Dec. 12, 1950 E. H. BROOKS, SR 2,533,218

FEED BOX FOR FIBER SCOURING MACHINES

Filed July 12, 1946 2 Sheets-Sheet 1

Fig. 1.

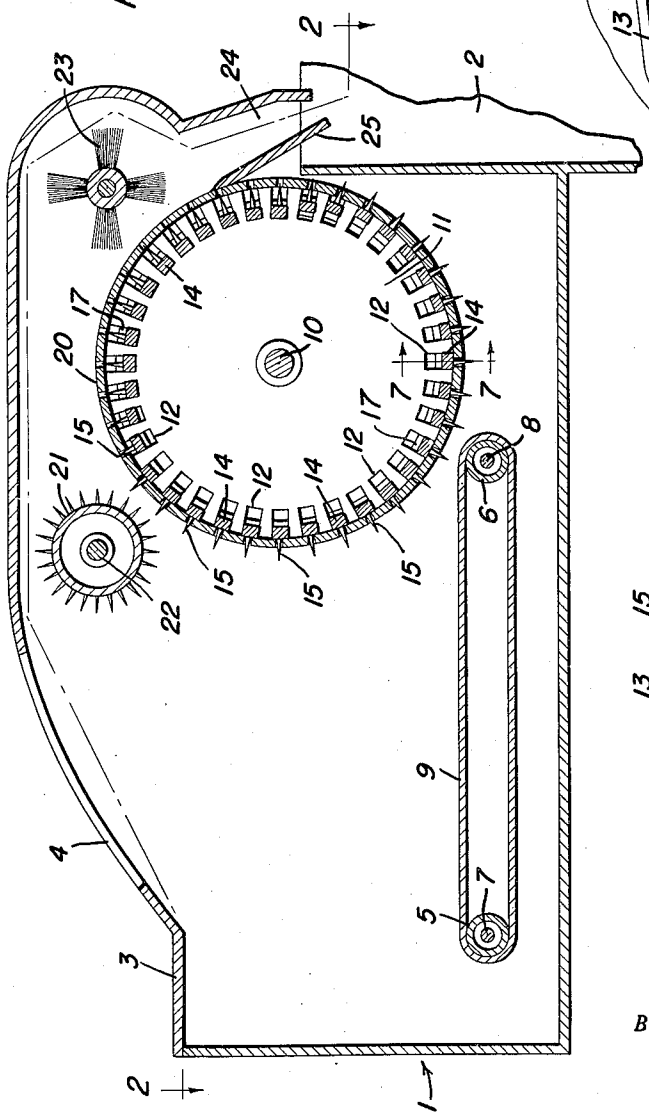


Fig. 8.

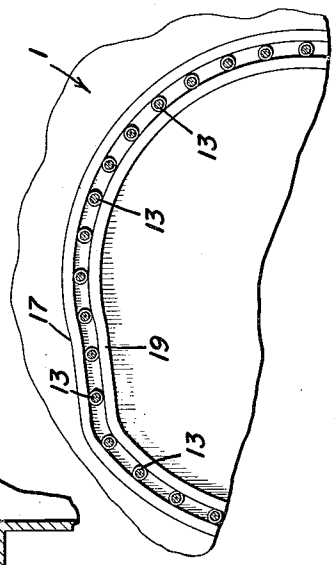
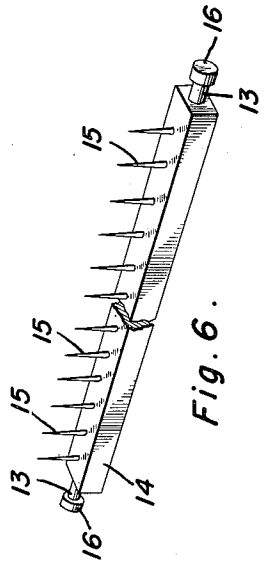


Fig. 6.



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FEED BOX FOR FIBER SCOURING MACHINES

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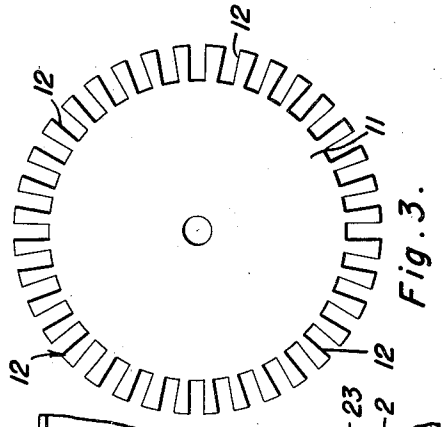


Fig. 3.

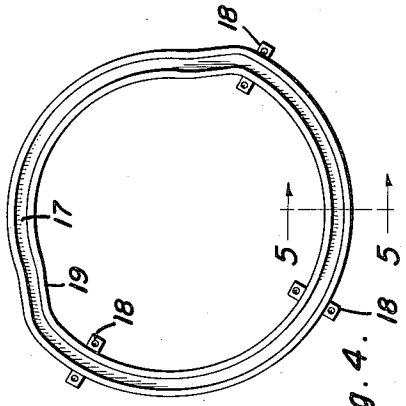


Fig. 4.

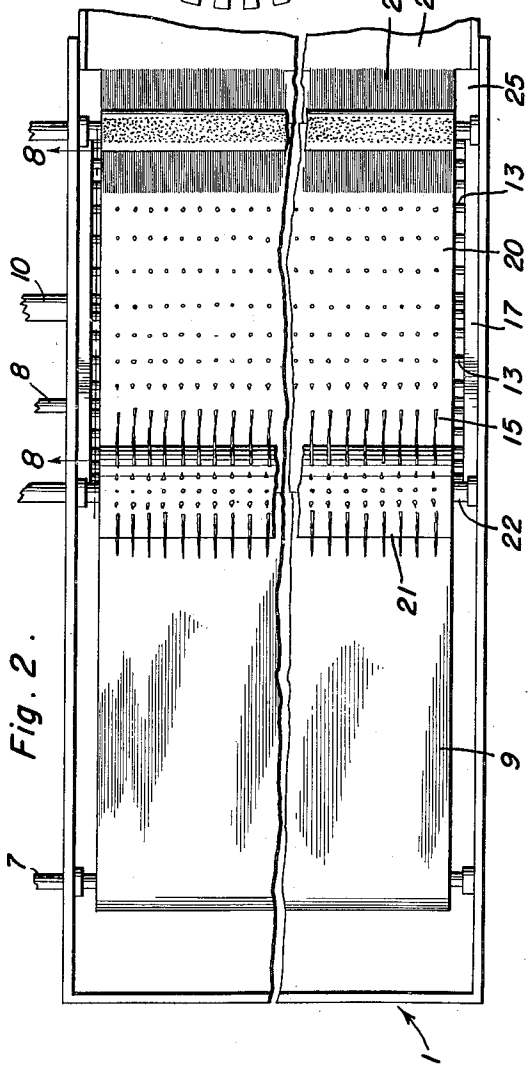


Fig. 2.

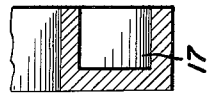


Fig. 5.

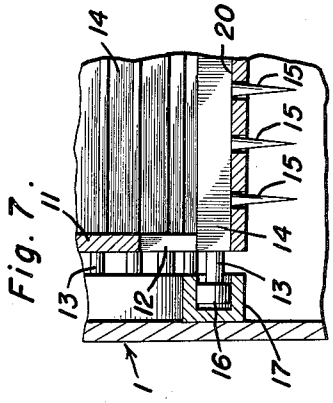


Fig. 7.

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2,533,218

FEED BOX FOR FIBER SCOURING MACHINES

Edward H. Brooks, Sr., Portland, Maine, assignor of one-half to Edward H. Brooks, Jr., Portland, Maine, and one-half to Elton H. Thompson, Cape Elizabeth, Maine

Application July 12, 1946, Serial No. 683,203

4 Claims. (Cl. 19—67)

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This invention relates to improvements in feed boxes for fibre scouring machines and relates to subject matter similar in nature to that disclosed in pending applications Serial No. 694,991 and Serial No. 696,294, now Patent No. 2,498,646, issued Feb. 28, 1950.

An object of the invention is to provide an improved feed box construction for fibre scouring machines in which fibre stock may be deposited and carried by means of an endless conveyor to a rotating pickup or feed roll which will convey the fibre stock upwardly to be stripped by a rotary toothed roll and then brushed from said feed roll by a rotary ejector or doffer roll into a chute which will dump the fibre stock into a tank where it will be thoroughly washed and scoured.

Another object of the invention is to provide an improved feed box construction for fibre scouring machines which will be formed with a power driven rotary pickup or feed roll comprising a perforated cylinder and a pair of spaced circular U-shaped fixed guide channels in which pin supporting bars or rods will be transversely mounted with the pins adapted to extend through the perforations in said cylinder to pick up the fibre stock, said channels having portions inset from a perfect circle to automatically retract the bars and pins as they reach the upper portion of the guide channels to free the fibre stock at a point where a doffer or ejector roll will brush it from the pick-up roll and through a chute into a washing bowl.

Another object of the invention is to provide an improved box for fibre scouring machines which will be highly efficient in operation, and relatively inexpensive to manufacture and produce.

Other objects will appear as the description proceeds.

In the accompanying drawings which form a part of this application,

Figure 1 is a longitudinal sectional view taken through the improved feed box showing the relative positioning of the endless conveyor, the feed roll, the stripping roll and the doffer roll;

Figure 2 is a plan view of the improved feed box with the cover removed showing the feed mechanism positioned therein;

Figure 3 is an end view of the feed roll end plate;

the guide channels;

shaped guide channel members;

Figure 5 is a detail sectional view taken on the line 5—5 of Figure 4;

Figure 6 is a perspective view of one of the bars

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with pickup pins attached and formed with the oppositely disposed guiding heads which ride in the guide channels,

Figure 7 is a detail sectional view taken on the line 7—7 of Figure 1, and

Figure 8 is an enlarged fragmentary sectional view showing the guide channel cam track and members disposed therein taken substantially on the line 8—8 of Figure 2 and in the direction of the arrows.

Like characters of reference are used throughout the following specification and the accompanying drawings to designate corresponding parts.

In carrying out the invention, there is provided an improved feed box construction for fibre scouring machines including a box or housing 1 which will be secured to one end of a washing tank 2, clearly illustrated in Figure 1 of the drawings.

The housing 1 is provided with a removable cover 3 which is open at its forward end to provide the inlet opening 4 through which the fibre stock may be dumped into the said feed box or housing 1.

An endless conveyor is mounted longitudinally of the feed box 1 in spaced relation with the bottom of said feed box, and comprises the spaced rollers 5 and 6 which are mounted upon the shafts 7 and 8 respectively, and support the endless conveyor belt 9 which extends approximately the full width of said feed box housing 1.

Disposed transversely of the housing 1 adjacent the forward end of said endless conveyor and slightly above the same, is a shaft 10 which is suitably mounted between the opposite sides of the feed box housing 1, and supports the oppositely disposed end plates or members 11 which are affixed thereto. A plurality of rectangular shaped bearing notches 12 are formed about the periphery of each of said end plates or members 11, and are adapted to receive the ends of the sticks or bars 14 in which a row of upwardly extending pins 15 are supported. The bearing heads or rollers 16 are mounted upon the outer ends of the bearing ends 13 of the bars 14, and are adapted to be received within the oppositely disposed U-shaped guide channels 17 secured by means of the oppositely extending attaching tabs 18 to the inner faces or surfaces of the side of said feed box housing 1, screws or other suitable fastening means (not shown) being inserted through suitable apertures formed through said tabs.

The U-shaped guide channels 17 are circular in form, but have portions of each channel inset,

as clearly illustrated in Figure 4 of the drawings, to form the cam portions 19 of said guide channels so that as the shaft 10 is rotated in a clockwise direction to rotate the end plates or members attached thereto, the plurality of sticks or bars supported in the sockets in said end plates or members and having bearing engagement in the guide channels, will transmit motion and pick up the cylindrical perforated roll 20, due to the pins 15 on the sticks or bars 14 extending upwardly through the perforations in said roll.

A toothed roll 21 will be fixed to the shaft 22 mounted transversely between the opposite sides of the feed box or housing 1, and will be positioned adjacent the pick up or feed roll 20 so that as the fibre stock is fed to the pick up roll by means of the endless conveyor, and picked up by the protruding pins on the sticks or bars 14 and carried upwardly, some of said fibre stock will be removed from the roll 20. Immediately thereafter the cam portions of the U-shaped guide channel will cause the sticks or bars to ride inwardly to retract the pins 15 to a position even with or immediately below the outer surface of the cylindrical perforated roll 20, thereby leaving a matted covering of the fibre stock clinging to the surface of said roll, and as the roll advances in a clockwise direction, the doffer or ejector roll 23 will brush the fibre stock from the pick up roll and into the chute 24 formed as a continuation of the cover 3, directly into the adjacent end of the washing tank 2. A doctor blade 25 will engage the surface of the cylindrical perforated roll 20 to scrape any remaining fibre therefrom.

It will be understood that the several shafts for the endless conveyor, the toothed roll, the doffer or ejector roll and the pick up or feed roll will be extended through one side of the feed box housing 1 to be suitably connected by any desired means to a suitable driving motor (not shown).

From the foregoing description, it will be seen that there has been provided a highly efficient form of feed box mechanism for fibre scouring machines which will pick up the fibre stock as it is deposited within the box and transport the same past a rotary toothed roll to remove some of the stock, after which the remainder of the stock in matted form will be removed from the feed roll by means of the rotary doffer wheel and deposited through the feed chute into the adjacent washing tank.

While the preferred embodiment of the instant invention has been illustrated and described, it will be understood that it is not intended to limit the scope of the invention thereto, as many minor changes in detail of construction may be resorted to without departure from the spirit of the invention.

Having thus described my invention what I claim as new and desire to secure by Letters Patent of the United States is:

1. A feed box for fibre scouring machines, said feed box including a housing having a cover formed with a fibre stock inlet opening, an endless conveyor to convey fibre stock and disposed in said housing below said inlet opening, a perforated feed roll rotatably mounted in said housing adjacent the discharge end of said conveyor to receive conveyed stock, peripherally notched end members forming a part of said feed roll, oppositely disposed guide channe's of U-shape in cross section having camming peripheral sections secured to the inner opposite walls of said housing, a plurality of sticks mounted between said guide channels and disposed in the peripheral notches in said end members, means secured to the ends of said sticks and disposed in said channels and engaging said camming sections when said feed roll is rotated to laterally displace said sticks, radially extending pins on said sticks disposed in the perforations in said feed roll for automatic projection and retraction as said sticks displacing means passes over said camming sections to pick up the stock from the discharge end of said conveyor and to release the stock during rotation of said feed roll, and means forming an outlet in said housing adjacent said feed roll for passage of the stock from the feed roll to the exterior of said housing.

2. A feed box for fibre scouring machines, said feed box including a housing having a cover formed with a fibre stock inlet opening, an endless conveyor to convey fibre stock and disposed in said housing below said inlet opening, a perforated feed roll rotatably mounted in said housing adjacent the discharge end of said conveyor to receive conveyed stock, peripherally notched end members forming a part of said feed roll, oppositely disposed guide channels of U-shape in cross section having camming peripheral sections secured to the inner opposite walls of said housing, a plurality of sticks mounted between said guide channels and disposed in the peripheral notches in said end members, means secured to the ends of said sticks and disposed in said channels and engaging said camming sections when said feed roll is rotated to laterally displace said sticks, radially extending pins on said sticks disposed in the perforations in said feed roll for automatic projection and retraction as said sticks displacing means passes over said camming sections to pick up the stock from the discharge end of said conveyor and to release the stock during rotation of said feed roll, means forming an outlet in said housing adjacent said feed roll for passage of the stock from the feed roll to the exterior of said housing, a doctor blade engageable with the outer surface of said feed roll to strip fibre from said feed roll, and said doctor blade being disposed in said means forming an outlet in said housing.

3. A feed box for fibre scouring machines, said feed box including a housing having a cover formed with a fibre stock inlet opening, an endless conveyor to convey fibre stock and disposed in said housing below said inlet opening, a perforated feed roll rotatably mounted in said housing adjacent the discharge end of said conveyor to receive conveyed stock, peripherally notched end members forming a part of said feed roll, oppositely disposed guide channels of U-shape in cross section having camming peripheral sections secured to the inner opposite walls of said housing, a plurality of sticks mounted between said guide channels and disposed in the peripheral notches in said end members, means secured to the ends of said sticks and disposed in said channels and engaging said camming sections when said feed roll is rotated to laterally displace said sticks, radially extending pins on said sticks disposed in the perforations in said feed roll for automatic projection and retraction as said sticks displacing means passes over said camming sections to pick up the stock from the discharge end of said conveyor and to release the stock during rotation of said feed roll, means forming an outlet in said housing adjacent said feed roll for passage of the stock from the feed roll to the exterior of said housing, a doctor blade disposed in the fibre out-

let and engaging the outer surface of said feed roll to strip said feed roll of fibre, and a fibre doffer roll mounted for rotation in said housing adjacent said feed roll to assist in removing the stock from said feed roll.

4. A feed box for fibre scouring machines, said feed box including a housing having a cover formed with a fibre stock inlet opening, an endless conveyor to convey fibre stock and disposed in said housing below said inlet opening, a perforated feed roll rotatably mounted in said housing adjacent the discharge end of said conveyor to receive conveyed stock, peripherally notched end members forming a part of said feed roll, oppositely disposed guide channels of U-shape in cross section having camming peripheral sections secured to the inner opposite walls of said housing, a plurality of sticks mounted between said guide channels and disposed in the peripheral notches in said end members, means secured to the ends of said sticks and disposed in said channels and engaging said camming sections when said feed roll is rotated to laterally displace said sticks, radially extending pins on said sticks disposed in the perforations in said feed roll for automatic projection and retraction as said sticks displacing means passes over said camming sections to pick up the stock from

the discharge end of said conveyor and to release the stock during rotation of said feed roll, means forming an outlet in said housing adjacent said feed roll for passage of the stock from the feed roll to the exterior of said housing, a doctor blade disposed in the fibre outlet and engaging the outer surface of said feed roll to strip said feed roll of fibre, a fibre doffer roll mounted for rotation in said housing adjacent said feed roll to assist in removing the stock from said feed roll, a stripping roll mounted in said housing adjacent said feed roll to remove stock from said feed roll as said feed roll is rotating, and a discharge chute connected with said housing and connected in communication with said means forming an outlet for said housing.

EDWARD H. BROOKS, SR.

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The following references are of record in the file of this patent:

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