

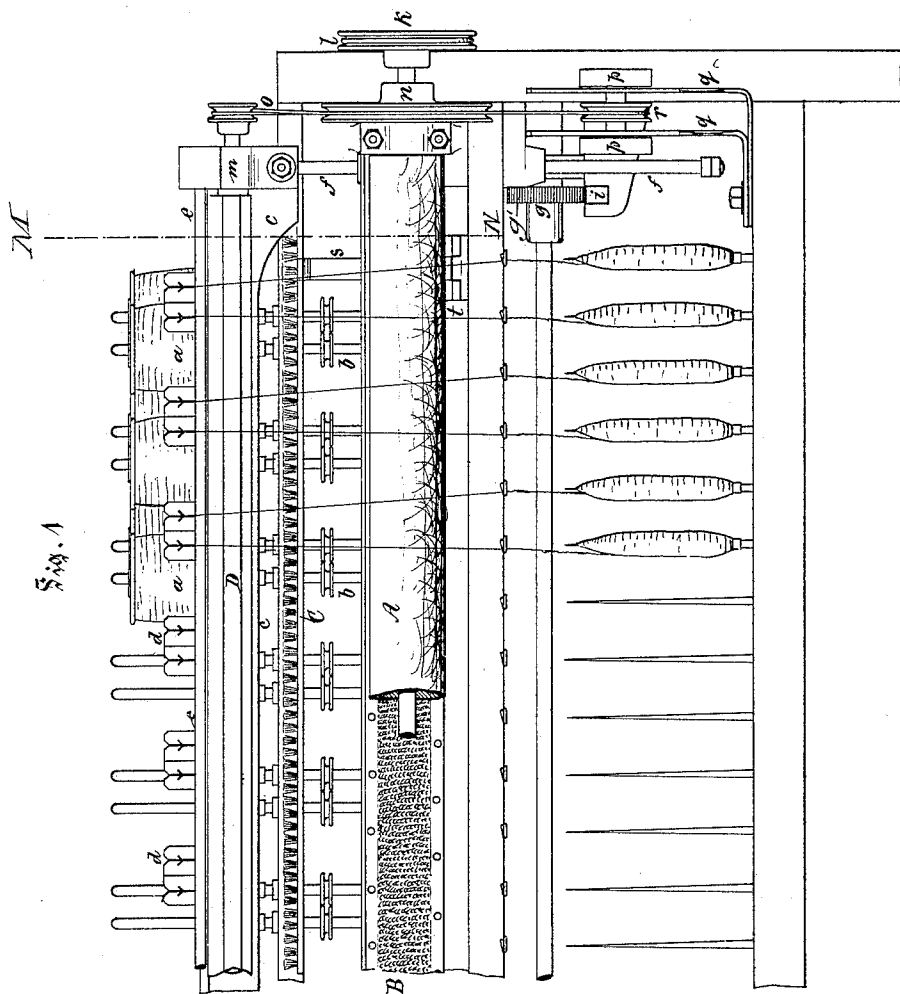
(No Model.)

2 Sheets—Sheet 1.

C. HÄMIG.
YARN CLEANING AND FLY COLLECTING DEVICE FOR YARN
WINDING MACHINES.

No. 468,055.

Patented Feb. 2, 1892.



Witnesses:
 Caspary, Fey,
 Eugen Jäger

*Inventor,
D. Harrington*

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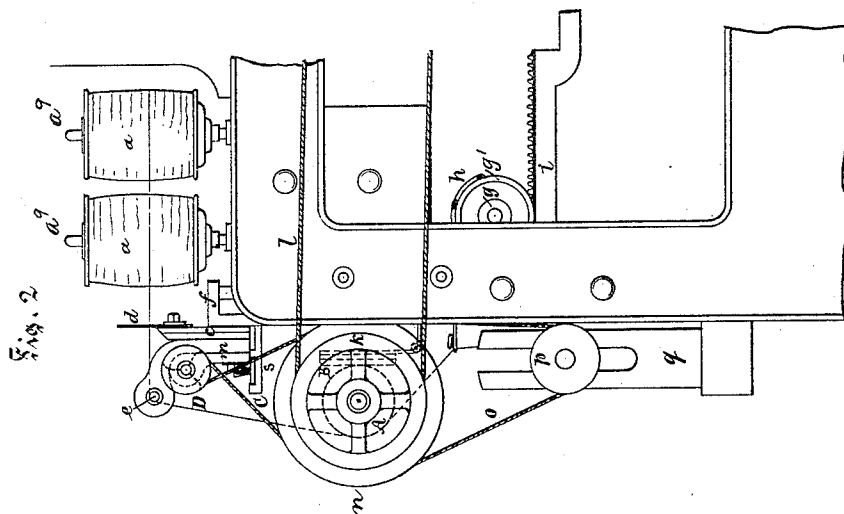
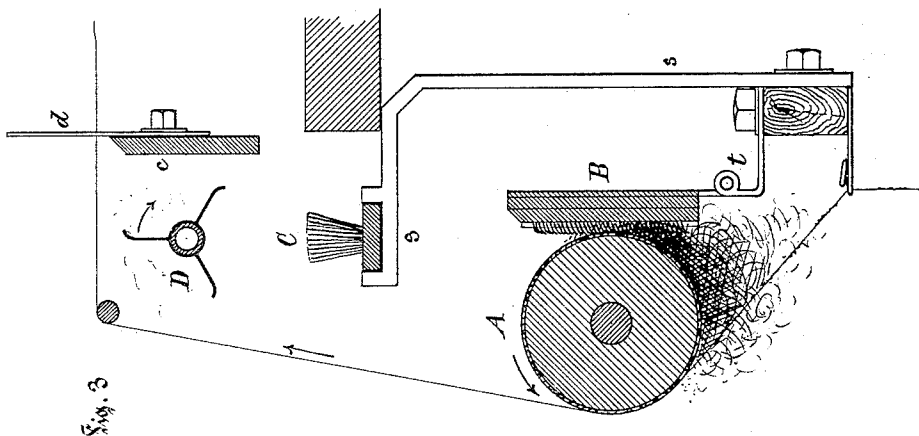
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Witnesses
Casper J. Taylor
Eugen Pfeiffer

Inventor:
C. Hämig

UNITED STATES PATENT OFFICE.

CONRAD HÄMIG, OF MUNICH, GERMANY.

YARN-CLEANING AND FLY-COLLECTING DEVICE FOR YARN-WINDING MACHINES.

SPECIFICATION forming part of Letters Patent No. 468,055, dated February 2, 1892.

Application filed May 7, 1890. Serial No. 350,875. (No model.) Patented in Switzerland September 25, 1889, No. 1,420; in Austria-Hungary September 25, 1889, No. 41,733 and No. 68,216; in Germany September 27, 1889, No. 52,256; in England October 8, 1889, No. 15,811; in Italy March 31, 1890, XXIV, 27,095, and LIII, 402; in Belgium May 12, 1890, No. 90,532, and in Spain June 30, 1890, No. 10,976.

To all whom it may concern:

Be it known that I, CONRAD HÄMIG, a citizen of Switzerland, residing at Munich, in the Kingdom of Bavaria, Germany, have invented certain new and useful Improvements in Yarn-Cleaning and Fly-Collecting Devices for Yarn-Winding Machines, (for which I have obtained Letters Patent in Switzerland, No. 1,420, of September 25, 1889; in Germany, No. 52,256, of September 27, 1889; in England, No. 15,811, of October 8, 1889; in Austria-Hungary, No. 41,733, tome 40, folio 398, and No. 68,216, tome 24, folio 303, of September 25, 1889, issued February 5, 1890; in Italy, XXIV, 27,095, and LIII, 402, of March 31 1890; in Belgium, No. 90,532, of May 12, 1890, and in Spain, No. 10,976, of June 30, 1890,) of which the following is a specification.

The object of this invention is a device for removing and collecting the impurities and velvet dust occurring in the winding up of yarn and leading to interruptions in the winding and injury to the yarn and the articles produced therefrom.

It is known that when winding the yarn upon the spools by guiding it over a brush or over a bead or bar covered with plush or other suitable device for the purpose of cleaning it and producing the requisite tension on the spools, a large amount of velvet dust mixed with impurities is stripped off the yarn. This dust condensing into lumps adheres to the brush or other device, and thereby comes in contact with and is partly taken along by the following parts of the threads. The latter becoming thus sticky and flocked, are frequently unable to pass the narrow slits of the thread-guides situated immediately in front of the bobbins and consequently break, unless this is prevented by the workman assisting the passage of the thread, in order to save himself the trouble of knotting the broken parts; but in this case the locks or lumps get on the bobbin, which is more prejudicial to the machinery or to the appearance and quality of the subsequent fabric than a regular knot, and frequently the bobbins are thrown out of the shuttle in weaving. These and other inconveniences connected with the condensing and flying about of the dust and im-

purities are intended to be obviated by the improvements illustrated by the accompanying drawings, in which—

Figure 1 is a partial front view, and Fig. 2 a partial side view, of the improved mechanism, in combination with the other constituents of the winding-frame, while Fig. 3 is a section along line M N, Fig. 1, showing the object of the invention separately, drawn on an enlarged scale.

The illustrated contrivance essentially consists of a cleaning-roller A, its front or outer surface rotating in a direction opposite to the course of the yarn; a roller-brush B, of metal wires, provided behind said roller; a bristle brush C, and fly-wheel D, rotating above the latter.

The drawings show the parts described as being arranged on one side of the machine; but similar parts are to be applied to both the front and the rear of the machine when the latter is double. The bobbins *a* are mounted on spindles *a'*, driven by means of bands passing around the pulleys *b* in an ordinary manner. The lifting rail or bar *c*, which carries the yarn-guides *d*, guide-rods *e*, and fly-wheel D is connected to lifting-rods *f* at opposite ends of the machine. A strap *h* at each end of the machine is attached at one end to the hub *g* and at the other end to the lower end of the lifting-rod *f*. The hub *g* is fast to a pinion *g'*, which meshes with and is actuated by a reciprocating rack *i*. The roller A is rotated by the cord *l* from the main wheel by means of the pulley K, secured on the shaft of said roller A. The fly-wheel having the bearings *m*, connected with the bar *c*, is actuated from the pulley *n* through the cord *o*, carrying at the bottom the roll *r*, charged with poises *p* and guided in grooves *q* for the purpose of insuring and compensating the tension connected with the up-and-down movement of the parts *c*, *d*, *e*, *m*, and D. The rotation of the roller A is opposed to the travel of the yarn, and that of the fly-wheel D is such as to prevent the rising of the few flocks that would otherwise rise and move toward the yarn-guides from the roller. The brush C rests at each end on a support *s*, the bifurcated extremities of which embrace the

bar, so as to be capable of easy introduction and removal.

When the machine is at work, the impurities and velvet dust adherent to the thread, which is drawn by the above rotating spools off the pirns below, are stripped off by the adversely-revolving roller A, and when condensed through their rapid increase in a short time to gradually-enlarging flocks, and reaching the roller-brush B, they are stripped off and received by the latter. Consequently the said brush, which, being movable in the hinges *t*, so bears with its own weight on the roller as not to impair the revolution thereof, continually frees the latter of the velvet dust, thus keeping clean the roller-surface above and in front where it comes in contact with the yarn. The flocks accumulating below gradually grow denser and harder till they fall down as a homogeneous mass and can be easily removed, as in this state no more dust is emitted therefrom. Those flocks that have not yet assumed such consistency but still adhere to the rollers and brush are every now and then removed after turning back the brush, and the light and hardly-visible particles of dust raised by the air or taken up by the threads are attracted by the fly-wheel, which, when in its lowest position—that is to say, after its downward movement—delivers the impurities and dust it has gradually collected to the

brush C, so as to be cleaned prior to its return upward and resume its work.

When the machine is stopped, the roller-brush can be removed by screwing off the hinges *t*, and the brush C by lifting it out of the forks of the supports for the purpose of subjecting them to a thorough cleaning process.

It is obvious that by the application of the improved device the enormous quantities of velvet dust that would otherwise be injurious to machinery and fabric are efficaciously dealt with, while at the same time considerable economy of work and protection from accidents are insured.

Having now particularly described and ascertained the nature of this invention and in what manner the same is to be performed, I declare that what I claim is—

In winding-machines, the cleaning-roller A, in combination with the brush B, the fly-wheel D, means for moving said fly-wheel D up and down, and the brush C, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

C. HÄMIG.

Witnesses:

EUGEN PUGEL,
CASPAR PEY.