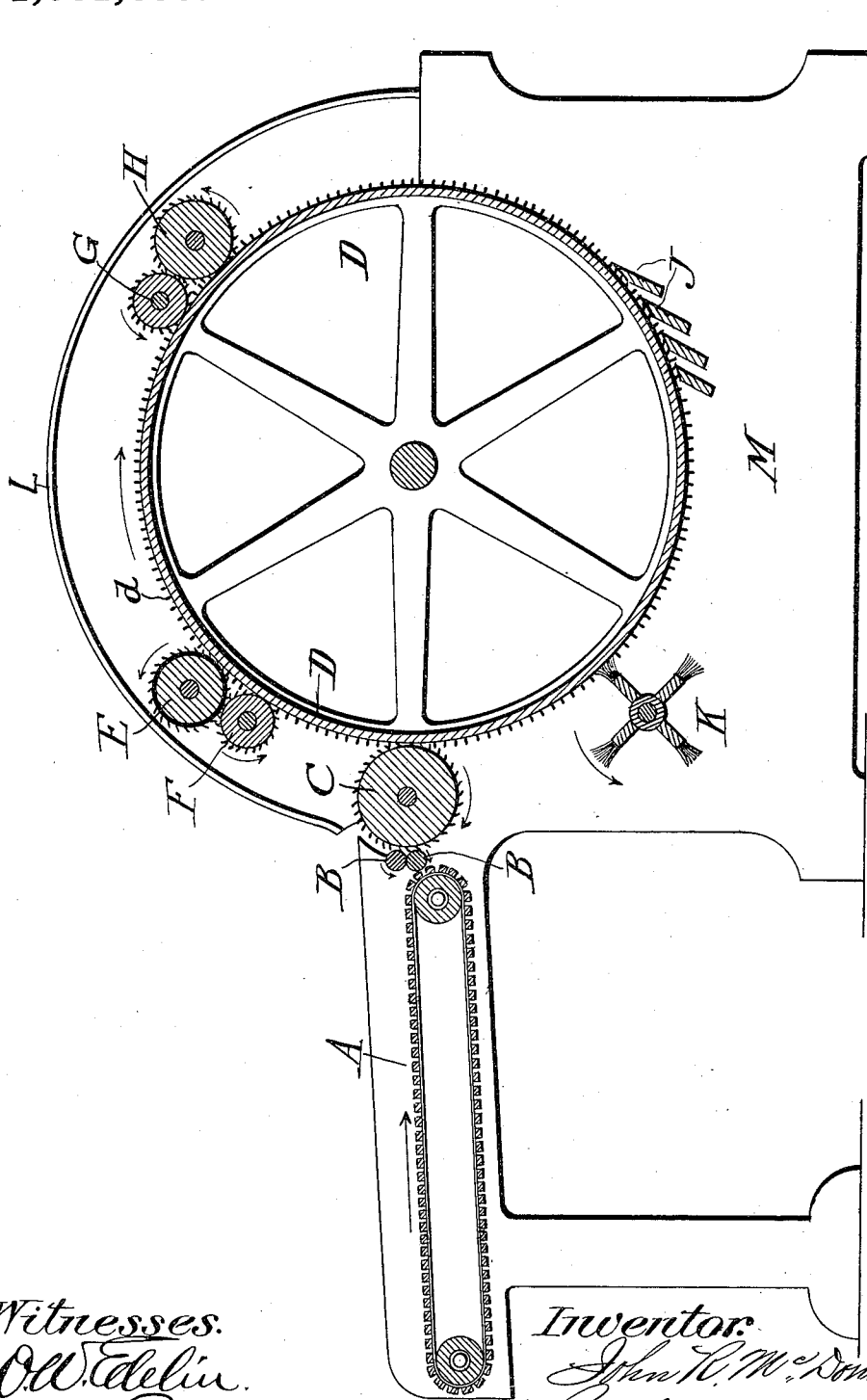


J. R. McDONALD.
WASTE CLEANING MACHINE.
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1,031,655.

Patented July 2, 1912.



Witnesses.
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UNITED STATES PATENT OFFICE.

JOHN R. McDONALD, OF ROCKHILL, SOUTH CAROLINA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO NEW SOUTH STOCK CO., OF CHARLOTTE, NORTH CAROLINA, A CORPORATION OF NORTH CAROLINA.

WASTE-CLEANING MACHINE.

1,031,655.

Specification of Letters Patent.

Patented July 2, 1912.

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To all whom it may concern:

Be it known that I, JOHN R. McDONALD, a citizen of the United States, and resident of Rockhill, county of York, and State of South Carolina, have invented certain new and useful Improvements in Waste-Cleaning Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to that class of machines designed for cleaning cotton waste, and the purpose of the machine is to separate the fibers and to remove the pieces of hull and other foreign material usually contained in motes so as to save and put in condition the good fibers for reworking into different textile products, or, in other words, to clean and straighten the fibers of cotton waste, such as motes, linter, fly, card stripping and roving.

The novel features of the invention will appear from the following description and claims.

The accompanying drawing illustrates in vertical longitudinal section a waste cleaning machine constructed in accordance with the invention.

In the drawing, M indicates the frame of the machine, at the forward or feed end of which is located a slatted feed belt or apron A, upon which the waste stock is loosely spread, and carried to a pair of fluted steel rolls B, which compress the stock into a thin sheet or bat.

C is a feed roll adapted to take the bat as it is delivered from rolls B, and to effect this said roll C is provided on its surface with a multiplicity of pointed pins or spikes, which entangle themselves in the stock or bat delivered from rolls B and wrap the same around said roll, from which it is lifted or combed by the large cylinder D. This latter is provided with a covering of card clothing, which may be of any convenient form but is preferably made up of a wrapping of a steel band or bands having teeth thereon, and known to the trade as bur card clothing. It will be apparent, of course, that the particular character of the card clothing will depend upon the kind and quality of the stock to be cleaned.

Located in proximity to the upper por-

tion of the cylinder D are two sets of rolls E and F, and G and H, each of which is covered on the exterior surface with wire card clothing having sufficient "pitch" and "knee" to first strip cylinder D and manipulate the stock, and then return the latter to the cylinder D. The cylinders F and G are driven at a different speed from that of the large cylinder D and serve to comb and straighten out the fibers as said rollers F and G remove the fibers from the large cylinder, and the rolls E and H strip the fibers from said rolls F and G and deliver the fibers back on to the large cylinder D.

Located near the lower part of cylinder D are a series of knives J, which extend the full length of the cylinder and cut from the fibers carried by the latter all small particles of hulls or other foreign material and cause the same to drop to the bottom of the machine. Located opposite the knives J and in contact with the cylinder D is a rapidly revolving brush K which is conveniently constructed with four radial brush arms, which extend the full length of the cylinder. These brushes are composed of steel or iron wire, and revolve in the direction of the arrow and at much greater speed than the cylinder D, serving to sweep from said cylinder all the stock that clings to the teeth on the latter. The arms of the brush are so constructed as to constitute a rotary fan and are so arranged as to create a draft to blow the stock away from the cylinder D and said brush toward the front of the machine.

It will be obvious that in the operation of the machine, with the rolls and cylinder rotating in the directions indicated by the arrows, the stock to be cleaned will be delivered to the large cylinder D at one point in its periphery, after which it will pass in succession to the two sets of rolls E, F, and G, H, respectively, which operate on the material in the manner previously indicated. The stock adhering to the main cylinder D will then, on a further movement of such cylinder, be passed beneath the stationary knives or strippers J, after which it will be finally acted on by the brush K in the manner described. Thus it will be seen that in the embodiment illustrated, the stock after being fed to the main cylinder at one point is acted upon by different devices at

four points in the periphery of the cylinder, and it will be noted that these devices are arranged around the cylinder in what is approximately, at least, an equidistant relation. By the time the stock is swept or
 5 stripped off from the cylinder by the brush K it is well combed and cleaned and ready for reworking into the textile products desired.

10 The various rolls and cylinders, as described and illustrated, are journaled in the sides of the casing M, which, of course, are provided with suitable bearings in which the shafts rotate. The main cylinder D is
 15 conveniently operated by a pulley on the end of the shaft, and the other cylinders or rolls and the feed belt or apron are appropriately driven by belts and pulleys or sprockets and chains from the main shaft
 20 D. The upper portion of the case is inclosed by a hood or cover L, preferably made of sheet metal, and arranged to cover the various rotating parts and thereby to prevent injury to operatives and also to keep the
 25 loose fiber from flying out of the machine.

What I claim is:—

1. A waste cleaning machine comprising a rotary cylinder having a covering of card
 30 clothing to carry the fibers or stock to be cleaned, means to feed the stock to said cylinder at one point in its periphery, sets of rotary cleaning devices coacting with the peripheral portion of said cylinder at differ-

ent points, relatively fixed stripping devices coacting with said cylinder at another portion and arranged in advance of said cleaning devices to strip off small particles remaining on the fibers cleaned by said devices, and a device located at still another
 35 portion of the cylinder and coacting therewith in proximity to the aforesaid feeding means, to strip off the cleaned stock from the cylinder. 40

2. A waste cleaning machine comprising a main cylinder having a covering of card
 45 clothing, feed mechanism associated with said cylinder and including a feed roll coacting with the peripheral portion thereof, sets of rotary cleaning devices coacting with the upper peripheral portion of the cylinder
 50 at different points, a set of relatively fixed knives coacting with the cylinder at a point beneath said rotary cleaning devices and operative to strip off from the fiber
 55 cleaned by the latter the small particles of foreign matter adhering to such fiber, and a rotary stripping device coacting with the cylinder in proximity to said feed roll, and operative to strip off from the cylinder the
 60 cleaned stock. 60

In testimony whereof I affix my signature, in presence of two witnesses.

JOHN R. McDONALD.

Witnesses:

FRANK F. JONES,
 J. DONNELLY.