

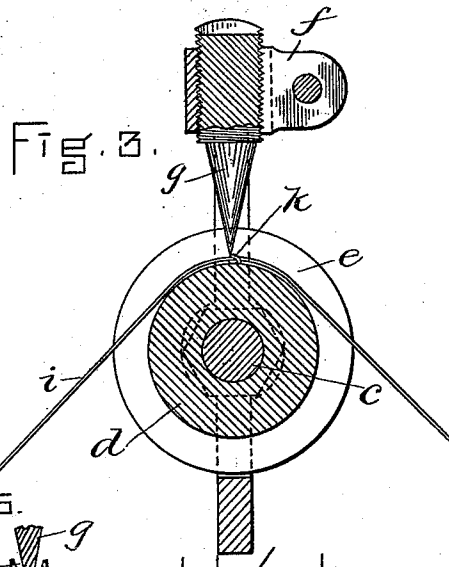
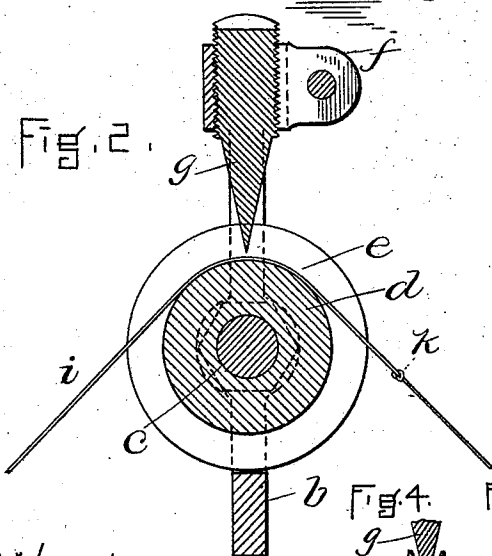
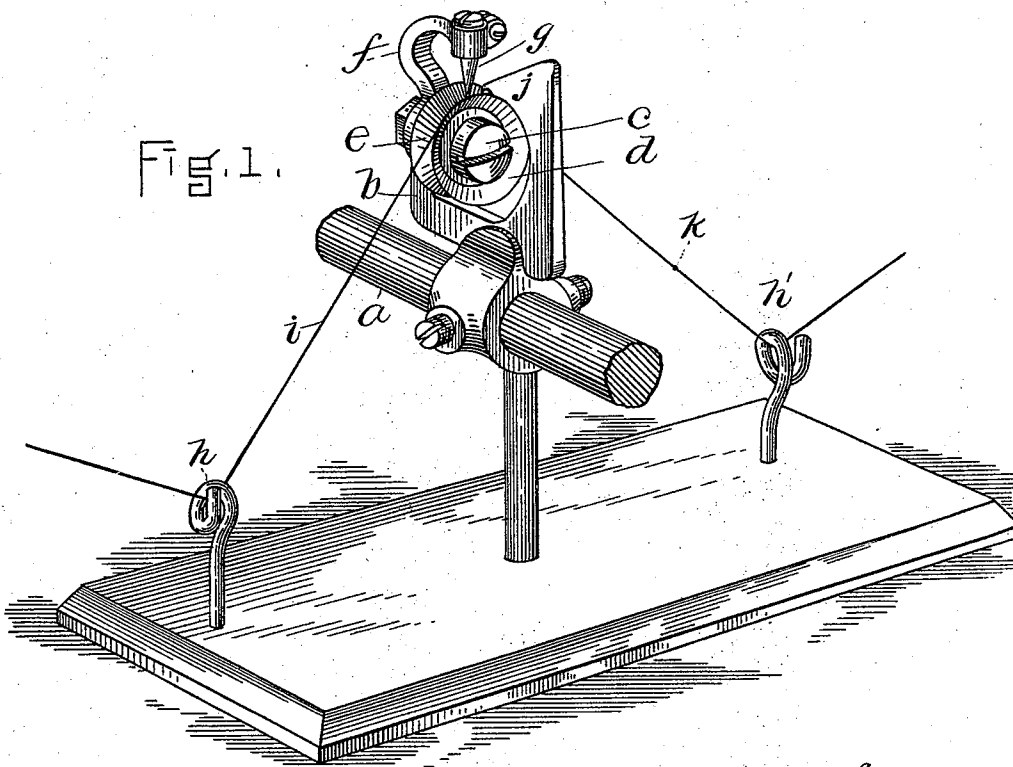
(No Model.)

R. H. COOK.

KNOT CATCHING AND THREAD OR YARN CLEARING DEVICE.

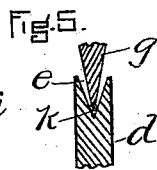
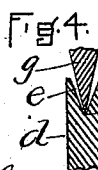
No. 497,633.

Patented May 16, 1893.



WITNESSES.

L. H. Marsh.
W. W. Jackson



INVENTOR.

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by
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UNITED STATES PATENT OFFICE.

RICHARD H. COOK, OF FALL RIVER, MASSACHUSETTS, ASSIGNOR TO THE
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KNOT-CATCHING AND THREAD OR YARN CLEARING DEVICE.

SPECIFICATION forming part of Letters Patent No. 497,633, dated May 16, 1893.

Application filed November 11, 1892. Serial No. 451,642. (No model.)

To all whom it may concern:

Be it known that I, RICHARD HARTLEY COOK, of Fall River, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Knot-Catching and Thread or Yarn Clearing Devices, of which the following is a specification.

This invention has relation to that class of devices which is employed by yarn or thread makers to remove burls or unevenness from their products and make sure that the same do not contain knots, slugs, or fluffy points or places.

The means heretofore most commonly employed for the purpose mentioned have consisted of a fork or pair of blades set nearly touching, so as to remove unevenness from yarn passing between them. The difficulty with these means has been that with some yarns where the unevenness was soft or of a fluffy character it was liable to flatten and pass through without removal or detection; and even when the knots or unevenness were hard, if flat in form, and not thicker than the width of the slot it would likewise pass without being arrested.

It is the purpose of this invention to provide such improvements, as will render certain the removal of burls, slugs, fluffy bunches, knots or other unevenness from the thread or yarn, or arrest the progress of the latter, whatever might be the form of such unevenness.

To these ends the invention consists of a yarn-clearer and knot-catcher comprising in its construction a pulley or wheel provided in its periphery with an angular groove in or through which the thread or yarn may run, and an adjustable catching or clearing pin or device opposite the bottom of the said groove, the whole being so constructed and arranged that as long as the thread is of normal size it will run in or pass through the said groove out of contact with the catching or clearing device, but when a burl, bunch or knot occurs in the yarn, the said unevenness will, as it were, raise the thread out of the groove, by bearing upon its sides or bottom, into contact with the said catching or clearing device removing the burl or bunch or catching the knot or unevenness, and stopping the passage

of the thread, all as I will now proceed to describe and claim.

Reference is to be had to the annexed drawings and to the letters marked thereon, forming a part of this specification, the same letters designating the same parts or features, as the case may be, wherever they occur.

Of the drawings—Figure 1, is a perspective view of the invention, supported on a suitable base, a thread being represented as running through the device. Fig. 2, is a sectional detail view taken centrally through the grooved pulley or wheel, across the axis of the same, showing the position of the thread with respect to the wheel, and the clearing or catching device, when the said thread is free from unevenness and without knots. Fig. 3, is a view similar to Fig. 2, but showing the position of the thread when a knot or bunch occurs therein. Figs. 4 and 5 are transverse sectional diagrams corresponding to Figs. 2 and 3.

In the drawings *a* designates a rod, adjustably supported upon which is a bracket *b* which bracket, in turn, supports a journal stud *c*, upon which is arranged a wheel or pulley *d*, provided in its periphery with a V-shaped or angular groove *e*. In an arm *f* projecting up from the bracket *b* and extending over the grooved wheel *d*, there is arranged a vertically adjustable pin *g*, the lower end of which may be pointed, made sharp, or otherwise constructed to suit it to perform the functions required of it, as hereinafter explained. In the present instance, the shank of the pin *g* is constructed as a screw tapped through the inner end of the arm *f*.

h h' are guide eyes arranged at a plane below or out of line with the wheel *d*, so that the passing thread *i* may be held down in the bottom or as near the bottom of the groove *e*, as may be.

j is a guard to prevent the thread from being accidentally, or with the purposes of mischief, readily thrown out of the groove of the wheel.

In use a thread or yarn *i* will be placed in position in the groove *e* of the wheel *d*, and the catching or clearing device *g* will be adjusted so as that the thread will run in close proximity thereto yet not touch the same, as shown in Figs. 2 and 4. So long as the thread

is of normal structure and size, it will run through the device without trouble, and without friction or abrasion, since any appreciable friction will serve to turn the wheel or pulley

5 *d*. In case, however, of a knot *k*, or a burl, slug, fluffy bunch or unevenness of any kind occurring in the tread, it will raise the same from its normal position in the groove, into contact with the catching or clearing device
10 *g*, and be stopped with certainty thereby, as shown in Figs. 3 and 5.

It is to be noted that with this device there is no liability of an unevenness in the yarn passing, by the flattening of the same, nor can
15 a flat bunch or knot pass the catching or clearing device. Furthermore, the catching device can be adjusted fully out of contact with the thread, when of normal size so as not to abrade the same, nor is the thread liable of
20 abrasion by friction, since the pulley or wheel *d* is free to turn upon its axis when any appreciable force is applied to its periphery. It is to be observed, also, that the construction of the invention is such as to make the application
25 thereto of a stop-motion ready of accomplishment. For example, the arm *f* might be pivotally supported so that undue force exerted upon the wheel *d* would turn said arm, move a catch, and cause the winding device to
30 knock off. It is not essential, however, that the wheel or guide *d* should be made to turn when the thread is passing through the an-

gular guide-groove *e*. Indeed, in practice, with smooth yarn or thread it does not turn excepting when undue friction or power is ex- 35 erted thereon.

Having thus explained the nature of the invention and described a way of making and using the same, though without attempting to explain all of the forms in which it may be 40 constructed or all of its modes of use, I declare that what I claim is—

1. A knot-catching and thread-clearing device comprising in its construction a guide or base provided with a V-shaped or angular 45 groove, through which the thread is led, and a clearing or catching device arranged above or opposite the bottom or angle of the said guide-groove, as set forth.

2. A knot-catching and thread-clearing de- 50 vice comprising in its construction a wheel or pulley provided in its periphery with a V-shaped or angular groove, and a knot-catching and thread-clearing device adjustable opposite the bottom of the said groove, as set 55 forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 26th day of October, A. D. 1892.

RICHARD H. COOK.

Witnesses:

NICHOLAS HATHEWAY, Jr.,
NICHOLAS HATHEWAY.