

(No Model.)

H. P. CHASE.

YARN CATCHER AND GUIDE EYE FOR SPINNING MACHINES.

No. 270,179.

Patented Jan. 2, 1883.

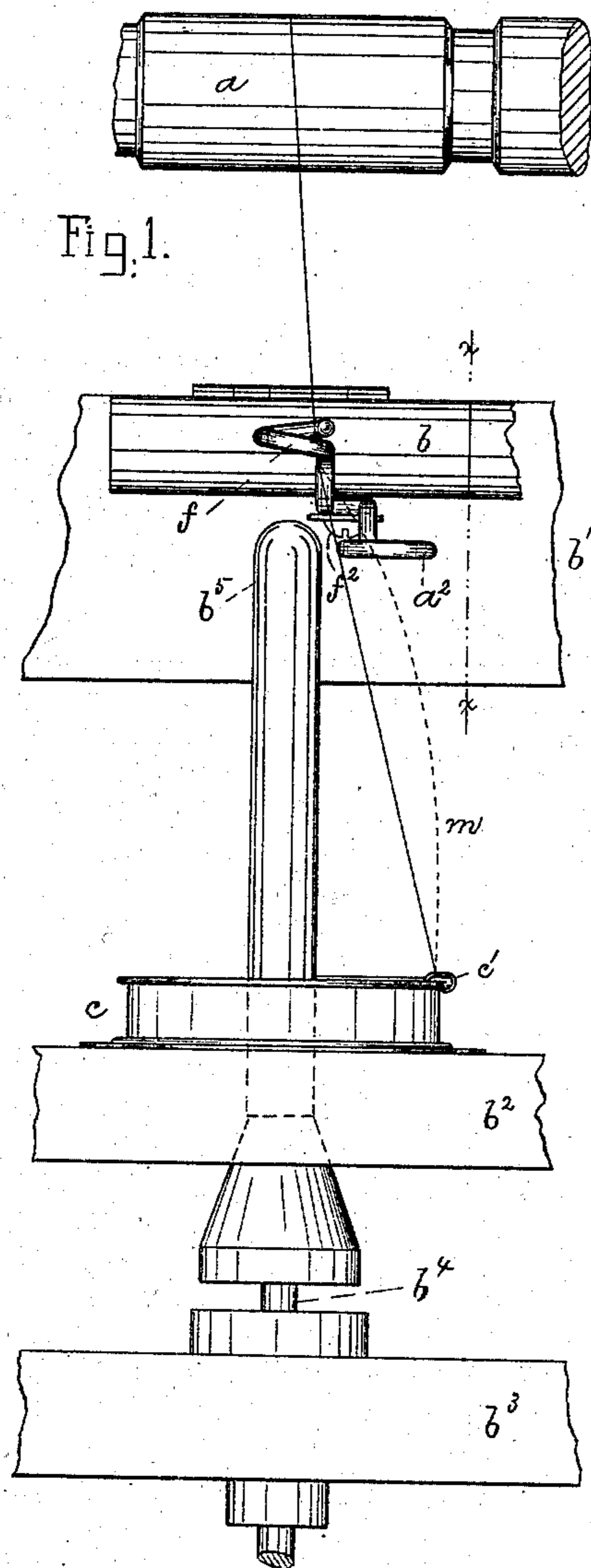


Fig. 1.

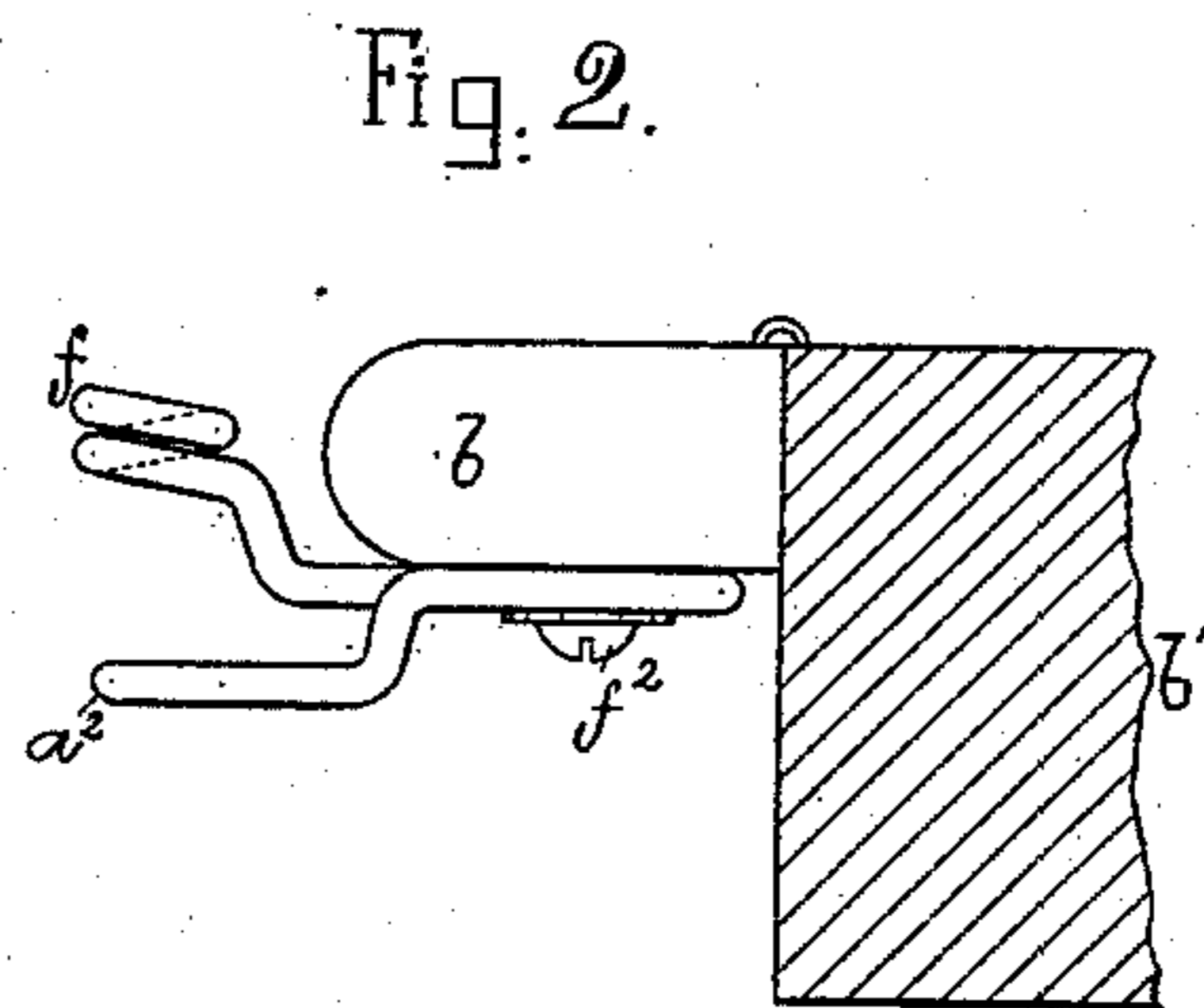


Fig. 2.

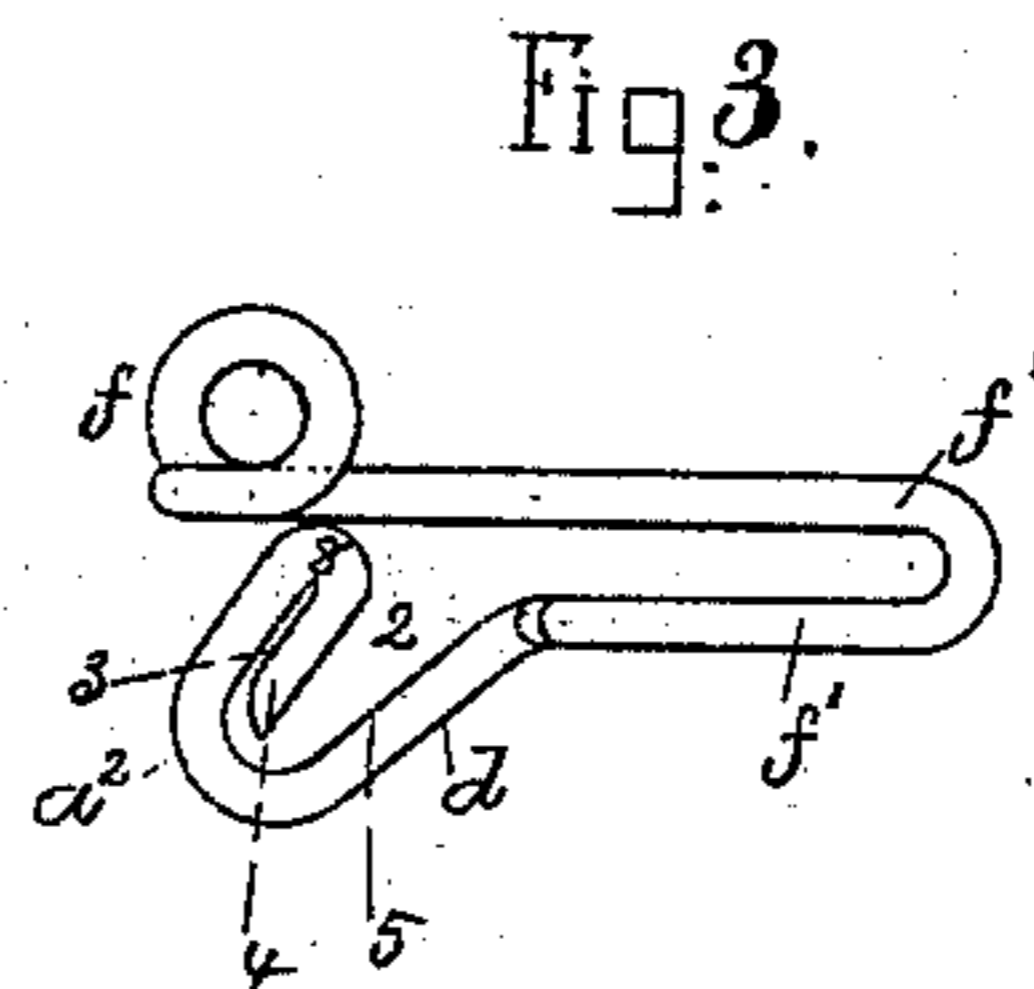


Fig. 3.

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.

YARN-CATCHER AND GUIDE-EYE FOR SPINNING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 270,179, dated January 2, 1883.

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

To all whom it may concern:

Be it known that I, HORACE P. CHASE, of Lowell, county of Middlesex, State of Massachusetts, have invented an Improvement in Yarn-Catcher and Guide-Eye 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 have been correspondingly decreased, and the strength and durability of the traveler have 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 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, and have made it in one piece with the guide-eye, and the wire from which the catcher and guide-eye is formed is so bent or shaped as to form what I shall denominate a “slotted shank,” common to both, whereby the combined catcher and guide-eye may be attached to the guide-board by means of a single screw. Constructing the shank in this way and attaching it to the guide-board by an independent screw, which clamps it to the guide-board in an adjustable manner, enables the guide-eye to be more accurately adjusted on the guide-board and with relation to the top of the spindle than is possible with guide-eyes such as heretofore made, wherein the shanks are screw-threaded to be screwed into the edge of the guide-board.

By careful observation in practical work I have discovered that a large proportion of the ends which are broken in ring-spinning machines employing guide-eyes having screw-threaded shanks is attributable to the operators, who, in doffing the bobbin rapidly, turn the guide-eyes accidentally as the guide-boards are quickly thrown up and down. The breakage of yarn also frequently results from a want of proper adjustment of the guide-eyes, they frequently being one turn of the screw too far in or too far out, thus placing the guide-eye out of proper central position with relation to the spindle. In the form of my invention to be herein described the yarn-catcher, located below the guide eye, has an open space with flaring or curving sides, into which the yarn enters as it begins to bow or throw out below the guide-eye by reason of slack in the yarn, the

said space with flaring or curved sides ending with a slot or notch, into which the yarn is drawn and by which it is caught and broken or twisted off.

5 Figure 1 represents in front elevation a sufficient portion of a ring-spinning machine to illustrate my invention; Fig. 2, a sectional detail on the dotted line $x x$, Fig. 1; and Fig. 3, a detail in top view of my improved yarn-
10 catcher.

The delivery-roll a , guide-board b , bar b' , ring-rail b^2 , bolster-rail b^3 , spindle b^4 and bobbin b^5 , ring c , and traveler c' are and may be all as in common ring-spinning frames.

15 My improved yarn-catcher a^2 is composed, as herein shown, of a wire, d , bent to produce an open thread-catching eye, 2, (see Fig. 3,) having a narrow slot, notch, or space, 3, into which the yarn, once entering the eye 2 be-
20 tween the part 4 and inclined and curved surface 5 of the wire d , will be drawn and be held securely until broken off.

My improved yarn-catcher and guide-eye f is made from a single piece of wire d , bent as
25 shown and described, parts of the wire being bent to form a slotted shank, f' , to rest against the guide-board and be held firmly in adjusted position against possibility of turning by a set-screw, f^2 .

30 In operation, the yarn m , extended between

the guide-eye f and traveler c' , if even and free from bunches and imperfections, will occupy substantially the full-line position Fig. 1; but if a bunch or imperfection meets the traveler and slackens the yarn sufficiently to
35 cause kinks and snarls the slack yarn is thrown outward, so that it travels in a larger circle about the bobbin, as in dotted lines, Fig. 1, which causes the said yarn to be thrown past the point 8 of the yarn-catcher and into the
40 eye 2 and notch or space 3, where the said yarn will be caught and broken off, after which the yarn broken off at and between the catcher and bobbin will be wound upon the bobbins.

The two arms of the slotted shank resting
45 flat on the guide-board may be adjusted into the exact position desired, and be confined there by the single set-screw f^2 .

I claim—

The guide-eye and yarn-catcher made in one
50 piece, and having a slotted shank, f' , by which to attach the same to the guide-board, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two sub-
55 scribing witnesses.

HORACE P. CHASE.

Witnesses:

EBEN S. DRAPER,
ELIAS G. WATSON.