

Dec. 21, 1943.

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2,337,404

DEVICE FOR TIGHTENING WOOD BARKING DRUMS

Filed Nov. 12, 1940

2 Sheets-Sheet 1

Fig. 1.

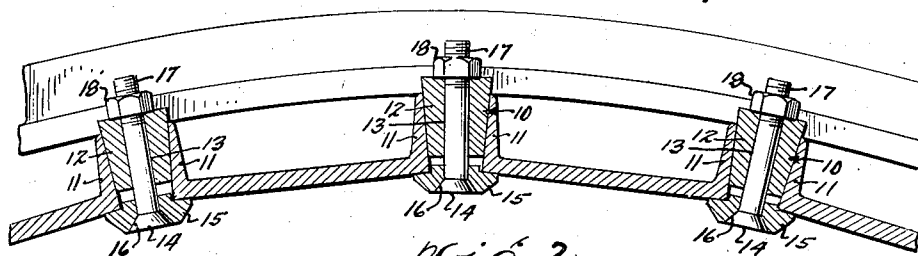
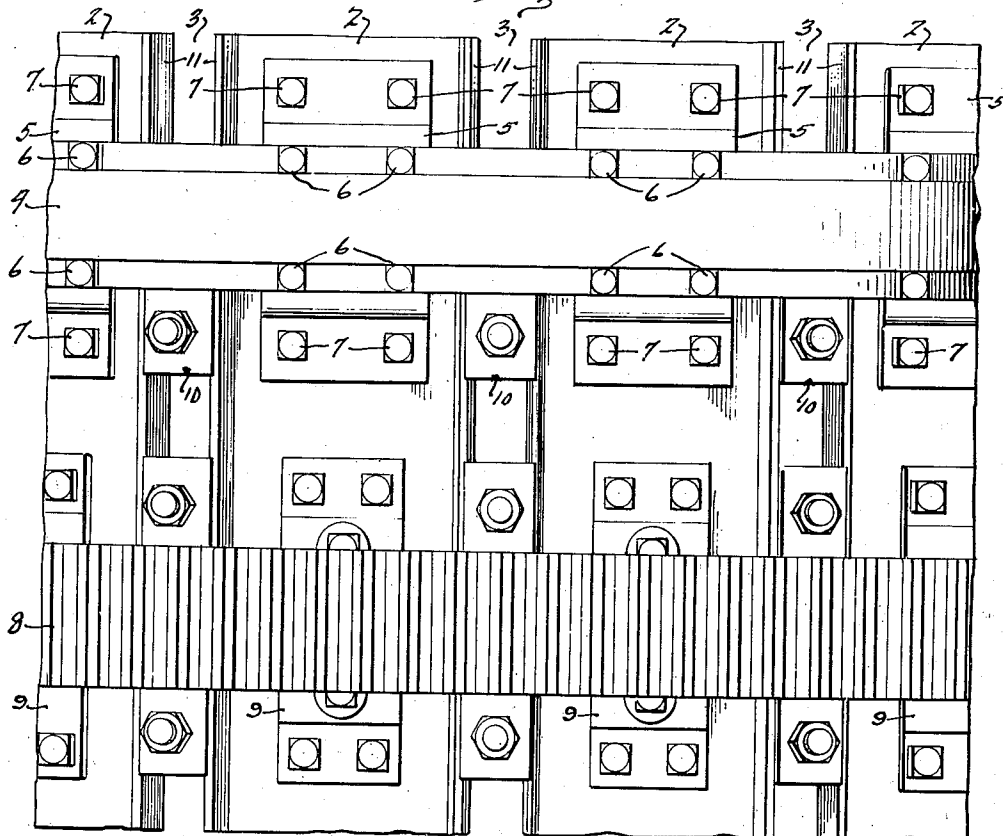


Fig. 2.



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Fig. 3

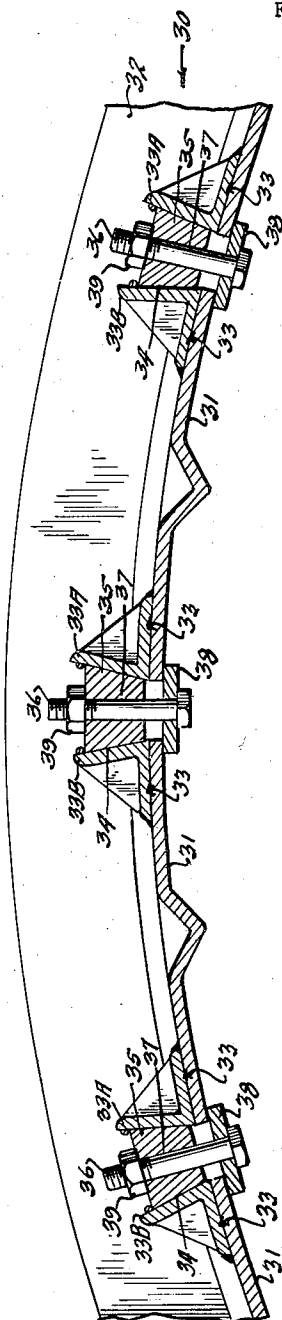
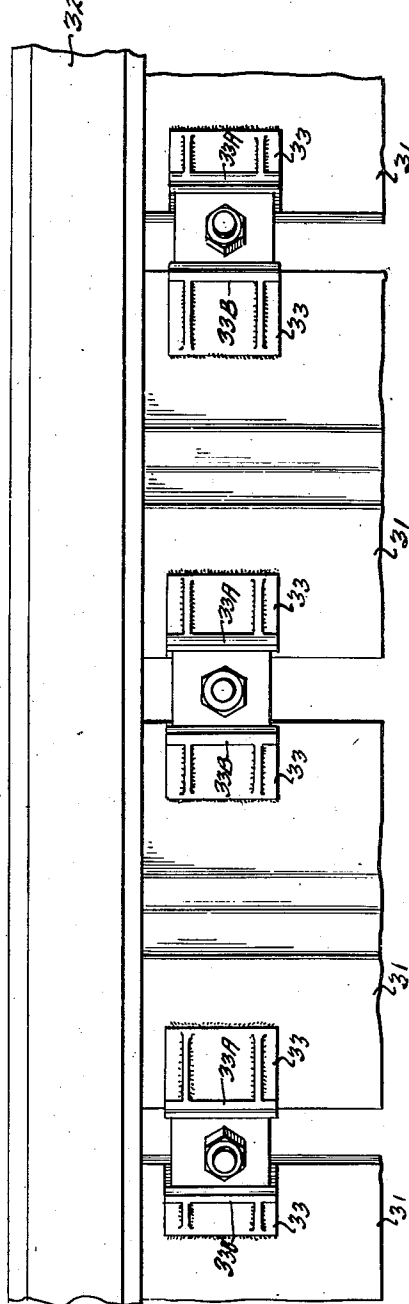


Fig. 4



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UNITED STATES PATENT OFFICE

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DEVICE FOR TIGHTENING WOOD BARKING DRUMS

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2 Claims. (Cl. 144-208)

The present invention relates to apparatus that is adapted to remove the bark from logs, and more particularly has reference to a wood barking drum that is provided with means whereby the drum can be tightened. While my inventive concept finds particular application in connection with wood barking drums, I wish it to be understood, however, that it can be employed to tighten other types of apparatus in which the longitudinal channel bars forming the circumference of the apparatus may be tightened.

At the present time wood barking drums comprise channel bars or V irons that form the circumference of the drum, and these irons are secured to a plurality of rings by means of bolts or rivets, etc. The initial cost of a wood barking drum is very high and, in addition, the cost of the upkeep of these drums is a very material item. In operation, due to the rough usage to which the drums are put, a tremendous strain is imposed on the rivet or bolt heads, and the vibration of the channel bars has caused loosening or breakage of the rivets or bolts with the attendant disadvantages. Of course, many attempts have been heretofore made to provide same means whereby rivet and bolt breakage could be obviated, but to the best of my knowledge no feasible practice has been proposed.

One object of this invention is to overcome the defects now in the art.

Another object of this invention is to provide a tightening device for wood barking drums of either the channel or V iron type that is simple in construction and operation, and that can easily be repaired or replaced.

Yet another object of this invention is to provide a tightening device that will cause the channel or V irons to be brought into close contact with the supporting rings, thus holding the channel or V irons rigidly in the proper position.

Yet a further object of this invention is to provide a tightening device for wood barking drums of the type herein described that will eliminate the vibration of the channel or V irons, thereby preventing loosening or breakage of the rivets or bolts securing the irons to their supporting rings.

To accomplish the above and other advantageous objects, my invention comprises providing a wood barking drum with an adjustable tightening device for the channel or V irons that can be easily actuated by the operators of the drum. More specifically, I employ a wedge member that is positioned between the flanges of the adjoining irons that is provided with means whereby the wedges can be moved to force the irons out against the supporting rings, thus tightening the channels and eliminating the strain

normally imposed upon the channel securing members.

In the drawings, in which like numerals designate the same or similar parts:

5 Figure 1 is a transverse sectional view of a portion of a wood barking drum of the channel iron type showing my novel tightening unit in position.

10 Figure 2 is a fragmental top plan view illustrating the construction shown in Figure 1.

Figure 3 is a transverse sectional view of a portion of a wood barking drum of the V iron type showing my novel tightening unit.

15 Figure 4 is a fragmental top plan view of the unit illustrated in Figure 3.

Referring to the drawings, and more particularly to Figures 1 and 2, I have shown a wood barking drum 1, the outer circumference of which comprises a plurality of longitudinal channel irons 2, each of which is spaced longitudinally from the other to define a longitudinal space or slot 3 through which the pieces of bark removed from the logs may be discharged. Each channel iron is adapted to be secured to iron rings 4 spaced at proper distances along the length of the drum, one of which is illustrated in the drawings. As best shown in Figure 2, each channel 2 is secured to the ring 4 by means of a saddle 5. The saddle 5 is bolted to the flange of the ring 4, as indicated at 6, and to the channel 2, as shown at 7. Obviously other modes of attachment for affixing the channels to the rings can be employed in lieu of that herein described.

To impart rotary movement to the drum, a ring gear 8 is provided and the channels can also be secured to this gear by means of a saddle such as shown at 9. The ring gear meshes with a pinion (not shown) which is driven by a suitable prime mover (not shown).

40 As previously pointed out, a great strain is imposed upon the securing means 5 during the operation of the drum 1 with the result that the securing means, due to the vibration of the channels 2, becomes loosened or broken. This loosening or breaking of the securing devices often results in the impairment of the channels 2, and it has been a real problem in the art to try and offset this objectionable feature of apparatus of this type.

After considerable work in the field, I discovered that the channel irons could be maintained in a rigid position and not become loosened by disposing a wedge member 10 in the slot 3 between the flanges 11 of adjoining channels adjacent to the ring 4. The wedge 10 comprises a body portion 12 which tapers from top to bottom and which is formed with a bore 13. I prefer that the body portion 12 be of steel although other materials, such as cast iron or

the like, may be used. A bolt 14 extends through the bore 13 and a washer 15 is disposed between adjoining channel irons 2 and the bolt head. The washer has a countersunk portion 16 into the bolt head seats providing a flush outer surface. The upper or free end of the bolt 14 is threaded, as at 17, and a nut 18 is positioned thereon. As clearly shown in Figure 1, the upper end of the bolt and the nut projects a short distance above the upper ends of the flanges 11 of the channel irons, which will, of course, permit the easy manipulation of the wedges 10 by the operators of the drum.

The wedges 10 are located at the positions which are subjected to the most strain and, as mentioned, they are located adjacent the supporting rings 4, since it has been found that considerable strain and stress is placed at these positions.

In practice the wedges are positioned around the entire circumference of the drum before the bolts 14 are tightened. Obviously when the bolts are tightened, the tendency is to spread the space 3 between adjoining channels 2, but the wedges beside the adjoining channels will prevent this and force the channels to move outward against the saddle 5. If the wedges were not installed in each space around the circumference of the drum 1, this spreading action would occur and the desired results would not be achieved. After each wedge is in position, the nut 18 is tightened, thus forcing the channels 2 outwardly against the rings 4 by expanding the circumference of the circle of the channels 2. I have also found it most advantageous to tighten the bolts 14 gradually, as this will prevent distortion of the drum.

By expanding the circumference of the circle of the channels 2, I have been able to relieve the strain on the securing devices, and consequently it has been possible to eliminate in a large degree the vibration of the channels 2 which has heretofore caused the loosening or breaking of rivets or bolts.

In Figures 3 and 4, I have shown my invention used in connection with a barking drum 30, the outer circumference of which is formed of longitudinally V bars 31. While the drawings do not illustrate specifically the manner in which the V bars are fixed to supporting rings 32, these bars can be attached in any desirable manner such as, for example, by rivets, bolts or the like.

In Figure 4 it will be noted that a bracket 33 is welded to the upper face of the V bar 31 at a point adjacent to the supporting ring 32. In other words, the brackets 31 are disposed at the positions where the bars are subjected to the greatest strain. The bracket 33 comprises complementary angle irons 33A and 33B, each one of which is secured along the free longitudinal edge of adjacent V bars.

The flange portion of members 33A and 33B tapers slightly from top to bottom which forms, in effect, a tapered slot 34.

A tapered wedge 35 similar in construction to the wedge 10 shown in Figure 1 is disposed in the slot 34. A bolt 36 is positioned in a bore 37 formed in the wedge and a washer 38 is disposed between the bolt head and the lower wall of the adjoining V bars. A nut 39 is threaded on to the upper free end of the bolt.

The operation of this particular embodiment is thought readily apparent, and by tightening

the bolt 36 of each wedge member the V bars 31 effect the expansion of the circumference of the circle of the V bars, thus causing the V bars to be moved tightly against the supporting rings 32.

In the event the wedges 10 and 35 are moved down to the position where they contact the washers 15 or 38, respectively, they may be removed and a thin metal shim can be placed alongside the channel or V iron to compensate for the wear. I might mention, however, that this condition should not occur except in cases of breakage or neglect as the channel and V irons and the wedges form a solid adjustable circle of metal.

It is believed readily apparent from the above description that I have provided a very effective means for maintaining the longitudinal channel or V bars forming the outer circumference of a wood barking drum in a rigid position against the supporting rings. By the use of my novel wedge construction it is possible to prevent the bolts or rivets from becoming loosened or broken during operating conditions with the attendant saving in the upkeep of the drum. The device is very simple in construction and can be used in connection with all channel or V iron type drums and can be installed with relative ease. The device is positive in action and can be replaced or repaired in a minimum of time.

While I have shown and described the preferred embodiment of my invention, I wish it to be understood that I do not confine myself to the precise details of construction herein set forth by way of illustration, as it is apparent that many changes and variations may be made therein, by those skilled in the art, provided they do not depart from the scope of the appended claims.

I claim:

1. A wood barking drum comprising a plurality of spaced axially aligned rings, a plurality of circumferentially spaced bars extending longitudinally of the drum within the rings, means connecting the bars to the rings, a plurality of wedges interposed between adjacent bars, a bolt extending through each wedge substantially radially of the drum, a washer on said bolt and engaging the inner surface of said bars, said wedges and associated bolts and washers being spaced apart axially of the drum to maintain open the spaces between the bars and a nut on each bolt for drawing the wedges toward the washers to force said wedges between said bars to spread the bars circumferentially and force them radially outwardly into engagement with the rings.

2. A wood barking drum comprising a plurality of spaced axially aligned rings, a plurality of circumferentially spaced bars extending longitudinally of the drum within the rings, means connecting the bars to the rings, a plurality of wedges interposed between adjacent bars, anchors bridging the spaces between adjacent bars and lying in contact with one face of the bars, said wedges and associated anchors being spaced apart axially of the drum to maintain the spaces open between the bars and ad, istable means cooperating with the anchors and wedges for forcing the wedges between the adjacent bars toward the anchors tending to spread the bars apart and forcing them radially outwardly into tight engagement with the rings.

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