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3,473,712

COMBINATION TOOL AND CASE THEREFOR

Filed Feb. 6, 1967

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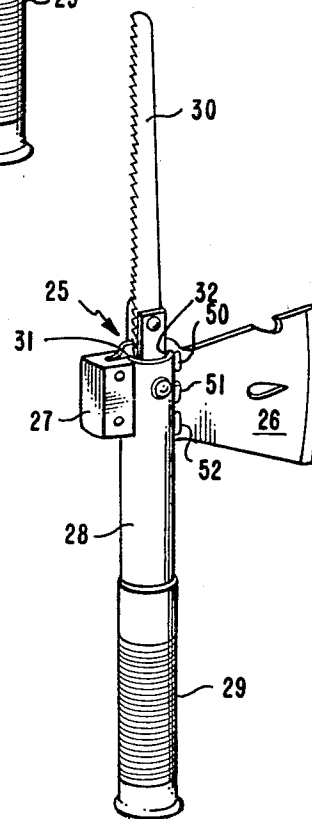
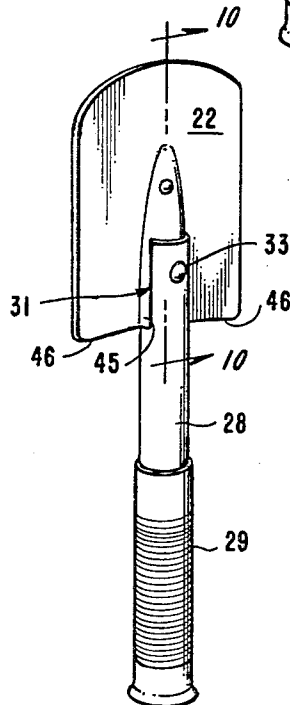
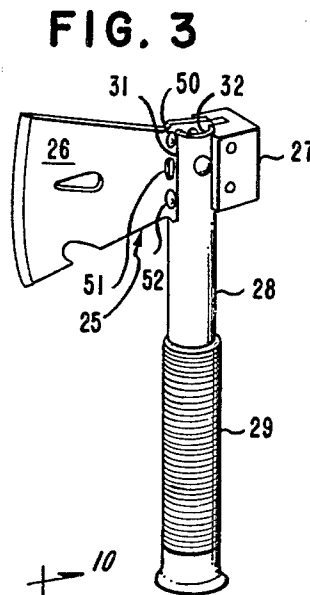
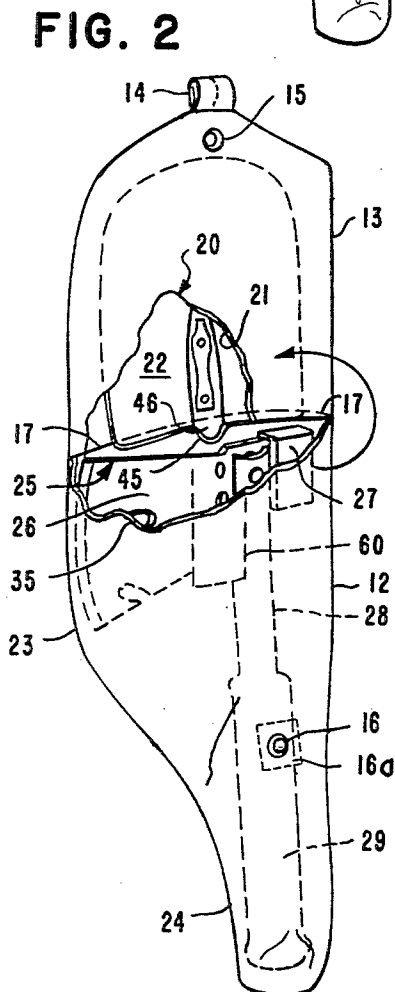
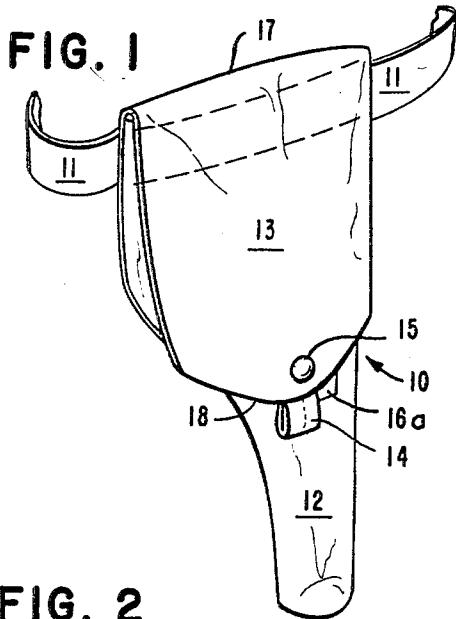


FIG. 4

FIG. 5

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2 Sheets-Sheet 2

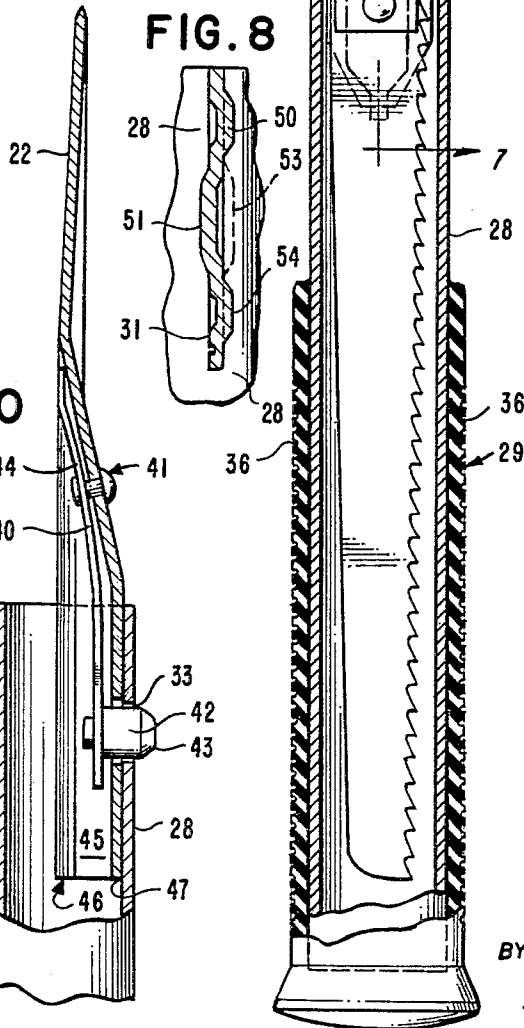
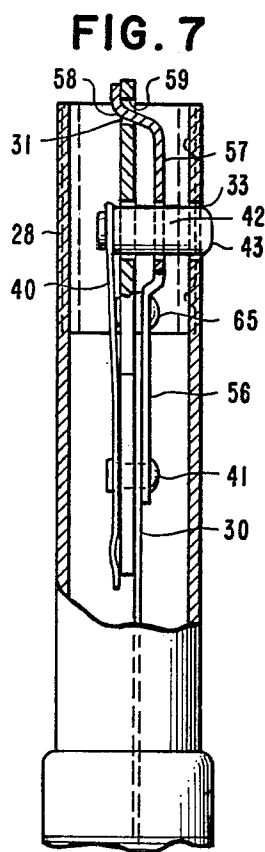
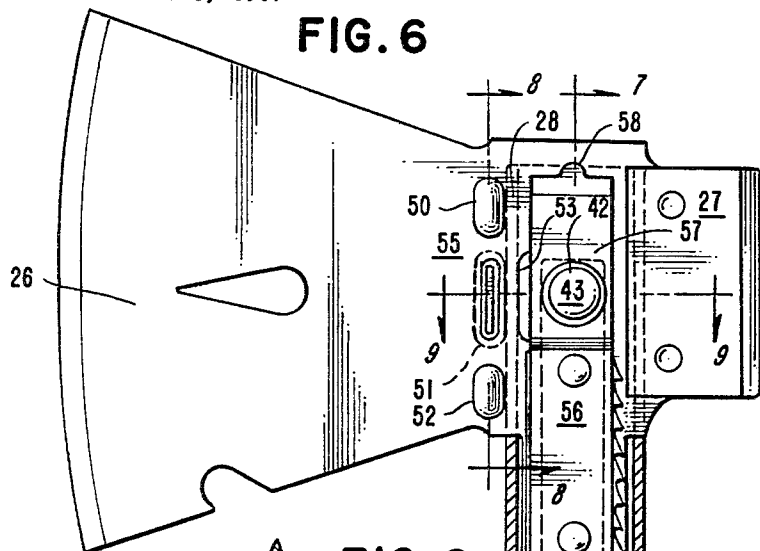
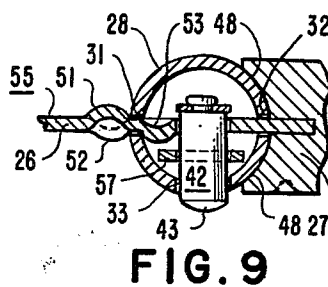
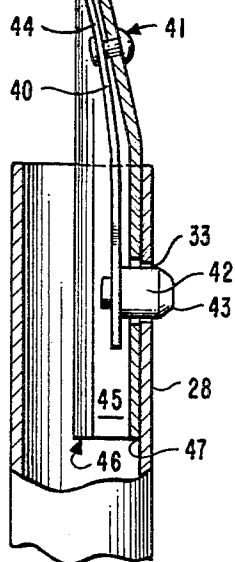


FIG. 10



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7 Claims

ABSTRACT OF THE DISCLOSURE

A combination tool having various assemblable work elements and a handle, a novel case therefor and novel locking and guide means for assembling the work elements to and storage thereof within the handle and the case.

Tool assemblies having a handle to which a variety of work elements may be attached are known in the prior art, as are such tool assemblies involving hollow handles in which to store the unused work elements. These types of devices are particularly well known in the screwdriver tools in which can be stored the several different bits supplied in the screwdriver handle.

However, the work elements of some tools are rather large compared with the handle so that storage within the handle is, at best, inconvenient, and, at worst, impossible. An example of a tool assembly of this type would be an axe or hatchet head, or a shovel blade, or even a hammer head in combination with a handle. These are obviously larger than a size which might reasonably be fitted into the axe, hammer or shovel handle.

This invention contemplates a handle which may be hollow to receive a saw blade, the saw blade being attached to a hammer-and-axe-head combination and fittable into the hollow handle in alternate positions, so that the saw or axe and hammer may be used selectively. There is also provided a shovel blade which may be substituted for the saw blade, axe and hammer unit and a novel case which makes it possible to carry the handle and all of the accessory heads, blades and the like on one's belt, or at the waist with a self-belt to which the novel case may be affixed through a belt loop on the case. In this fashion the tool heads, blades and handle are readily accessible when needed.

The tool assembly of the invention is useful to persons engaged in various outdoor activities, such as hunting, camping, or prospecting. It may be carried as an emergency tool combination to assist an individual to survive until assistance can reach him or until he can reach a place where assistance is available. The combination of tools are such as to permit many activities like digging, chopping, hammering, and sawing to provide shelter, foraging for food, cutting wood for fire of any number of other activities that may be associated with an emergency situation in a remote locality.

The portion of the respective work elements of the kit which may be fitted to the handle, includes identical spring-loaded bayonet snap-lock devices which interfit with snap-button-receiving apertures and slots in the handle to provide positive locking action. The axe-hammer-saw-blade combination work element has a novel dimple and pimple arrangement on opposite faces of the portion thereof which fits into the slots of the handle to insure against rocking of the saw blade or axe-hammer heads in use and to maintain the work elements rigid in the handle for better use in a work situation.

The outer surface of the handle is ridged to provide more efficient gripping thereof by the user.

The objects of the above described kit, as hereinbefore indicated, and additional objects and advantages thereof

will be more clearly understood from the specification which follows taken together with the drawings and the appended claims. In the drawings preferred embodiments are shown but should not be construed as limiting the invention to these embodiments only. It should be clearly understood that the embodiments shown are merely exemplary and that those skilled in the art pertaining to the invention should be able to conceive other embodiments in the light of the teachings herein within the ambit of the claims.

In the drawings:

FIGURE 1 is a perspective view of the holster-type case for the multiple-use tool assembly of the present invention, showing it in its folded-over condition as it attaches to a user's waist belt;

FIGURE 2 is a perspective open view of the case of the tool assembly according to this invention;

FIGURE 3 is a perspective view of the handle of the tool assembly according to this invention, with one of the work elements inserted therein in its use and packing condition;

FIGURE 4 shows in perspective a different tool element inserted in the handle;

FIGURE 5 is a perspective view of the tool handle with the work element shown in FIGURE 3 inverted to illustrate the use of an alternative work element therewith;

FIGURE 6 is a partially cutaway view of the handle with a combination work element according to the invention inserted therein;

FIGURE 7 is a sectional view taken at line 7—7 in FIGURE 6, showing in detail the bayonet locking mechanism utilized with the invention;

FIGURE 8 is a sectional view taken at line 8—8 of FIGURE 6;

FIGURE 9 is a sectional view taken at line 9—9 of FIGURE 6; and

FIGURE 10 is a sectional view taken at line 10—10 in FIGURE 4.

As hereinbefore indicated, the present invention comprises a combination tool kit assembly and a case for the handle and work elements thereof. The case 10 is shown in FIGURE 1 as it appears when worn by the user on a belt 11, shown in part. With reference to both FIGURES 1 and 2 in which the holster-like case 10 is shown respectively in the open and closed position, the case 10 may be seen to consist of a lower or holster portion 12 and an upper or flap portion 13. The flap 13 folds over the holster 12 on a fold line 17. The end 18 of cover 13 has a lift loop 14 attached and a snap fastener assembly 15, 16, 16a respectively in the inner surface of cover 13 and outer surface of holster 12, the parts of which interfit to close the case 10 and hold it together when the assembly is not in use and is supported at the user's waist on belt 11 as shown in FIGURE 1.

The cover 13 as is indicated by cut away portion 20 in FIGURE 2 has a pocket 21 which is generally configured to receive for storage a shovel blade 22, one of the work elements of the combination tool assembly. The cover 13 may also include other pockets for other types of tools. The holster portion 12 consists of a shaped pocket wider at the top as at 23 and narrower at the bottom as at 24 so as to receive the handle 28, 29 of the tool with the axe head, hammer and saw assembly 25 as shown in FIGURE 6 and in FIGURE 3 for storage. The wider portion 23 of holster 12 is shown partially cut away at 35 to show the axe and hammer head 25 inserted therein. In FIGURE 2 at 60 in dashed line, there is shown a belt loop attached to the rear of the case for hanging the case on belt 11.

Shovel blade 22 is shown attached to handle 28, 29 in FIGURE 4, and in the partially cross-sectional view of

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FIGURE 10. Hollow handle 28 and 29 includes the tool receiving portion 28 and the holding portion 29. The latter has a ridged rubber outer covering 36 provided for better and more secure gripping action when held in the user's hand.

The tool receiving portion 28 of the handle 28, 29, is slotted at 31, 32 at the top thereof to receive the tool work elements such as blade 22, axe-hammer-saw element 25 and any other useful tool working portions that those skilled in such arts may think of. As an example, other types of saw blades may be equipped with assembly components as hereinafter described or pick-axe heads may be so equipped as to be insertable in handle 28, 29. If the tool of the invention were to be used by prospectors special tools with appropriate pick and chopping heads for mineral use might be made to include the snap in and assembly elements as hereinafter discussed.

As shown in FIGURES 3 and 5, and as may be seen also in FIGURE 6 the axe-hammer-saw combination tool 25 can be inserted into the slot 31, 32 of handle 28, 29 so as to have the appearance of FIGURE 5 for use of the saw 30 and/or the hammer 27 or axe 26, or it may be used in the storage configuration shown in exterior view in FIGURE 3 and in cross-sectional cut-away view in FIGURE 6. In the latter configuration the use is as a hammer or axe only.

If reference is now made to the sectional views in FIGURES 6 through 10 the assembly of the component work elements such as shovel blade 22 and axe-hammer-saw 25 to the upper handle portion 28 will be more fully appreciated.

At a point below the top of handle portion 28 and on an axis perpendicular to slot 31, 32 there is provided a bore 33 in one face of the handle which is hollow as has been previously described. On each of the tool work elements 22 or 25 is provided a spring loaded bayonet snap lock which includes a strong leaf-spring 40 riveted to the tool by one end 44 of the spring as at 41. To the other or free end of spring 40 there is fixedly attached a locking button 42 which is dimensioned in diameter to fit bore 33 and rounded on its exposed surface 43 so as to slide easily in and out of the inner portion of handle 28 as the tool work element is being inserted into or removed from the handle 28 and so that the locking button 42 will readily snap into bore 33 as may be seen in FIGURES 7 and 9 under the urge of spring 40. The work element is thus held tightly in place in slot 31, 32 and cannot be removed without first pressing upon button 42 against the urge of spring 40 into bore 33 so that tool 22 or 25 can be removed from handle 28.

There are several varieties of fitting means employed in the tools of this invention for aiding in the rigid holding of the tool such as 22 or 25 in the handle 28. One of these is the half-round extrusion 45 of shovel blade 22 which may be seen in the heel portion 46 thereof and which fits snugly along the inner contour of handle 28 as may be seen at 47 in FIGURE 10. The other is the rounded under-cut 48 in the part of hammer head 27 fitting against the outer diameter of handle 28 as may be seen particularly in the cross-sectional portion of FIGURE 9. A third fitting means is incorporated in the axe blade 26 at 50, 51, 52 and 53, which may be seen in FIGURES 3, 5, 6, 8 and 9 in various degrees of detail and cross-section. These fitting means 50-53 inclusive incorporate dimples of a generally linear ovaloid configuration pressed in opposite directions into the surface heel edge 55 of axe blade 26. Dimples 50 and 52 are positioned near the top and bottom of one surface of blade 26 while dimple 51 is centrally located between them and in a line with them but pressed outward in the opposite surface of blade 26. Dimple 53 is arranged to be along side dimple 51 and projecting in the same direction as dimples 50 and 52 but so as to fall within the handle 28 whereas dimples 50-52 fall outside the handle 28 when the tool is inserted therein. Thus, when inserted

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in slot 31 as can be seen in FIGURE 9, particularly the separation between dimples 51 and 53 is equal to the thickness of the metal of handle 28 and the inner line of the edges of dimples 50-52 in axe blade 26 and the contour of the curvature 48 of hammer head 27 (see FIGURE 9) are separated by the outer diameter of the upper portion 28 of handle 28/29.

The saw blade 30 can be seen in FIGURES 5, 6 and 7 to be riveted to the axe-hammer head assembly 26-27 using as one of the rivet points the rivet 41 which holds spring 40 at one end and the other rivet being identified at 65. The rivets 41 and 65 hold a pad 56 against blade 30. Pad 56 is locked into the heel 55 of axe blade by a tab 58 which is bent through a bore 59 in heel 55.

There has been described hereinabove a combination tool assembly adapted for general hunting use, forest and woods use, prospecting use, other out-door uses, and for emergency or survival use. The assembly includes a hollow handle which is slotted at the top to receive the work elements of the various tool devices that can be inserted therein. Each of the tool devices includes a bayonet locking means to hold it in the handle. A shovel blade, and a combination axe-hammer and saw have been described and other tool elements suggested which are insertable and tightly fittable into the handle. The tool work elements can be fitted into the hollow handle both for use and for storage and a case has been described which will receive and store both the tools in the handle with the handle and includes a fold over pocket in which to store the external work elements such as the shovel blade and whatever other tools may be a part of the kit. The case can be worn by the user on his waist belt or it can be provided with a special belt.

Those versed in the art will appreciate that the present invention achieves the objects and realizes the advantages hereinbefore mentioned.

Although a specific embodiment of the present invention has been illustrated and described herein, it will be understood that the same is merely exemplary of presently preferred embodiments capable of attaining the objects and advantages hereinbefore mentioned, and that the invention is not limited thereto; variations will be readily apparent to those versed in the art, and the invention is entitled to the broadest interpretation within the terms of the appended claims.

The inventor claims:

1. A tool kit comprising:

- a hollow handle having a slot in the top thereof, a ribbed gripping surface on the lower exterior surface thereof, and a bore in one surface near said top disposed on a radius line perpendicular to said slot,
- a shovel blade having a contoured groove fittable into said hollow handle via said slot, and having a locking pin in said contoured groove, said pin being mounted on a spring in said contoured groove at a position on said spring such that said pin is engageable in said bore under the urge of said spring when said shovel blade is fitted into said slot,
- a combination hammer head, axe blade and saw blade, the hammer head and axe blade being disposed in a line perpendicular to the axis of said handle, the saw blade being attached to said hammer head and axe blade at a midpoint between said hammer head and axe blade and extending perpendicularly to the line of said hammer and axe elements, said combination having a spring and pin assembly thereon similar to that on said shovel blade, the pin thereof being located on a mid-line of said hammer and axe elements said combination being insertable into said slot of said handle in one direction so that said saw blade is within said hollow handle and stored therein and said combination being insertable in an opposite direction so that said saw blade extends outwardly from said hammer and axe elements for use of said saw blade; and

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a case having a lower holster-like portion and an upper flap portion, said flap portion being foldable over said holster portion, said holster portion being pocketed to receive and store said handle and said combination inserted in said one direction thereof; and said flap being pocketed to receive and store said shovel blade, said case also including a belt loop on a rear surface of said holster portion so as to provide for carrying said case on one's belt.

2. In a tool kit a generally cylindrical tubular handle having a slot therein at one end formed by a vertical cut to receive tool work pieces; and a bayonet pin receiving bore on one side of said handle midway between the edges of said vertical cut; a hammer head and axe head combination; the axe head having dimples arrayed on either side thereof for engaging the edges of said vertical cut; said hammer head having a curved contour where it joins the axe head matching the curve of said generally cylindrical handle, so that when said combination hammer head and axe head is inserted in said slot, said hammer head contour and said dimples in said axe head tightly hold said combination in said slot against lateral motion therein; and said combination also having a centrally positioned resiliently mounted bayonet button which is positioned thereon so as to engage said bayonet pin receiving bore to hold said combination in said slot against axial motion therein when said combination is inserted fully in said slot.

3. In a tool kit as defined in claim 2, the hammer head and axe head combination set forth therein wherein said dimples being arrayed on either side of said axe head include at least a first pair positioned in a location falling on the outside diameter of said cylindrical handle and a second pair positioned in a location falling on the inside diameter of said cylindrical tubular handle so as to engage the sides of said slot to hold said axe head rigidly therein, and to guide said axe head-hammer head combination into said slot during the insertion of said combination into said handle.

4. In a tool kit as defined in claim 2 a saw blade attached to said combination hammer and axe head and being positioned thereon so as to be selectively insertable in said hollow handle for storage on one direction and extended for use in the opposite direction, said resiliently mounted bayonet button being positioned so as to engage said bore in either of said selected directions of insertion of said saw, axe and hammer combination into said hollow handle.

5. In a tool kit as defined in claim 2 there being also provided a shovel blade having a central contour disposed

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so as to engage the slot in said hollow handle and a bayonet pin assembly resiliently mounted on said central contour so as to engage said bore, and said contour having a radius such that it fits snugly into the inner diameter of said hollow handle.

6. A tool kit comprising:

a tubular handle open at one end,

a combination tool including an elongate tool body having a hammer head at one end and an axe blade at the opposite end, and a saw blade joined to said body between said hammer head and saw blade and extending generally perpendicular to the longitudinal axis of said body, said tool body having dimples arrayed on each side thereof, and slot

means on said one end of said handle having edges for engaging said dimples for selectively securing said combination tool in a first position wherein said tool body extends transversely of said handle with said hammer head and axe blade disposed at opposite sides of said handle and said saw blade extends longitudinally through said handle so as to be encased by said handle, and a second position wherein said tool body extends transversely of said handle with said hammer head and axe blade disposed at opposite sides of said handle and said saw blade extends longitudinally from said one end of said handle so as to be exposed for use.

7. A tool kit according to claim 6 wherein:

said slot means is defined by a pair of diametrically opposed longitudinal slots entering said one end thereof for receiving said tool body at opposite sides of said saw blade in said first and second positions of said combination tool.

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U.S. Cl. X.R.

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