R. F. LOVEJOY & G. D. ALEXIS.

ANVIL KNIFE.

APPLICATION FILED FEB. 4, 1918.

1,298,526.

Patented Mar. 25, 1919.

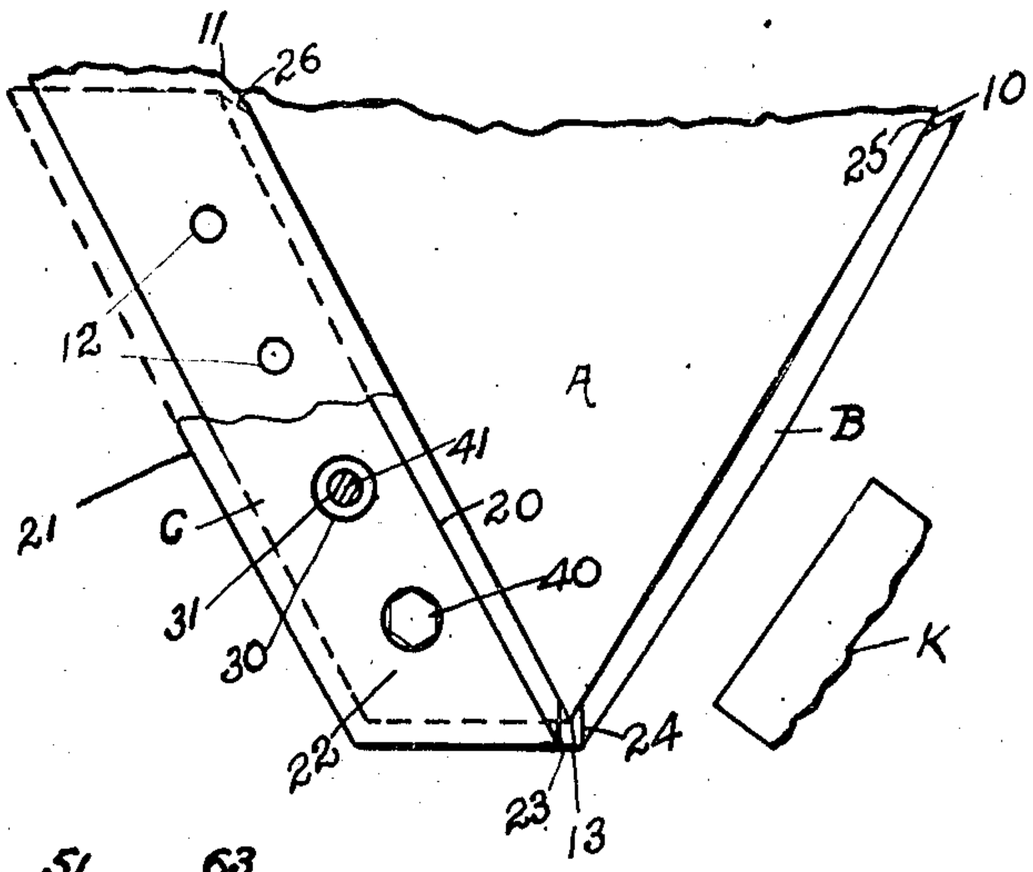

FIG 1.

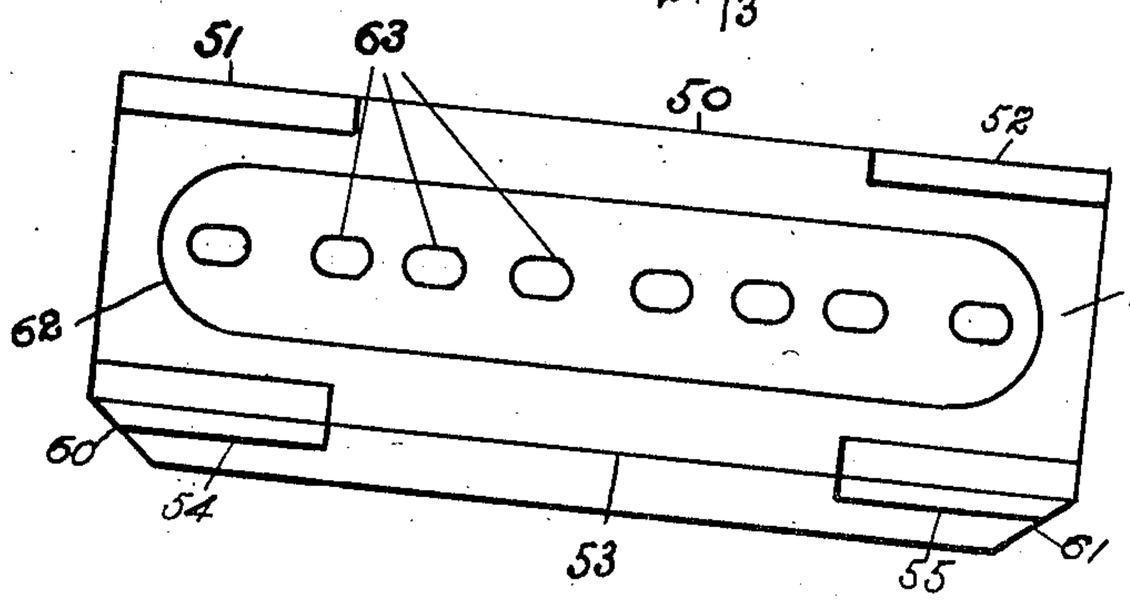

FIG 2.

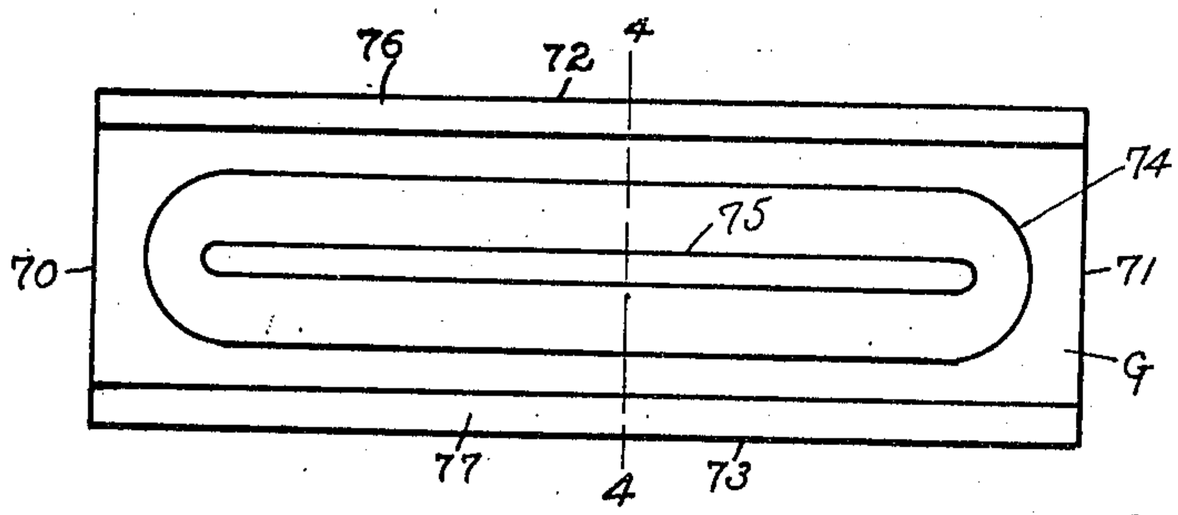

FIG 3

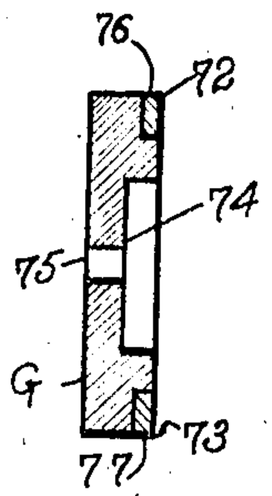

FIG 4

WITNESS:

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ANVIL-KNIFE.

1,298,526. Specification of Letters Patent. Patented Mar. 25, 1919.

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To all whom it may concern:

Be it known that we, ROY F. LOVEJOY, a citizen of the United States, residing at Lowell, in the county of Middlesex and State of Massachusetts, and GEORGE D. ALEXIS, a citizen of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented certain new and useful Improvements in Anvil-Knives, of which the following is a specification.

This invention relates to anvil knives for use with what are known as sawmill hogs. Such hogs are used for cutting refuse lumber into chips.

In the type of machine for which our knife is peculiarly adapted, there is a V-shaped anvil having sides which come together and a relatively flat top. To the faces or sides of such an anvil, there are fastened anvil knives which are substantially rectangular in shape. The front or outer edge of one of the long sides is at substantially right angles with the face of the knife and is used in association with a revolving disk or cutter as a cutting edge.

The cutting is usually greatest at the part of the edge which is nearest the point of the V for the reason that the anvil points downwardly and the wood naturally falls toward the bottom. This causes one end to wear out quicker than the other end, and when this wears out, the knife must be replaced by a new one even if the other end is substantially unworn.

At the point of the V, the short end or edge of the rectangular knife is cut at an oblique angle to fit the corresponding edge of the other knife so that chips will not get in between and wedge them apart. To make a tight joint, it is desirable that there should be some means of longitudinal adjustment.

Our invention is for the purpose of providing a reversible anvil knife which, instead of having one cutting edge, will have four and which can be properly adjusted in any one of four positions.

In the drawings, Figure 1 is a perspective view of an anvil with two double-ended knives bolted in position but non-adjustable, showing how the fitting edges appear when not properly adjusted. Fig. 2 is a perspective view showing our preferred form of knife. Fig. 3 is an elevation of a modification. Fig. 4 is a section on line 4—4 of Fig. 3.

In the drawings, A represents a well known V-shaped type of anvil for hog machines having side faces 10 and 11 and bolt holes 12, together with a front edge 13. K represents one of the knives which cooperate with the substantially rigid anvil knives, such as B and C.

In Fig. 1, we show knives such as B and C each of which is substantially rectangular and has cutting edges 20 and 21, which are at substantially right angles with the face 22 of the knife and each of which has fitting edges, such as 23, 24, 25, and 26, which are beveled off so as to extend back at equal oppositely disposed oblique angles toward each other, as shown clearly at 24 and 25.

In each knife, we counterbore or countersink recesses such as 30 to receive the heads 40 of bolts such as 41 and from these recesses we bore bolt holes 31 through the knife in such positions that they will register with holes 12 in the anvil.

In the above construction, it will be noted that there is a space between the fitting edges 23 and 24 which cannot be closed up because no means of adjustment is provided.

However, if holes 12 and 31 are bored at exactly the right positions, on both sides of the anvil and in both knives, when the top front cutting edge of each knife is worn down, it can be removed and turned end for end, thus bringing the bottom back edge up into cutting position.

When these diagonally opposite cutting edges have both been worn down on each knife, knives B and C can be exchanged whereby the other two diagonally opposite cutting edges can be used one after the

other. In this manner, we provide four cutting edges and as there are two fitting edges, both beveled at oblique angles in the same way, we get a great deal more wear out of a knife such as B or C than from those now in use.

In Fig. 2 we show our preferred form of knife F. This knife has fitting edges 60 and 61 at the short ends of the rectangle and these are beveled at acute angles from the face toward the back of the knife, as shown.

The long sides 50 and 53 of the rectangle form at their face edges the cutting edges of the knife and these are preferably specially hardened at 51, 52, 54, and 55 by any well known means or by the insertion of strips of hardened steel, as shown. It is not necessary that the hardening should extend the length of each edge.

For the purpose of adjustment, we form an oval shaped recess 62 in the face of the knife and from this recess through the knife, we cut a plurality of longitudinal slots 63, which are parallel with and midway between the cutting edges. The heads of the bolts are thus buried in recesses 62 and the slot 63 allows longitudinal adjustment of the knives so that their fitting edges will come so close together as to prevent anything getting in between.

Another advantage of such slots is that when the knife is turned end for end, all of the bolt holes 12 will easily registe th them and our knife can thus be used with an anvil in which the bolt holes are not specially bored to fit it.

In Fig. 3 we show a knife G which has oblique fitting edges 70 and 71, cutting edges 72 and 73, which are hardened their entire length at 76 and 77. We also show a recess 74 and one long longitudinal slot 75 instead of a plurality of bolt slots such as 63.

Such anvil knives are usually slightly curved, as shown, and we prefer to make the body of our knife from relatively soft steel and to cut a groove or grooves in each long face edge into which we insert a strip of tool steel which is then welded into place. We can, however, make the entire knife of tool steel if desired.

We claim:

1. A substantially rigid reversible and adjustable anvil knife of substantially rectangular form having relatively long parallel cutting edges at substantially right angles with the face of the knife, the part proximate each end of each edge being of hardened metal, and relatively short fitting edges at equal oppositely disposed oblique angles with said face, a longitudinal bolt head recess in the face and one or more longitudinal slots which, from such recess, pass through the knife.

2. A substantially rigid anvil knife of substantially rectangular form having parallel cutting edges at substantially right angles with the face of the knife and fitting edges at equal oppositely disposed oblique angles with said face, a longitudinal bolt head recess in the face and one or more longitudinal slots which, from such recess, pass through the knife.

3. An anvil knife of substantially rectangular form having parallel cutting edges at substantially right angles with the face of the knife and fitting edges at oblique angles with said face, and one or more longitudinal slots which, from such face, pass through the knife.

4. An anvil knife of substantially rectangular form having parallel cutting edges at substantially right angles with the face of the knife and fitting edges at oblique angles with said face.

5. A substantially rigid anvil knife of substantially rectangular form having relatively long parallel hardened cutting edges at substantially right angles with the face of the knife and relatively short fitting edges at equal oppositely disposed oblique angles with said face, and one or more longitudinal slots which, from such face, pass through the knife parallel with the cutting edges.

6. An anvil knife of substantially rectangular form having parallel cutting edges at substantially right angles with the face of the knife and fitting edges at equal oppositely disposed oblique angles with said face.

7. In a machine of the character described, the combination with a V-shaped anvil block, of diverging knives each of substantially rectangular form having parallel cutting edges at substantially right angles with the face of the knife and parallel fitting edges at opposite ends formed at equal oppositely disposed oblique angles with said face, and one or more longitudinal slots parallel with and midway between the cutting edges, together with bolts which pass through the slots of each anvil knife and through the anvil whereby the fitting edges thereof may be adjusted.

8. In a machine of the character described, the combination with a V-shaped anvil block, of two diverging substantially rigid anvil knives each of substantially rectangular form and each having relatively long parallel cutting edges at substantially right angles with the face of the knife and relatively short fitting edges at equal oppositely disposed oblique angles with said face, and one or more longitudinal slots parallel with and midway between the cutting edges, together with bolts which pass through the slots of each anvil knife and through the anvil whereby the said knives may be adjusted

longitudinally parallel with the cutting edges.

9. In a machine of the character described, the combination with a V-shaped anvil block, of diverging reversible anvil knives attached thereto, each knife being of substantially rectangular form having parallel cutting edges and fitting edges at equal oppositely disposed oblique angles with the face of the knife.

In testimony whereof we hereunto affix our signatures.

ROY F. LOVEJOY.
G. D. ALEXIS.