

G. S. Harwood. Wool Oiling Mach.

N^o 46,104.

Patented Jan. 31, 1865.

Fig. 1.

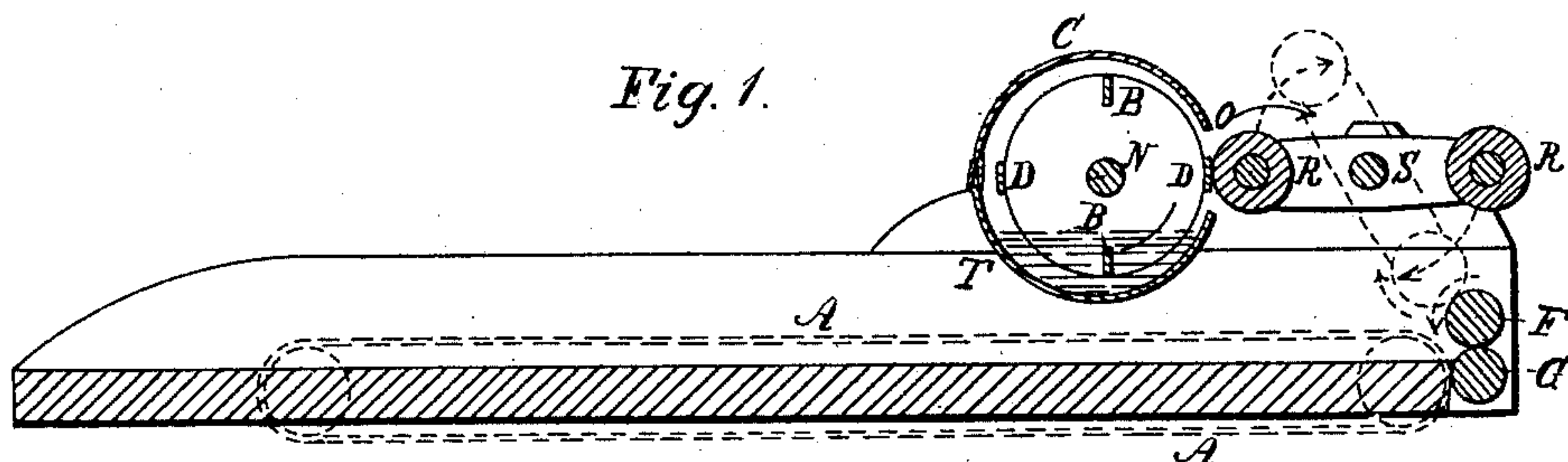


Fig. 2.

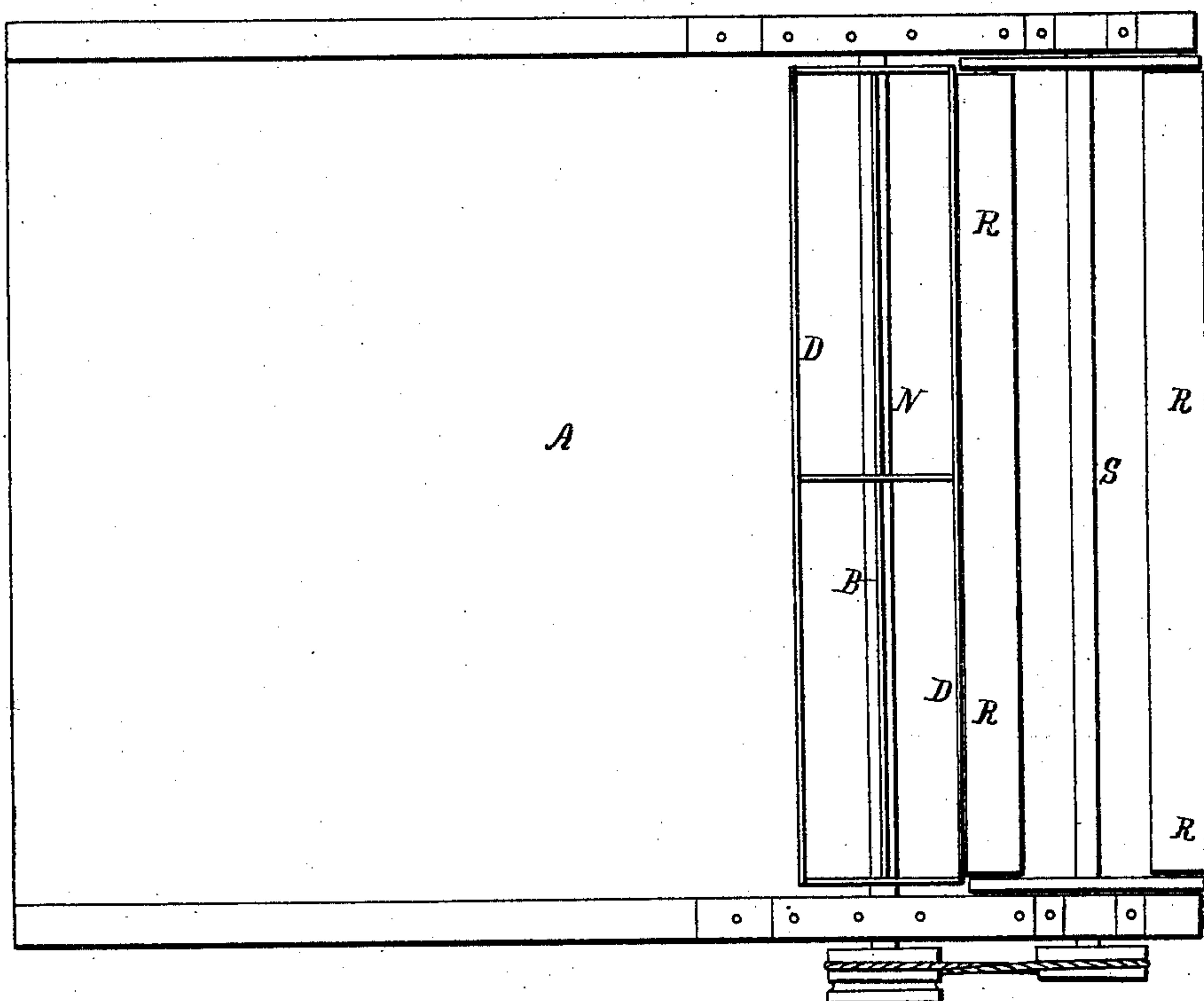
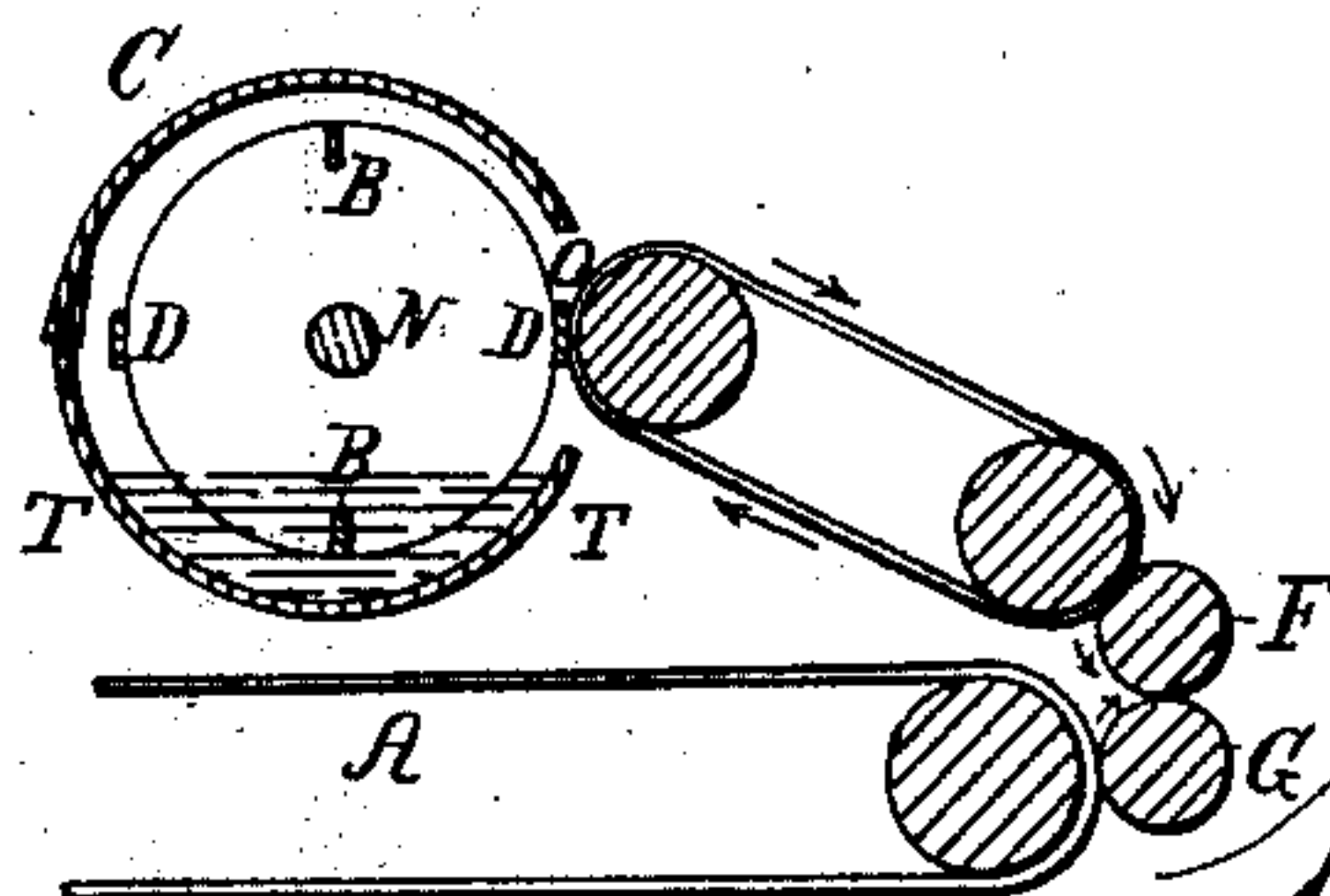


Fig. 3.



Witnesses.

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IMPROVEMENT IN MACHINERY FOR OILING WOOL IN CARDING-MACHINES.

Specification forming part of Letters Patent No. 46,104, dated January 31, 1865.

To all whom it may concern:

Be it known that I, GEORGE SHAW HARWOOD, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Machinery for Oiling Wool; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a transverse section, and Fig. 2 a plan view, of my improved oiler.

This invention relates to machinery for the automatic oiling of wool as it is fed to carding or other wool-preparing machinery, and belongs to the class of oilers in which oil from a cistern or tank is spread, dropped, or distributed upon a cylinder or pressure-roll, whereby the oil is conveyed to, pressed in, and disseminated through, the wool, also in which a tank is used, whether stationary or movable, having combined with it a brush or other suitable oil-conveyer, under such arrangement as to receive its oil or lubricating mixture after it has been properly agitated.

The object of this invention is to simplify and cheapen the construction of oilers of the kind referred to and to render them adaptable to machinery with which are combined a burr-cylinder and burr-box, generally arranged in the immediate vicinity of the upper feed-roller, which interferes with the proper location and performance of the independent pressure-roller, and I have accomplished my object by altogether dispensing with the independent pressure-roller and by using in lieu thereof one or both feed-rollers, which are made in this way to perform the double function of feed-roll and oiling pressure-roller. Other important results have been attained by the peculiar arrangement of machinery or devices employed to carry this my invention into effect; and my invention consists, first, in the method hereinafter described of oiling wool while being fed to carding or other wool-preparing machines by direct application of the oil or lubricating mixture onto either or both feed-rollers, substantially as set forth hereinafter; second, in the combination, with carding-engines or other wool-preparing machinery of otherwise ordinary or suitable construction, of an oil tank or cistern for supplying either or both feed-rolls of said machinery with oil, whether the same is effected directly

by dripping the oil upon the roll or through the intermediary of a brush, roller, or band, or the mechanical equivalent thereof; third, in the combination, in an apparatus constructed for use as an attachment to carding or other wool-preparing machine, and in which the oil is distributed to either or both of its feed-rolls, of an oil-tank, with a dipper arranged for operation substantially as hereinafter set forth, so that the oil or lubricating mixture shall be thoroughly mixed and agitated and conveyed to the feed-rolls directly or through the intermediary of a brush, cylinder, or apron, substantially as hereinafter described; fourth, in the employment of a roller or rollers made of any of the vulcanizable gums, in combination with a dipper and pressure-roller; fifth, in the combination, with a dipper and pressure-roller, of two or more rollers revolving both upon their own axis and upon an axis common to them, substantially as hereinafter described; sixth, in the apparatus herein described for oiling wool on the card, the same consisting of a tank extending transversely the whole width of the feed-roll, of a rotary dipper and a revolving distributor, when arranged to operate as described, so as to agitate and convey the oil from the tank directly to the feed roll or rollers.

To enable others to make and use my invention, I shall now proceed to describe the construction and operation of an apparatus constructed in accordance with the principle thereof.

In the accompanying drawings, F and G are the feed-rolls of a carding-engine or other wool-preparing machine. They are made in the usual way, sometimes of a simple shaft covered with card-leather, or of solid iron fluted or provided with steel or iron teeth. In front of these feed-rollers, and above the apron A, upon which the wool is spread in even layers to be carried to feed-rolls, is established the oiling apparatus proper. It consists of a tank or oil-holding vessel, a dipper, and oil-distributor. The tank T is here shown to consist of a semi-cylindrical or trough-like vessel extending transversely the whole width of the card. It is provided with a cover, C, so fitted as to prevent the dust or fibers of the wool from falling into the oil or mixture, yet leaving a lateral opening at O, where the brush, roller, apron, or other oil-

distributing device comes in contact with the blades of the dipper.

Centrally of this tank, and upon a horizontal shaft, N, is mounted a dipper constructed on the principle of the dipper in Clissold's apparatus—*i. e.*, performing the two functions of, first, continually stirring up and mixing the oil or composition, and, second, of conveying or lifting up the requisite quantity of oil to the brush or its equivalent oil distributor. In this instance the dipper is formed in the shape of a reel, having two stirring-blades, B—*i. e.*, blades arranged radially, and two oiling-blades, D—*i. e.*, blades arranged tangentially, the former to agitate and the latter to lift and convey the oil to the distributor. The oil thus lifted by the blades D is carried to the feed-roll F by means of a contrivance which I name the "distributor." This may be a brush or some other oil-absorbing device. In this instance it is composed of a number of rollers, R, mounted in a revolving frame, S, located between and at equal distances from the dipper and the feed-roll, so that its rollers shall come alternately in contact with the feed-roll and oiling-blades of the dippers. I use as many rollers as there are such oiling-blades, so that whenever one of the oiling-blades appears at the opening at O an oil-distributing roller will be ready to receive the oil adhering to the blade. The distributing-roller may be made of bristles, like a cylinder-brush, or of some porous fabric wrapped around a wooden mandrel, or of vulcanized india-rubber, or any other convenient or suitable material may be used, as the substance which the rollers are made of or covered with, according to the nature of the feed-rollers. If made of india-rubber, the surface may be smooth, or rough or corrugated, so that the oil may adhere in greater or lesser quantities, according to circumstances.

The operation of this machine will be understood from the foregoing description. The wool, being fed as usual to the card, is brought by means of the apron to the feed-rolls. With these feed-rolls, or other moving part of the machine, is geared the rotary dipper and distributing-rollers, so that they all move in unison, the dipper elevating a certain quantity of oil previously stirred, and the distributing-rollers taking it off to carry it in its turn to the feed-roll, upon the surface of which it is deposited. The movement of the rollers being indicated in arrows, it will be seen that the oiled feed-roll revolves to seize and carry forward the wool to the card, and in so doing will necessarily lubricate and compress the wool, acting thus in the triple capacity of feed-roll, oiling-roll, and pressure-roll.

Numerous modifications may be applied to this invention without departure from the

principle thereof. To illustrate, I have shown in Fig. 3 a device in which, in lieu of the distributing-roller, a distributing endless band is used, moving upon two rollers and in rolling contact with both the feed-rolls and the oiling-blades of the dipper. This arrangement may be advantageous in carding-engines in which a burr-box is used.

It will be understood that the apparatus described may be applied at pleasure to either the top or bottom roller, or it may be used applied to both.

And having thus fully described my invention, I claim—

1. The means and manner herein described of oiling wool while being fed to carding or other wool-preparing machine by direct application of the oil or lubricating mixture onto either or both feed-rollers, substantially as set forth.

2. In combination with carding-engines or other wool-preparing machinery of otherwise ordinary or suitable construction, a covered oil tank or cistern for supplying either or both feed-rolls of said machinery with oil, whether the same is effected directly by dripping the oil upon the roll or through the intermediary of a brush, roller, or band, or the mechanical equivalent thereof.

3. In an oiling apparatus constructed for use as an attachment to carding or other wool-preparing machine, and in which the oil is distributed to either or both of its feed-rolls, the combination of an oil-tank with a dipper arranged for operation substantially as set forth, so that the oil or lubricating mixture shall be thoroughly mixed and conveyed to the feed-rolls directly or through the intermediary of a brush, cylinder, or apron, substantially as described.

4. The employment of a roller or rollers made of any of the vulcanizable gums, in combination with a dipper and pressure-roller.

5. In combination with a dipper and pressure-roller, two or more rollers revolving both upon their own axis and upon an axis common to them, substantially as herein described.

6. The apparatus herein described for oiling wool on the card, the same consisting of a tank extending transversely the whole width of the feed-rolls, of a rotary dipper, and a revolving distributor, when arranged to operate as described, so as to agitate and convey the oil from the tank directly to the feed roll or rollers.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

GEO. S. HARWOOD.

Witnesses:

WM. H. SWEETSER.

GEO. H. QUINCY.