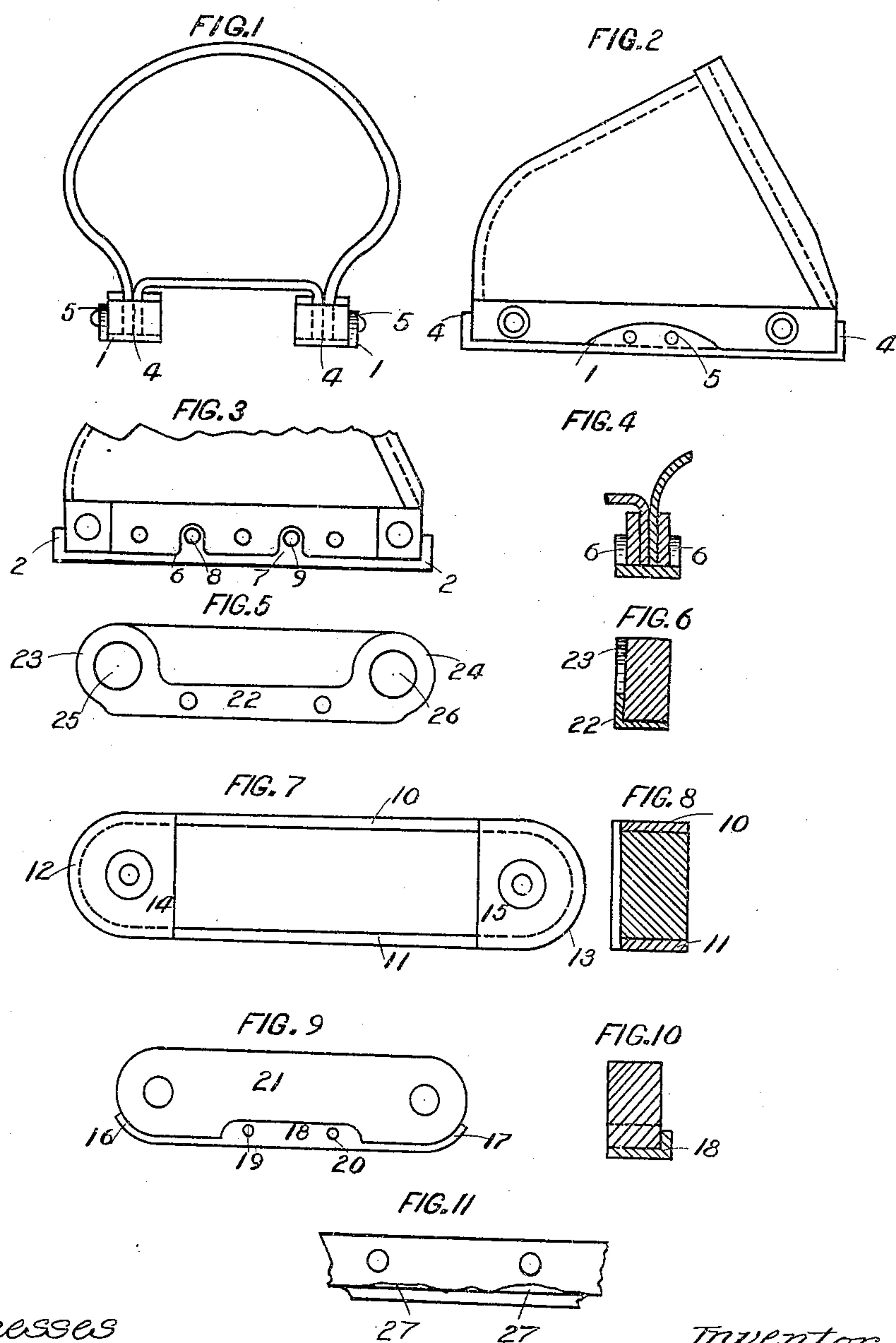


No. 814,590.

PATENTED MAR. 6, 1906.

R. R. DOUGLAS.
LINK OF BUCKET DREDGING MACHINERY.

APPLICATION FILED MAR. 14, 1905.



Witnesses
Wm. Kuehne
John A. Percival.

Inventor
Robert R. Douglas

BY *Richard R. Douglas*
ATTORNEYS

UNITED STATES PATENT OFFICE.

ROBERT RUTHERFORD DOUGLAS, OF DUNEDIN, NEW ZEALAND.

LINK OF BUCKET DREDGING MACHINERY.

No. 814,590.

Specification of Letters Patent.

Patented March 6, 1906.

Application filed March 14, 1905. Serial No. 250,110.

To all whom it may concern:

Be it known that I, ROBERT RUTHERFORD DOUGLAS, engineer, residing at Dunedin, New Zealand, have invented certain new and useful Improvements Relating to the Bucket-Links, Elevator-Links, and Connecting-Links of Bucket Dredging Machinery, of which the following is a specification.

This invention relates to bucket dredging machinery, and in particular to the bucket-links, elevator-links, and connecting-links. These links while in use are ordinarily subject to great wear upon their lower or running faces, and when they become worn a considerable amount of labor and expense is entailed in replacing them by new ones. When the bucket-links become worn down to the bolts, it is necessary to provide new buckets, and when they are partly worn a jolting results on their passing over the rollers.

The object of this invention is to provide means for saving the wear and tear of the links and the consequent expense and trouble, so that the links, whether new or partly worn, are rendered capable of lasting for a long time.

The leading feature of the invention is a shoe combined with the links to protect same from wear.

The invention consists in this feature and in the features and combination and arrangement of parts hereinafter described, and more particularly pointed out in the claims.

In the accompanying drawings the same reference-numbers indicate the same or similar parts.

Figure 1 is a front elevation of a dredge-bucket with one form of the invention fitted thereon. Fig. 2 is a side view of same. Fig. 3 shows a form of shoe applicable to new bucket-links. Fig. 4 is a cross-section thereof. Fig. 5 shows a shoe preferred for connecting-links whether old or new. Fig. 6 is a cross-section thereof. Fig. 7 is a reversible form of shoe for new connecting-links. Fig. 8 is a cross-section thereof. Fig. 9 is a form of shoe for old connecting-links. Fig. 10 is a cross-section thereof. Fig. 11 illustrates part of a worn link with part of a special shoe thereon.

The invention as illustrated in Figs. 1 and 2 consists of a plate or strip of steel 1, provided with a wing-piece 5 and having its ends 4 turned up. The strip is placed on the link with the wing-piece against the outside face of the link and with the ends against the ends

of the links, and the strip is secured to the link by rivets or the like; but there are no rivets in the running surface of the strip.

When the running face of the strip 1 is worn away, the strip can be removed by knocking out the rivets, and a fresh strip may then be substituted. The links themselves are thus subject to practically no wear and will consequently last for an indefinite period.

Figs. 3 and 4 illustrate a shoe applicable to new bucket-links, in which instead of the wing-pieces there are two lugs 6 7, which in conjunction with the turned-up ends 2 are for the purpose of securing the shoe to the link, the bolts 8 9, that secure the bucket to the link, also going through the lugs 6 7.

Figs. 5 and 6 illustrate a form of shoe applicable to connecting-links, whether old or new. In this form there is a flange 22 to the shoe, adapted to lie alongside the link, having extension-pieces 23 24 in the form of washers, with bolt-boles 25 26 therein, coinciding with the holes in the link and through which the pivot-pins pass, securing the shoe to the link.

For new connecting-links the shoe is preferred reversible and is in the form of a box, (illustrated in Figs. 7 and 8,) in which there are two interchangeable wearing-surfaces 10 11, connected together by curved ends 12 13 and having plates 14 15, by which the shoe is bolted onto the link through the pivot-holes thereof.

The shoe illustrated in Figs. 9 and 10 is preferred for old connecting-links, and in this case the ends 16 17 of the shoe are turned up a short distance only, so that they will not jam between the old links, whose distance apart is fixed. There is a wing-piece 18 in this form of shoe, which has rivets 19 20 through it, securing the shoe to the old link 21.

Fig. 11 illustrates a worn link having secured thereto a shoe (part of which only is shown) in one of the forms before described and having in addition a packing piece or pieces 27, secured to the shoe so as to fit into the worn portion of the link and fill same out to prevent the shoe being forced into the worn portion.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. Improvements relating to the bucket-links, elevator-links and connecting-links of bucket dredging machinery consisting of in combination a link of the class described, a

shoe, and means for securing said shoe to the under side of said link substantially as and for the purposes set forth.

2. Improvements relating to the bucket-
5 links, elevator-links, and connecting-links of bucket dredging machinery comprising in combination a link of the class described, a shoe, a packing-piece, and means for securing

said shoe and packing-piece to said link, substantially as and for the purposes set forth. 10

In witness whereof I have hereunto set my hand in presence of two witnesses.

ROBERT RUTHERFORD DOUGLAS.

Witnesses:

JOHN RUTHERFORD PARK,
A. J. PARK.