May 3, 1932. A. BRECKENRIDGE 1,857,039

GARNETT OR BATTING MACHINE

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Fig. 1.

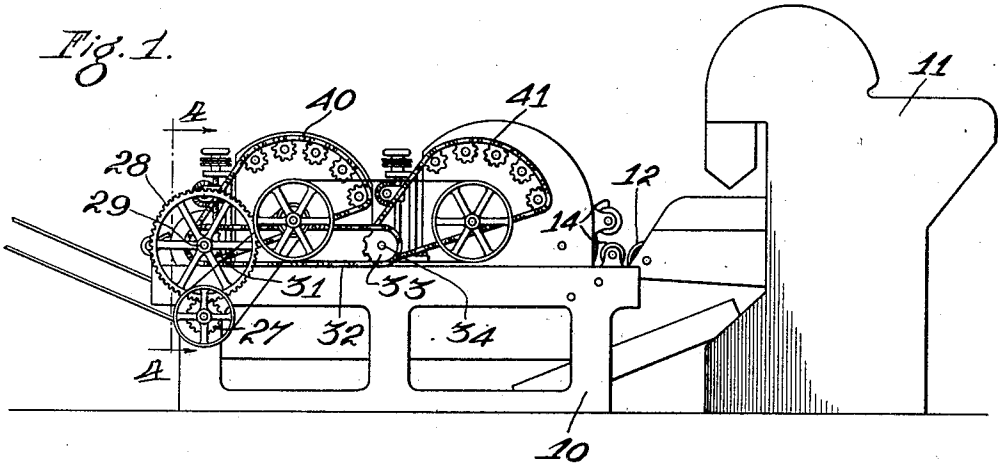

Fig. 2.

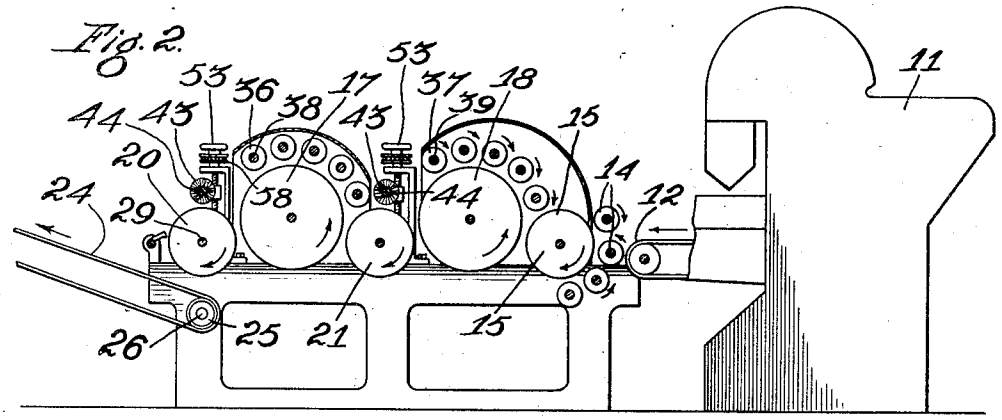

Fig. 3.

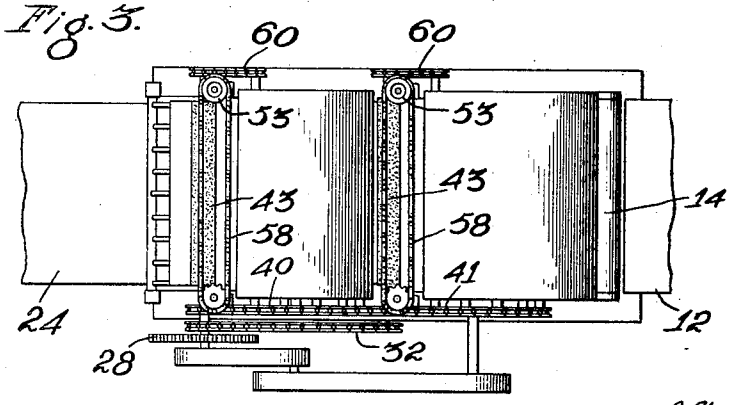

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Fig. 4.

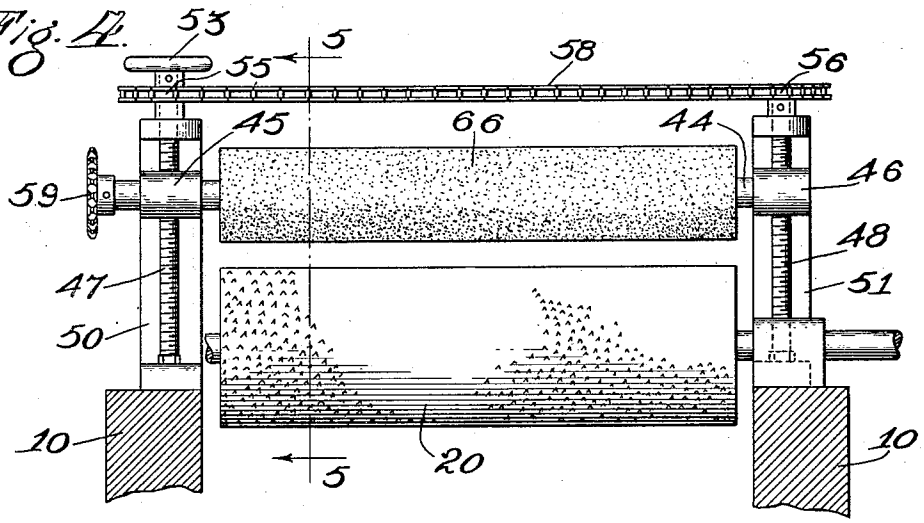


Fig. 5.

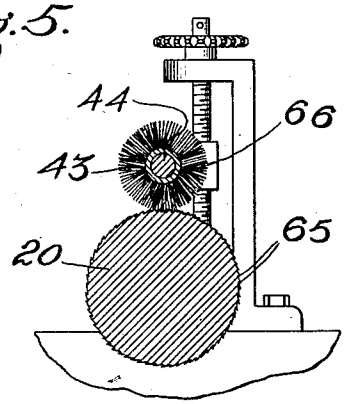


Fig. 7.

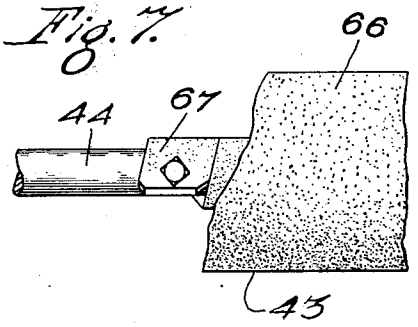
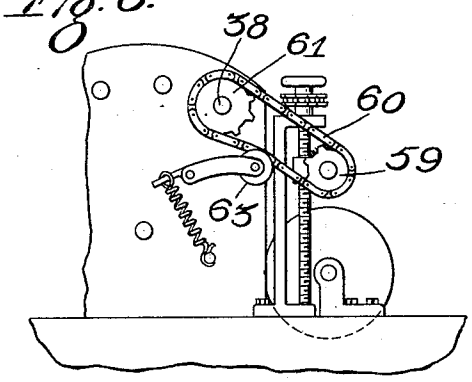


Fig. 6.



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Patented May 3, 1932 1,857,039

UNITED STATES PATENT OFFICE

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GARNETT OR BATTING MACHINE

Application filed March 24, 1930. Serial No. 438,468.

This invention relates broadly to Garnett or batting machines, and more particularly to apparatus for cleaning the doffer rolls of such machines.

A particular object of the invention is to provide cleaning apparatus of the kind described which will obviate the necessity of cleaning the doffer rolls manually without the attendant risks of injury to the operator.

Another particular object of the invention is to provide cleaning apparatus of the kind described which will lengthen the life of the "cloth" or covering of the doffer rolls.

One form of the invention is embodied in a batting-machine or Garnett machine provided with two doffer rolls, the "cloth" covering of which comprises the usual bent wires or pins. Associated with each doffer roll is an adjustably mounted brush or cleaning roll having numerous bristles or wires projecting therefrom and adapted to clean the bent wires or pins of the doffer rolls. The cleaning rolls are driven in the same direction as the doffer rolls so that the contacting parts of their surfaces travel in opposite directions.

Many other objects and advantages will appear as this description progresses, reference being had to the accompanying drawings, wherein:

Figure 1 is a somewhat diagrammatic elevation of a Garnett or felting machine embodying the invention.

Fig. 2 is a somewhat diagrammatic longitudinal vertical section taken through the improved machine, a portion thereof being shown in elevation.

Fig. 3 is a fragmentary plan elevation of the improved machine.

Fig. 4 is an enlarged section taken on line 4—4 of Fig. 1.

Fig. 5 is a section taken on line 5—5 of Fig. 4.

Fig. 6 is a fragmentary elevation of the side of the machine opposite to that shown in Fig. 1, and

Fig. 7 is a fragmentary elevation of one of the cleaning brushes, the bristles or wires being partly broken away to illustrate certain details of construction.

Referring to the drawings wherein a preferred form of the invention is illustrated, the reference character 10 designates the frame of a Garnett or felting machine adapted to form batting from linters, or the equivalent. At the front end of the machine the usual hopper 11 is positioned, into which hopper the linters, or the equivalent, are fed. In this instance, the hopper contains the usual spike apron (not shown) and the linters are delivered from the hopper by a feed apron 12.

The feed apron 12 delivers the felting material to feed rolls 14 rotatably mounted in the frame 10, the feed rolls being arranged to co-operate with a lickerin roll 15, also journaled in the frame 10.

The usual cylinders 17 and 18 and the usual doffer rolls 20 and 21, together with the usual fancy and fancy stripper rolls are also journaled in the frame 10. From the doffer roll 20, the felting material passes to the runway apron 24.

The runway apron 24 is driven by a roll 25 mounted on a shaft 26 which is journaled in the frame 10 and driven from any suitable source of power. A pinion 27 fixed to the shaft 26 meshes with a gear 28 mounted on a shaft 29 which carries the doffer roll 20 (see Fig. 1). A sprocket 31 mounted on the shaft 29 meshes with a sprocket chain 32 which meshes with a sprocket 33 secured to a shaft 34 which carries the middle doffer roll 21. The direction in which the doffer rolls rotate is indicated by arrows in Fig. 2.

The above mentioned fancy-stripper rolls are designated by the reference characters 36 and 37 and are mounted on shafts 38 and 39, respectively, the shafts 38 and 39 being driven from the shafts 29 and 34, respectively, by means comprising sprocket chains 40 and 41, respectively.

Adjustably mounted above each of the doffer rolls is a cleaning brush or roll 43. Each roll 43 comprises a shaft 44 in bearing blocks 45 and 46 which are mounted on screw-threaded pins or posts 47 and 48, respectively, the construction being such that when the screw-threaded posts 47 and 48 are rotated the brush or roll 43 is raised or lowered, de-

pending upon the direction in which the posts 47 and 48 are rotated. The posts 47 and 48 are rotatably journaled in bracket members 50 and 51, respectively, rigidly secured to the frame 10. The post 47 is provided with a hand-wheel 53 whereby it may be rotated. Secured to the post 47 and 48 are sprocket-wheels 55 and 56, respectively, over which a sprocket chain 58 is trained. Obviously, the hand-wheel 53 may be rotated in either direction to raise or lower the brush or roll 43 at will.

As best shown in Figs. 3, 4 and 6, each shaft 44 is provided with a sprocket-wheel 59 which is operatively connected by a sprocket chain 60 to a sprocket-wheel 61 mounted upon the associated fancy-stripper roll shaft 38 or 39. Each cleaning roll is rotated in the same direction as its associated doffer roll so that the part of the surface of the cleaning roll in contact with the doffer roll at any given time travels in the opposite direction and insures a thorough cleaning of the doffer roll.

Take-up mechanism comprising an idler-roll, or sheave, 63 is provided for each sprocket chain 60 to take up play in the sprocket chain when the associated roll 43 is raised or lowered.

As indicated diagrammatically in Figs. 4 and 5, the doffer rolls are covered with the usual "cloth" from which bent wires or pins project, the pins being identified by the reference character 65. The cleaning rolls 43 preferably comprise rubberized fabric, or rubber wrapped around the shafts 44 and provided with numerous bristles or wires 66 which enter the spaces between the bent pins 65 during the cleaning operation and remove linters therefrom.

In the preferred form of the invention, the rubberized cloth, or rubber, wrapped around the shafts 44 is preferably in the form of strips 67 which have their ends rigidly secured to the shafts 44 and which are wrapped spirally around the shafts (see Fig. 7).

The operation of the above described apparatus is substantially as follows: Assuming that the machine is in operation, it is obvious that the rolls 43 may be adjusted to clean the doffer rolls 20 and 21 continuously, or the cleaning rolls may be brought into contact therewith at predetermined intervals, if it is so desired.

The linters are advanced through the apparatus and through the action of the cylinders 17 and 18, the doffer rolls 20 and 21 and the accompanying worker rolls, fancy-rolls and fancy-stripper rolls are matted into felting or batting. Linters will tend to adhere to the pins 65 and are brushed therefrom by the cleaning rolls 43.

The invention is particularly advantageous as it obviates the necessity of having the operator clean the doffer rolls with a brush, or the equivalent, while the machine is in operation. This has been the usual practice heretofore and has often resulted in injury to the operator. Another advantage of the invention is that the doffer rolls may be cleaned continuously, or at such intervals that the linters do not have an opportunity to mat between the pins 65 and, therefore, it is unnecessary to later scrape the pins with such force as to damage or destroy them.

Still another important advantage of the apparatus described above is that depth through which the wires 66 enter between the bent pins 65 can be accurately adjusted so that the wires 66 will enter deep enough to remove the lint adhering to the pins 65 but will not injure the "cloth" to which the pins 65 are secured.

Cleaning the doffer rolls as described above results in better carding and insures that the felt produced will be of a good quality.

While I have shown and described certain embodiments of my invention, it is to be understood that it is capable of many modifications. Changes, therefore, in the construction and arrangement may be made without departing from the spirit and scope of the invention as disclosed in the appended claims, in which it is my intention to claim all novelty inherent in my invention as broadly as possible, in view of the prior art.

What I regard as new, and desire to secure by Letters Patent, is:

1. In a machine of the character set forth, the combination with a roll covered with card-cloth, of means for cleaning said roll comprising rotatably journaled pins, bearing blocks screw-threaded on said pins, a shaft journaled in said bearing blocks, a brush on said shaft, means for driving said shaft, means operatively connecting said pins whereby they are constrained to rotate in unison, and manually operable means for rotating said pins to bring said brush into and out of effective engagement with said roll.

2. In a machine of the character set forth, the combination with a roll covered with card-cloth, of means for clamping said roll comprising rotatably journaled pins, bearing blocks screw-threaded on said pins, a shaft journaled in said bearing blocks, a brush on said shaft, means for driving said shaft, sprockets on said pins, an endless sprocket chain meshing with said sprockets, and a hand wheel on one of said pins whereby said pins may be rotated to bring said brush into and out of effective engagement with said roll.

In testimony whereof, I hereunto affix my signature this 10th day of March, 1930.

ALBERT BRECKENRIDGE.