(No Model.)

J. H. MITCHELL.

NON-ADHESIVE SHEETING ROLL.

No. 534,071. Patented Feb. 12, 1895.

Fig. 1.

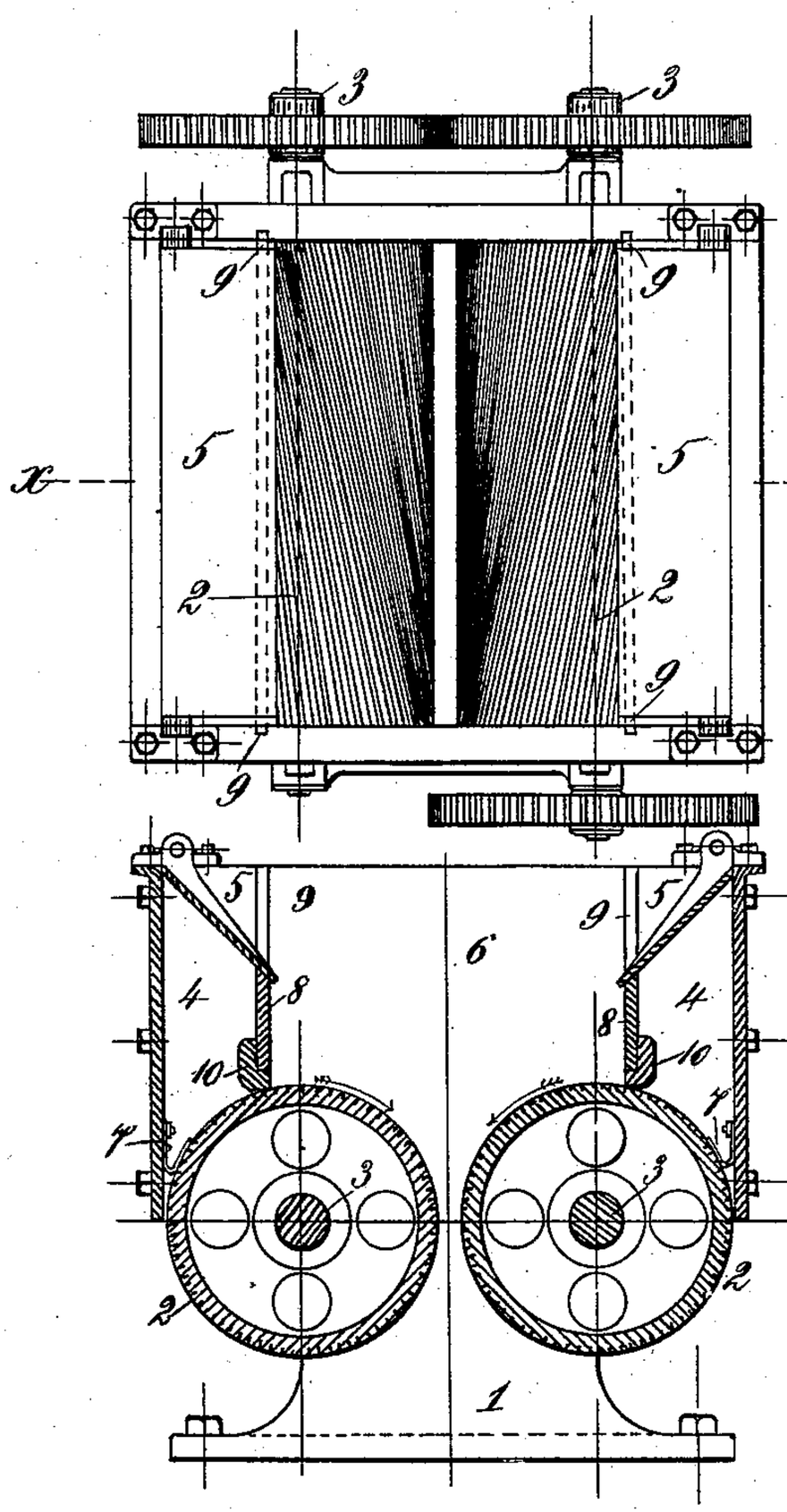


Fig. 2.

Fig. 5.

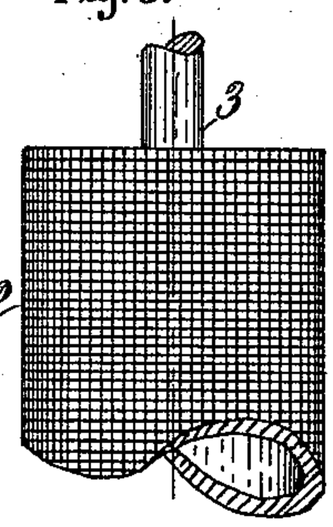


Fig. 6.

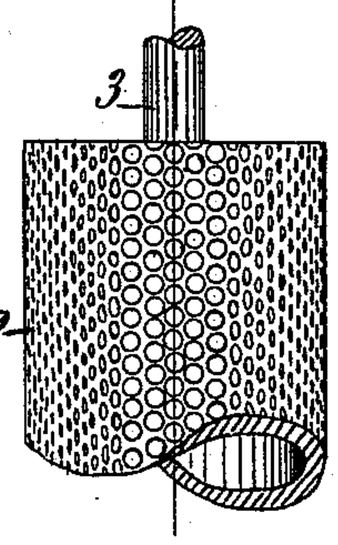


Fig. 7.

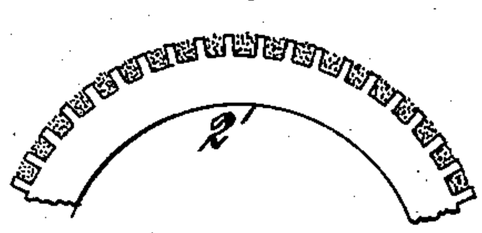


Fig. 4.

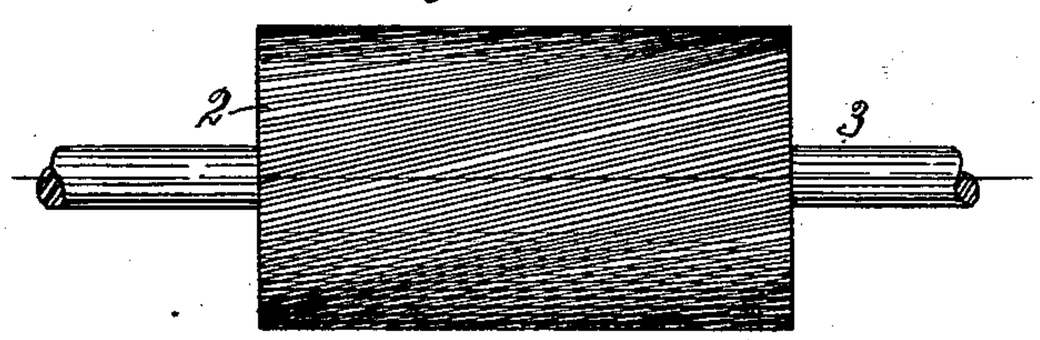
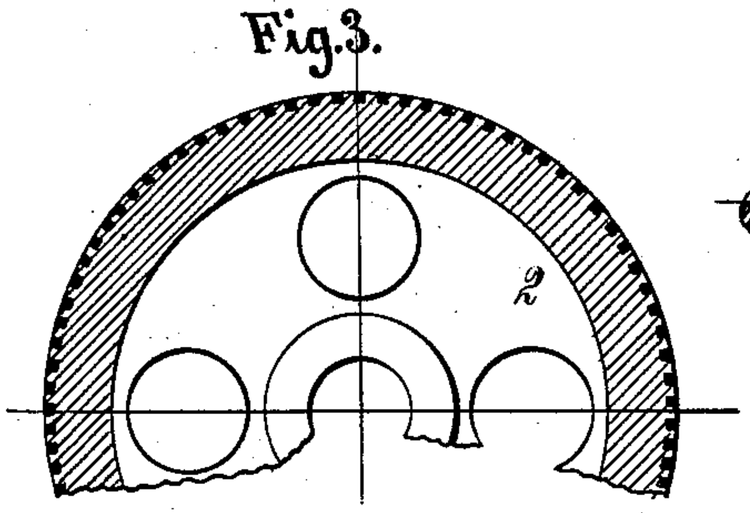


Fig. 3.



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NON-ADHESIVE SHEETING-ROLL.

SPECIFICATION forming part of Letters Patent No. 534,071, dated February 12, 1895.

Application filed March 10, 1894. Serial No. 503,146. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. MITCHELL, a citizen of the United States, residing at Chestnut Hill, (Philadelphia,) in the county of Philadelphia, State of Pennsylvania, have invented new and useful Improvements in Non-Adhesive Sheeting-Rolls, of which the following is a specification.

My invention relates especially to rolls employed for forming plastic material of any kind, style or description, into a continuous sheet, and has for its object the provision of sheeting rolls of simple construction, whereby adhesion of the material being sheeted is absolutely prevented.

To attain the desired end, my invention consists essentially in a sheeting roll having in its periphery minute or microscopic grooves or cavities, and means for packing absorbent powder into the same, whereby a roll is provided having its surface composed of powdered material compressed between metallic walls; and my invention also involves certain other novel and useful combinations or arrangements of parts, and peculiarities of construction and operation, all of which will be hereinafter first fully described, and then pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of a pair of sheeting rolls, embodying my invention. Fig. 2 is a vertical, cross-sectional view at line *x*—*x* of Fig. 1. Fig. 3 is an enlarged, cross-sectional view of one of said rolls, the grooves therein being exaggerated in size. Fig. 4 is a plan view of one of the rolls, removed from the frame of the sheeter. Fig. 5 is a portion of a roll, shown as being covered with wire gauze to form the powder-retaining cavities in the meshes thereof, and Fig. 6 is a like view showing circular depressions formed in the surface thereof. Fig. 7 is an end view of a fragment of a roll illustrating substantially the relation of the retaining metal to the compressed absorbent material.

Like numerals of reference, wherever they occur, indicate corresponding parts in all the figures.

Heretofore in sheeting plastic material, absorbent powder to prevent adhesion has been plentifully supplied to either the surface of the material to be sheeted or to the surface of the rolls, or to both, substantially all of such powder being taken from the rolls, and left upon the surface of the sheet in an excessive quantity. By my invention this over-application of absorbent powder is obviated, and only a very small quantity is used, while at the same time adhesion of the sheet to the rolls is entirely prevented, and a perfect sheet is delivered. This is accomplished from the fact that my rolls, when in use, have their surfaces which come in contact with the material to be sheeted, composed of a surface of absorbent powder embedded, packed and held between metallic divisions of the face of the roll, only a very small portion of such powder being taken up by the plastic material as it is formed into the sheet.

In the drawings, 1 is the main frame wherein the rolls, 2, are mounted, the shafts, 3, of said rolls being provided with driving gears, arranged in the well known manner. As illustrated in Figs. 1, 2, 3, 4 and 7, the surface of the rolls 2 are provided with minute or microscopic grooves, said grooves extending at an angle to the axis of the roll. Practice has shown that a width of about one thirty-second of an inch is the most effective width to give such grooves, as if they be made wider, the absorbent powder will not pack firmly therein, and be held by the metal, but will be substantially entirely removed by the material being sheeted, or fall from the roll as it revolves, thus defeating the very object which is gained by my invention When made the size indicated but a very small portion of the powder is removed from my rolls.

I do not limit myself to the grooves arranged as above described, as other forms of surface to the roll, such as is indicated in Figs. 5 and 6 will carry out my invention, but I have found the said grooves to be the most satisfactory in operation.

4, 4 are chambers arranged to hold the absorbent powder, provided with lids, 5, said lids being inclined so as to form a portion of the hopper 6 for receiving the material to be sheeted. Each powder chamber 4, is provided near its bottom with a flexible flap, 7, made of leather, or equivalent material, having one edge secured to the outer wall of the chamber, the other edge resting upon the periphery of the roll, thus preventing the working down-

ward of the powder from the chamber, the weight of the powder holding the flap in position.

Beneath lid 5 of the powder chamber is a movable side wall 8 of said chamber, held in grooves, 9, in the main frame. The lower edge of the wall 8 is provided with a shoe, 10, preferably made of hard wood, said shoe being shaped in cross-section as particularly illustrated in Fig. 2, and resting upon the periphery of the roll 2. The object of this construction is to force, pack, and rub the absorbent powder firmly into the grooves or holders in the roll 2, as it rotates, by the weight of said wall 8.

When constructed and arranged in accordance with the foregoing description, the operation of my improved sheeting rolls is as follows: The plastic material or lump dough to be sheeted is placed in the hopper, and rests upon the rolls, made to rotate in the direction indicated by the arrows, in Fig. 2. The lump dough is compressed into a continuous sheet, and is delivered upon any approved form of receiving belt, in the usual manner. The surface of the sheet is only slightly powdered, by the small quantity of absorbent powder taken from the roll cavities, and all adhesion to the rolls is effectually prevented. As the rolls continue to rotate, the small quantity of powder which has been taken by the sheet, is automatically renewed, being so forced into the microscopic holders that I provide on the surface of the sheeting roll, which when in operation, has a compressing surface constituted of a combination of absorbent powder and metal, the powder being so firmly embedded as to have nearly the same resistance in sheeting powder as the metal itself.

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

1. A sheeting roll provided with microscopic cavities in its surface, in combination with an absorbent powder holder, and means for automatically supplying said absorbent powder to said cavities, substantially as shown and described.

2. A sheeting roll provided with minute holding cavities in its surface, in combination with a chamber for supplying absorbent powder to the roll which forms the bottom of said chamber, and means for forcing the powdered material from said chamber into the cavities of the roll, substantially as shown and described.

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Witnesses:
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