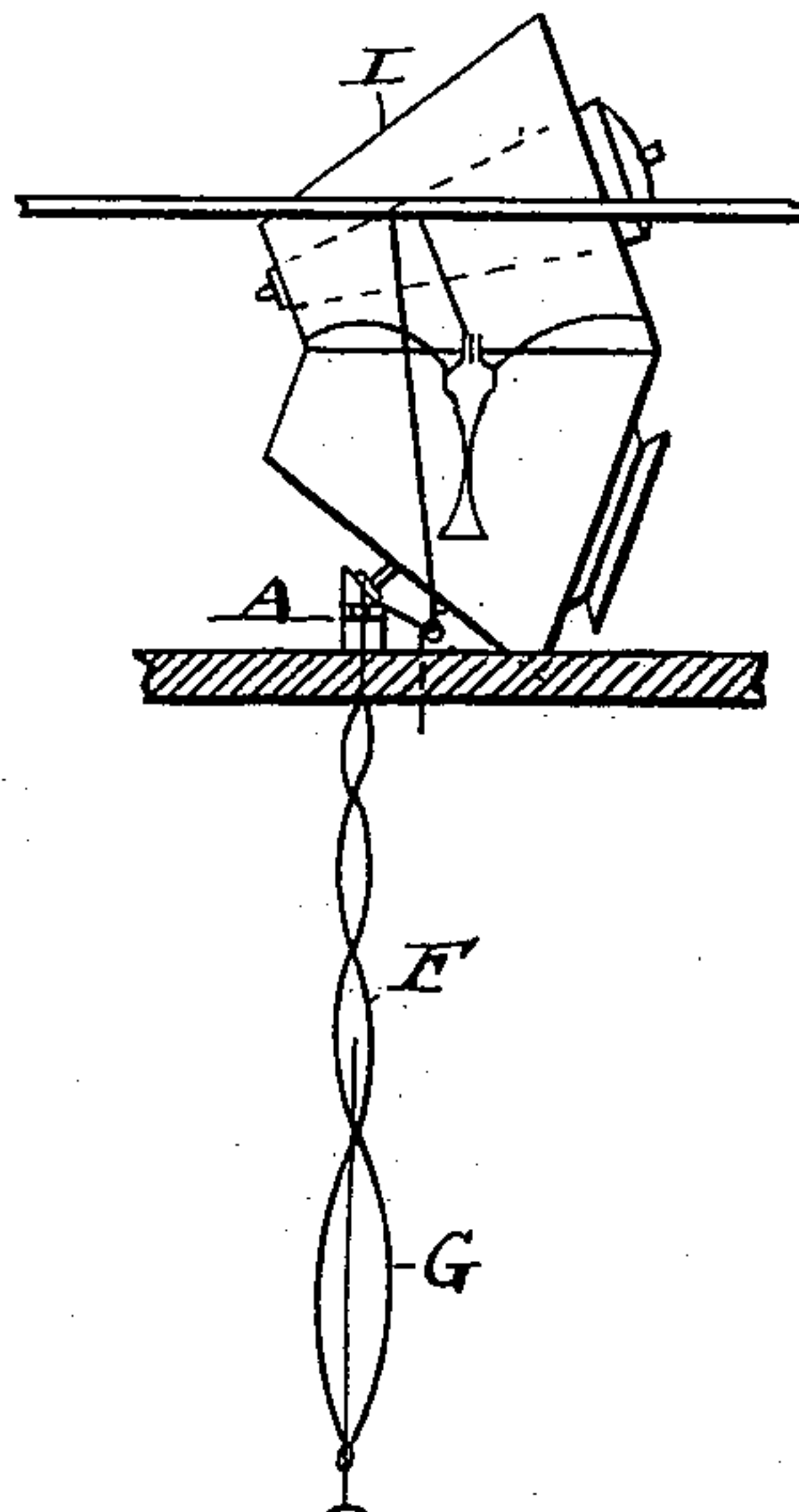


Fig. 4.



Witnesses

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PARDON B. SANFORD, OF FALL RIVER, MASSACHUSETTS.

YARN GUIDE, TENSION, AND CLEARER.

SPECIFICATION forming part of Letters Patent No. 605,918, dated June 21, 1898.

Application filed July 10, 1897. Serial No. 644,051. (No model.)

To all whom it may concern:

Be it known that I, PARDON B. SANFORD, a citizen of the United States, residing at Fall River, in the county of Bristol and State
5 of Massachusetts, have invented certain new and useful Improvements in Yarn Guides, Tensions, and Cleaners; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable
10 others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

15 My invention relates to devices for guiding, cleaning, and tensioning yarn as it is fed to winding spools, cones, or reels.

20 The object of my invention is to enable the tension to be readily changed for different sizes of yarn and to remove from the yarn all slubs, seeds, leaves, bunches, or other foreign or deleterious matter.

25 The invention is especially designed for use with cone-winding machines for winding yarn to be made into knit goods.

30 In the drawings, Figure 1 is a perspective view of my device. Fig. 2 is an end view. Fig. 3 is an end elevation of a portion of a cone-winding machine with my device applied thereto. Fig. 4 is a front elevation of the same. Fig. 5 is a cross-section of the slub-catching blades.

35 At one end of a suitable casting A is a notch and eye a . Adjacent to the eye is an inclined or curved surface a' , beyond which is a plane surface a^2 , inclined from the horizontal on an axis parallel with the movement of the yarn. A flat annular weight is laid upon this inclined surface and is mounted to
40 be rotatable thereon, preferably as shown in Figs. 1 and 2, in which a pin B projects at right angles to the inclined surface, and a loose flat washer C is slipped onto this pin and rests upon the surface a^2 . A short distance from the incline is an upright a^3 , having in its top a notch or groove a^4 to receive and guide the yarn. Between the incline and the upright is a lug a^5 , having one side up-
45 right and transverse to the line of the yarn. A pair of thin elastic metal blades D, preferably of steel, are secured to this lug. Each

blade has, preferably, an enlarged lower end d , with a perforation to permit a clamping-screw E to pass into the lug a^5 . The edges of the blades lie parallel, and the narrow space
55 between them can be adjusted on slacking off the screw. The adjacent edges of these blades are not sharp, but are rounded off, as shown in Fig. 5. The blades are set so as to come close to the yarn, but not so close as to chafe or injure
60 it. The blades are set obliquely, so that their edges are in the plane of the inclined surface a^2 . This causes the yarn to feed through the tension and slub-catcher always in a straight line.

65 The device is placed on a winding-machine in the position shown in Figs. 3 and 4. There will be one device for each cone. The yarn F is taken from the cop, spool, or bobbin G and passed up through the eye a and across
70 the incline a^2 under the washer C, between the blades D, and over the guide a^4 to the drop-wire of the stop-motion H, and thence to the cone I.

75 The washer C accomplishes three purposes. First, it serves by its weight as a tension, and by using washers of different weights the tension can be nicely adjusted to the size of the yarn. This tensioning effect prevents the
80 formation of kinks between the weight and the slub-catcher. Secondly, it revolves slowly on the pin B as the yarn passes under it, which has a tendency to roll the yarn, compacting the loose fibers, and making it soft and smooth and better prepared to run
85 through the slub-catcher. Thirdly, the revolving washer pushes to one side any foreign substance loosely caught on the yarn, and thus acts as a cleaner.

90 If the bunch or other substance has been twisted into the yarn, it passes under the washer and brings up against the edges of the blades D. If the slub cannot be thrown off, the blades bend until their tension is sufficient to snap the thread, when the stop-motion
95 automatically stops the cone. The operator then takes out the slub, pieces the ends together, and starts the cone.

100 The spring action of the slub-catcher operates to snap the yarn a few inches from the slub without stretching or straining the yarn, as in other devices with which I am familiar.

The blades D do not scrape or operate in any manner on the yarn proper. They merely obstruct the passage of any bunch.

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

In a yarn guide, tension and cleaner, the combination with an inclined stationary surface, of a loose flat weight rotatable thereon,

and a pair of thin elastic metal blades having rounded edges lying in the plane of said inclined surface, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

PARDON B. SANFORD.

Witnesses:

GEORGE O. LATHROP,
ARBA N. LINCOLN.