R. N. FRANCE.

WASTE COLLECTOR FOR CARDING MACHINES.

APPLICATION FILED JULY 27, 1911.

1,108,070.

Patented Aug. 18, 1914.

2 SHEETS—SHEET 1.

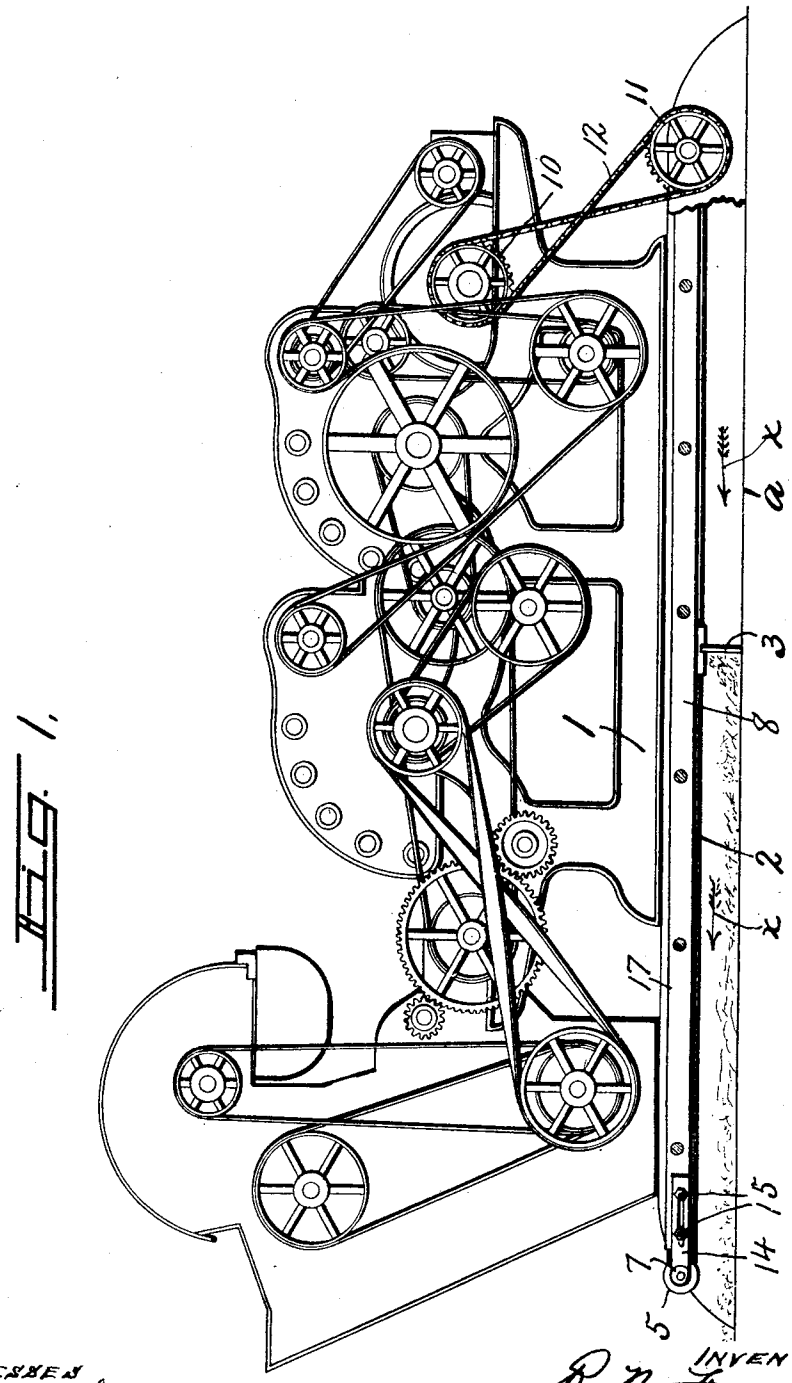


Fig. 1.

WITNESSES

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2 SHEETS—SHEET 2.

Fig. 2.

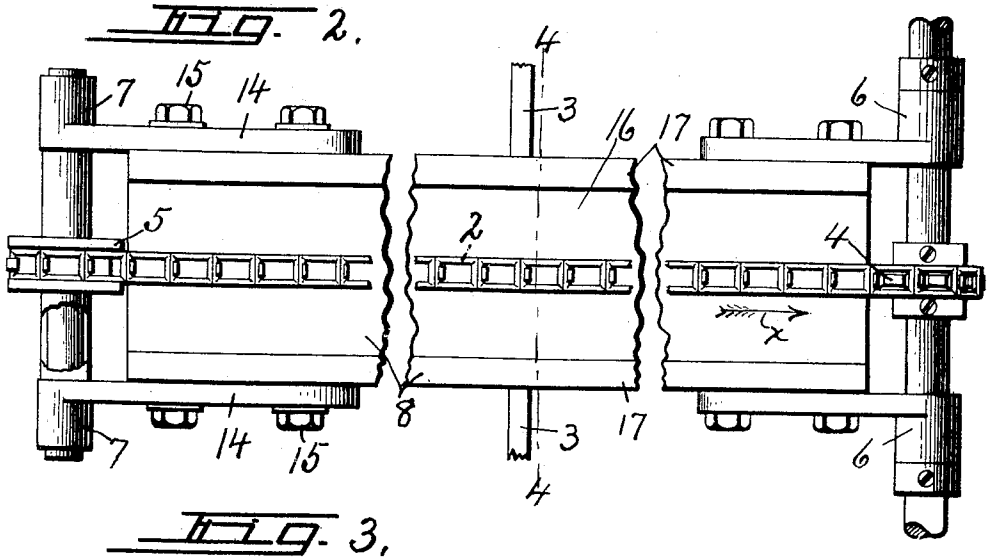


Fig. 3.

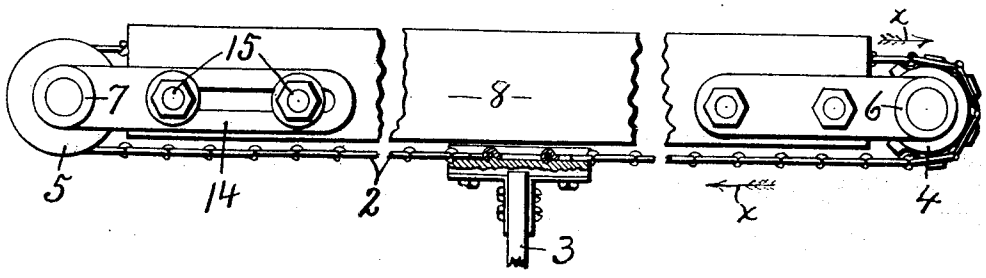
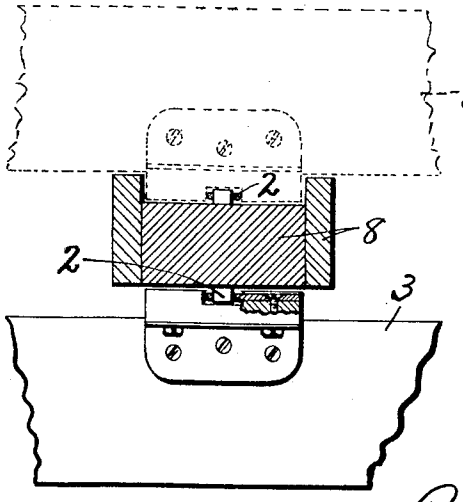


Fig. 4.



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WASTE-COLLECTOR FOR CARDING-MACHINES.

1,108,070. Specification of Letters Patent. **Patented Aug. 18, 1914.**

Application filed July 27, 1911. Serial No. 640,789.

To all whom it may concern:

Be it known that I, ROBERT N. FRANCE, of Oswego, in the county of Oswego, in the State of New York, have invented new and useful Improvements in Waste-Collectors for Carding-Machines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to certain improvements in waste collectors for garnetting, carding machines and other apparatus commonly employed in the preparation of wool, cotton and similar fibrous material for shoddies, felt, bats and various fabrics. In the operation of feeding the material to and through this class of machines more or less of such material is unavoidably deposited upon the underlying portion of the floor and has to be removed from time to time to prevent clogging of the machine. The usual method is to stop the machine while the operator or other attendant removes or withdraws the accumulated deposit by hand or by some suitable hand operated instrument, which not only causes loss of time and reduced output, but allows the material to become more or less soiled and deteriorated in bulk by contact with any grease, oil or dirt which is always present in greater or less quantities in and around the floors of machines of this character. In order to avoid excessive loss, the major part of this deposit is re-fed into the machine usually by hand *en masse* or along with the main boy or fibrous congeries, but in so doing produces perceptible imperfections in the yarn and fabric made therefrom.

The main object therefore of my present invention is to provide simple means for continuously and automatically removing the fibrous deposits from underneath the machine to the front end thereof where it may be easily mixed in small quantities by hand with the main body and re-fed through the machine, thereby avoiding to a large extent accumulations of foreign matter, so that practically the entire deposit may be re-used without showing any perceptible imperfections in the yarn or fabric made therefrom.

A further object is to obviate the loss of time on the part of the operator, and coincidently to increase the output of the machine, and also to permit the use of practically all the material which has heretofore gone to waste.

Other objects and uses will be brought out in the following description.

In the drawings: Figure —1— is a side elevation of a carding machine showing my improved waste collector as incorporated therein. Fig. —2— is an enlarged top plan partly broken away of the conveyer and guide therefor. Fig. —3— is a side elevation of the mechanism shown in Fig. —2—. Fig. —4— is a transverse sectional view taken on line 4—4, Fig. —2—, the scraper being shown by dotted lines in its returning position along the top of the guide.

In order that my invention may be clearly understood I have shown a portion of a carding apparatus of what is commonly known as a "Garnet machine" for "bat" or felt work, comprising, among the usual elements not necessary to herein illustrate or describe, a main supporting frame —1—, having an open lengthwise space upon the floor line as "*a*" extending from end to end and from side to side of the machine for the reception substantially centrally thereof of a suitable conveyer belt —2— having a scraper —3— attached thereto and adapted to travel under and upon the surface of the floor —*a*—. This conveyer belt preferably consists of an endless chain supported upon suitable drums as sprocket wheels —4— and —5— which are journaled in bearings —6— and —7— at opposite ends of the machine, and preferably upon the opposite ends of the central lengthwise guide —8— as shown more clearly in Figs. —2— and —3—. This guide is supported upon and made to form a part of the main supporting frame —1—, a sufficient distance above the floor line —*a*— to allow free movement of the scraper —3— lengthwise of the machine along the surface of the floor, and is comparatively narrow being of a width only sufficient to perfectly perform its functions. This scraper is secured to one of the links of the chain and preferably consists of a flat plate or bar of sheet metal or other suitable material of sufficient length to extend from side to side of the machine, the width being slightly less than the distance between the under side of the guide —8— and surface of the floor —*a*— so as to trail along said floor during the operation of the belt.

The belt travels in the direction indicated by arrows —X—, so that the lower side travels towards the front of the machine or the end in which the material is fed, and may be driven by any suitable mechanism, as for instance, sprocket wheels —10— and —11— and a cross chain —12— connecting said sprocket wheels.

The sprocket wheel —10— is secured to one of the revolving parts on the rear end of the machine, while the sprocket wheel —11— is secured to the shaft of the rear drum —4— imparting a rotary motion thereto and thereby driving the belt in the direction indicated by the arrow —X—. This operation of the belt causes the scraper —3— to carry any deposit of material which may lodge on the floor forwardly to the inlet end of the machine where such deposits are collected and re-fed into the machine, as fast as it accumulates, together with the main body of the fiber.

The bearings of one of the drums, as for example, the front drum —5— are adjusted longitudinally of the guide —8— and are provided with slotted arms —14— for receiving the clamping bolts —15— by which they are held in their adjusted position.

One of the objects of the guide —8— is to support and guide the upper lid of the chain —2— against undue sagging, and also to sustain the scraper properly upon its return, and for this purpose the upper portion is provided with the lengthwise channel —16— and opposite lengthwise ribs —17— the upper lead of the chain traveling through the channel, as well as the connecting bracket 18, which secures the scraper to the chain and positions it at right angles thereto while the scraper rides upon the upper edge of the rib 17 during its return. The bracket 18 and chain, by riding upon the bottom 16 and between the sides of the channel sustains the chain and scraper from any sidewise movement, and further, as will be obvious by reference to Fig. 4, constitutes the bracket a scraper to remove any accumulation of fibrous material within the channel, thus to insure the conservation of all of the material that escapes from the machine.

The operation of my invention will now be readily understood upon reference to the foregoing description and the accompanying drawings, and although I have shown a chain conveyer provided with a single scraper which is sufficient for the purpose, it is evident that I may employ another form of endless conveyer with one or more scrapers either of metal or any other suitable material without departing from the spirit of my invention.

What I claim is:

The combination with the supporting frame of a carding machine, of a channel-shaped guide supported centrally below said frame, and extending longitudinally throughout the length of the frame, the sides of said channel projecting upward to form parallel longitudinal ribs, an endless driven chain having its leads disposed respectively above and below the bottom of said guide, a bracket secured to the chain and being of a width to move between the sides of the channel to prevent lateral movement of the chain, and upon the channel bottom to free the channel of accumulations, and a scraper secured to the bracket and adapted to travel on said ribs and thus to support the chain against sagging.

In witness whereof I have hereunto set my hand this 21st day of July 1911.

ROBERT N. FRANCE.

Witnesses:
LUTHER MOTT,
JOHN T. MOTT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."