

(No Model.)

H. P. CHASE.

THREAD GUIDE FOR SPINNING MACHINES.

No. 275,020.

Patented Apr. 3, 1883.

Fig. 1.

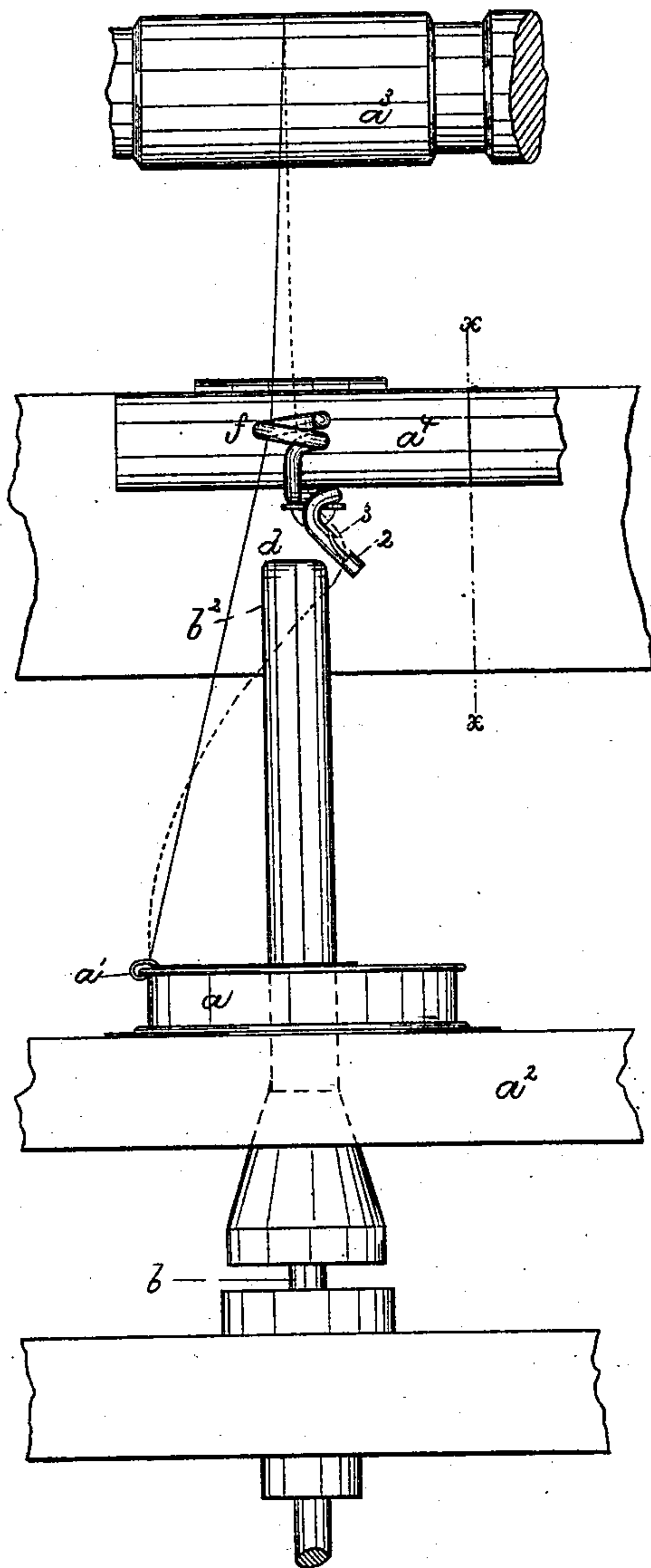


Fig. 2.

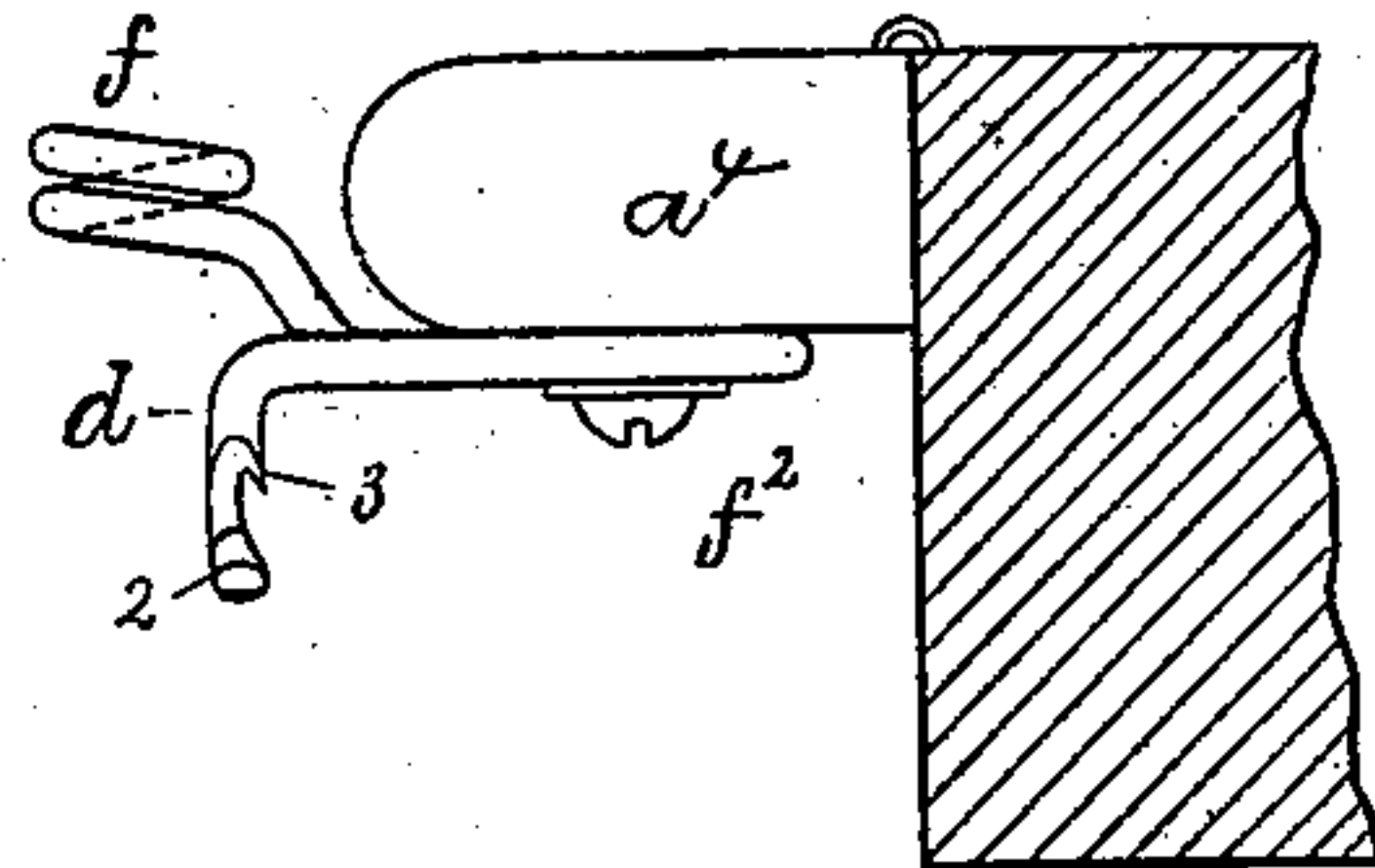


Fig. 3.

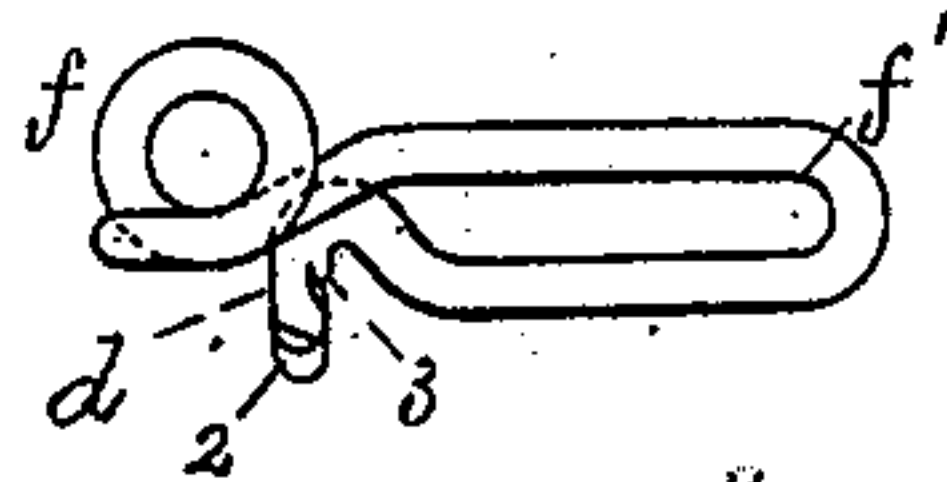


Fig. 4.



Fig. 5.

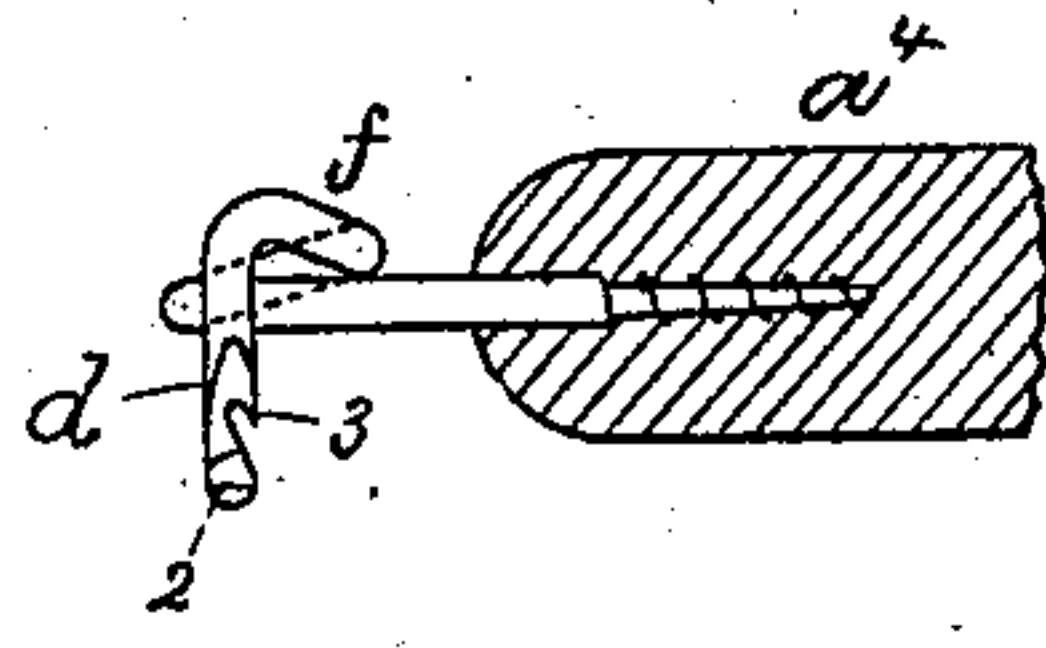
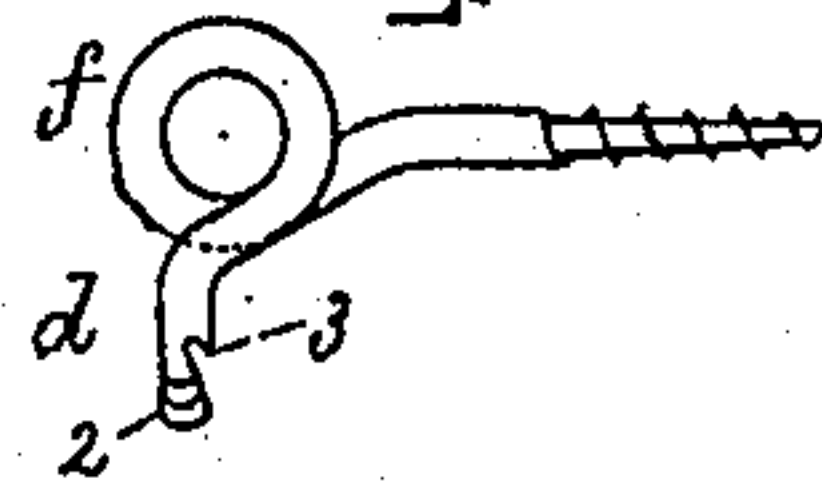


Fig. 6.



Witnesses.

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UNITED STATES PATENT OFFICE.

HORACE P. CHASE, OF LOWELL, ASSIGNOR OF ONE-HALF TO GEORGE DRAPER & SONS, OF HOPEDALE, MASSACHUSETTS.

THREAD-GUIDE FOR SPINNING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 275,020, dated April 3, 1883.

Application filed June 29, 1882. (No model.)

To all whom it may concern:

Be it known that I, HORACE P. CHASE, of Lowell, Middlesex county, State of Massachusetts, have invented an Improvement in Thread-Guides for Spinning-Machines, of which the following description, in connection with the accompanying drawings, is a specification.

My invention has for its object to catch and hold the yarn between the guide-eye and the traveler, and break it off quickly whenever the yarn is sufficiently slack to commence to kink and snarl to such degree as to be liable to do injury to the yarn running to adjacent spindles, the said yarn-catcher also acting to break off the yarn in case the yarn should break at the usual rollers above the guide-eye and commence to drop down through the guide-eye.

In spinning-machines the weight of the traveler and its friction on the ring-race, while being drawn around the same by the yarn extended to and being wound on the bobbin, must be sufficient to enable the traveler to move at a speed a little less than that of the rotating spindle and bobbin to thus effect the winding of the yarn upon the bobbin. As the speed of modern spindles has been greatly increased, the weight of the travelers and the size of the wire from which they are made has been correspondingly decreased, and the strength and durability of the traveler has been lessened and its liability to be thrown off the ring has been increased. If a traveler be broken or thrown from the ring, the yarn will kink and snarl; and so, also, should the yarn contain bunches or projections—such, for instance, as small pieces of cotton-leaf, or pieces of seed, or other foreign substance—the said bunch or projection, on arriving at the traveler and being unable to pass the same, will stop the winding of the yarn upon the bobbin, and thereafter the twisted yarn between the traveler and the guide-eye will become slack and kink, forming snarls of greater or less length. The lighter the traveler the easier for the yarn to kink on the occurrence of bunches or imperfections such as alluded to. When yarn containing a bunch or bunches too large to pass the traveler arrives at the traveler, or when a traveler is thrown off the ring, the yarn must be caught quickly and be broken or the snarls or kinks will be formed in it,

which will strike against, whip, and spoil the yarns extending to the bobbins each side of it, and it very frequently happens that the badly kinked and snarled yarn, after it has been broken off, will be thrown upon and be entangled with the yarns of adjacent bobbins, thus causing the breaking of a number of yarns along the side of the frame. To overcome these difficulties I have provided a yarn-catcher which, should the yarn become sufficiently slack to form a kink or snarl, will catch and immediately cause the yarn to be broken off or twisted apart at the catcher. I have located this catcher at the front of the guide-board, in close proximity to the guide-eye.

This invention is an improvement on the thread-catcher described in United States Patent No. 41,582, February 9, 1864, to which reference may be had. In that patent the thread-catcher had a downwardly-extended arm provided at its lower end with a shoulder to prevent the yarn wound thereon from passing off its lower end, and to hold the yarn until twisted or broken off.

In this my invention, in addition to the shoulder therein shown and described, I have provided the arm with a second shoulder or notch to break the yarn thrown about it and prevent the said yarn from working or sliding upward thereon, and from being drawn from the bobbin up through the guide-eye in case the said yarn becomes caught between the usual rollers above the guide-eye.

Figure 1 represents in front elevation a sufficient portion of a ring-spinning frame or machine to illustrate my invention; Fig. 2, a partial section on the line *xx*, Fig. 1; Fig. 3, a detached top view of the combined yarn-catcher and thread-guide, and Figs. 4, 5, and 6 views of a modified form of my invention.

The ring *a*, traveler *a'*, ring-rail *a''*, delivery-roll *a'''*, hinged guide-board *a''''*, spindle *b*, and bobbin *b'* are and may be all as usual.

In Figs. 1 to 3 I have herein shown the guide-eye *f* and yarn-catcher *d* as made from a single piece of wire bent to form a common slotted shank, *f'*, to be attached to the guide-board by a single screw, *f''*, as described in my application No. 65,532, filed June 29, 1882, to which reference may be had.

I shall herein denominate the downwardly-

turned outer end of the yarn-catcher as the "arm." This arm, besides having the shoulder 2, common to the patent herein referred to, has a second shoulder or notch, 3, which serves to prevent the yarn rising upon said arm when the yarn, by reason of slack therein, is sufficiently bowed out, as on dotted lines, Fig. 1, to be thrown or wound about the said arm. When the yarn, for any reason, is about to become sufficiently slack to kink and snarl, as described, the slack yarn must be caught, broken, and wound up. In case the traveler flies off, the yarn is thrown about the arm; but with an arm having only the shoulder 2 at its lower end the yarn may be drawn upward over the arm and back through the guide-eye. This would happen should the slack in the yarn above the guide-eye be sufficient to permit the said yarn to be caught between the usual clearer and delivery rolls, and under such circumstances, were it not for the shoulder 3, the said rollers would act to draw and unwind from the bobbin the yarn already wound thereon. The addition of the shoulder 3 to the

arm of the yarn-catcher obviates the difficulty just alluded to. 25

In Figs. 4 to 6 I have shown the extra shoulder 3, added to the arm of a guide-eye, having the usual screw-threaded shank.

In the drawings I have shown but one roll above the guide-eye; but in practice the machine will have a set of rolls such as commonly found in all ring-spinning frames. 30

I claim—

As an improved article of manufacture, a yarn-catcher having an arm provided with two shoulders, 2 3, the former to prevent the yarn passing from the end of the arm and the latter to prevent the yarn passing upward above the top of the said arm, substantially as described. 35 40

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HORACE P. CHASE.

Witnesses:

EBEN S. DRAPER,
ELIAS S. WATSON.