

(No Model.)

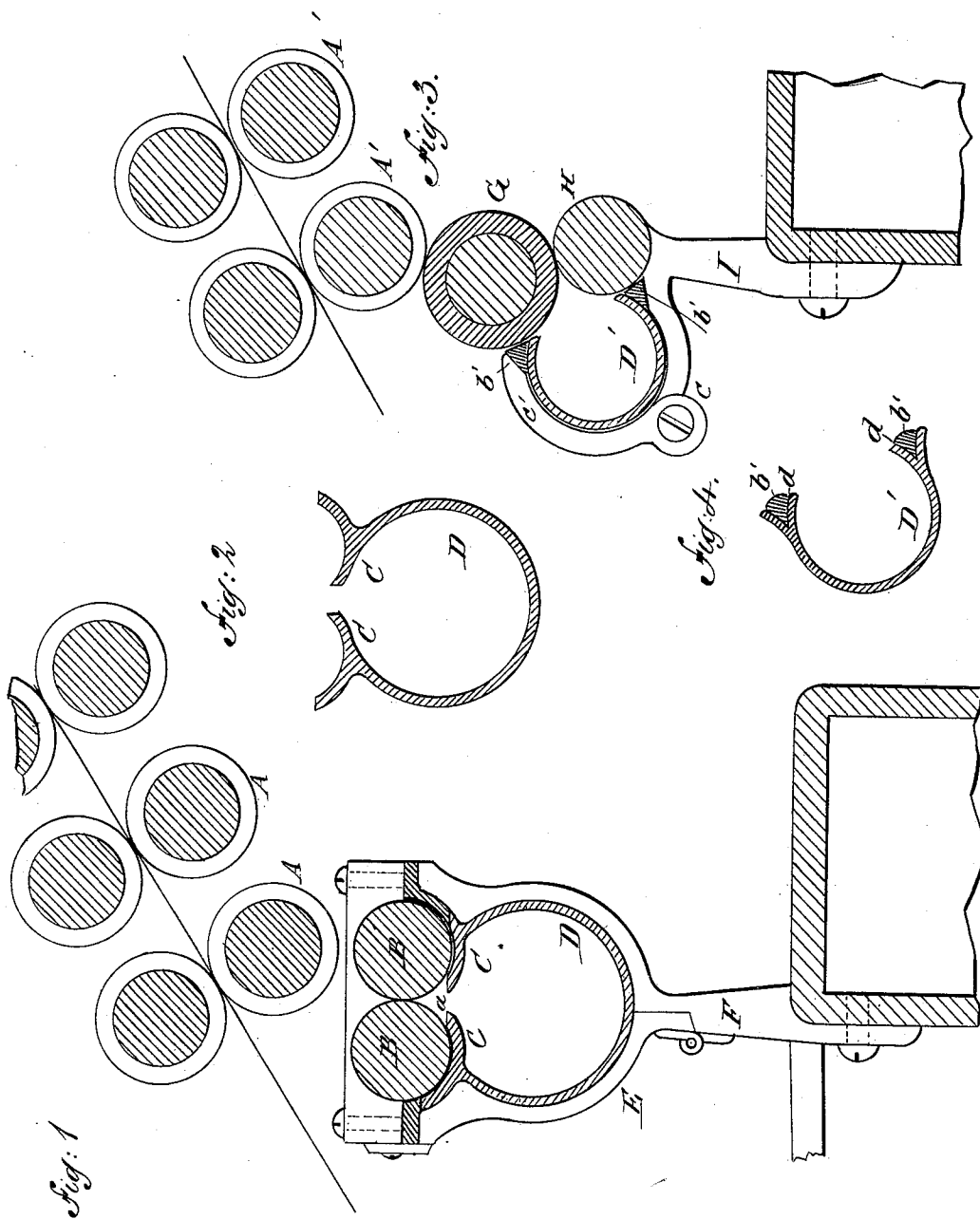
2 Sheets—Sheet 1.

W. A. DELMAGE.

SCAVENGER MECHANISM FOR SPINNING AND DRAWING MACHINES.

No. 351,314.

Patented Oct. 19, 1886.



WITNESSES:

Chas. Nida
to Sedgwick

C. Sedgwick

INVENTOR:

H. A. Delmage

BY

Munn & Co

ATTORNEYS.

(No Model.)

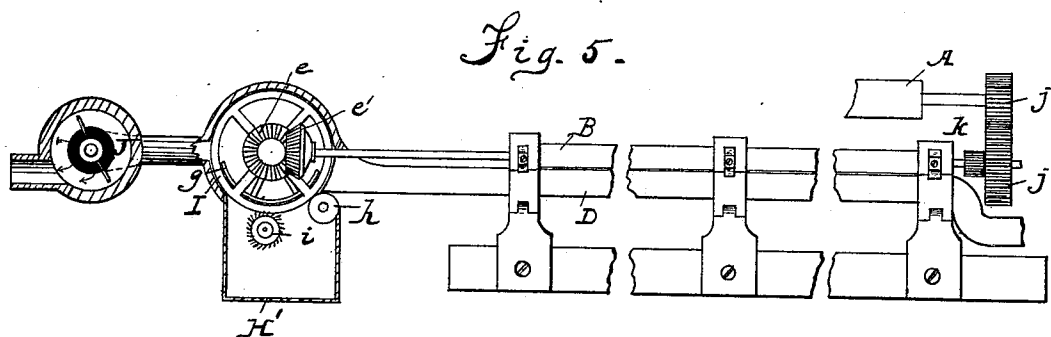
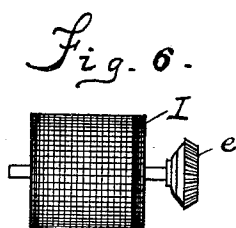
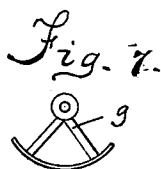
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WITNESSES:

C. Sedgwick
Edgar Tate

INVENTOR:

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UNITED STATES PATENT OFFICE.

WILLIAM A. DELMAGE, OF LOWELL, MASSACHUSETTS.

SCAVENGER MECHANISM FOR SPINNING AND DRAWING MACHINES.

SPECIFICATION forming part of Letters Patent No. 351,314, dated October 19, 1886.

Application filed November 20, 1885. Serial No. 183,411. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. DELMAGE, of Lowell, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Scavenger Mechanism for Spinning and Drawing Machines, of which the following is a specification, reference being had to the annexed drawings, forming a part thereof, in which—

Figure 1 is a vertical transverse section of a part of a machine to which my improvement has been applied. Fig. 2 is a detailed view of the pneumatic tube connected therewith. Fig. 3 shows a modified form, and Fig. 4 is a detailed sectional view, of the pneumatic tube used in connection therewith. Fig. 5 is a side elevation, with parts broken away and others in section, of contrivances embodying my invention. Figs. 6 and 7 are detail views showing the screen and adjunctive part thereof, respectively.

Similar letters of reference indicate corresponding parts in the different figures.

The object of my invention is to provide for spinning and drawing machines a device for collecting the broken ends of the yarn, and the waste produced by the usual drawing-rolls, and conducting them away, so that they do not become entangled with the other threads.

My invention consists in a pair of rollers placed below the drawing-rolls and arranged to receive the broken ends of the thread from the drawing-rolls, and in a pneumatic tube arranged to receive the waste from the auxiliary rollers and conduct it away.

It also consists in a roller formed of hard rubber or other material capable of generating electricity by friction, the object being to create an electrical attraction which will draw the broken threads and waste to the roller.

The drawing-rolls A of the spinning-machine are constructed and arranged in the usual way. Below the lower pair of rolls A are journaled two rolls, B, whose under surfaces are partly enveloped by the concaves C, formed on the edges of the slotted tube D. Between the concaves C, and below the line of contact of the two rollers B, there is a slot, *a*, which allows the broken threads and waste received between the rollers B to pass into the tube D, said slot being arranged in alignment with a plane passing intermediately of the auxiliary rollers.

The frame which supports the tube D and the rollers B is provided with a hinged arm, E, which is secured by a catch, *a'*, which holds the pneumatic tube D in place, and which is unfastened and dropped down when it is desired to remove the pneumatic tube for the purpose of cleaning it.

Motion is imparted to the rollers B, as will be hereinafter pointed out, and the broken ends of thread and waste which are delivered by the lower rolls A are received by the rollers B and transferred to the tube D. The tube D extends to a convenient place for discharge, and a current of air driven or drawn through the tube D carries the waste discharged into the tube to the end of the tube, where it is discharged into a chamber closed upon one side by wire-cloth, the wire-cloth permitting of the escape of air, but retaining the waste.

As one way of removing or withdrawing the waste from the pneumatic tube D, I employ a cylindric screen, I, which is arranged transversely to the tube, and intermediately of the latter and the suction-fan J, said screen and fan being disposed in a common trunk or casing connecting with the tube, as shown in Fig. 5. The screen I is driven or rotated by a pinion, *e*, on one end of its shaft, and a pinion, *e'*, on one end of one of the shafts of the rolls B, which roll-shaft is provided at its other end with a pinion, *j'*, gearing with a pinion, *j*, on the shaft of one of the rolls, A, from which motion is received. Each shaft of the rolls B is provided with a pinion, *k*, whereby motion is transmitted from the shaft carrying the pinion *j'* to the shaft of the other roll. Below the trunk or case of the screen I, which is open at its lower side, is disposed a receptacle, H', which receives the waste, with its open upper side arranged opposite the opening in the fan-case or trunk. To exclude the air from the receptacle H' a roll, *h*, is hung in the upper front side of said receptacle in frictional contact with the screen, while beneath said screen, within the receptacle, is journaled a toothed cylinder, *i*, to strip the adhering waste from the screen and deliver it into the receptacle. Hung within the tube D is a segmental plate or shield, *g*, the latter having a tube which is slipped upon the screen-shaft and connected by arms to the plate, the object of which shield or plate is to prevent the current of air from

entering the bottom of the screen, or where the cleaning-cylinder *i* takes the waste therefrom, otherwise the suction of the fan would be liable to cause the waste to adhere to the screen, so as to prevent in a measure the removal of the waste by the action of said cylinder.

In the modification shown in Fig. 3 the drawing-rolls *A'* of the spinning-machine are of the usual description, and below the lower pair of rolls *A'* are journaled two rolls, *G H*, one above the other, the upper roll, *G*, being made of hard rubber or other material capable of electrification, or being made of other material and covered with a material capable of being electrified.

The rolls *G H* receive motion, among other ways, in the same manner as the rollers *B B*, as above described, and a pneumatic tube, *D'*, which is opened in one side, is provided with packing-strips *b'* along its edges, contacting with the rollers *G H* to prevent the entrance or escape of air between the tube *D'* and the roller *H*. The packing *b'*, which bears upon the surface of the roller *G*, serves to excite the roller *G* electrically, so that it will attract the broken threads and waste delivered by the lower pair of rollers *A'*, and will retain it while it is carried round and brought into contact with the lower roll *H*, when it will be carried forward by both rolls into the tube *D'*. The waste will be removed from the surface of the rollers by the edges of the tube *D'* and by the packing *b'*.

The standard *I*, by which the rollers *G H* and the tube *D'* are supported, is provided with an arm, *e*, which partly encircles the tube *D'*, and is provided with a hinged part, *e'*, which may be opened when it is desired to remove

the tube *D'* for the purpose of cleaning it when it becomes clogged.

In Fig. 4 I have shown a tube, *D'*, which is opened upon one side, and is provided with V-shaped channels *d* for receiving the packing *b'*.

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

1. The combination, with the drawing-rolls, of the auxiliary rolls and the slotted pneumatic tube, and means to produce a current of air through the tube and to rotate the auxiliary rolls from the drawing-rolls, said auxiliary rolls being disposed contiguously to the driving-rolls, and the tube having its slot arranged in alignment with a plane passing intermediately of the auxiliary rollers, substantially as shown and described, and for the purpose set forth.

2. The combination, with a pneumatic tube having a slot in one side thereof, of a roll formed wholly or in part of hard rubber or other material capable of electrification, a packing adapted to electrically excite said roll, and means for rotating said roll and for creating a current of air through said tube, substantially as and for the purpose set forth.

3. The combination, with a slotted pneumatic tube, *D'*, and rolls *G H*, of packing-strips *b'*, attached to the edges of the pneumatic tube and bearing against the rolls, together with means for creating a current of air through the pneumatic tube and for rotating the rolls, as herein specified.

WILLIAM A. DELMAGE.

Witnesses:

WILLIAM MCCARTY,
JAMES E. NICKS.