Nov. 4, 1930. B. BUEHLER 1,780,863

JORDAN PLUG

Filed Aug. 28, 1929

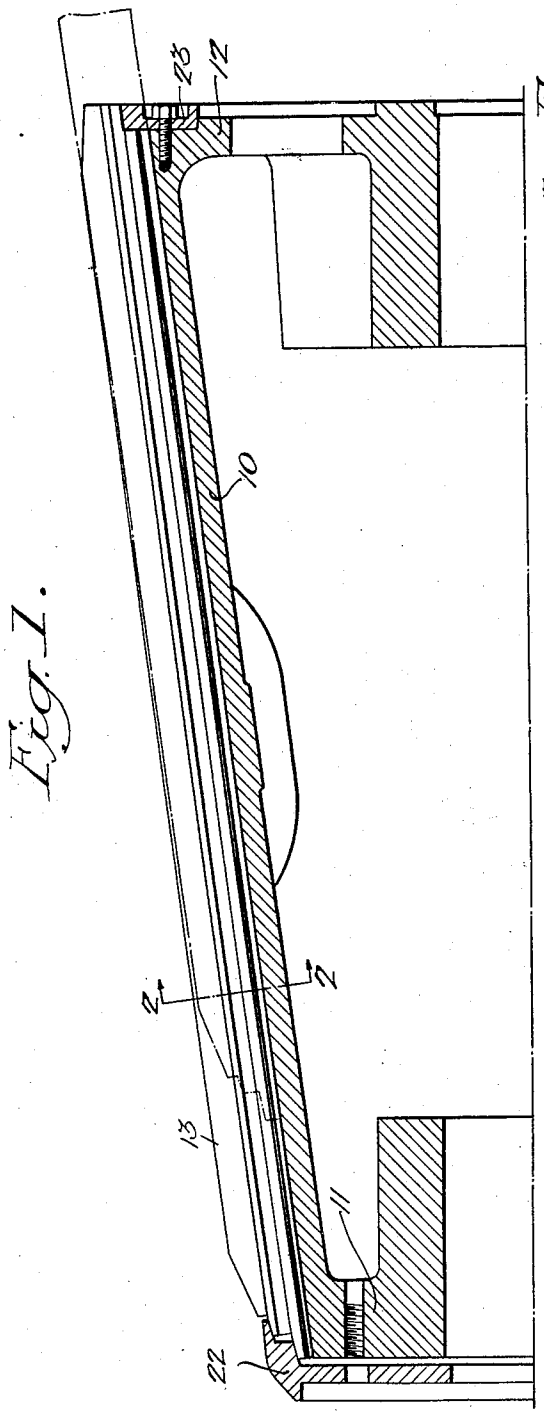


Fig. 1.

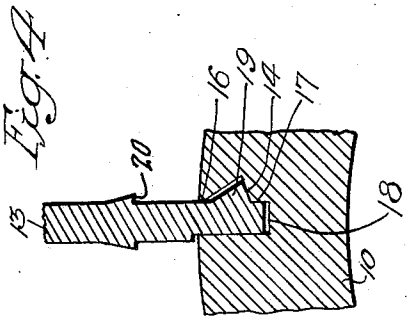


Fig. 4.

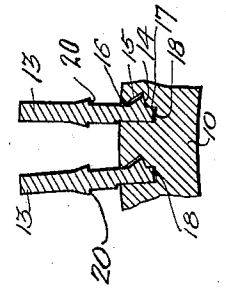


Fig. 3.

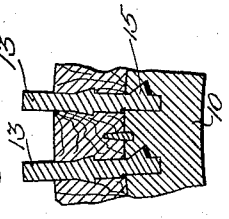


Fig. 2.

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UNITED STATES PATENT OFFICE

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JORDAN PLUG

Application filed August 28, 1929. Serial No. 389,002.

This invention relates to Jordan plugs, beater rolls or the like and more particularly to the method of mounting the bars in such devices.

An important object of the invention is to provide a bar mounting of such character that the bar will be very firmly held in its seated position and at the same time may be very readily installed or removed.

In the ordinary Jordan roll construction the bars are forced into slots which may or may not have an undercut shoulder for the reception of a rib formed upon the slot-engaging portion of the bar.

It is necessary that the bar fit very closely in the slot, and that it be rigidly held when it is in seated position. Since the bars are of considerable length, installation thereof is a difficult matter and after a period of use the removal is even more difficult, the bar tending to rust and otherwise impact in its groove. Accordingly, an important object of the present invention is the provision of a construction of this character wherein insertion of the bar is facilitated by so constructing the same that the bar is loose fitting in its groove until it is practically seated and thereafter has engagement with the walls of the groove very firmly seating it so that there is no danger of its loosening in use.

A further and more specific object of the invention is to provide in a structure of this character a wedging action between the walls of the groove and the groove-engaging portions of the bar which is not effective until the bar is substantially seated.

These and other objects I attain by the construction shown in the accompanying drawings wherein, for the purpose of illustration, I have shown a preferred embodiment of my invention and wherein:

Fig. 1 is a longitudinal sectional view through a Jordan roll constructed in accordance with my invention;

Fig. 2 is a section on line 2—2 of Fig. 1 when the bar is fully seated as shown on the solid lines of Fig. 1;

Fig. 3 is a similar section when the bar is partially seated as indicated by the dotted lines of Fig. 1; and

Fig. 4 is an enlarged sectional view through one of the blades when seated in its groove.

Referring now more particularly to the drawings, the numeral 10 generally designates the roll body having the usual front and rear heads 11 and 12. The body is longitudinally grooved for the reception of bars 13 which, as it is well known to those familiar with the art, include long and short bars of which the former is herein illustrated. In accordance with my invention the bar-receiving grooves are enlarged intermediate the ends thereof as indicated at 14, the enlargement occurring at one side of the groove and producing a downwardly facing shoulder 15, which inclines downwardly and outwardly from the opposed wall of the groove. Shoulder 15 is preferably spaced from both the upper and lower ends of the groove so that the groove has upper and lower parallel-sided sections 16 and 17 and an intermediate section in which the walls are upwardly convergent. The bottom 18 of this groove converges from end to end of the groove upon the lower end of the enlargement.

The bar 13 has upon its side face a rib 19 having the same angle to the bar face at its upper surface as the under-cut shoulder 15 has to the wall of the groove. The bottom edge of the bar converges upon the lower face of this rib from end to end of the bar. The enlargement or rib 19 is disposed at one side face of the bar and it will be obvious that when the bar is inserted in the groove and until it is practically seated the rib will merely fit loosely in the enlargement which has greater depth than the rib. During the final seating movement, however, the bottom edge of the bar comes upwardly until the upper face of the rib 19 comes into engage-

ment with the slanting shoulder 15. This causes the entire bar to be wedged transversely so that the flat face of the bar is forcibly seated against the flat face of the groove at the same time the bar is shifted radially and this radial shifting will cause a binding action to be set up between the shoulder 15 and the bottom of the groove. By this arrangement, the bar can be very firmly held and at the same time, when it is desired to remove the bar it is merely necessary to drive the bar a distance sufficient to release the gripping action effected by the wedging when the bar will slide readily in its groove. The projecting portions of the bars 13 may be of any suitable character being at present shown as constructed to produce downwardly facing shoulders 20, beneath which the wooden strips 21 arranged between adjacent bars may expand so that these bars will be securely held against accidental disengagement. Other constructions may, however, be employed in lieu of that illustrated.

The roll at its front head may be provided with the usual retainer ring 22 and at its rear head is provided with an annular combined retainer and wear ring 23 which seats against the ends of the bars 13 to prevent their movement toward the deeper end of the slot and to further serve as a guard preventing honeycombing of the head. It will be obvious that with a construction of this character repairs or initial assembly of the roll may be readily effected and at the same time a very secure mounting for the bars is provided.

As the construction illustrated is capable of a certain range of change and modification, without departing from the spirit of my invention, I do not wish to be understood as limiting myself thereto except as hereinafter claimed.

I claim:

1. In a device of the type described, a rotatable body having a longitudinal groove in its periphery affording an under-cut shoulder and having its bottom longitudinally convergent upon said shoulder and a bar having a rib for co-action with said shoulder and proportioned to simultaneously engage the rib with the shoulder and its bottom edge with the bottom of the groove when fully seated in said groove.

2. In a device of the type described, a bar and a rotatable body having a groove, said bar having an enlargement upon its groove-engaging portion forming a longitudinally-extending rib combining with the bar to produce a wedge-shaped portion the butt end of which is disposed toward the bottom of the bar, the bottom of the bar converging upon said rib from end to end of the bar, the groove being formed to receive said bar and having a shoulder for engagement with the rib simultaneously with the engagement of the bottom of the bar with the bottom of the groove when the bar is fully seated in the groove.

3. In a device of the type described, a rotatable body having a longitudinal groove in its periphery and a bar to engage in said groove, said bar and groove having co-acting means to cause radial movement of the bar in the groove during final seating movement of the bar in the groove, said bar and groove having further co-acting portions limiting such radial movement.

4. In a device of the type described, a rotatable body having a longitudinal groove in its periphery and a bar to engage in said groove, said bar and groove having co-acting means to cause radial movement of the bar in the groove during final seating movement of the bar in the groove, said bar and groove having further co-acting portions limiting such radial movement, said limiting means having co-action wedging the bar toward one wall of the groove, said wall of the groove and the confronting face of the bar being plane.

5. In a device of the type described, a rotatable body having a longitudinal groove in its periphery affording an under-cut shoulder and having its bottom longitudinally convergent upon said shoulder and a bar having a rib for co-action with said shoulder and proportioned to simultaneously engage the rib with the shoulder and its bottom edge with the bottom of the groove when fully seated in said groove, said rib and shoulder co-acting to wedge the bar transversely of the groove.

6. In a device of the type described, a rotatable body having a longitudinal groove in its periphery affording an under-cut shoulder and having its bottom longitudinally convergent upon said shoulder and a bar having a rib for co-action with said shoulder and proportioned to simultaneously engage the rib with the shoulder and its bottom edge with the bottom of the groove when fully seated in said groove, said rib and shoulder co-acting to wedge the bar transversely of the groove and toward one wall thereof, said wall and the confronting face of the bar being plane.

7. In a device of the type described, a rotatable body having a longitudinal groove in its periphery and a bar for engagement with said groove engageable therein through one end of the groove, said bar and groove having co-acting means positively limiting radial movement of the bar in the groove, the bottoms of the groove and bar being inclined and coming into engagement with one another when the bar is substantially fully seated in the groove to cause radial movement of the bar.

8. In a device of the type described, a ro-

tatable body having a longitudinal groove in its periphery and a bar to engage in said groove, said bar and groove having co-acting means to cause radial movement of the bar in the groove during final seating movement of the bar in the groove, said bar and groove having further co-acting portions limiting such radial movement, said limiting means having co-action wedging the bar toward one wall of the groove.

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