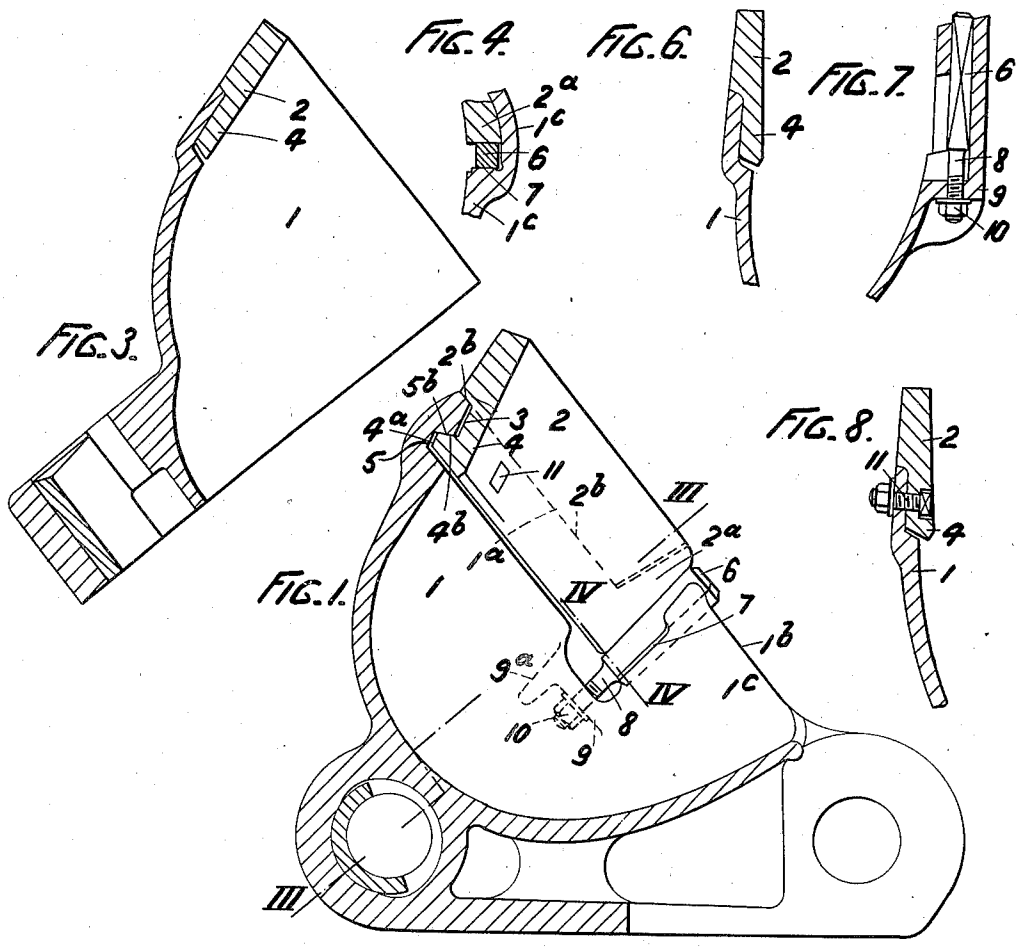
Aug. 9, 1938. J. S. WHITTAKER 2,126,522

DREDGER BUCKET

Filed Aug. 22, 1936 2 Sheets-Sheet 1



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FIG. 5.

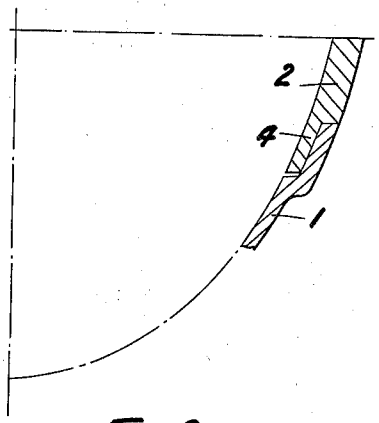


FIG. 10.

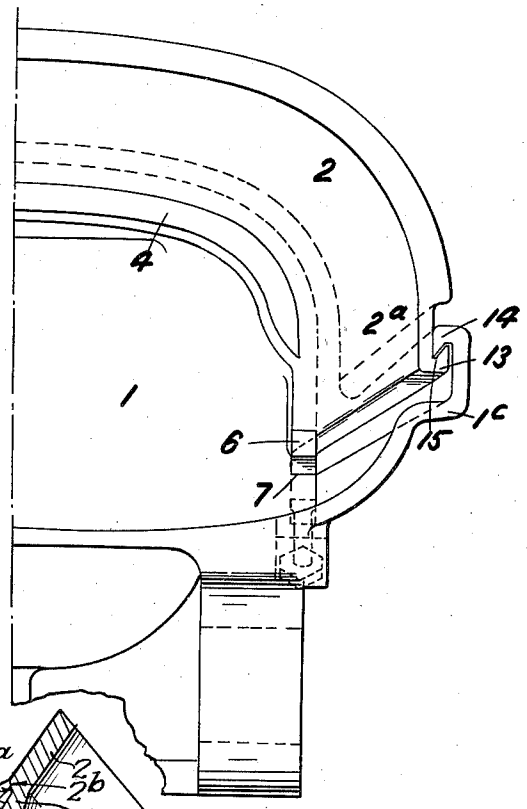


FIG. 2.

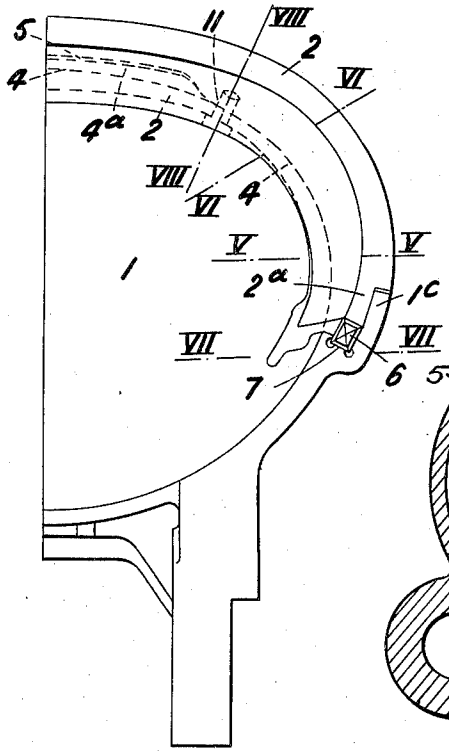
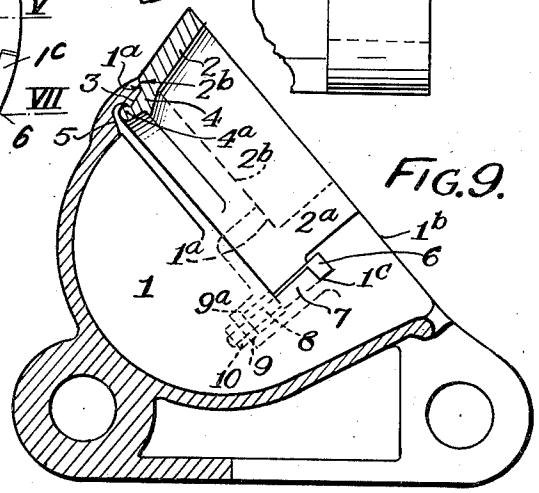


FIG. 9.



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DREDGER BUCKET

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In Great Britain September 30, 1935

10 Claims. (Cl. 37—141)

This invention relates to dredger buckets of the hooded type the front edge portion of which is provided with a renewable metal lip adapted to offer great resistance to wear, and particularly to that kind of combined dredger bucket and renewable metal lip in which the lip is secured to the bucket without the aid of rivets which are difficult to remove when it is required to replace a worn lip by a new one.

The present invention has for its object to provide an improved construction of combined dredger bucket and renewable wear resisting metal lip of the rivetless type.

For this purpose, a combined dredger bucket and renewable metal lip constructed according to the present invention, is characterized broadly in that the lip, formed of a metal plate or casting having a curved contour corresponding to that of the crown and part of the side walls of the bucket, is externally recessed at its rear end to form a flange-like portion adapted to fit into and under the crown of the bucket and within the adjacent upper side portions of the bucket the front edge of which is set back with reference to the front edge of the lower portion of the bucket so that the lower side portions of the bucket extend under the side portions of the lip, the adjacent crown portions of the lip and bucket being shaped to become interlocked with each other in such manner as to prevent them moving in a direction normal to the plane of the rim of the bucket relatively to one another and means being provided on the lower side portions of the bucket, adjacent to lower flanged side portions of the lip, adapted to force the lip upward and cause the crown portion thereof to become firmly interlocked with the crown portion of the bucket, thereby rigidly fixing the said parts together.

In the accompanying illustrative drawings, Fig. 1 shows in central longitudinal vertical section, one construction of combined dredger bucket and renewable lip embodying the present invention. Fig. 2 shows in front elevation, one half of the combined dredger bucket and renewable lip shown in Fig. 1. Figs. 3 and 4 are part sections on the lines III—III and IV—IV respectively of Fig. 1. Figs. 5, 6, 7 and 8 are part sections on the lines V—V, VI—VI, VII—VII and VIII—VIII respectively of Fig. 2. Figs. 9 and 10 are similar views to Figs. 1 and 2 respectively, showing a modified construction of combined dredger bucket and renewable lip.

Referring to Figs. 1 to 8 inclusive, 1 is the body portion of a dredger bucket the front edge of the crown and of the upper portion of the side walls of which is set back, as shown at 1^a, with reference to the front edge 1^b of the lower portions 1^c of the side walls of the bucket. 2 is a renewable lip of hard wear resisting metal, corresponding in contour to the crown and portions of the side walls of the bucket. The rear end portion of the lip 2 is recessed externally at 3 (Fig. 1) so as to form a flange-like portion 4 adapted to fit within and to receive the front end portion of the crown and of portions of the side walls of the bucket, while the lower portions 2^a of the side walls of the lip overlap the lower forwardly projecting portions 1^c of the side walls of the bucket on the inner side thereof. The crown portion of the flange 4 is formed with an external rib 4^a which is arranged to enter a recess 5 formed within the crown portion of the bucket 1, and is formed with an inclined surface 4^b adapted to bear against an inclined surface 5^b at one side of the recess 5, the two surfaces 4^b and 5^b being adapted to co-act, in a wedge-like manner, when the lip is forced upwardly relatively to the bucket, and force the shoulder 2^b at the front end of the recess 3 against the front edge 1^a of the crown of the bucket so as to lock the lip to the bucket.

The means used for forcing the lip 2 upward so that the inclined surfaces 4^b and 5^b shall co-act and cause the crown portions of the lip and bucket to become interlocked firmly with each other, may, as shown in the example now being described, comprise two keys or wedges 6 located in longitudinal recesses or guideways 7 formed in the lower side portions 1^c of the bucket (Fig. 2) and adapted to act against the lower edges of the overlapping lower flanged ends 2^a of the side portions of the lip 2, which may, as shown in Fig. 1, be slightly inclined to the bottom of the said recesses or guideways 7, so that the two wedges 6 will act, not only to force the lip 2 upward for the purpose herein before mentioned, but will act also to force the shoulder 2^b of the recessed end portion of the lip 2, rearward against the front edge 1^a of the crown and side portions of the bucket 1. Each wedge 6 is provided with a screw threaded shank 8 that extends through a lug 9 on the bucket 1 and is fitted with a nut 10 for locking the wedge 6 in position. Means, for example a rearward extension 9^a of each lug 9, may be provided for protecting the adjacent nut 10. The lip 2 may, as shown, be of an upwardly and outwardly flaring shape.

The adjacent side portions of the lip 2 and bucket 1 may, as shown in Figs. 2 and 8, be provided, at an intermediate portion of their height,

with holes 11 into which bolts can be inserted and secured by nuts, in order to facilitate the attachment of the lip to the bucket while the wedges 6 are being fitted in position, after which the bolts may be removed.

As will readily be understood, a metal lip secured to a dredger bucket in the manner hereinbefore described, can readily be removed and be replaced by a new one when required.

A combined dredger bucket and renewable lip embodying the invention, can be modified in various ways. Thus, as shown for example in Figs. 9 and 10, the flanged portions 2^a of the side portions of the lip 2, may be provided externally with upwardly extending wedge shaped extensions or projections 13 adapted, when the lip is being forced upward, as by the wedges 6, to become firmly engaged with co-acting downwardly extending wedge-shaped extensions or projections 14 formed on the adjacent side portion 1^c of the bucket 1 and extending downward into the recesses 15 formed in the adjacent flanged portions 2^a of the side portions of the lip 2.

What I claim is:—

1. A dredger bucket having a lip seat at its front end, a renewable lip bearing against said lip seat and having its rear portion extending below the crown portion and between the side walls of the bucket, adjacent opposed surfaces on the crown portions of said bucket and lip, said opposed surfaces of the crown portions of the bucket and of the lip being firmly interlocked with each other to prevent movement between them in a direction normal to the plane of the rim of said bucket, and means for holding said lip in rigid contact with the lip seat and interlocked with the crown portion of the bucket.

2. A dredger bucket having a lip seat on its front end, a renewable lip the rear end portion of which extends below the crown and between the adjacent portions of the walls of the bucket and has a shoulder thereon adapted to bear against said lip seat, the crown portion of the lip having therein an external recess of wedge shape in the longitudinal direction of the bucket and lip, and the under side of the crown portion of the bucket is shaped to enter the recess in the lip and become wedged therein, and means acting to hold the crown portions of the lip and bucket in interlocked engagement and the shoulder on the lip rigidly against the lip seat on the bucket.

3. A dredger bucket having a lip seat at its front end and a recess in the lower side of its crown portion, a renewable lip the rear portion of which extends below the crown and between the adjacent side walls of the bucket and has a shoulder thereon bearing against the lip seat on the bucket, the crown of the lip having thereon a rib extending into the recess in the crown of the bucket and bearing against the front wall of the said recess, and means acting to force the crown of the lip into interlocking engagement with the crown of the bucket and hold the lip rigidly against the lip seat on the bucket.

4. A dredger bucket the front edge of the crown and the upper portions of the side walls of which are set back with reference to the front edge of the lower portions of the side walls of the bucket and form a lip seat, a renewable lip [illegible]ear end portion of which bears against the [illegible]at and extends below the crown and [illegible]upper portions of the side walls of [illegible]ed surfaces on the crown por[illegible]and lip, said opposed surfaces of the crown portions of the bucket and lip being interlocked with each other so as to prevent movement between them in a direction normal to the plane of the rim of said bucket, and means adapted to force said lip upward relatively to the bucket and to cause the interlocking crown portions of the lip and bucket to become engaged with each other and to hold the lip rigidly against the lip seat on the bucket.

5. A combined dredger bucket and renewable lip according to claim 4, wherein the rear end portion of the crown of the lip is shaped to form an external recess the rear and front end walls of which are inclined to one another, and the adjacent portion of the inner side of the crown of the bucket is shaped to fit tightly between the said end walls of the recess.

6. A dredger bucket the front edge of the crown and of the adjacent upper portions of the side walls of which are set back with reference to the front edge of the lower portions of the side walls of the bucket and form a lip seat, a renewable lip having a contour corresponding to that of the crown and side walls of the said bucket and bearing against the said lip seat, the side walls of the lip extending downward and overlapping the inner side of said lower portions of the side walls of the bucket, the rear end portion of said lip extending below the crown and between the said upper portions of the side walls of the bucket, adjacent opposed surfaces on the crown portions of said bucket and lip, said opposed surfaces of the crown portions of the bucket and lip being interlocked with each other to prevent movement between them in a direction normal to the plane of the rim of said bucket, each of the said lower portions of the side walls of said bucket having a longitudinal guideway therein below the corresponding lower overlapping side portion of the lip, and an endways adjustable wedge located in each guideway and below and in contact with the lower edge of the corresponding lower overlapping portion of said lip.

7. A combined dredger bucket and renewable lip according to claim 6, in which the lower edge of each overlapping lower side portion of the lip is inclined rearward and downwardly with reference to the bottom of the guideway for the corresponding adjustable wedge.

8. A dredger bucket the front edge of the crown and of the upper portions of the side walls of which are set back with reference to the front edge of the lower portions of the side walls of the bucket, a renewable lip having a contour corresponding to that of the crown and side walls of said bucket, the side walls of the lip extending downward and overlapping the inner side of said lower portions of the side walls of the bucket, the rear end portion of said lip extending below the crown and between the adjacent upper portions of the side walls of the bucket, opposed surfaces on the crown portions of said bucket and lip, said opposed surfaces of the superposed crown portions of the bucket and lip being interlocked with each other in a direction normal the plane of the rim of said bucket, each of the lower portions of the side walls of said bucket having a longitudinal guideway therein and a lug at the rear end of said guideway, a wedge located in each guideway and below and in contact with the lower edge of the corresponding overlapping lower portion of said lip, each wedge having a screw threaded shank extending through said lug, and a nut on the projecting rear end of said

shank and bearing against the rear side of said lug.

9. A combined dredger bucket and lip according to claim 4, wherein the adjacent side portions of the said bucket and lip are provided at an intermediate part of their height with bolt holes for the purpose set forth.

10. A dredger bucket the front edge of the crown and of the adjacent upper portions of the side walls of which are set back with reference to the front edge of the lower portions of the side walls of the bucket and forms a lip seat, a renewable lip having a contour corresponding to that of the crown and side walls of said bucket, the side walls of said lip extending downward and overlapping the inner side of said lower portions of the side walls of the bucket, the rear end portion of said lip bearing against said lip seat and extending below the crown and between the said upper portions of the side walls of the bucket, adjacent opposed surfaces on the crown portions of said bucket and lip, said adjacent surfaces of the superposed crown portions of the bucket and lip being interlocked with each other in a direction normal to the plane of the rim of said bucket, each of the lower portions of the side walls of said bucket having therein a longitudinally extending guideway, each of the side portions of said lip having an external upwardly extending wedge shaped projection, a co-acting downwardly extending wedge-shaped projection on the inner side of the adjacent lower portion of the side wall of said bucket, and means adapted to force said lip upward relatively to the bucket and cause the crown portions of said bucket and lip to become interlocked with each other and the said co-acting wedge shaped projections on the lip and the lower side portions of the walls of the bucket to become engaged with each other.

JOHN SYDNEY WHITTAKER.