Jan. 18, 1949. D. C. BEAVER 2,459,407

ROOFER'S KNIFE

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FIG. 1

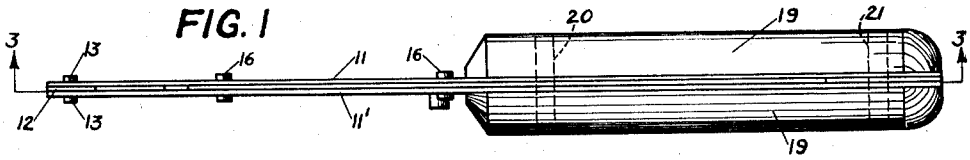


FIG. 2

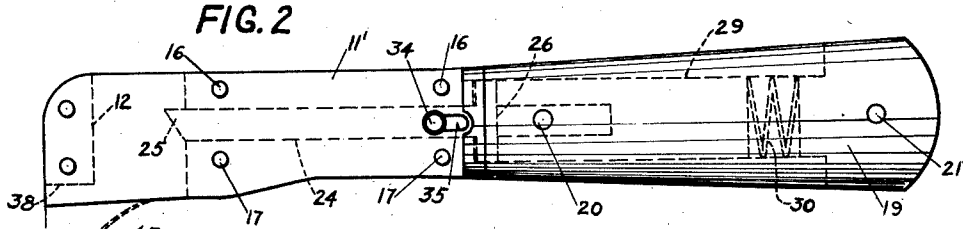


FIG. 3

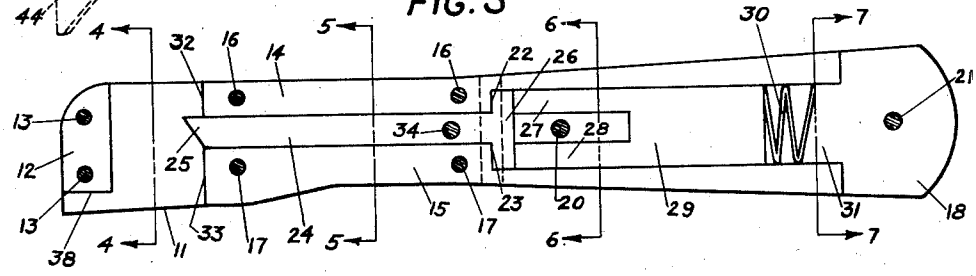


FIG. 4

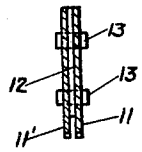


FIG. 5

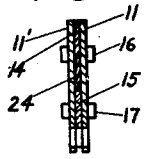


FIG. 6

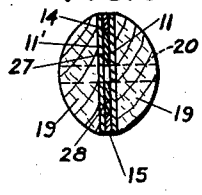


FIG. 7

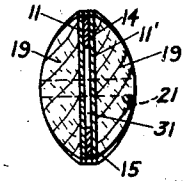


FIG. 8

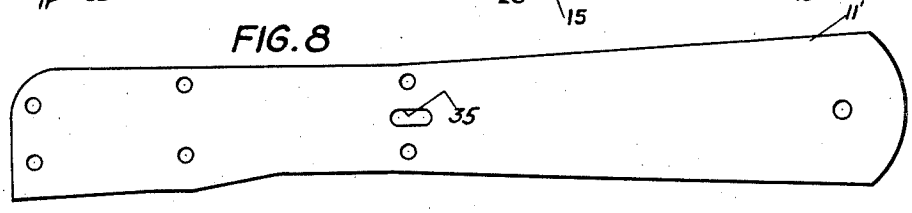


FIG. 9

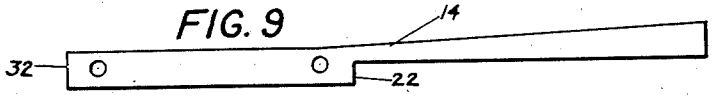
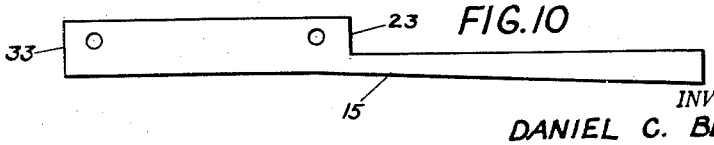


FIG. 10



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FIG. 11

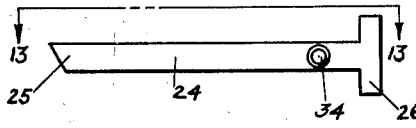


FIG. 12

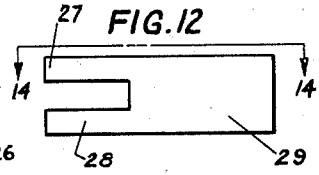


FIG. 13

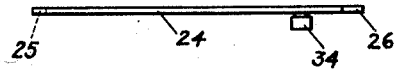


FIG. 14

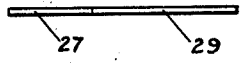


FIG. 15

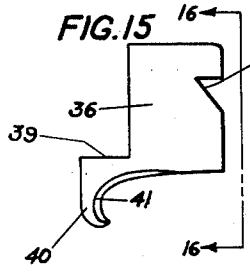


FIG. 17

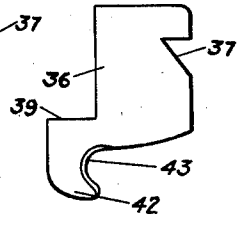


FIG. 18

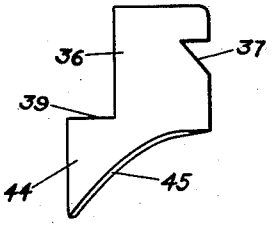


FIG. 16

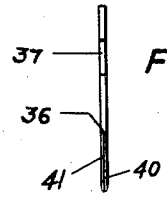
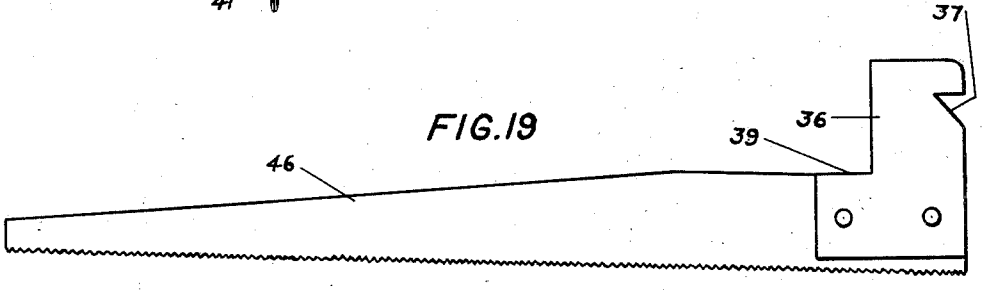


FIG. 19



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Patented Jan. 18, 1949 2,459,407

UNITED STATES PATENT OFFICE

2,459,407

ROOFER'S KNIFE

Daniel C. Beaver, Mason City, Iowa

Application September 5, 1947, Serial No. 772,259

5 Claims. (Cl. 30—337)

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This invention relates to roofer's implements, and more particularly to a roofer's knife of the type having detachable blades which are interchangeable to take care of the various cutting requirements encountered in installing roofing and siding.

A main object of the invention is to provide a novel and improved roofer's implement which is very simple in construction and which is provided with a plurality of interchangeable blades which are very easy to attach to or remove from the implement.

A further object of the invention is to provide an improved cutting implement adapted to perform a wide variety of required cutting operations, the implement being inexpensive to manufacture, easy to assemble and sturdy in construction.

Further objects and advantages of the invention will become apparent from the following description and claims, and from the accompanying drawings, wherein:

Figure 1 is a top plan view of the main body portion of an implement constructed in accordance with the present invention.

Figure 2 is a side elevational view of the implement body shown in Figure 1.

Figure 3 is a cross-sectional view taken on line 3—3 of Figure 1.

Figure 4 is a cross-sectional view taken on line 4—4 of Figure 3.

Figure 5 is a cross-sectional view taken on line 5—5 of Figure 3.

Figure 6 is a cross-sectional view taken on line 6—6 of Figure 3.

Figure 7 is a cross-sectional view taken on line 7—7 of Figure 3.

Figure 8 is an elevational view of a longitudinal body member employed in the main body of the implement of Figure 1.

Figure 9 is an elevational view of an upper spacer member employed in the implement body of Figure 1.

Figure 10 is an elevational view of a lower spacer member employed in the implement body of Figure 1.

Figure 11 is an elevational view of a locking plunger employed in the implement body of Figure 1.

Figure 12 is an elevational view of a spring follower plate employed in the implement body of Figure 1.

Figure 13 is a view taken on line 13—13 of Figure 11.

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Figure 14 is a view taken on line 14—14 of Figure 12.

Figure 15 is an elevational detail view of a first blade adapted to be employed with the implement body of Figure 1, said blade being designed for straight cutting of roofing composition, asbestos, slate shingles, and the like.

Figure 16 is a view taken on line 16—16 of Figure 15.

Figure 17 is an elevational detail view of a second blade adapted to be employed with the implement body of Figure 1, said second blade being designed for trimming out valleys where it is desired to control the depth or number of plies of material being penetrated.

Figure 18 is an elevational detail view of a third blade adapted to be employed with the implement body of Figure 1, said third blade being designed for cutting rag felt or any heavy paper-like material.

Figure 19 is an elevational detail view of a fourth blade adapted to be employed with the implement body of Figure 1, said fourth blade being designed for use as a hack saw to cut nails between damaged or broken shingles, and the like.

Referring to the drawings, the implement body comprises a pair of longitudinal plate members 11, 11' secured together in parallel spaced relationship, the plate members being spaced at their forward ends by an intervening spacer block 12, secured between the plate members 11, 11' by rivets 13, 13. The plate members are spaced at their intermediate portions by upper and lower spacer plates 14 and 15 secured between the plate members 11, 11' by respective sets of rivets 16, 16 and 17, 17. Secured between the rear end portions of the plate members 11, 11' is an end spacer plate 18. Secured to the rear portions of the plate members 11, 11' are handle segments 19, 19, said segments being secured by a transverse rivet 20 at the intermediate portion of the implement body and by a removable pin or screw 21 at the rear end of the body, said pin or screw 21 also passing through the end spacer plate 18.

The upper and lower spacer plates 14 and 17 are formed with respective shoulders 22 and 23. Positioned between the opposed longitudinal inner edges of said plates 14 and 17 and slidable longitudinally therebetween is a plunger member 24 having a tapered forward end 25 and a T-head 26 at its rear end which is adapted to fit against the shoulders 22 and 23. Bearing against said T-head 26 are the spaced fingers 27 and 28

of a follower plate 29 slidably positioned between the opposed inner longitudinal edges of the rear portions of the spacer plates 14 and 15. A spring 30 is positioned between the rear end of follower plate 29 and a forwardly extending projection 31 carried by end spacer plate 18, said spring biasing the follower plate 29 against the T-head 26, whereby the tapered end 25 of plunger member 24 is normally maintained in an advanced position with respect to the vertically aligned forward edges, shown at 32 and 33, of the spacer plates 14 and 15. Plunger member 24 is provided with a laterally projecting pin 34 which projects through a longitudinal slot 35 formed in the plate member 11', so that by manually moving the pin 34 rearwardly in slot 35 the tapered end 25 of the plunger member 24 may be retracted to a release position with respect to the aligned edges 32 and 33 of the spacer plates 14 and 15.

Figures 15 to 19 show various forms of blades which may be interchangeably employed with the implement body above described. Each blade is formed with a holding portion 36 adapted to fit into the space between the aligned edges 32, 33 and the forward spacer plate 12, said holding portion 36 being formed with a notch 37 adapted to interlock with the tapered end 25 of the plunger member 24. The lower edge, shown at 38, of forward spacer plate 12, is spaced upwardly with respect to the bottom forward edge portions of the plate members 11, 11' to define a space which receives a shouldered portion 39 formed on each blade, said shouldered portion 39 cooperating with the spacer plate 12 to resist upward forces acting on the forward end of the blade and thus serving to maintain the blade in fixed position with respect to the implement body. To remove the blade, pin 34 is merely moved rearwardly until detent 25 is completely retracted from notch 37, whereupon the blade may be freely withdrawn downwardly from between spacer plate 12 and the aligned edges 32 and 33.

The blade shown in Figures 15 and 16 is designed with a hook-like depending portion 40 formed with a sharp inner edge 41 and is adapted for straight cutting of roofing composition materials, asbestos, slate shingles, and the like.

The blade shown in Figure 17 also has a hook-like depending portion 42, somewhat wider than the hook portion 40 of Figure 15, and is sharpened at its inner edge as shown at 43. The blade of Figure 17 is designed for trimming out valleys, and the like, where it is desired to accurately control the depth or number of plies of material being penetrated.

The blade of Figure 18 has a tapered depending portion 44 formed with a relatively flat arcuately curved inclined sharpened edge 45. The blade of Figure 18 is designed for cutting rag felt or any heavy paper-like material.

The blade of Figure 19 comprises a hack saw blade 46 secured to the holding portion 36. This blade is designed for metal cutting, as for example, to cut nails between damaged or broken shingles, and the like.

Various other forms of cutting blades may be provided with a holding portion 36 and thus adapted to be releasably secured to the implement body. In thus securing a blade to the implement body, all that is required is to insert the holding portion 36 into the space between forward spacer plate 12 and the aligned edges 32 and 33 and to press the holding portion upwardly until the detent 25 snaps into the notch 37 of said holding portion. The holding portion is then securely locked to the body of the implement.

By making the pin or screw 21 removable, the end spacer plate 18 may be readily removed whenever it is necessary to replace a spring 30.

It is to be noted that by employing the structure of the present invention, the body of the implement can be made very thin; the release pin 34 is at the side of said body and does not interfere with the grip thereon; and when the implement is used there is no strain on the handle portion of the body, all the strain being absorbed in the forward locking portion thereof.

With the implement of the present invention, any number of different types of blades may be employed, such as keyhole saws, sickles, and the like.

While certain specific embodiments of a roofer's cutting implement have been disclosed in the foregoing description, it will be understood that various modifications within the spirit of the invention may occur to those skilled in the art. Therefore it is intended that no limitations be placed on the invention except as defined by the scope of the appended claims.

What is claimed is:

1. A cutting implement comprising a pair of elongated plate members, means securing the plate members in parallel spaced relation, said means including a front spacer plate between the forward end portions of the plate members and upper and lower spacer plates between the intermediate portions of the plate members, a plunger member slidably positioned between the opposed edges of said upper and lower spacer plates and between said plate members, means carried between the rear portions of said plate members biasing said plunger member forwardly, and a cutting blade having a holding portion adapted to be received in the space between said front spacer plate and the forward edges of said upper and lower spacer plates said holding portion being formed with a notch adapted to lockingly receive the forward end of said plunger member.

2. A cutting implement comprising a pair of elongated plate members, means securing the plate members in spaced parallel relation, said means including a front spacer plate between the forward end portions of the plate members and upper and lower longitudinal spacer plates between the intermediate portions of the plate members, a plunger member longitudinally slidable between the opposed inner edges of said upper and lower spacer plates and between said plate members, the forward end of said plunger member being tapered to define a detent, spring means carried between the rear portions of said plate members biasing said plunger member forwardly, and a cutting blade having a holding portion adapted to be received in the space between said front spacer plate and the forward edges of said upper and lower spacer plates, said holding portion being formed with a notch adapted to lockingly receive said detent and with a shoulder adapted to underlie the front spacer plate.

3. A cutting implement comprising a pair of elongated plate members, means securing the plate members in spaced parallel relation, said means including a front spacer plate between the forward end portions of the plate members and upper and lower longitudinal spacer plates between the intermediate portions of the plate

members, said longitudinal spacer plates being formed with rearwardly facing shoulders at their inner opposed edges, a T-headed plunger member slidably positioned between said longitudinal spacer plates, the forward end of said plunger member being tapered to define a detent, spring means between the rear portions of the plate members urging the T-head of the plunger member against said shoulders, and a cutting blade having a holding portion adapted to be received in the space between said front spacer plate and the forward edges of said upper and lower spacer plates, said holding portion being formed with a notch adapted to lockingly receive said detent and with a shoulder adapted to underlie the front spacer plate.

4. A cutting implement comprising a pair of elongated plate members, means securing the plate members in parallel spaced relation, said means including a front spacer plate between the forward end portions of the plate members and upper and lower spacer plates between the intermediate portions of the plate members, a plunger member slidably positioned between the opposed inner edges of said upper and lower spacer plates and between said plate members, spring means carried between the rear portions of said plate members biasing said plunger member forwardly, a cutting blade having a holding portion adapted to be received in the space between said front spacer plate and the forward edges of said upper and lower spacer plates, said holding portion being formed with a notch adapted to lockingly receive the forward end of said plunger member

and with a shoulder adapted to underlie the front spacer plate, one of the plate members being formed with a longitudinal slot, and a pin carried by said plunger member projecting through said slot.

5. A cutting implement comprising a pair of elongated plate members, means securing the plate members in parallel spaced relation, a front spacer plate between the forward end portions of the plate members, the bottom edge of said front plate being spaced upwardly from the bottom edges of said plate members, upper and lower spacer plates between the intermediate portions of the plate members, a plunger member slidably positioned between the opposed inner edges of said upper and lower spacer plates and between said plate members, spring means carried between the rear portions of said plate members biasing said plunger member forwardly, a cutting blade having a holding portion adapted to be received in the space between said front spacer plate and the forward edges of said upper and lower spacer plates, said holding portion being formed at its rear edge with a notch adapted to lockingly receive the forward end of the plunger member and with a shoulder at its forward edge adapted to underlie the front spacer plate, one of the plate members being formed with a longitudinal slot, and a pin carried by said plunger member projecting through said slot.

DANIEL C. BEAVER.

No references cited.