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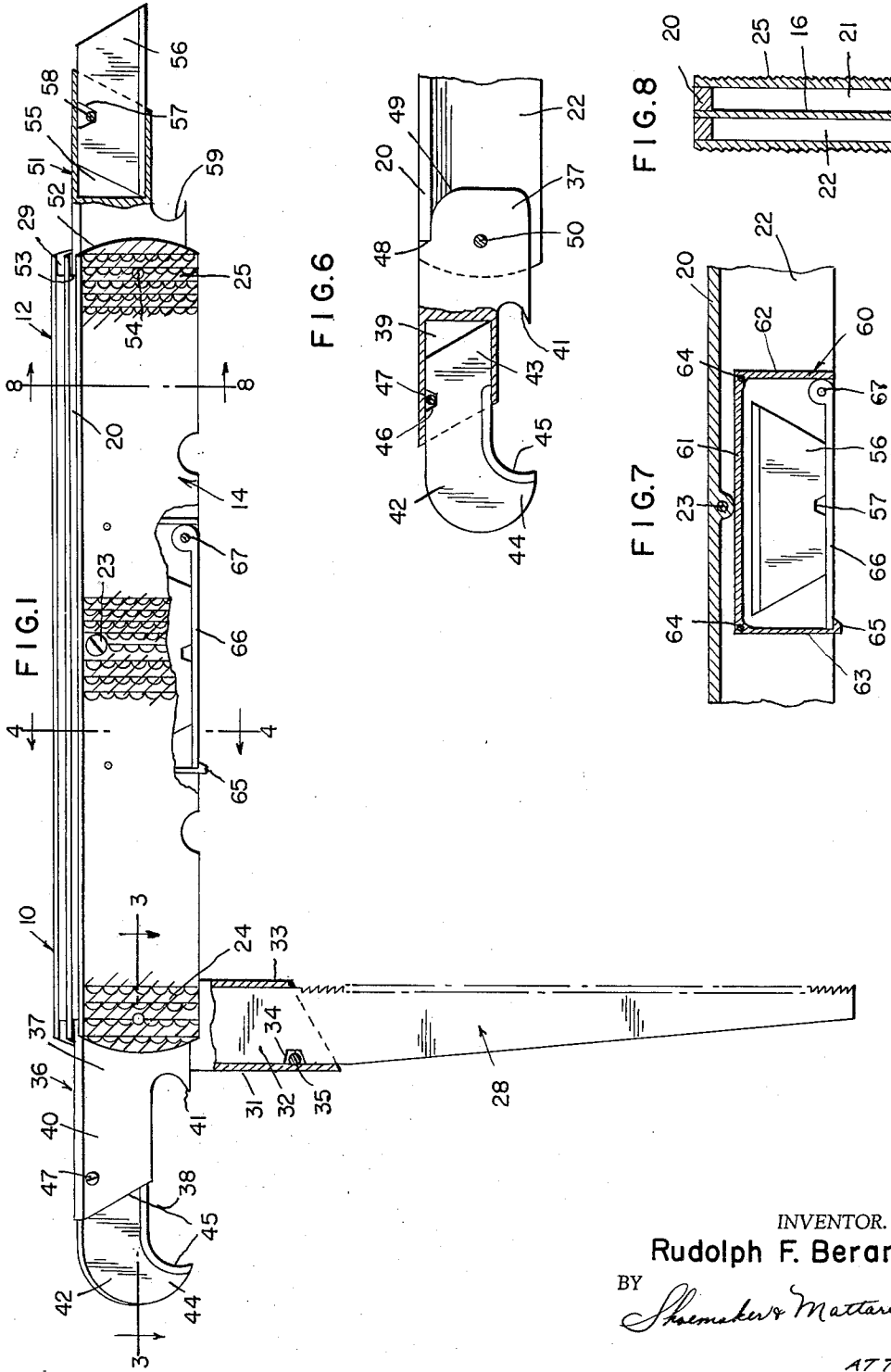
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2,980,996

SHEATHED TOOL WITH DETACHABLE BLADE

Filed May 8, 1958

2 Sheets-Sheet 1



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FIG. 2

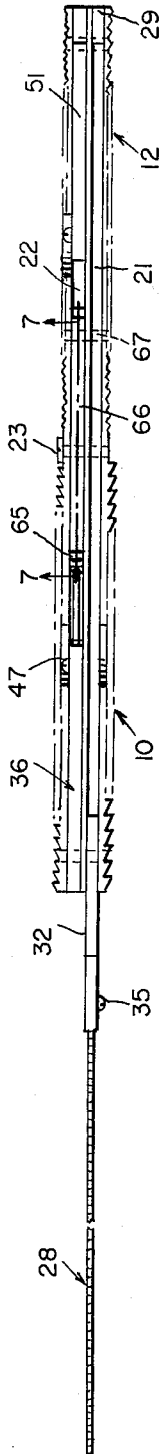


FIG. 5

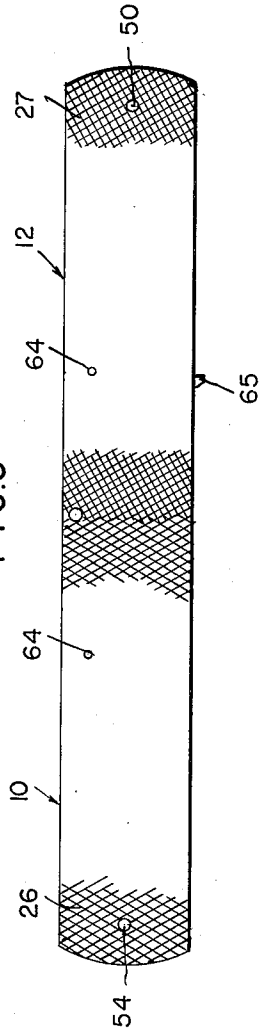


FIG. 4

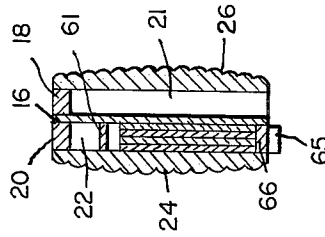
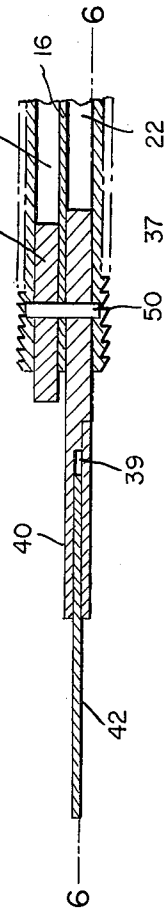


FIG. 3



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## SHEATHED TOOL WITH DETACHABLE BLADE

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2 Claims. (Cl. 30—157)

This invention relates generally to the class of tools and is directed particularly to an improvement in compound or combination tools.

Mechanics whose work requires that they employ a number of individual tools or implements in the carrying out of certain jobs, find it necessary to carry about with them a box or kit in which to keep a multiplicity of different tools for use in their work.

Such kits usually are in the nature of a box or tray having a handle and the different tools are ordinarily thrown into the box in an unorganized manner so that as the different tools are required for use, a great deal of time is often wasted in hunting for the right tool.

It is accordingly a particular object of the present invention to provide in one unit or one device a combination of different tools or implements which are associated with one another so that they may be readily selected for use but wherein the various tools or implements are also so assembled or connected together that when one is in use the others are covered or shielded and are out of the way and will not interfere with or hamper the user.

Another object of the invention is to provide a new and novel combination tool employing several different types of cutting implements, wherein a new and novel means is provided by means of which the individual cutting implements can be removed and replaced as may be found necessary.

Still another object of the invention is to provide a new and novel combination tool embodying a handle portion constructed in general similarity to a pocket knife and wherein a number of socketed adapters are pivotally joined to the handle body to be swung from a covered or encased position to an extended position for use and which adapters are designed to have blades or cutting implements detachably mounted therein.

A still further object of the invention is to provide a new and novel combination tool in which there is a main body portion constructed in general similarity to a pocket knife and having the side walls or side plates in the form of rasps and/or files so that the said side plates of the tool body can be used for filing or rasping operations as may be desired.

A still further object of the invention is to provide a new and novel combination tool of the character stated having incorporated in the body thereof a case or box designed to contain additional blade elements for replacing other blades which may have become dull or broken.

Other objects and advantages of the invention will become apparent as the description of the same proceeds and the invention will be best understood from a consideration of the following detail description taken in connection with the accompanying drawings forming part of the specification, with the understanding, however, that the invention is not confined to a strict conformity with the showing of the drawings but may be changed or modified so long as such changes or modifica-

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tions mark no material departure from the salient features of the invention as expressed in the appended claims.

In the drawings:

5 Fig. 1 is a side perspective view of a combination tool constructed in accordance with the present invention and showing the cutting implements and the adapters for the same in opened-out position and with a portion of one side plate broken away to show the extra cutter storage case;

10 Fig. 2 is a view looking at the front of the implement and showing the illustrated saw in opened-out position;

Fig. 3 is a fragmentary detail section taken substantially on the line 3—3 of Fig. 1;

15 Fig. 4 is a transverse section taken substantially on the line 4—4 of Fig. 1;

Fig. 5 is a view looking at one side of the implement with all of the cutters in closed position and showing two types of rasp forming the side plate as contrasted with two other types of rasp forming the opposite side plate and shown in Fig. 1;

Fig. 6 is a sectional view taken substantially along the line 6—6 of Fig. 3;

25 Fig. 7 is a sectional view taken substantially along the line 7—7 of Fig. 2; and

Fig. 8 is a transverse section taken substantially on the line 8—8 of Fig. 1.

Referring now more particularly to the drawings, the numeral 10 generally designates the body of the implement which, as it is held in the hand in the use of the different elements or units of the implement, functions as the handle. This handle body is of substantial size, particularly as regards the length thereof, and it comprises the two side plates 12 and 14 which have disposed longitudinally therebetween the middle partitioning plate or wall 16 and at the back of the body there are disposed between the partitioning wall 16 and the outer side walls 12 and 14 the long spring leaves 18 and 20.

As shown in Figs. 4 and 8, these spring leaves also function, in addition to their more important function, as hereinafter pointed out, as separators so as to form the slot 21 which extends throughout the length of the handle body and a second slot 22 which is divided intermediate its ends by the hereinafter described extra blade carrying case.

The spring leaves 18 and 20 extend along the back of the implement and midway between the ends of the implement a screw or rivet 23 is extended through the side plates 12 and 14 and through the spring leaves 18 and 20 to bind all of these elements, together with the partition plate 16, firmly together.

The side plates 12 and 14 of the body have the outer faces thereof formed to provide rasps and/or files. One plate, here shown as the plate 14, is divided transversely into two portions, one of which has a rounded outer side and is cut to form the round rough rasp 24 while the other portion of this plate 14 has its outer face flat and is cut to form the flat rough rasp 25.

The opposite side plate 12 is likewise formed on the outer face to provide cutting surfaces which may be in the form of rasps or files and this plate 12 is divided transversely midway between its ends into a round smooth or fine rasp portion 26 and a flat smooth or fine rasp portion 27.

The long slot 21, which extends the length of the handle body is designed to receive a cutting implement having a length approximately the same as the length of the handle body, such, for example, as a long tapered saw of the character here illustrated and generally designated 28. One end of the long slot 21 is closed by a separator 29 while the opposite end of this slot has positioned therein the shank 30 of a socketed

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adapter 31 which is formed to receive the shank portion 32 of the saw blade 28. Such shank is, as shown, in the form of a flat plate member while the socketed adapter forms an integral elongate part thereof and this form or construction is true with respect to the other shanks and socketed adapter units hereinafter described. The socket into which the shank 32 of the saw blade is introduced is designated 33 and extends into the elongate adapter part from the outer end and is closed at its inner end and the back edge of the shank portion of the saw blade has the notch 34 formed thereacross to receive a set screw 35 which is threaded through the opposite side walls of the socket 33 so that the shank of the saw blade will be held against escape, as will be readily obvious.

At the same end of the handle body where the shank 30 of the saw blade receiving adapter is located, is a short socketed adapter 36 which has the shank portion 37 which fits in the slot 22 and the short outer portion of the adapter 36 is flat or of substantially the same thickness as the shank and is cut obliquely across its end as indicated at 38 and has the longitudinal socket 39 formed therein between the flat side walls 40.

The extended portion of the adapter 36 between the walls 40 of the socket is of less width than the shank portion and the inner edge of the socketed extension joins the inner edge of the shank portion 37 in a forwardly directed hook 41 which may be employed for hooking up edges of material or for any other suitable purpose.

The numeral 42 designates a removable or detachable hook blade which has an end portion or shank 43 which is adapted to be inserted in the socket 39 while its opposite end is curved to form the hook or bill 44, the inner edge of which hook and a portion of the inner edge of the shank being sharpened to form the cutting edge 45. The back edge of the hook blade shank 43 is likewise notched as at 46 to receive a set screw 47 which is threaded in the side walls of the socket at the back thereof so as to hold the blade firmly in the adapter.

The back edge of the adapter shank 37 is cut in to form a stop shoulder 48 and the adjacent end of the spring leaf 20 terminates short of the adjacent end of the handle body and is engaged by this stop shoulder 48 when the blade adapter 36 is in the blade-opened position, and the adjacent back corner of the shank 37 is rounded as indicated at 49 to permit the adapter shank to turn in the closing of the blade. The side plates 12 and 14 and the middle division plate 16 are riveted together by the hinge rivet or hinge pin 50 which passes through the adapter shanks 30 and 37 and these shanks turn on this pin as will be readily obvious.

The opposite end of the slot 22 has positioned therein the shank portion of an adapter 51 which is of the same form as the adapter 36 in that it is of a thickness to fill the slot 22 and it has the shank end portion 52 located in the slot and provided at its back edge with the stop shoulder 53 which, when the adapter and the blade which it carries, are in opened-out position for use, bears against the adjacent end of the spring leaf 20. A pivot pin 54 passes through the side plates 12 and 14, the center or division plate 16 and the shank 52 of this adapter and also through the spacer 29. This pin, in addition to functioning as a pivot, also is fixed to firmly rivet the several parts together but, of course, permits the knife carrying adapter to turn so that it may be closed into the slot 20. In this second adapter 51, which, of course, is socketed as indicated at 55, in the same manner as the adapters 31 and 36, the straight edge cutting implement or blade 56 has one end extended and the back of this blade is also notched as at 57 to receive the set screw 58 which is threaded transversely through the sides of the adapter socket as illustrated. While the blade 56 may, of course, be used

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for any suitable purpose, a blade of the type shown is particularly well adapted to use by linoleum layers while the hook blade 42 is suitable particularly for cutting or trimming harder materials such as sheet rock and the like. As will be readily apparent, the formation of the ends of the socketed adapters with an oblique edge so that the back of the socket will be longer than the front, allows for a more firm setting of the blade in the socket and for the exposure of a substantial length of the cutting edge of the blade.

The inner edge of the adapter 51 where the edge of the socketed portion joins the inner edge of the shank portion, is here shown as formed to provide a hook 59 which may be used for any suitable purpose such as the removal of bottle caps and the like.

The slot 22 is divided in two end portions, each of which receives a short blade carrying adapter, by a flat case 60 which is inserted between the side plate 14 and the central division plate 16 at substantially midway between the ends of the slot. This case is provided to house additional short blades such as the blade 56, and it has the inner or bottom wall 61 and the opposite end walls 62 and 63. After being placed in position in the slot 22, rivets 64 are extended through the plates 14 and 16 and through the corner portions of the case so as to fix the case firmly in position and the case additionally serves to strengthen the middle portion of the tool, as will be readily obvious.

The wall 63 of the case is preferably of flexible material so that it may be bent or flexed in the slot 22 and the outer end of this flexible wall is hooked, as indicated at 65, to fasten in closed position the cover 66 which lies between the walls 62 and 63 and between the plates 14 and 16 and this cover is supported at the end opposite from the hook 65 upon the pivot pin 67 which extends across the slot 22 between the plates 14 and 16.

From the foregoing it will be seen that there is provided by the present invention a combination tool of new and novel construction which provides in addition to the several cutting implements which are pivoted to be closed in the slots of the body, the novel handle body side plates in the form of rasps or cutting implements, and the novel pivoted adapters which facilitate the easy removal and replacement of the cutting implements and which when attached to the cutting implements form an integral part thereof to be closed with the implements in the receiving slots.

The tool also affords a novel provision of a case or compartment in which may be stored the short cutting blades. The use of short blades is made possible because of the provision of the socketed adapters in which an end of the blades can be inserted. Because of this very desirable feature of having the socketed adapters, shorter blades may be used and because of the fact that shorter blades can be used in the implement, provision can be made for storing such blades in the body of the implement as in the case 60 which is located in the central part of the body between the aligned adapters and the short blades which they carry.

I claim:

1. A tool comprising an elongate substantially flat handle body comprising at least two spaced parallel plates, a spring leaf extending longitudinally between and secured intermediate its ends to said plates and forming with adjacent edges of the plates the back of the handle body, said plates forming a slot longitudinally of the body and open along the front side of the body, a flat member in each end of the slot between and separating said plates, a pivot pin extending transversely through each flat member and into the plates on opposite sides thereof, said flat members being rotatable on their respective pivot pins and having turning bearing on one edge against an end of the adjacent spring leaf, each of said flat members including an elongate portion of reduced width and having a socket formed therein from its

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outer end and terminating in a closed bottom at its inner end short of the pivot pin, said elongate portion having a back edge and a front edge and having its free outer end formed oblique to its length whereby said back edge is of greater length than the front edge, said back edge being flush with said one edge of the member, an elongate work implement having a back edge and a front edge and an end adapted for insertion into the socket of a member with the back edge of the work implement against the long back edge side of the socket, said work implement having a recess formed transversely of the back edge, and a securing element removably extended transversely of and through the socket for engagement in the recessed edge of the work implement therein, said work implement having a major portion of the said front edge formed for the performance of a work operation.

2. A tool comprising a flat handle body embodying at least two spaced parallel plates, a leaf spring extending longitudinally between and secured inwardly of one end to said plates and forming with adjacent edges of the plates the back of the handle body, said plates forming a slot open along the front side of the body, a flat member in an end of the slot between and separating said plates, a pivot pin extending transversely through the flat member and into the plates on opposite sides thereof, said flat member being rotatable on its pivot pin and having turning bearing on one edge against the end of the adjacent spring leaf, said flat member including an elongate portion of reduced width and having a socket formed therein

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from its outer end and terminating in a closed bottom at its inner end short of the pivot pin, said elongate portion having a back edge and a front edge and having its free outer end formed oblique to its length whereby said back edge is of greater length than the front edge, an elongate work implement having a back edge and a front edge and an end adapted for insertion into the socket of the elongate portion of the flat member with the back edge of the work implement against the long back edge side of the socket, said work implement having a recess formed transversely of the back edge, and a securing element removably extended transversely of and through the socket for engagement in the recessed edge of the work implement, said work implement having a major portion of the said front edge formed for the performance of a work operation.

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