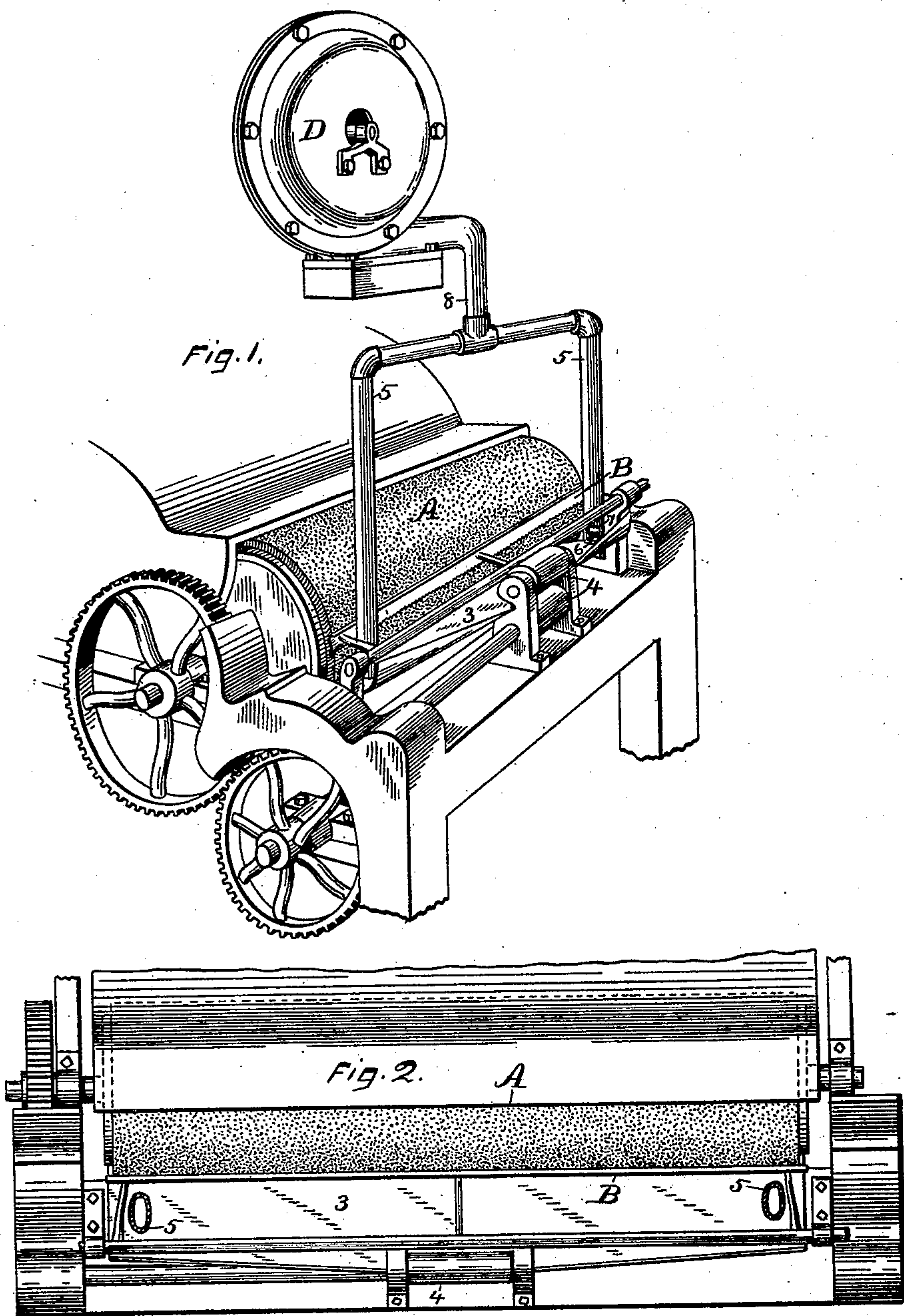


(No Model.)

A. L. WASHBURN.
METHOD OF MAKING ROVINGS OF PINE FIBER AND APPARATUS THEREFOR.
No. 465,440. Patented Dec. 15, 1891.



WITNESSES.

John Edwards Jr.
W. H. Whiting.

INVENTOR.

Albert L. Washburn.
By James Shepard.

Att'y.

UNITED STATES PATENT OFFICE.

ALBERT L. WASHBURN, OF AIKEN, SOUTH CAROLINA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE PINE FIBRE COMPANY, OF SAME PLACE.

METHOD OF MAKING ROVINGS OF PINE FIBER AND APPARATUS THEREFOR.

SPECIFICATION forming part of Letters Patent No. 465,440, dated December 15, 1891.

Application filed May 14, 1891. Serial No. 392,662. (No model.)

To all whom it may concern:

Be it known that I, ALBERT L. WASHBURN, a citizen of the United States, residing at Aiken, in the county of Aiken and State of South Carolina, have invented certain new and useful Improvements in Methods of Making Rovings of Pine Fiber and Apparatus Therefor, of which the following is a specification.

My invention relates to improvements in carding pine fiber into rovings and machinery for the same; and the objects of my improvement are to more readily draw the fiber into a roving or sliver and to improve the character of the roving.

In the accompanying drawings, Figure 1 is a perspective view of so much of a carding-machine as is necessary to illustrate my improvement, and Fig. 2 is a plan view of the same with the blast-pipes in horizontal section.

The machine, aside from the blower and blast pipes, is or may be of any ordinary construction, and the same when considered by itself is not of my invention. For this reason I consider it unnecessary to show a complete carding-machine or to describe in detail all of the parts shown.

A designates the doffing-cylinder, and B the vibratory doffer-knife working in connection therewith in the ordinary manner. In front of the doffing-cylinder and under the doffer-knife is an apron 3, upon which the fiber falls as it leaves the doffing-cylinder. Near the middle of the machine is a pair of delivery-rollers 4, driven by any suitable means, the apron 3 being inclined up toward said rollers, so that the fiber or material collected upon the apron is delivered between the rolls 4 in the form of a roving or sliver, all as in ordinary carding-machines.

In carding pine fiber or analogous material in which the fibers do not readily adhere to each other it is difficult to cause the fibers upon the apron to draw together and be drawn out in the shape of a sliver or roving, and even when successful in drawing it out in a continuous roving or sliver the same is apt to be of a very uneven character. In order to draw fiber into a roving which could not otherwise be drawn and to perfect the char-

acter of the roving by making it more solid and even, I arrange blast-pipes 5 5, with their lower ends extended down to a point near the apron at each end and with an opening, as at 6, Fig. 1, on the inside of the pipes—that is, on the side which faces the delivery-rolls 4. These pipes are provided with any suitable valves or gates 7 to regulate the quantity of air passing through the pipes. They are supplied with an air-blast from any suitable source of supply—as, for instance, a blower or fan D, communicating with the pipes 5 by the pipe 8. An air-blast is the cheapest and most economical; but a blast of gas or other fluid may accomplish the same object.

The carding-machine is supplied with fiber and performs its work in the ordinary manner until the fiber falls upon the apron 3. It is then caught by the air-blast from the pipes 5 5 and forced toward the middle of the apron in front of the delivery-rolls 4 and there compacted together sufficiently to cause the fiber to be readily drawn out through the rolls into a roving of a uniform character. After the fiber is started through the rolls it would without the air-blast have a tendency to be drawn into a sliver; but with pine fiber and analogous material there is sometimes only the tendency without any perfect results; but the assistance of the air-blast perfects the work and makes that possible which without was impossible, and in all cases makes the operation more certain and produces better work. Some material will require more assistance than others, and the proper blast to give the required assistance can easily be regulated by means of the gates 7.

I have shown two pipes, one at each end of the apron, with openings to force the sliver from said ends toward the middle of the apron, and this of course is the best construction when the delivery for the roving is at the middle of the apron. If, however, the roving was drawn out from one end of the apron instead of at the middle, as in some carding-machines, then only one pipe for an air-blast would ordinarily be necessary and that might be placed at the opposite end of the apron. If, however, the blast from one pipe is insufficient to carry the fiber the whole length of the apron, another pipe might be placed at or

near the middle of the apron and the openings in both pipes be faced in the same direction to assist the fiber on its way to the delivery.

5 I am aware that a prior English patent describes a carding-machine and an air-blast directed upon one of the cylinders to act as a doffer and remove the fiber from said cylinder, and I hereby disclaim the same.

10 I claim as my invention—

1. The method herein described of forming roving from pine fiber and analogous material, which consists in delivering the carded material upon a support, compacting the fiber
15 in front of its delivery by means of an air-blast, and then drawing it into roving, substantially as described.

2. The combination, with the doffing-cyl-

der, doffer-knife, and apron of a carding-machine, of a blast pipe or pipes extended nearly 20 to said apron and provided each with an opening facing the delivery therefrom, substantially as described, and for the purpose specified.

3. The combination, with the doffing-cyl- 25 der, doffer-knife, and apron of a carding-machine, of a blast pipe or pipes having each an opening near said apron which faces the delivery therefrom, and a gate or valve for regulating the blast through said pipes, substan- 30 tially as described, and for the purpose specified.

ALBERT L. WASHBURN.

Witnesses:

IRA HARDIN,

LUTHER W. BURT.