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APPARATUS FOR CARDING COTTON

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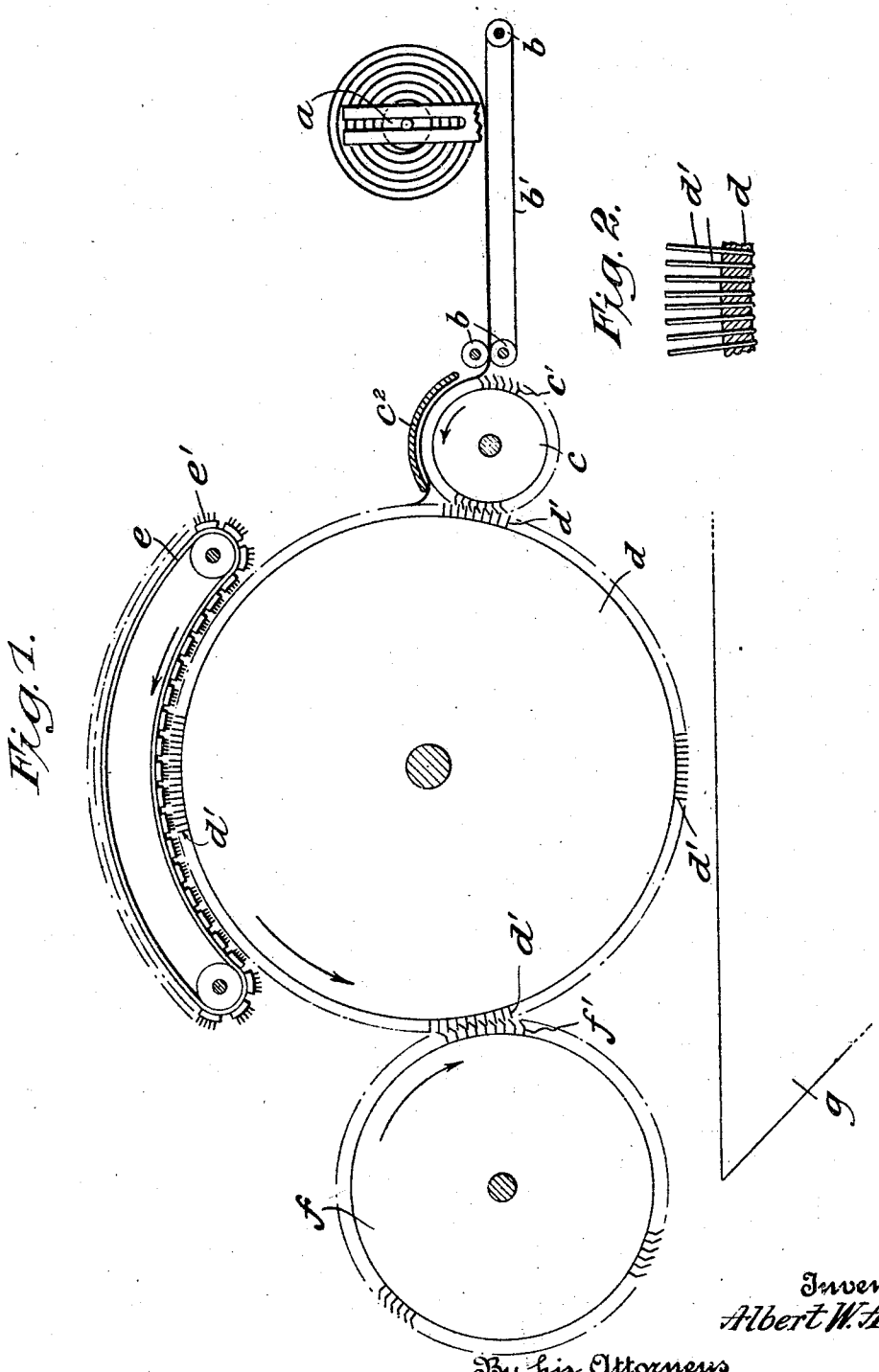


Fig. 1.

Fig. 2.

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UNITED STATES PATENT OFFICE

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APPARATUS FOR CARDING COTTON

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The present invention relates to devices for carding cotton and embodies, more specifically, an improved method of carding as well as a new form of carding cylinder which is constructed to clean and separate the impurities from cotton in a more effective manner than accomplished heretofore.

It has been common practice to form the teeth on the carding cylinder with a bend so that the ends are angularly disposed to the circumference. The supposition has been that such bent teeth will pick off the strands from the lickerin more effectively and prevent them from flying off of the teeth due to centrifugal force. Due to the packing of the strands at the bottom of the teeth, considerable difficulty is encountered in removing the strands and cleaning the teeth and it has been necessary to stop the cylinder at regular intervals to remove all packed strands and clean the teeth thereof. This frequent interruption in service is quite objectionable and the cleaning operation difficult, and a great demand exists for a machine which is not subject to these delays.

The present invention employs short and straight teeth on the carding cylinder, such teeth being substantially radially disposed with respect to the cylinder. In this manner, packing of the strands is eliminated and the machine may be operated continuously and without interruption.

Accordingly, it is an object of the present invention to provide a carding cylinder with substantially radial straight teeth whereby packing of the strands is eliminated and the cleaning of the cylinder greatly facilitated. Further objects of the invention will appear as the invention is described more fully in connection with the accompanying drawings, wherein:

Figure 1 is a view in elevation, showing an apparatus for carding cotton.

Figure 2 is a view in section, taken through the surface of the carding cylinder.

Referring to the above drawings, *a* designates a cylinder which is wound with the lap or cotton batting from the pickers. Feed rolls *b* and endless belt *b'* carry the lap to the lickerin *c*, the surface of which is formed with teeth *c'* having a forward cant or bend. A shield c^2 holds the cotton against the teeth and, in this manner, the cotton is carried from the feed rolls *b* to a carding cylinder *d*. The carding cylinder rotates in the same direction as the lickerin and is provided with substantially radial straight teeth *d'* upon its surface. These teeth catch the strands of cotton on the lickerin and carry them from one side of the carding cylinder to the other, a top flat *e* being provided for straightening the strands on the carding cylinder. This top flat is formed of an endless belt provided with straight teeth *e'* as clearly shown in Figure 1.

A doffer *f* is rotated in such manner that the teeth *f'* thereof at the side of the carding cylinder rotate in the same direction as the adjacent side of the carding cylinder. These teeth *f'* are bent rearwardly with respect to the direction of rotation and remove the strands from the carding cylinder. A hopper *g* is provided to receive the screenings such as parts of the boll, hull, etc.

In one form of the apparatus the diameter of the carding cylinder was approximately 50 inches, it being driven at a speed of approximately 180 revolutions per minute. The diameter of the doffer was 27 inches and driven at a speed of 11 revolutions per minute. The screenings fall from the radial teeth by gravity when on the underside of the cylinder, the cotton being held to the teeth by the pressure of the air due to the rotation of the cylinder. In this manner, the difficulty of removing the strippings is entirely eliminated and the cylinder is kept clean without any interruptions in the operation of the mechanism. There is no tendency for the cotton to pack at the bottom of the teeth and the carding is accomplished far more efficiently than heretofore.

Although the invention has been described with reference to the specific construction shown in the drawings, it is not to be limited, save as defined in the appended claim.

I claim as my invention:

An apparatus for carding cotton comprising a carding cylinder having a foundation, straight teeth in the foundation disposed sub-

stantially radially to the axis of the cylinder, a top flat for the cylinder, and straight teeth projecting substantially radially toward the carding cylinder and cooperating with the straight teeth thereof.

This specification signed this 13th day of November, A. D. 1928.

ALBERT W. ARNOLD.