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CUTTING EDGE FOR LOADER BUCKETS OR THE LIKE

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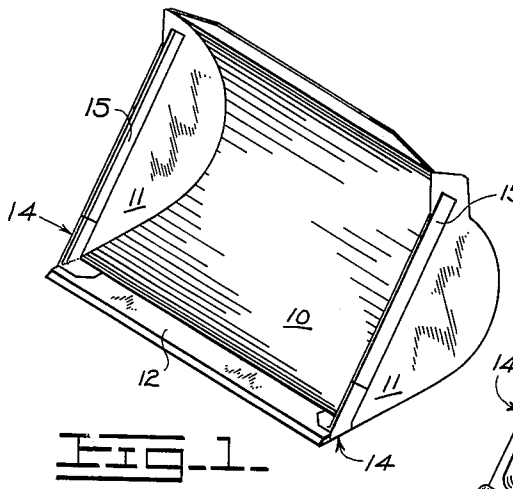

Fig-1-

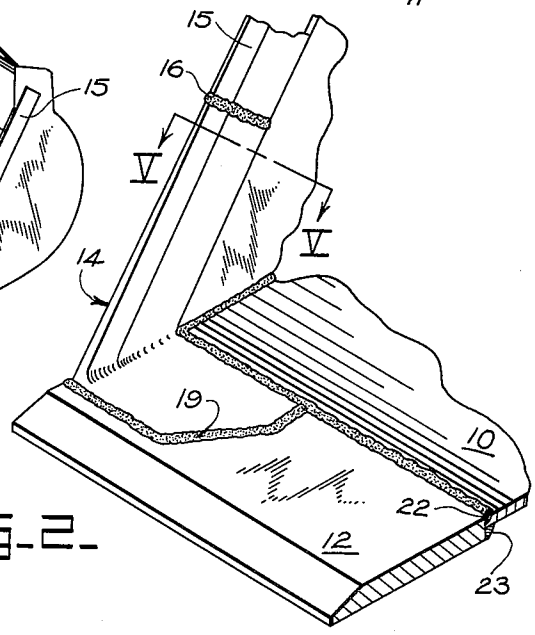

Fig-2-

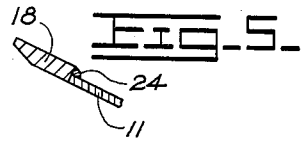

Fig-5-

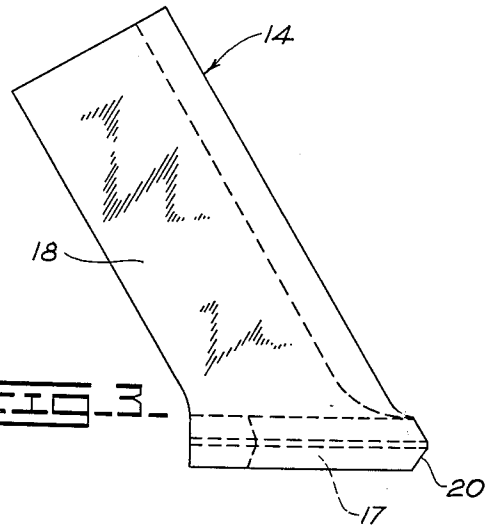

Fig-3-

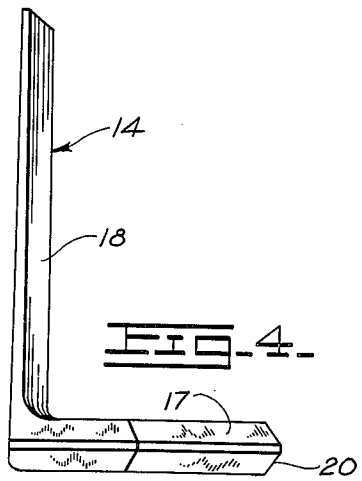

Fig-4-

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CUTTING EDGE FOR LOADER BUCKETS OR THE LIKE

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3 Claims. (Cl. 37—141)

This invention relates to the cutting edges of buckets such as used on tractor mounted loaders or other earth moving machines and is directed particularly to the elimination of weak or soft portions in the cutting edge which result from welding or bending.

Cutting edges for earth moving tools are conventionally made of hardened steel. In buckets they comprise a straight section contiguous with the horizontal earth engaging edge of the bucket, and two sections contiguous with the edges of the side walls which meet the horizontal edge. Welding these sections together reduces their hardness because of the heat of welding creating soft areas subject to rapid wear and stress risers which lead to cracks or fractures in the surface. Bending the three sections from a single piece of stock also has disadvantages. Bending prior to hardening creates difficulties in the hardening process and bending after hardening requires heating which reduces hardness. Bending also reduces thickness at the corners of the bucket which are subject to the highest rate of wear and produces a rounded corner which is not adaptable to fastening means for teeth sometimes used on cutting edges.

It is the object of the present invention to provide an improved cutting edge for buckets or the like which is constructed of multiple hardened parts secured to each other and to the bucket by means so positioned as to avoid any weakening of the parts at points which are subjected to a high rate of wear in use.

Further and more specific objects and advantages of the invention and the manner in which it is carried into practice are made apparent in the following specification wherein reference is made to the accompanying drawing.

In the drawing:

FIG. 1 is a perspective view of a typical loader bucket with a cutting edge constructed in accordance with the present invention;

FIG. 2 is an enlarged fragmentary sectional view of one corner of the bucket illustrated in FIG. 1;

FIG. 3 is a view in side elevation looking from the outer side of a corner bit which forms a part of the cutting edge of the present invention;

FIG. 4 is a front elevation of the same corner bit; and

FIG. 5 is a cross sectional view taken on the line V—V of FIG. 2.

The typical bucket illustrated in FIG. 1 has what will be termed for the purposes of the present description a bottom 10 and sides 11 when it is in its digging or loading position, which is the position in which the cutting edges are employed. The forward edge of the bottom 10 as well as the forward edges of the sides 11, which are first to engage the earth in a digging operation, are reinforced by hardened steel plates welded in place, and when these plates are formed in the conventional manner of a single straight member for the bottom and two straight members for the sides, corner welds soften and tend to weaken them where they are joined and where they are subjected to the highest rate of wear.

The present invention provides a straight hardened cutting edge 12 for the forward edge of the bottom of the

bucket and two corner bits generally indicated at 14 for the lower forward portions of the side edges of the bucket. The vertically extending portions of the corner bits may be of any desired length, and for practical purposes they are just sufficiently long to insure that their upper ends are above the position where the edges are subjected to a high rate of wear. Hardened members 15 may be employed as continuation of the corner bits 14 and are the same in cross sectional configuration and joined to them as by welding shown at 16 in FIG. 2 above the area of the greatest wear. The corner bits as shown in FIGS. 3 and 4, have a horizontal portion 17 and an upstanding portion 18 and the horizontal portion is of less width than the bottom cutting edge 12. The bottom cutting edge 12 has its rear portion cut away adjacent the ends to receive the horizontal portion 17 of the corner bits as is best shown in FIG. 2, and the corner bits are welded to the bottom portion as shown at 19, the weld being spaced from the forward earth engaging edge of the member 12. A double V type weld may be provided for by forming the lower edges of the corner bits with chamfers as indicated at 20 in FIGS. 3 and 4, and similarly treating the edges of the recess in the member 12 to which the corner bits are welded. The entire assembly is welded to the forward edge of the bottom of the bucket, preferably on both sides as indicated at 22 and 23 in FIG. 2, and the corner bits, as well as the upward extensions 18 thereof, are welded to the forward edges of the side walls 11 by a corner weld such as indicated at 24 in FIG. 5. The leading edges of all of the cutting members are beveled, as is conventional, to facilitate penetration of the earth, and as may be seen from the drawing, no welds or bends which create undesirable weak areas intercept any of these leading edges with the exception of the weld 16 which as previously stated is located in an area subject only to a low rate of wear.

One of the advantages of the invention resides in the fact that the corner bits may be made by any conventional process, such as casting, forging or machining and may be hardened as a unit, while the long straight edge of the bottom member 12 is readily hardened by conventional heat treating methods and apparatus.

While joining of the several parts has been described herein as by welding, the invention is applicable to cutting edge parts joined by other conventional methods such as riveting or bolting.

We claim:

1. A cutting edge for the bottom and contiguous sides of a loader bucket or the like which comprises a straight hardened member extending forwardly from the bottom and having recesses in its rear edge adjacent both ends, and two end bits each comprising a hardened angular member with one portion extending forwardly from a side of the bucket, and one portion lying within one of said recesses.

2. A cutting edge for the bottom and contiguous sides of a loader bucket or the like which comprises a straight hardened member extending forwardly from the bottom and having recesses in its rear edge adjacent both ends, and two end bits each comprising a hardened angular member with one portion extending forwardly from a side of the bucket, and one portion lying within one of said recesses and a line of welding joining said last portion to the straight hardened member within said recess with all of said welding disposed rearwardly of the forward cutting edge of said straight member.

3. A cutting edge for the bottom and contiguous sides of a loader bucket or the like comprising a hardened member welded to and extending forwardly from each side and having a short angularly related portion in the plane of and extending forwardly from the bottom ad-

jacent each side, and a straight hardened member in the plane of the bottom member extending the full length thereof and welded to the forward edge of the bottom member and to said angularly related portions of the side members.

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