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TUMBLER FOR CRAWLING TRACTION MECHANISM

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Fig. 1.

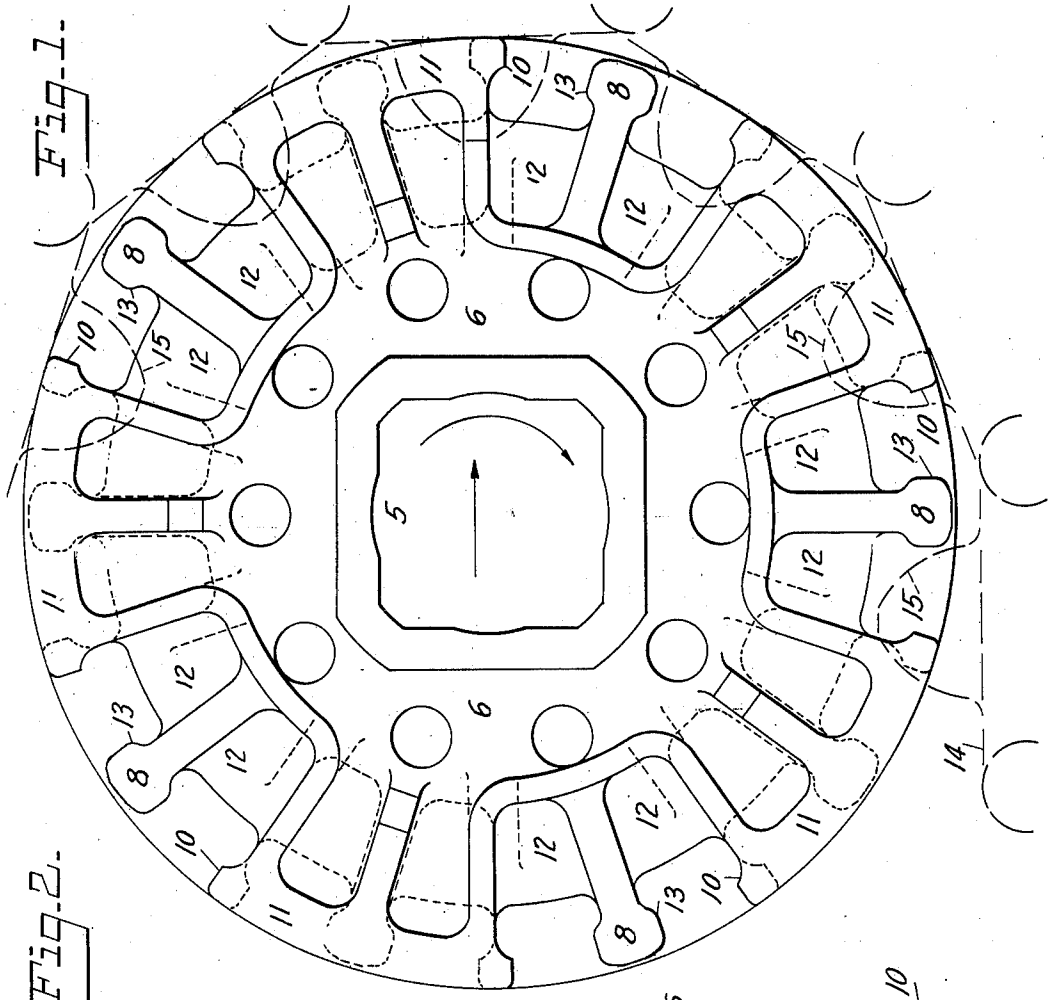


Fig. 2.

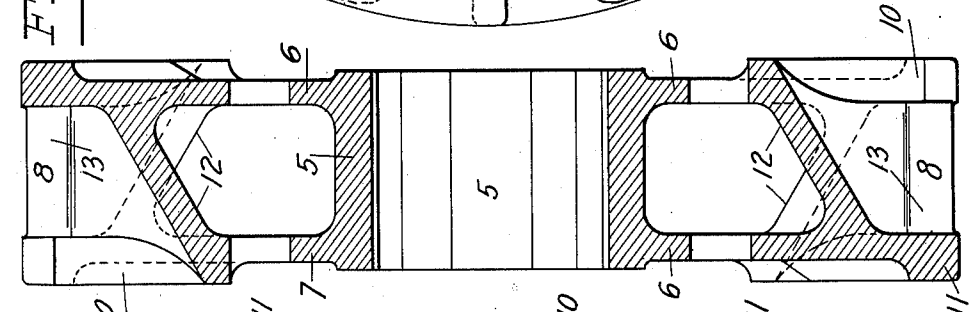
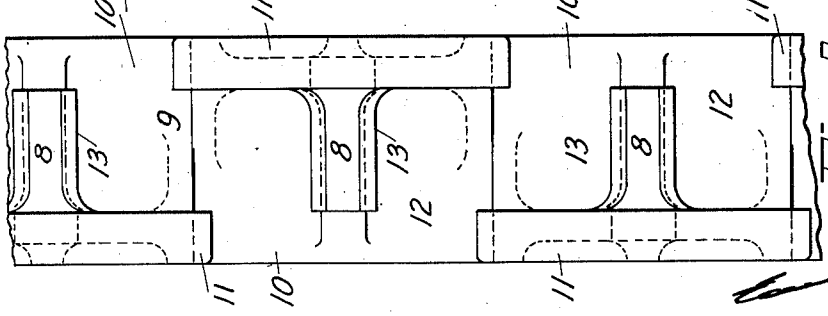


Fig. 3.



INVENTOR.
J. J. DIVNEY.
B. JACOBY.

ATTORNEY.

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TUMBLER FOR CRAWLING TRACTION MECHANISM

James J. Divney and Benjamin Jacoby, Marion, Ohio, assignors to The Marion Steam Shovel Company, Marion, Ohio, a Corporation of Ohio

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10 Claims. (Cl. 74—31)

This invention relates to a tumbler for a crawling traction mechanism. As is well known a crawling traction mechanism comprises an endless track made up of a plurality of pivotally connected links or treads and extending about an idler drum at one end of the mechanism and about a rotatable driving member at the other end of the mechanism. The driving member is in the nature of a sprocket wheel and is commonly called a tumbler. Usually each tread has an inwardly extending tooth which enters a recess or socket in the tumbler to establish driving connection between the track and the tumbler.

One object of the present invention is to provide a tumbler which will be self-cleaning, that is, of such a character that mud or other matter entering the recesses will be automatically ejected.

A further object of the invention is to provide such a tumbler which will be of a strong durable construction in which the driving lugs or teeth between adjacent recesses will be strongly braced.

A further object of the invention is to provide such a tumbler in which the recesses will have lateral openings to permit of the escape of mud and the like and which will have continuous rolling contact with the track.

A further object of the invention is to provide such a tumbler which will be simple in construction and easy to produce.

Other objects of the invention will appear as the device is described in detail.

In the accompanying drawing Fig. 1 is a side elevation of a tumbler embodying our invention; Fig. 2 is a transverse sectional view taken centrally through such a tumbler; and Fig. 3 is an edge view of a portion of the tumbler.

In the drawing we have illustrated one embodiment of our invention but it will be understood that this particular embodiment has been chosen for the purposes of illustration only and that the structure may take various forms without departing from the spirit of the invention.

In the particular embodiment here illustrated the tumbler comprises a body portion having a central hub 5 from which extend two circumferential side walls 6 and 7, these side walls being spaced one from the other. The peripheral edges of these side walls constitute the surfaces which contact with the track and which support the tubler on the track. A circumferential series of transverse projections or driving lugs 8 extend alternately from the respective side walls and divide the space between the side walls into recesses 9. Each recess is provided near its ends with lateral openings formed in the opposite side walls, each lateral opening of each recess being opposite a closed portion of the other side wall thereof. In the present construction the transverse projections and side walls are so arranged as to form a series of T-shaped sections spaced apart about the periphery of the tumbler, alternate T-shaped sections facing in opposite directions. For this purpose each side wall is formed with a series of peripheral openings 10 which are separated one from the other by solid portions or projections 11, the projections being preferably of a circumferential length slightly greater than the length of the openings. The solid portions or projections of each side wall are arranged opposite the openings in the other side wall and because of the greater length of the projections the ends of the projections or side walls on opposite sides of each recess extend in opposite directions slightly beyond a transverse line between the ends of the recess, so that the end portions of adjacent projections on opposite sides thereof will slightly overlap and provide a continuous rolling support for the tumbler. Transverse walls 12 extend from each solid portion or projection, on a line spaced some distance from the peripheral edge of that solid portion, to the inner edge of the opposite opening and constitute bottom walls of the recesses, these bottom walls being preferably inclined to facilitate the ejection of mud or other matter from the recesses. The driving lugs 8 are arranged substantially midway between the ends of the respective projections, and consequently are substantially midway between the ends of the opposed openings 10. The adjacent bottom walls slope in opposite directions, as shown in Fig. 2, so that the bottom of one end of each recess slopes toward one side of the tumbler and the bottom of the other end of that recess slopes toward the other side of the tumbler. These bottom walls are spaced from the peripheral edges of the side walls a distance sufficient to enable the tooth or driving projections on the tread of the track to fully enter the recess and, in the present construction, they are spaced some distance from the hub but their position with relation to the hub will depend largely upon the size and other characteristics of the tumbler. The outer end portion of each driving lug 8 is enlarged, as shown at 13, so that the outer portion of the lug projects circumferentially in both directions beyond the inner portion of the lug and thus provides a relatively narrow contact surface to engage the tooth on the tread. The tumbler is pref-

erably cast in one piece and the driving lugs are thus integral with the respective side walls and those parts of the side walls which project beyond the driving lugs serve to rigidly brace the lugs against the strain to which their outer ends are subjected.

When the tumbler is rotated it will travel over the endless track, as shown at 14, in Fig. 1, and the teeth 15 on the treads of the track will enter the successive recesses. Should any mud or other matter have found its way into the recesses in objectionable quantities it will be engaged by the teeth 15 and forced from the recesses through the lateral openings 10, thus preventing the mud from accumulating in the recesses in such quantities as to in any way interfere with the normal operation of the mechanism.

Having now fully described our invention, what we claim as new and desire to secure by Letters Patent is:

1. In a tumbler of the character described, a body portion, side walls carried by said body portion and spaced apart, each side wall having a series of openings spaced about the same near the periphery thereof, each opening being arranged opposite a closed portion of the other side wall, a driving lug extending from each closed portion of each side wall toward an opening in the other side wall and arranged between the ends of said opening, and transverse walls extending from the respective closed portions of each side wall to the corresponding openings in the other side wall.

2. In a tumbler of the character described, a body portion, side walls carried by said body portion and spaced apart, each side wall having a series of openings spaced about the same near the periphery thereof, each opening being arranged opposite a closed portion of the other side wall, inclined bottom walls extending from the respective closed portions of each side wall to the inner portions of the corresponding openings in the other side wall, and a driving lug carried by each bottom wall and the adjacent closed portion of one of said side walls and spaced for each end of said closed portion.

3. In a tumbler of the character described, a body portion and substantially vertical spaced side walls carried by said body portion, each side wall comprising a circumferential series of projections spaced one from the other by peripheral openings in said side wall, the projections of each side wall being opposite the respective openings in the other side wall, a transverse wall extending from each projection to the inner edge of the opposite opening, and a driving lug extending outwardly from an intermediate portion of each transverse wall between the adjacent projection and the opening opposite the same.

4. In a tumbler of the character described, a body portion and substantially vertical spaced side walls carried by said body portion, each side wall comprising a circumferential series of projections spaced one from the other by peripheral openings in said side wall, the projections of each side wall being opposite the respective openings in the other side wall, a transverse wall extending from each projection to the inner edge of the opposite opening, and a driving lug extending outwardly from each transverse wall, having one lateral edge secured to an intermediate portion of the adjacent projection and having its other lateral edge in line with the opening opposite said projection.

5. In a tumbler of the character described, a body portion and spaced side walls carried by said body portion, each side wall comprising a circumferential series of projections spaced one from the other by peripheral openings in said side wall, the projections of each side wall being opposite the respective openings in the other side wall, inclined transverse walls connecting said side walls, each transverse wall extending from one of said projections to the inner edge of the opposite opening, and a driving lug extending outwardly from each transverse wall between the ends thereof.

6. In a tumbler of the character described, a rotatable element having a circumferential series of driving lugs dividing the periphery thereof into recesses, each recess having at one side thereof a wall extending from the lug at one end of said recess and having at its other side a wall extending from the lug at the other end of said recess, said walls being of a length less than the length of said recess and of a width equal to the depth of said recess, whereby each recess is provided at its respective ends with oppositely facing lateral openings opposed to the respective walls.

7. In a tumbler of the character described, a rotatable element having a circumferential series of driving lugs dividing the periphery thereof into recesses, each recess having at one side thereof a wall extending from the lug at one end of said recess and having at its other side a wall extending from the lug at the other end of said recess, said walls being of a length less than the length of said recess, whereby each recess is provided at its respective ends with oppositely facing lateral openings, the two walls of each recess terminating near the same transverse line between the ends of said recess to provide a continuous support for said rotatable element as the latter rotates.

8. In a tumbler of the character described, a body portion, and circumferential side walls carried by said body portion and spaced one from the other, driving lugs dividing the space between said side walls into peripheral recesses, and bottom walls for said recesses, each side wall having a series of openings so arranged that each opening in each side wall is opposite a closed portion of the other side wall and communicates with the adjacent ends of two of said recesses.

9. In a tumbler of the character described, a body portion, and circumferential side walls carried by said body portion and spaced one from the other, driving lugs dividing the space between said side walls into peripheral recesses, and bottom walls for said recesses, each side wall having a series of openings so arranged that each opening in each side wall is opposite a closed portion of the other side wall and communicates with the adjacent ends of two of said recesses, the closed portions of the side walls of each recess extending in opposite directions beyond a transverse line between the ends of said recess.

10. A tumbler of the character described comprising a series of T-shaped sections arranged in staggered relation about the periphery of said tumbler, alternate sections having their side portions adjacent to the opposite sides of said tumbler, the sections at each side of said tumbler being spaced circumferentially one from the other, and the transverse portion of each section extending from the side portion thereof toward a space between adjacent sections at the other side of said tumbler.

BENJAMIN JACOBY.
JAMES J. DIVNEY.