A foldable lock gate for the removal end of a barking drum wherein two gate segments are mounted on a frame structure to be slidable relative to each other. The movement is effected by cylinder piston devices attached to each gate segment and to the frame structure.

8 Claims, 2 Drawing Figures
LOCK GATE OF THE REMOVAL END OF A BARKING DRUM

This invention relates to a lock gate for the removal end of a barking drum the lock gate is in side direction in horizontal fences of a scaffold placed in front of the removal end of the drum by a cylinder-piston device connected to the scaffold and to the lock gate, in order to regulate the size of the removal opening of the drum and in this way the amount of barked trees coming from it.

Such lock gates of above described quality are known when made in one piece. A disadvantage of this kind of a lock gate is, however, that it takes, in its extreme open position, a remarkable space on the side of the barking drum so that this extreme position dictates the smallest distance between parallel barking drums.

The object of this invention is to eliminate the disadvantage mentioned above and is accomplished by a lock gate according to the invention, which is mainly characterized in that the lock gate is formed by two or more vertical gate segments, smaller than the diameter of the removal opening of the drum in their breadth, the gate segments are movable by one or more cylinder-piston devices in order to regulate the size of the removal opening and to transfer them horizontally to the extreme open position in vertical disposition opposite to each other to one side of the removal opening.

The advantage of the lock gate of a foldable type according to the invention is, above all that being open, it takes noticeably less space on the side of the barking drum than with the gate being made in one piece. Due to this, parallel barking drums can be adapted or placed nearer to each other than before. Because of this building space of the barking works, and thus expenses, will be saved.

The invention will be more apparent from the following explanation and from the accompanying schematic drawing, where;

FIG. 1 shows a lock gate according to the invention seen from the removal end of the barking drum and,

FIG. 2 is a top view of the same than in FIG. 1.

According to the drawing at the removal end of the cylindrical drum 1 of the barking drum, a small distance therefrom, is placed a transverse scaffold. The scaffold comprises a pair of vertical braces 2 located generally at the sides of the drum, adjoining fences or arms 3, 4 fastened perpendicularly to them and a vertical support 5 at a distance from the side of the drum 1. To the arms 3, 4 is slidingly adapted or mounted the lock gate according to the invention. This lock gate is formed by an inner (i.e., located nearer the removal opening) vertical hollow gate segment 6 and a similar outer gate segment 7 in the case shown in the drawing. To move the gate segments 6 and 7 in horizontal direction are arranged two cylinder-piston devices 8 and 9 that are located in a horizontal position mainly in the middle of the removal opening 10 of the drum 1. The cylinder 11 of the other cylinder-piston device 8 going through the side face of the gate segment is jointed connected to the vertical support 5 at the point 12 through the side face of the gate segment. The piston rod 13 is jointed connected to the inner surface of the opposite side of the gate segment 6 in the point 14. The cylinder 15 of the other cylinder-piston device 9 is jointed connected in the point 16 to lobes 17 that are attached to the outer side edge of the inner gate segment 6 and the piston rod 18 that goes through the outer side of the gate segment is jointedly connected to the inner face of the opposite side in the point 19.

According to the drawing gate segments 6, 7 are transferred to the closed extreme position by cylinder-piston devices 8, 9, where piston rods 13, 18 are outermost, in other words to position, where the removal opening 10 of the drum 1 and thus the amount of barked trees departing from the drum is in its smallest.

The removal opening 10 can be enlarged by pulling one or both piston rods into their cylinders, in which case the other or both gate segments move to the left as shown in the drawing. In this way by transferring gate segments 6, 7 the removal end of the drum and the amount of outcoming barked trees can be regulated at a desired extent. To bring the removal opening 10 to its greatest, in other words to move gate segments 6, 7 to their open extreme position, the piston rod 13 of the cylinder-piston device 8 of the gate segment 6 is first pulled in so that the gate segment 6 transfers to its open extreme position and the gate segment 7 also to the left the same distance than the gate segment 6, after which the piston rod 18 is pulled in so that the outer gate segment 7 also moves to its open extreme position. Then the gate segments 6, 7 are situated side by side or with edges overlapping in side direction mainly face to face with each other on the side of the removal opening 10 of the drum 1. However, the outer gate segment 7 can be transferred first in the place of the inner one and then both together to their open extreme positions or both gate segments can be transferred simultaneously.

Of course the invention is not restricted to the application example described above, but may vary even significantly in its details in the limits of claims, so for example gate segments that can be more than two may also be transferred by a telescope cylinder, by steering the extreme or the last gate segment that in its transition takes with the preceding gate segment or segments. According to the invention it is also possible to make and adapt gate segments so that they can be transferred telescopewise one inside the other. Further on the cylinder-piston device and/or the telescope cylinder can be adapted to operate hydraulically or pneumatically.

I claim:

1. A gate in combination with a barking drum having a discharge opening at one end thereof, said gate comprising:

- a plurality of gate segments disposed adjacent said discharge opening;

- support means slidable supporting said gate segments for horizontal transverse movement toward said discharge opening to an extended posture tendency to close said discharge opening, and

- from said discharge opening to a retracted posture tendency to expose said discharge opening; and

- means for sliding said gate segments with respect to each other to maintain said gate segments overlapped in the direction of movement when in a retracted posture.

2. A gate according to claim 1 wherein: said means for sliding comprises cylinder means.

3. A gate according to claim 1 wherein:

- said means for sliding comprises a pair of power actuating means,
one of said power actuating means being operatively connected between said supporting means and one of said gate segments; and the other of said power actuating means being operatively connected between said one gate segment and another gate segment.

4. A gate according to claim 3 wherein:

Each of said power actuating means comprises a piston-cylinder device.

5. A gate according to claim 3 wherein:

Said plurality of gate segments comprises a pair of gate segments;

Said gate segments being arranged in side-by-side relation on said supporting means.

6. A gate according to claim 4 wherein:

Said plurality of gate segments comprises a pair of gate segments;

Said gate segments being arranged in side-by-side relationship on said supporting means; and said means for sliding said gate segments comprising a pair of piston-cylinder devices;

One of said devices being operatively connected between said supporting means and one of said gate segments; and the other of said devices being operatively connected between said one gate segment and the other gate segment.

7. A gate according to claim 6 wherein:

The horizontal extended position is less than the horizontal extent of said discharge opening.

8. A gate according to claim 7 wherein:

Said supporting means includes a pair of horizontal arms slidably supporting said gate segments.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,716,087 Dated February 13, 1973

Inventor(s) ROLF ERIK TUUHA

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

After [21] Appln. No. 87,372, insert:

--Claims Priority of Foreign Application
November 26, 1969 Finland 3438/69--

Signed and sealed this 3rd day of July 1973.

(SEAL)
Attest:

EDWARD M. FLETCHER, JR.
Attesting Officer

Rene Tegtmeyer
Acting Commissioner of Patents