E. BEDE.

Devices for Dividing Fleeces from a Card into Slivers.

No. 151,678. Patented June 9, 1874.

Fig. 4.

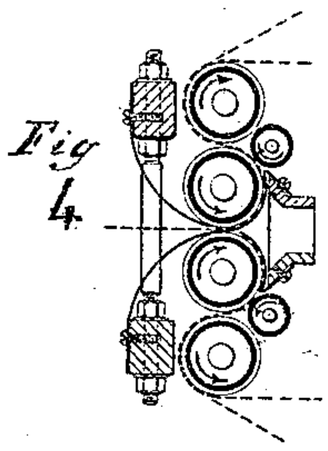

Fig. 5.

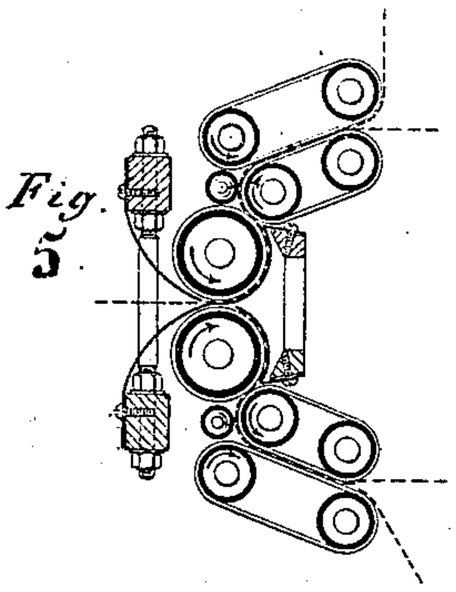

Fig. 1.

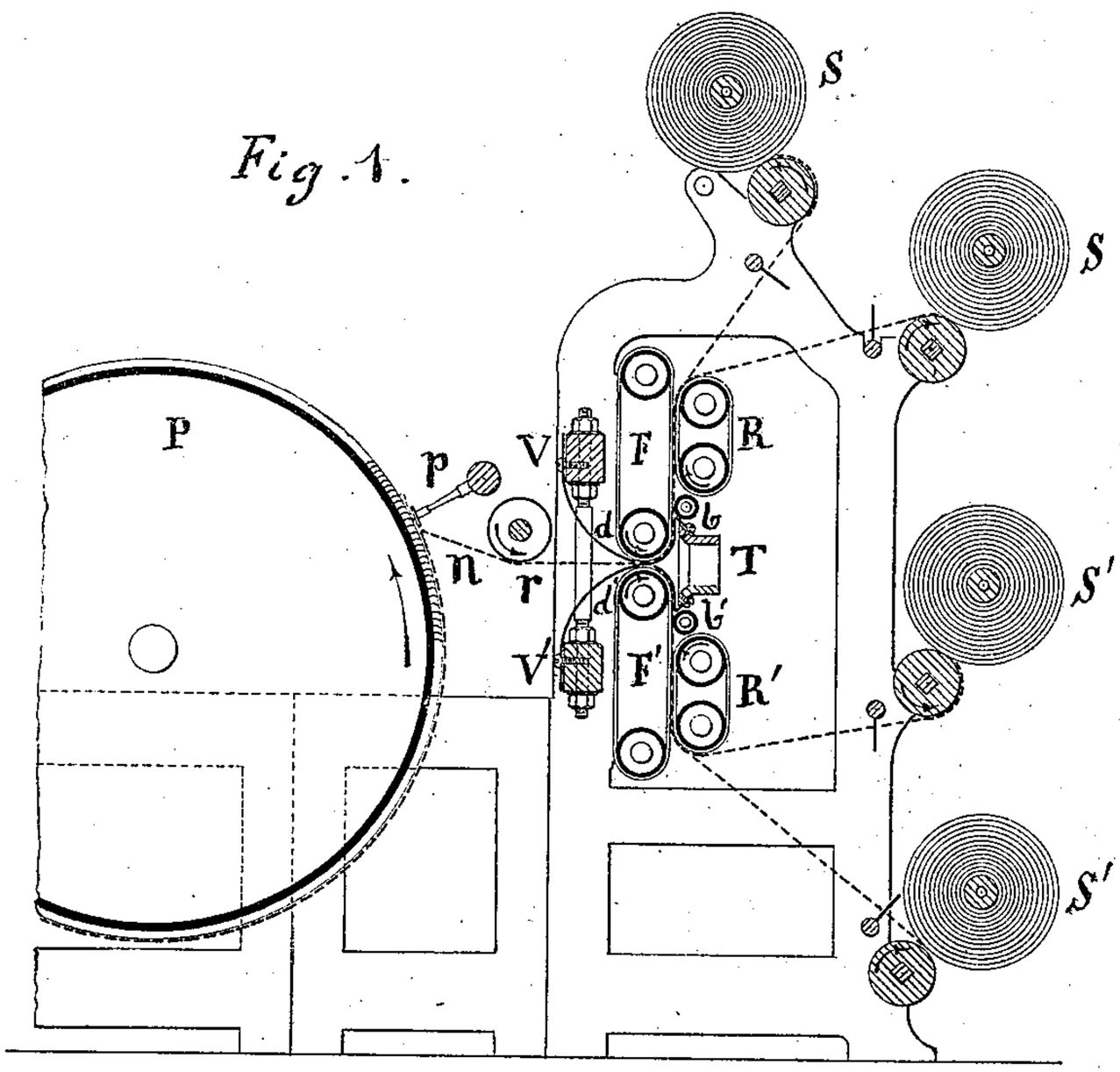

Fig. 2.

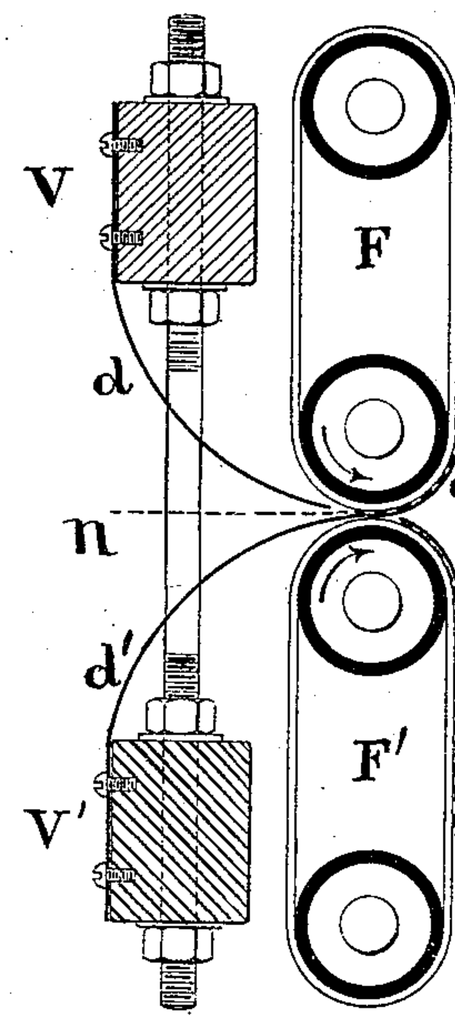

Fig. 3.

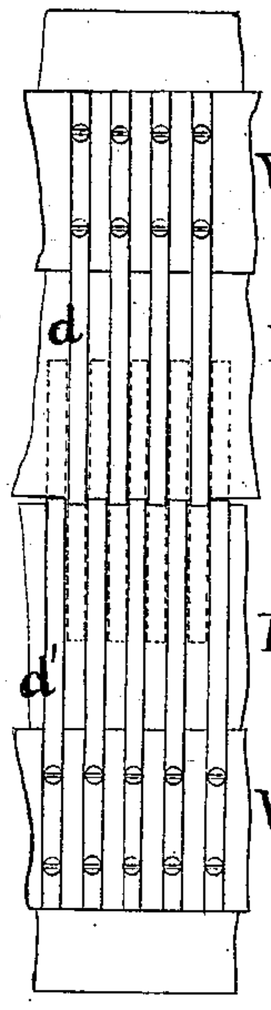

Fig. 6.

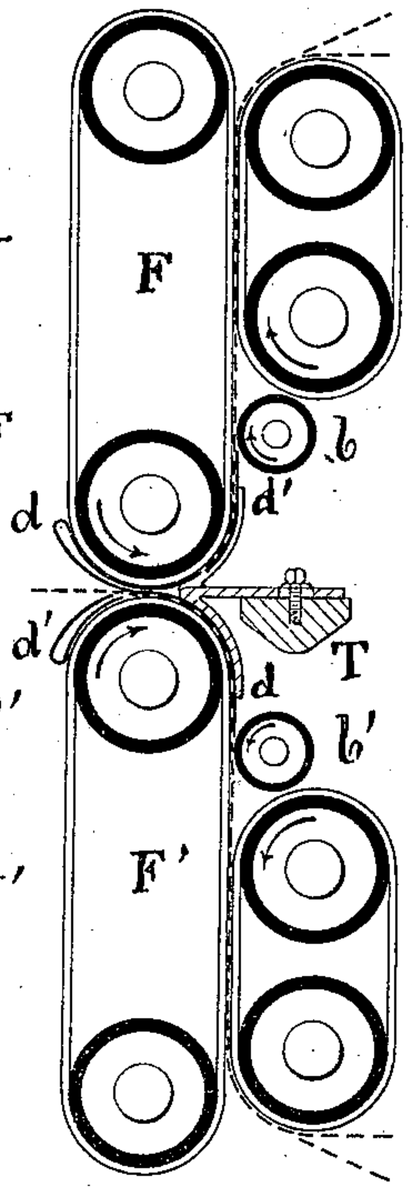

Fig. 7.

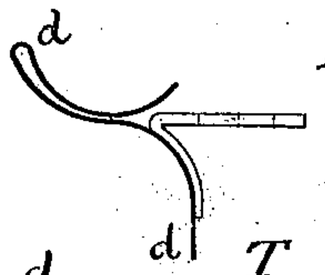

Fig. 8.

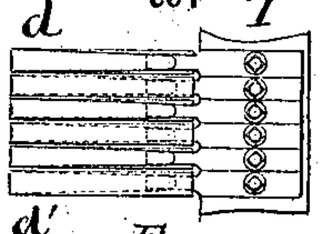

Fig. 9.

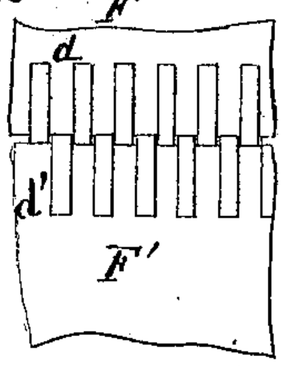

Fig. 10.

Witnesses,

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EMILE BEDE, OF VERVIERS, BELGIUM.

IMPROVEMENT IN DEVICES FOR DIVIDING FLEECE FROM A CARD INTO SLIVERS.

Specification forming part of Letters Patent No. **151,678**, dated June 9, 1874; application filed March 18, 1874.

To all whom it may concern:

Be it known that I, EMILE BEDE, of the firm of Bede and Company, of Verviers, in the Kingdom of Belgium, engineers, have invented certain improvements in apparatus for dividing cardings of wool or other fiber into strips or slivers, and rubbing them into rovings, of which the following is a specification:

This invention consists in the improved apparatus hereinafter described, and illustrated in the accompanying drawings, for dividing the sheet of wool or other fiber, as it leaves the carding or condensing engine, into a series of strips or slivers, and rubbing the same into rovings.

Figure 1 represents, in longitudinal section, part of a carding-engine, with apparatus applied thereto, constructed and arranged according to my invention. Fig. 2 is a sectional view (drawn to a larger scale) of my improved dividing and rubbing apparatus detached, showing a modification of the rubbing apparatus represented in Fig. 1. Fig. 3 is part of a front elevation of Fig. 2. Figs. 4, 5, 6, 7, 8, 9, and 10 are sectional views, illustrating modifications of the arrangement shown in Figs. 1, 2, and 3, as hereinafter described.

Similar letters of reference are used to indicate like or equivalent parts where they occur in Figs. 1, 2, 3, 6, 7, 8, 9, and 10. The letters of reference are omitted on Figs. 4 and 5, in order not to crowd the said figures, as they will be readily understood without such indications.

P, Fig. 1, represents the doffer of a carding-engine, and *p* is the doffer-comb, for stripping the sheet or web of wool or other fiber *n* from the doffer. *r* is a small revolving roller, which keeps the said sheet or web of fiber in a suitable state of tension. F F′, Figs. 1 and 2, are a pair of endless leather aprons or bands, mounted on and traveling around revolving rollers in the directions indicated by the arrows. In front of the endless apron F is a horizontal cross-bar, V, and in front of the endless apron F′ is another horizontal cross-bar, V′, the ends of the said cross-bars V V′ being attached to the frame of the machine, so that, if required, the said bars may be set farther apart, one from the other. T is a double cross-bar, situated behind the traveling aprons F F′, and at each end affixed to the frame of the machine, or to brackets or supports carrying the rollers of the endless aprons F F′. *d d′* are strips or blades of steel for dividing or separating the sheet or web of fiber into slivers. The said steel strips *d d′* are fixed, alternately, to the upper and to the lower cross-bars V V′, and from thence pass between the endless aprons F F′, and, by their other ends, are fixed, respectively, to the lower and upper edges of the double bar T, behind the said endless aprons, the ends of the strips *d* being affixed to the bar V, and to the lower part of the bar T, and the strips *d′* being affixed by one end to the bar V′, and by the other end to the upper part of the double bar T.

The arrangement and mode of connecting the ends of the steel strips *d d′*, respectively, to the bars V V′ and to the double bar T will be readily understood by reference to Fig. 2, and the way in which the said steel strips or blades are made to cross each other is clearly exhibited in Fig. 3.

R R′, Fig. 1, are endless rubbing aprons or bands, mounted, each, upon two rollers, which receive rotatory motion, and also reciprocating motion, in the direction of their axes, in the usual manner. The said endless aprons R R′ work in connection with the endless aprons F F′, respectively, as shown in Fig. 1; or, instead of the endless rubbing-aprons R R′, hereinbefore described, and illustrated in Fig. 1, a rubbing-roller covered with leather may be used in connection with each of the traveling aprons F F′, for the purpose of rubbing or rolling the slivers into rovings. This modification is represented in Fig. 2 of the drawings, in which R R′ are the rubbing-rollers, which receive rotatory motion, and also reciprocating motion, in the direction of their axes, the roller R working in connection with the endless traveling apron F, and the roller R′ in connection with the endless traveling apron F′. *b b′*, Figs. 1 and 2, are small rollers, which revolve in contact with the endless aprons F F′, respectively; the object of the said rollers being to press against the said endless aprons the small slivers of wool or other fiber, as they move onward in a divided state from the ends of the steel strips or blades *d d′*, and also to cleanse the ends of the said strips *d d′*, which are bent so as to hook onto the bar T, as shown,

a small space or interval being left between the said strips *d d'* and the face of the said bar T, so as to prevent the fiber from catching or being arrested on the ends of the said strips.

The working of the apparatus is as follows: The endless traveling aprons F F' having been suitably greased and rubbed, the sheet or web of wool or other fibrous material *n* from the doffer is made to engage between them, as shown, Fig. 1. The said sheet of fiber is drawn on by the motion of the said aprons F F', and the adherence of the said sheet of fiber to the leather aprons F F' is such that, instead of its advancing motion being arrested when it comes in contact with the steel strips *d d'* as they cross each other between the said aprons, the said sheet or web of fiber separates, or is divided into two series of slivers, which slivers adhere alternately to the upper and to the lower endless apron or band, and follow the directions indicated by the letters *d d d' d'*, Fig. 2; and the said slivers, still adhering to the leather aprons F F', respectively, pass under the rubbers R R', where they are rubbed or rolled into rovings, which rovings are then wound onto bobbins S S S' S', Fig. 1, of which there may be one or more for each endless apron F F', according to the number of rovings.

A single pair of dividing-rollers, covered with leather, may be substituted for the endless rubbing-aprons F F' hereinbefore described, a rubbing-roller being used in connection with each of the said dividing-rollers. This arrangement is shown in section in Fig. 4, where it will be seen that the rubbing-rollers are placed above and below the dividing-rollers, respectively. Or the sheet or web of fiber may be divided into slivers between two dividing-rollers, and the slivers rubbed into rovings by ordinary rubbers, as shown at Fig. 5.

Figs. 6, 7, 8, and 9 illustrate another arrangement of my apparatus, in which the cross-bars V V' are dispensed with, and the steel strips or blades *d d'* are attached by one end only to the cross-bar T, which is placed on the delivery side of the dividing-aprons F F'. In this case the said strips or blades *d d'* are soldered to small pieces of iron bent and curved so as to cause the said strips to rest upon the dividing-aprons, the said strips being curved and bent backward, as shown at Fig. 7. The said strips *d d'*, thus formed, are placed side by side, as seen at Fig. 8, which is a plan view of some of the strips and part of the cross-bar T; and Fig. 9, which is an elevation of the said strips and part of the dividing-aprons, viewed from the front side of the apparatus. The object of this arrangement is twofold; first, it enables the strips *d d'* to be made more resisting on that side where the sheet of fiber is fed between the aprons; and secondly, it prevents the small particles of fibrous material which pass along the sides of the blades or strips from being arrested, one by the other, and collecting on the delivery side of the apron, and then, if not carefully removed, falling onto the rovings and becoming attached thereto.

By having the ends of the steel strips turned back the small particles of material arrested between the adjoining strips or blades are pressed upon, and carried forward by, the dividing-aprons. This result may also be obtained in the arrangements hereinbefore described with reference to Figs. 1 2 3 4 5, by adding to each of the dividing blades or strips a small blade or strip curved in an opposite direction, as shown at Fig. 10.

The peculiar shape of the blades or strips *d d'*, (represented in Figs. 6, 7, 8, and 9,) has also the advantage of allowing the rollers *b b'* to be placed quite close to the ends of the said blades or strips *d d'*, so as to cleanse them from the grease which is always accumulating on their ends when highly-lubricated fibrous material is operated upon.

Having now described my invention, and the manner of performing the same, I wish it to be understood that I do not confine myself to the precise details hereinbefore described, and illustrated in the accompanying drawings, as the same may be varied without departing from the nature of my invention.

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

The strips or blades of steel or other suitable smooth or polished material, crossing each other, and stretched between movable endless leather aprons or bands, or leather-covered rollers, for separating or dividing the sheet or web of wool or other fibrous material produced by a carding-engine into narrow slivers, as described.

Witnesses: E. BEDE.

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