

Aug. 2, 1938.

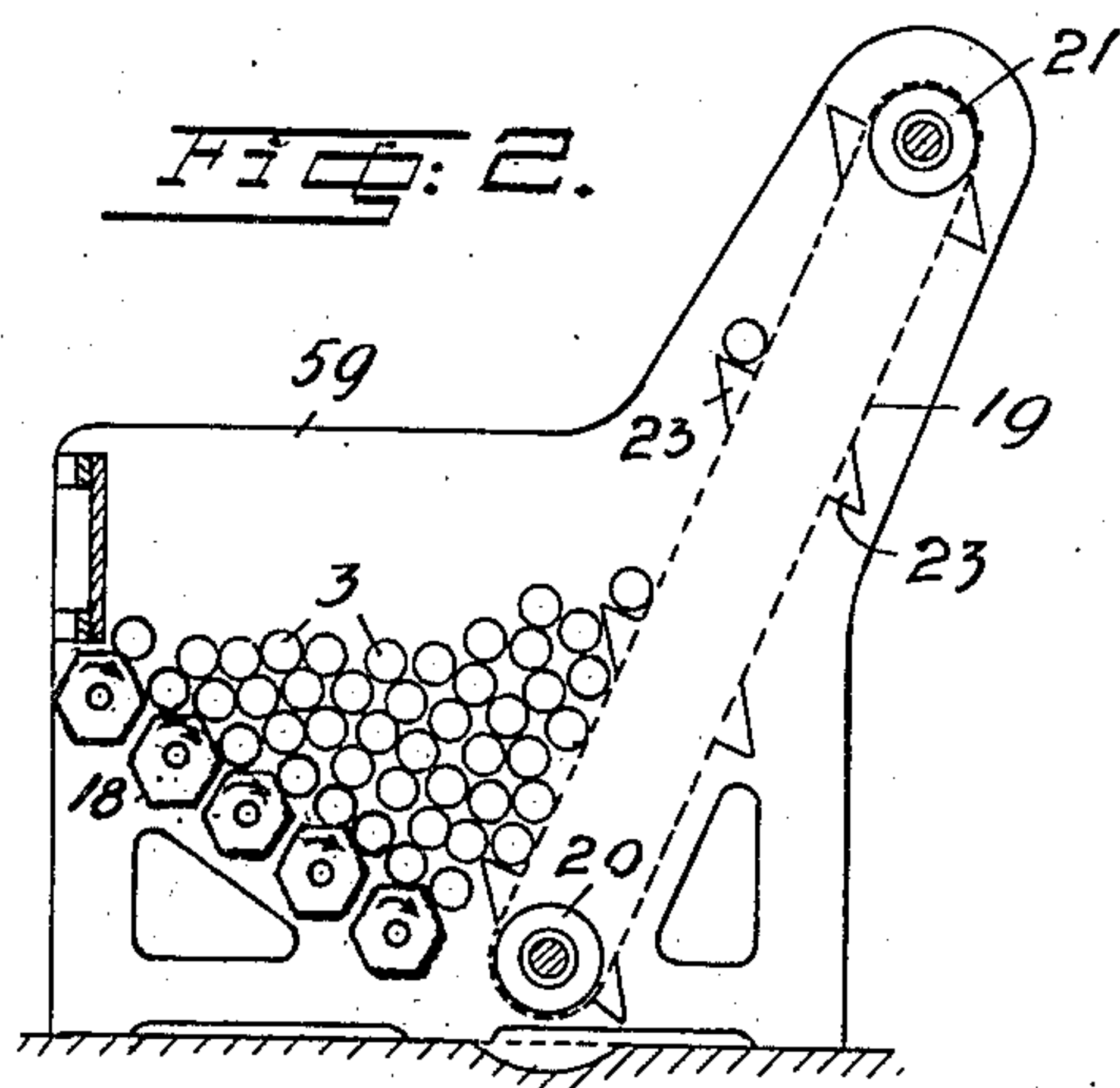
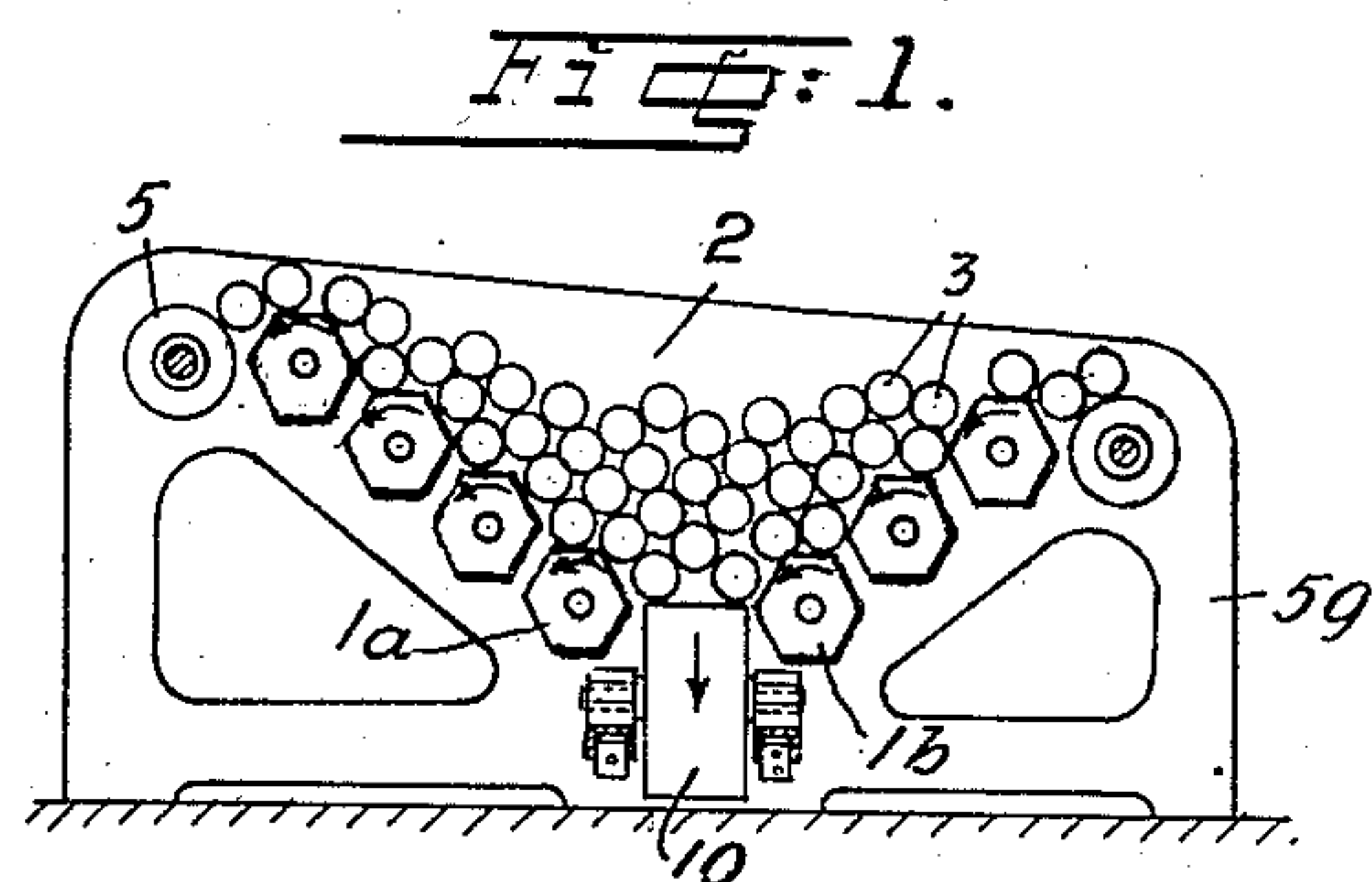
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2,125,529

APPARATUS FOR BARKING LOGS

Filed Nov. 7, 1935

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

FIG. 3.

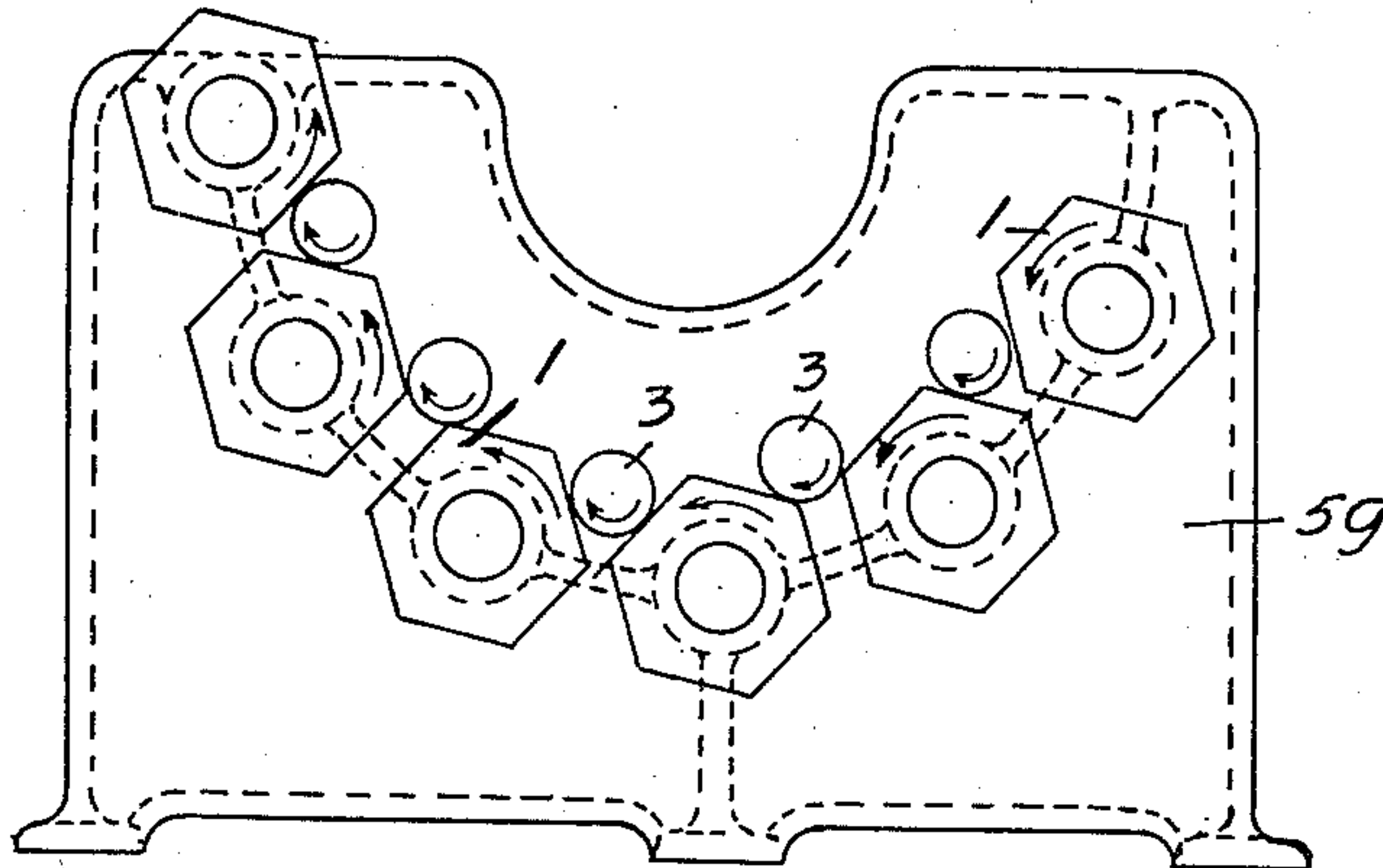


FIG. 4.

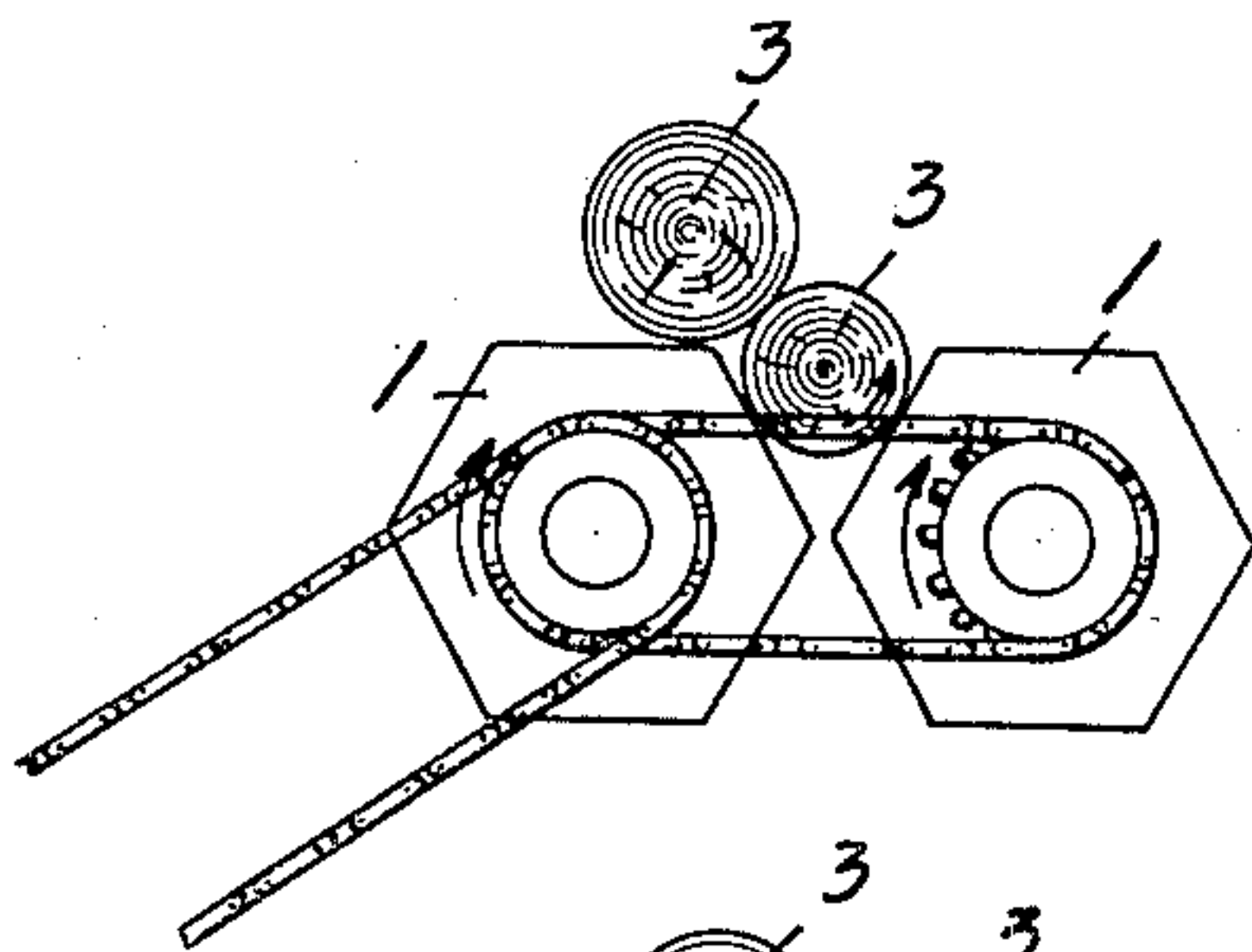


FIG. 5.

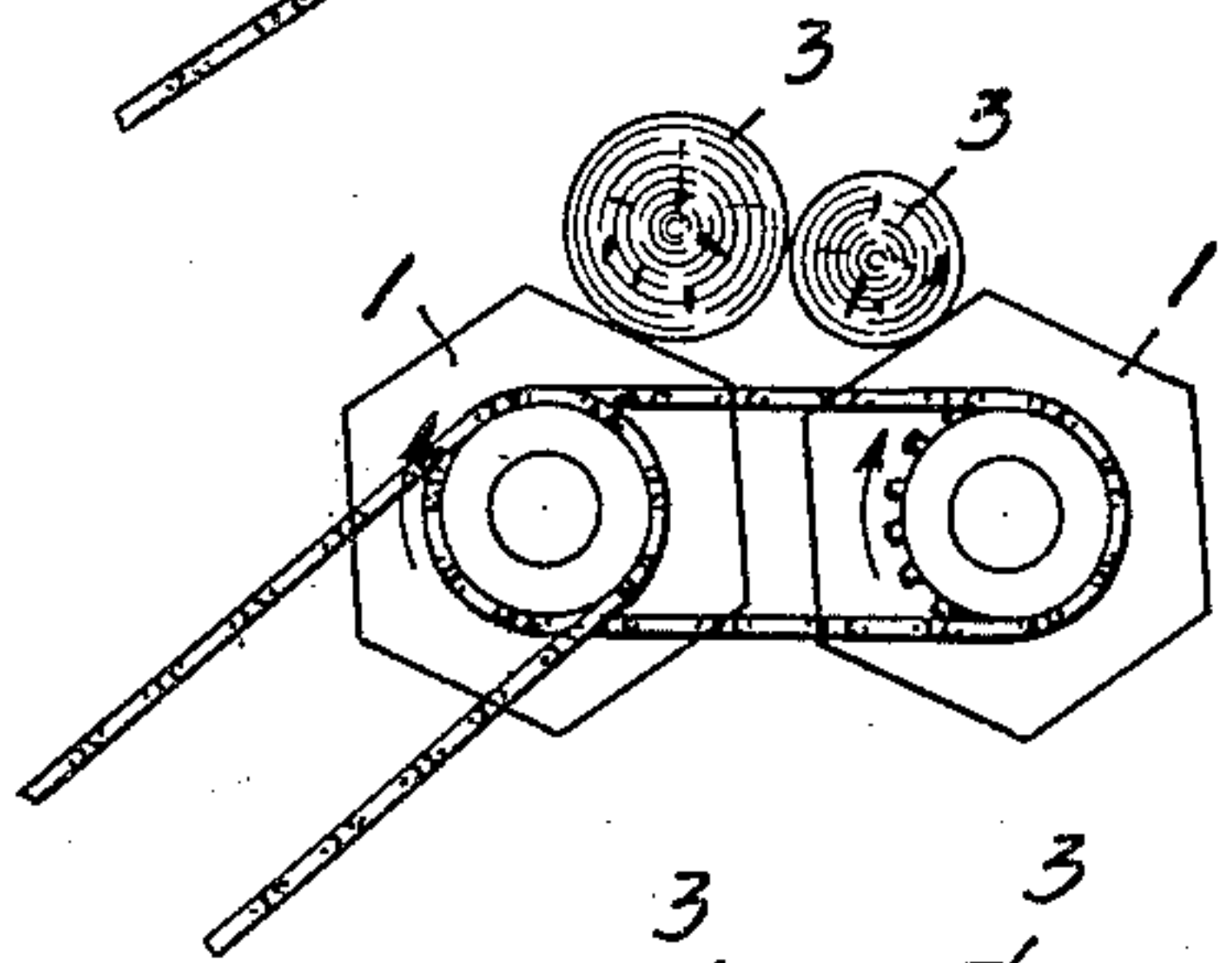
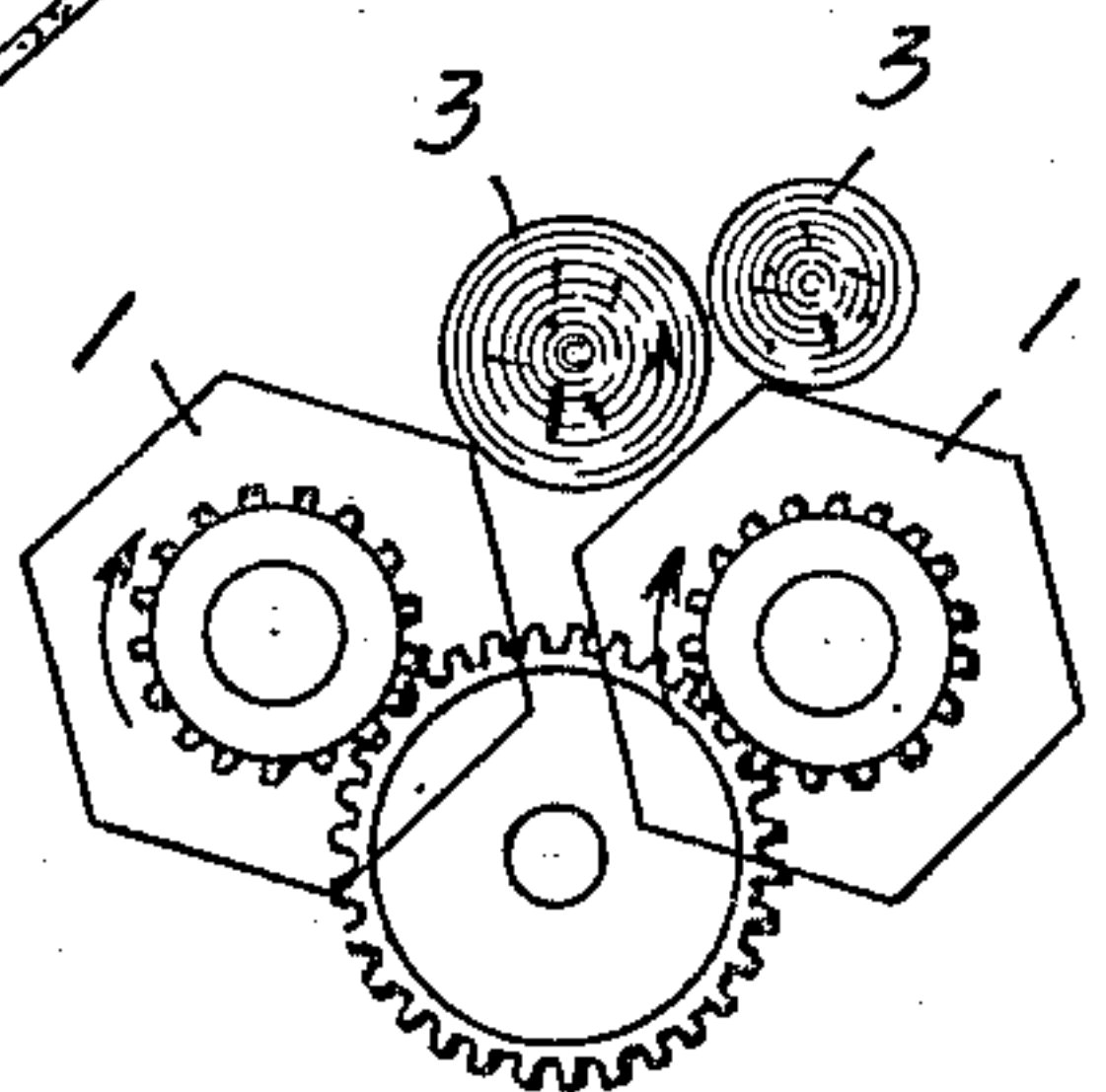


FIG. 6.



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## UNITED STATES PATENT OFFICE

2,125,529

## APPARATUS FOR BARKING LOGS

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4 Claims. (Cl. 144—208)

For a considerable time past so-called barking drums have been used for barking timber. These consist of very large, rotating drums, cylindrical or conical in shape. The object of the latter form is that the logs should automatically leave the rotating drum at one end. The considerable volume and weight of these drums makes them expensive in initial cost and in working, and the journalling of the same presents considerable difficulties. In addition, they are unsatisfactory in work since, when working continuously, less than half of the drum can be filled with timber so that the effective part of the drum is small. Further, the wall of the drum only produces an inconsiderable de-barking of the timber since the logs which are adjacent to the wall are during the rotation at rest with relation to it.

In order to avoid these disadvantages in the use of barking drums, it has been proposed to use stationary barking apparatus, open at the top and in which the logs are supported by chain-conveyers. When these chains are caused to move in a given direction, the bundle of wood lying on them is caused to rotate in a similar manner to that which takes place in a barking drum.

However, these open barking apparatus suffer from the same drawback as the barking drums, viz., that the logs adjacent to the chain-conveyers acquire very little or no individual rotary motion, wherefore the barking effect of these machines is unsatisfactory. In addition, the guiding effect of the chains is inadequate so that the logs easily take up other positions than the parallel one which is requisite for effective de-barking.

It has also been proposed to use open barking apparatus consisting of a container filled with water in which the logs float and are caused to move by a series of rollers supporting the logs floating in the water. In this case the rollers are provided with longitudinal grooves or ridges, which when the rollers are rotated, catch the logs and strike them so as to move forwards. Due to the form of the rollers the wood of the logs is easily damaged.

The principal object of applicant's invention is to construct a barking apparatus which makes it possible to execute the barking process in an efficient manner at the same time so that the wood of the logs is not damaged.

This is rendered possible according to the present invention by using rollers which are prismatical in shape with flat or practically flat

surfaces and a suitable number of sides. Thus, their cross-sections may have three or more sides, the number of sides being adapted to the thickness of the logs. For thick logs, it is suitable to use rollers with three or four sides while, for thinner logs, the number of sides may suitably be six or eight. It is, however, generally more suitable for manufacturing reasons to have an even number of sides.

It has been found in practice that the individual rotation of the logs in the spaces between the rollers is much better when the rollers are prismatical in shape than if they are practically round or provided with grooves or otherwise roughened, in which case blows on the wood from these irregularities cannot be avoided. When using rollers with a prismatical cross-section not only an individual rotation but also a jumping motion is effected which contributes to increase the de-barking effect.

Some forms of construction of the barking machine according to the present invention are shown in the accompanying drawings.

Fig. 1 shows a machine in vertical section. Fig. 2 shows another form of apparatus in vertical section, one portion of the bottom being formed by prismatic rollers and the other portion by a chain conveyer. Fig. 3 shows the end wall and the prismatic rollers on a larger scale. Fig. 4 shows on a still larger scale two prismatic rollers with two logs in a position which said rollers take during the barking process. Figs. 5 and 6 show other positions taken by the prismatic rollers and the logs during the barking process.

According to Fig. 1 prismatic rollers 1a and 1b are rotatably mounted between two end walls 59, only one being visible in Fig. 1. The bearings of the axles of the rollers are arranged along straight lines forming an angle with one another, the point of the angle being at the lower part of the apparatus. Between the end walls 59 and the rollers there is thus formed a working chamber 2. In this working chamber and supported by the rollers 1a and 1b are the logs 3. When the rollers rotate the bundle of logs is caused to execute a wandering movement, and each log is given an individual rotation in the interstices between the rollers. The rollers are placed so close to each other that the logs cannot fall between the interstices, but far enough apart for allowing the logs to enter partly said interstices, so that the rollers when rotated may be able by pairs to cause the logs between them to rotate individually. The peripheral speed of the rollers may be uniform for all the rollers or, alternatively, the speed may in-



crease towards the end where the logs leave the apparatus. At this outlet end there is a roller 5, which according to the drawings is circular in cross section, and which ejects the barked logs out of the apparatus.

The bark is partly removed from the working chamber through the interstices between the prismatic rollers. In order to further ensure the removal of the bark there are arranged a number of short rollers 10 with circular section and located at right angles to the rollers 1a and 1b. For this purpose the lowermost rollers 1a and 1b are arranged at a greater distance from each other than the other rollers, and the rollers 10 enter into the space between said rollers. By these cross rollers 10 the bark is effectively removed and enabled to escape downwards between these cross rollers.

Fig. 2 shows another form of embodiment in which between the end walls 59 there are rotatably located prismatic rollers 18, the shafts of which are arranged along a straight line sloping towards the bottom. These rollers thus form one part of the bottom of the working chamber. The other part of the bottom of said chamber consists of a chain conveyer 19 of the usual kind, the chain conveyer being inclined at an angle towards the rollers 18. The chain conveyer 19 passes around the chain wheels 20 and 21 and is provided with catches 23, by which the barked logs are fed out of the apparatus.

Fig. 3 shows on a larger scale different positions of the prismatic rollers and of the logs during the debarking operation.

Figs. 4, 5 and 6 illustrate how the logs are rolling in contact with the flat sides of the rollers. In Fig. 4 the rollers are in such a position that the upper and lower sides of the hexagons are parallel. When the rollers rotate the logs roll on the flat sides of the rollers. Fig. 5 shows how the logs in one position of the rollers rest on the flat sides, the upper log according to Fig. 4 then pushes the other log forwards so that it finally comes into the position shown in Fig. 6 when it is carried over into the interstice between the adjacent rollers.

It is obvious that the rollers must be placed at such a distance from each other that the corners of the prisms do not touch when they rotate but, at the same time, the spaces between the rollers must not be so large that the logs can fall through when the rollers are in the position in which the interstices are larger.

In order that the rolling of the logs on the rotating prismatic rollers may be as ideal as possible it is preferable that all rollers should have the same number of sides, that they rotate with the same speed, effected by means of a chain drive as shown in Figs. 4 and 5 or a geared drive as shown in Fig. 6, and that they are so arranged that the corresponding sides of two adjacent rollers are parallel to each other during the rotation. As a result of this a log resting on a pair of adjacent rollers is given the same peripheral speed by each of the rollers, so that the risk of jamming, especially in the case of thin logs, is reduced. In order further to reduce this risk it is advisable that the corners of the rollers be somewhat rounded.

In the drawings the rollers are shown mounted on axles through their centres. It is, however, possible to have all or some of the rollers eccentrically journaled as a result of which the jumping motion of the logs obtained by using prismatic rollers is still further increased. This

jumping motion effects an efficient removing of the bark.

In Fig. 3 the bearings of the rollers are on each side arranged along an arc of a circle, but, as results from the other figures they may also be arranged along straight lines forming an angle with one another. The main point is that a working chamber is formed, in which the part, on which the logs lie, consists wholly or partly of rotatable prismatic rollers.

What I claim is:—

1. Apparatus for barking a bundle of logs comprising in combination a frame, side-walls on said frame, a number of parallel prismatic rollers with at least three plain sides and journaled in said frame, so as to form at least one part of the bottom of a container between the said side walls, said rollers being placed at such a distance from one another that the logs placed parallelly with the rollers cannot fall through the interstices between them, but only partially enter into said interstices, means for imparting rotary motion to said rollers during the work of the apparatus, so that the bundle of logs is given a circular rotary motion and the logs in the interstices between the rollers are given an individual rotary motion and a jumping motion, means for feeding logs into the container and means for ejecting barked logs from the same.

2. Apparatus for barking a bundle of logs, comprising in combination a frame, side-walls on said frame, a number of parallel prismatic rollers with at least three sides and journaled in said frame, so as to form at least one part of the bottom of a container between said side-walls, said rollers being placed at such a distance from one another that the logs cannot fall through the interstices between them, but only partially enter into said interstices, at least one pair of adjacent prismatic rollers being rotated synchronously and so adjusted that each one of the sides of one roller is during the rotation parallel to the corresponding side of the adjacent roller, and means for imparting rotary motion to said rollers during the operation of the apparatus, so that the bundle of logs is given a circular rotary motion and the logs in the interstices between the rollers are given an individual rotary motion and at the same time a jumping motion.

3. Apparatus for barking a bundle of logs, comprising in combination a frame, side-walls on the said frame, a number of parallel prismatic rollers with at least three sides and journaled in said frame so as to form at least one part of the bottom of a container between said side-walls, two adjacent rollers being located at a larger distance from one another, cross-rollers located in the space between said adjacent rollers in such way that their axles form right angles to the axles of the prismatic rollers, said cross-rollers being adapted to rotate in pairs in opposite directions, and means for imparting rotary motion to said rollers and said cross rollers during the work of the apparatus.

4. Apparatus for barking a bundle of logs, comprising in combination a frame, a number of parallel prismatic rollers with at least three sides and journaled in the said frame, so as to form one part of the bottom of a container between the said side-walls, the other part of said bottom being formed by chain conveyers, the logs being placed parallelly with the rollers and the rollers being placed at such a distance from one another that the logs cannot fall through the



interstices between them, but only partially enter into said interstices, means for imparting rotary motion to said prismatic rollers and chain conveyers during the work of the apparatus, thereby  
5 imparting a circular rotary motion to the bundle of logs and an individual rotary and jumping mo-

tion to the logs in the interstices between the rollers, means for supplying logs to the working chamber of the apparatus and means for rejecting barked logs from the same.

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