

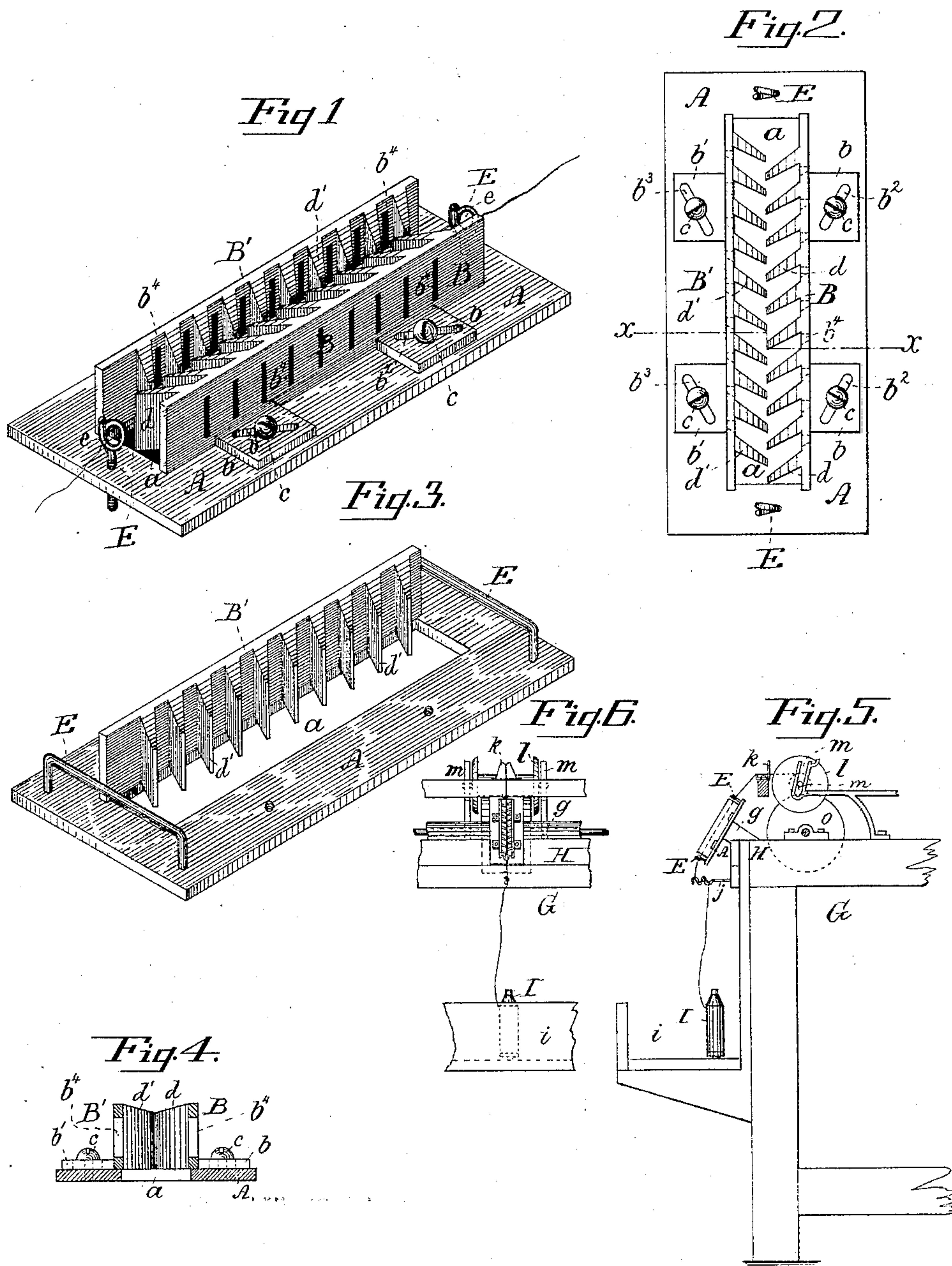
(No Model.)

H. F. WEST.

DEVICE FOR CLEANING YARN, &c.

No. 390,323.

Patented Oct. 2, 1888.



WITNESSES.

Hermann Bormann.  
Thomas M. Smith.

INVENTOR.

Henry F. West.  
by J. Walter Doughton  
Atty.



# UNITED STATES PATENT OFFICE.

HENRY F. WEST, OF GLOUCESTER CITY, NEW JERSEY.

## DEVICE FOR CLEANING YARN, &c.

SPECIFICATION forming part of Letters Patent No. 390,323, dated October 2, 1888.

Application filed May 4, 1887. Serial No. 237,030. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY F. WEST, of Gloucester City, in the county of Camden and State of New Jersey, have invented a certain  
5 new and Improved Device for Cleaning Yarn or other Material, of which the following is a specification.

The object of my invention is to provide a device of simple construction for effectually  
10 cleaning yarn or other similar material in its passage from the bobbin to the spool in a spooling or other machine.

My invention consists in mounting upon a plate having an opening of any suitable form  
15 two adjustable plates provided with any desired number of knives, arranged, preferably, at an angle thereto, with either beveled-off or square cutting surfaces or edges, and the plates disposed in such manner that the yarn or other  
20 material may be thoroughly cleaned and any fuzz or fine particles accumulating on the surfaces of the knives continually discharged through openings provided in the sides of the adjustable plates, and also through an opening  
25 in the base-plate.

My invention will be more fully understood, taken in connection with the accompanying drawings, wherein I have shown the same in a form which has been found practically efficient,  
30 and in which—

Figure 1 is a perspective view of the improved cleaning device and the adjustable guides secured to the base-plate. Fig. 2 is a top or plan view thereof. Fig. 3 is a perspective view of the device with one of the adjustable knife plates removed, and showing stationary guides secured to the respective ends of the base-plate. Fig. 4 is a transverse section on the line  $x x$  of Fig. 2. Fig. 5 is a  
40 side elevation of so much of a spooling-machine as will serve to illustrate the application of my improved cleaning device thereto, and Fig. 6 is a front elevation thereof.

Referring to the drawings, A is the metallic plate, of any suitable form, having a central rectangular opening,  $a$ , therein, through which the fuzz or fine particles from the yarn or other material removed therefrom by means of the knives, to be hereinafter fully explained, are  
50 discharged.

B and B' are two vertical plates provided with supporting seats  $b$  and  $b'$ , having oblong

slots  $b^2$  and  $b^3$  therein for admitting screws  $c$ , for holding these plates firmly to the rectangular plate A and permitting of their adjustment, laterally or otherwise, to accommodate  
55 any size thread or yarn. In the sides of these plates are provided a series of slots,  $b^4$ , for the fuzz or other particles from the yarn to pass through. The vertical plates B and B' have  
60 preferably cast therewith a series of knives,  $d$  and  $d'$ , arranged at acute angles thereto. These knives taper slightly from the top surface of the vertical plates, respectively, in the direction of the center, and the bottom surface of  
65 the knives is preferably flush with the surface of the vertical plates B and B' to the center, while the cutting-edges of the knives are either beveled off, as shown in Fig. 1, or square, as shown in Fig. 3, and these knives are preferably  
70 arranged, for example, so that a knife of one series at an angle to the vertical plate B will occupy a position between two knives of a series in the vertical plate B'.

The advantage obtained by the setting or  
75 arranging of the knives so that they will all be at or nearly at an acute angle to the vertical plates is that any fuzz or fine particles continually accumulating on the upper surfaces of the respective knives will be readily  
80 and continually discharged therefrom through the rectangular opening  $a$  of the base-plate A and through the slits  $b^4$  in the sides of the vertical plates B and B', away from the material being cleaned.  
85

It should be understood that while the series of knives, preferably formed integral with each of the vertical plates, are arranged, as hereinbefore described, for operation so that a series of knives of one plate will occupy a position between a series of knives of the opposite plate, yet, nevertheless, they must not be so arranged or adjusted to the base-plate as to produce tensional friction between the material undergoing the cleaning operation, because if a tensional friction should be present the material would be instantly severed or cut and the device thereby rendered incapable of performing the function designed—that of removing mote fuzz or small particles from  
95 fibrous material in its passage in a straight course between the series of angular knives formed with the vertical plates.

Centrally to each end of the rectangular



plate A is secured, preferably, a guide, E, having an eye, *e*, of such construction as to readily permit of the insertion of the thread there-through in a manner shown, for instance, in Fig. 1. The stem of this guide is screw-threaded for a portion of its length, and is fitted into the plate A, wherein it can be readily adjusted by hand either upward or downward. The advantage of using an adjustable guide, E, is that when the knives become dull the guides may be readily raised or lowered by hand in the base-plate A without having to remove the vertical plates B and B', containing the series of knives *d* and *d'*, until the entire knife-edge surfaces thereof have become ineffective for the performance of their work in the cleaning of the material. While it is true that the plates B and B', being adjustable, may be readily removed for the purpose of sharpening the knives, yet with the use of adjustable guides much time is saved, because the entire cutting-surface of the knives can be used up before removing the vertical plates B and B' for grinding and sharpening these knives.

In Fig. 3 I have shown another form of guide, E, rigidly or otherwise secured in the base-plate A, which may be used, if desired; but the adjustable guides above described I give preference to for the reasons stated.

In Figs. 5 and 6 I have shown side and front elevations of so much of an ordinary well-known construction of spooling-machine as will serve to illustrate the manner of applying my improved cleaning device thereto. In this machine G the cleaning device is secured to a bracket, *g*, attached to the cross-frame H of the machine.

I is the bobbin, suitably held in the trough *i*, supported by the standards of the machine.

*j* is a double guide attached to the cross-frame H.

*k* is an ordinary device for guiding the yarn or other material onto the spool.

*l* is the spool upon which the yarn or thread is wound, held in the U-shaped end of the bracket *m*, secured to the frame of the machine and in frictional contact with the driving-pulley *o*, which has motion imparted to it from any suitable source.

The manner of applying my improved cleaning device to the type of spooling-machine illustrated in the drawings will now be briefly explained.

The yarn or thread being passed upward through the guides *j* from the bobbin I and through the lower adjustable guide E, secured to the rectangular plate A, and between the knives *d* and *d'* of the vertical plates B and B', and thence through the upper adjustable guide E of the plate A, through the movable guiding device *k*, and onto the spool *l*, and continuously wound thereon when motion has been communicated to the frictional driving-pulley *o*, imparting motion to the spool *l*, and revolving the same in a well-understood manner, the fine particles or fuzz from the cleaning

off of the yarn or other material by the knives *d* and *d'* during the operation of the machine and accumulating on the upper surfaces thereof will be continually discharged therefrom through the opening *a* of the base-plate A or through the openings in the sides of the adjustable plates B and B', away from the material being cleaned by the device above described.

While I have described my invention in a manner which has been found practically efficient, yet, nevertheless, it is manifestly obvious that the same will admit of modifications, and hence I do not wish to be understood as limiting myself to the use of the precise number of knives shown, as any less or greater number may be used with practical success, and then, again, their shape may be modified somewhat without departing from the spirit of my invention; and hence I crave the right to modify the same in any manner that will give the best results in the more extended practice thereof.

Having thus described the nature and objects of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A yarn-cleaning device consisting of two plates provided with knives arranged so that while the knives of one plate come between those of the other plate the edges of the two sets of knives will not overlap the median line, but approach or stand in substantially the same vertical plane.

2. A yarn-cleaning device consisting of two vertical plates having slits therein and knives in series formed integral therewith and arranged so that a knife in the series of one plate will occupy a position immediately between two knives in the series of the opposite plate, yet without the edges of the two series of knives overlapping the median line, but approaching or standing in substantially the same vertical plane, substantially as described.

3. A yarn-cleaning device consisting of two vertical plates having slits therein, and each plate provided with a series of knives arranged at an angle thereto, and seats having slots therein, in combination with a base-plate and means for adjustably securing said plates thereto so that the edges of the two series of knives will not overlap the median line, but approach or stand in substantially the same vertical plane, substantially as and for the purposes set forth.

4. A yarn-cleaning device consisting of two vertical plates, each provided with a series of knives, a base-plate having an opening therein, and means for securing said plates thereto so that the edges of the knives of said plates will not overlap the median line, but approach or stand in substantially the same vertical plane, substantially as and for the purposes set forth.

5. A yarn-cleaning device consisting of two vertical plates with slits therein and knives arranged at acute angles, and supporting-seats formed integral with said plates and having slots therein, a base-plate, means for attaching



said plates thereto so that the edges of the two sets of knives of said plates will not overlap the median line, but approach or stand in substantially the same vertical plane, and guides in the ends of said base-plate, substantially as and for the purposes set forth.

6. A yarn-cleaning device consisting of two vertical plates having knives disposed at an angle thereto, and with supporting seats with slots therein, a base-plate with an oblong opening, means for adjusting said vertical plates thereto so that the edges of the respective knives of said plates will not overlap the median line, but approach or stand in substantially the same vertical plane, and adjustable guides in said base-plate, substantially as and for the purposes set forth.

7. A yarn-cleaning device consisting of two plates having oblong slits therein and knives tapering to the center with beveled-off cutting-edges and supporting-seats formed integral with said plates, a base-plate, and means for securing said plates thereto so that the cutting-edges of the knives of said plates will not overlap the median line, but approach or stand in substantially the same vertical plane, substantially as set forth.

8. A yarn-cleaning device consisting of two

vertical plates with oblong slits therein and provided with knives in series disposed at an angle to each plate, supporting-seats secured to each plate with oblong slots therein, and means, as described, for adjustably securing said seats to said base-plate so that the edges of the two sets of knives will not overlap the median line, but approach or stand in substantially the same vertical plane.

9. A yarn-cleaning device consisting of two plates with knives in series formed integral therewith and disposed at an angle to each plate, a base-plate, means for supporting and attaching said plates to said base-plate so that the edges of the two series of knives of said plates will not overlap the median line, but approach or stand in substantially the same vertical plane, and adjustable guides in said base-plate, substantially as and for the purposes set forth.

In witness whereof I have hereunto set my hand in the presence of two subscribing witnesses.

HENRY F. WEST.

Witnesses:

THOMAS M. SMITH,  
HERMANN BORMANN.