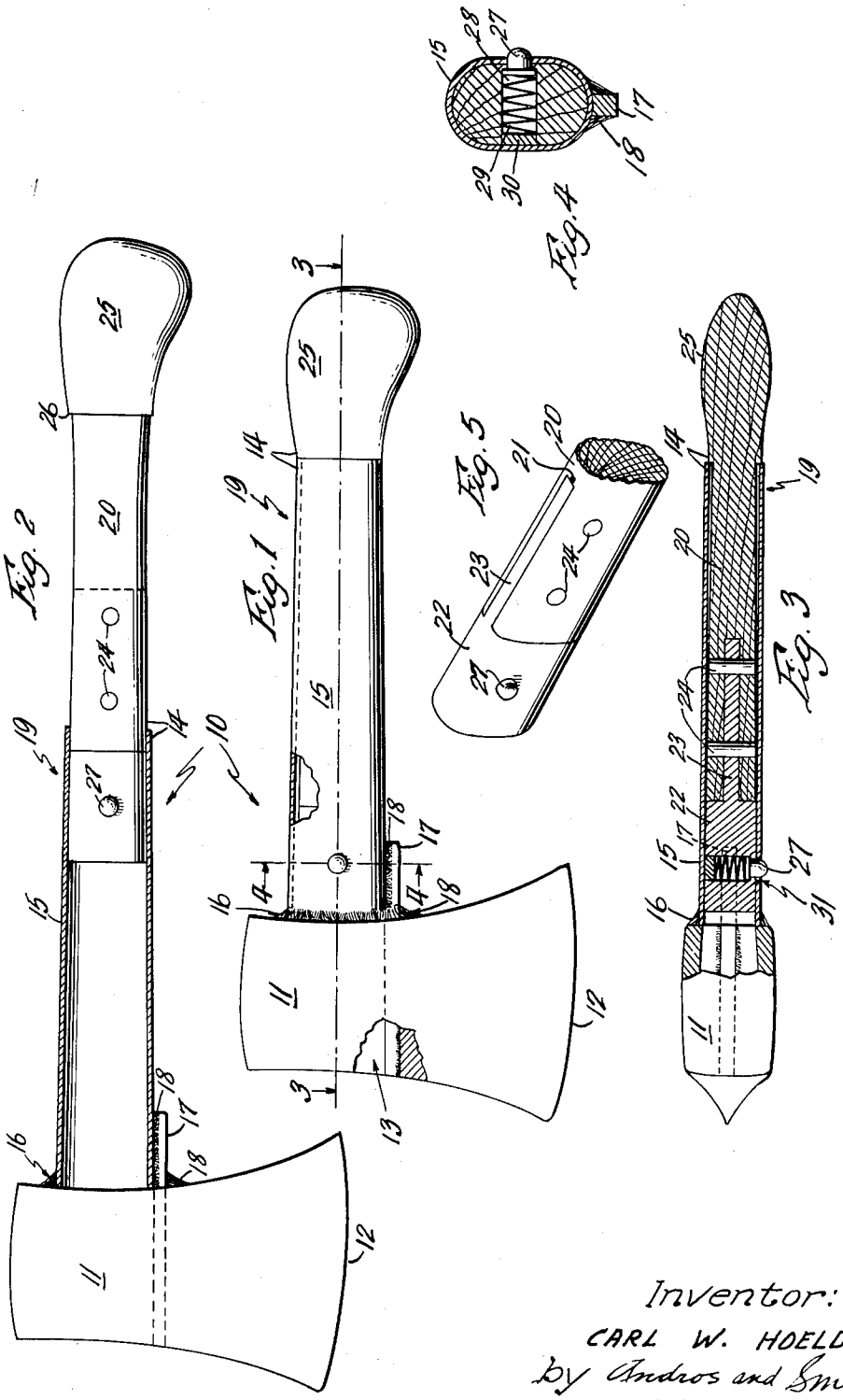
March 20, 1956 C. W. HOELDTKE 2,738,815

AXLE WITH EXTENSIBLE HANDLE

Filed July 27, 1953



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United States Patent Office 2,738,815
Patented Mar. 20, 1956

2,738,815

AXE WITH EXTENSIBLE HANDLE

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Application July 27, 1953, Serial No. 370,283

4 Claims. (Cl. 145—64)

This invention relates to improvements in hand tools, such as, for example, hand axes, or the like, having particular reference to such devices comprising a dual purpose, extensible-contractable handle, whereby the same can be used alternately as a two-handed, or as a single-handed implement, and the provision of such an improvement is the principal object of the invention.

Generally, it is an object of the invention to provide such a device which is simple, yet sturdy and durable of construction, economic of manufacture, relatively free from wear and tear or other mechanical difficulties, and otherwise well suited to the purpose for which it is intended.

More specifically, it is an object of the invention to provide an axe, either single or double bladed, having a dual purpose handle, constituting a tubular extension portion integrally connected at one end to the head, and an extensible-contractable portion slidably or reciprocably mounted within the tubular portion, both portions being so constructed and arranged with respect to each other that the second portion, when contracted, will remain in an out-of-the-way position, whereby the device can be used as a single hand axe, or hatchet, and, when extended, will remain firmly and rigidly positioned at the opposite end of said tubular extension, whereby the device can thus be used as a two-handed axe.

Other specific objects of the invention are the provision of such a device in which the tubular portion is so constricted at its free end to provide a socket in a manner such that it will grippingly and rigidly engage the inner end of the extensible-contractable portion; in which such dual purpose handle is provided withe means whereby said extensible-contractable portion, and tubular portion, are adapted to be held in contracted position to prevent vibration when the device is used as a single hand axe or hatchet; in which such means preferably comprises a spring-loaded detent element carried by the inner end of the extensible-contractable portion, and the tubular portion is provided, for example, with an opening therein to receive the detent element lockingly to hold the same in contracted position; and in which the dual purpose handle preferably consists of a tapered tubular extension sleeve and a reciprocable handle mounted therein that is adapted at opposite ends grippingly to be engaged by the smaller or constricted portion of the tapered sleeve, when alternately used as a hatchet or two-handed axe.

Other objects of the invention will in part be obvious and will in part appear hereinafter.

The invention accordingly comprises an article of manufacture possessing the features, properties, and the relation of elements which will be exemplified in the article hereinafter described and the scope of the application of which will be indicated in the claims.

For a fuller understanding of the nature and objects of the invention reference should be had to the following detailed description taken in connection with the accompanying drawing, in which:

Fig. 1 is a side elevational view, with fragmentary portions broken away and partly in section, illustrating an embodiment of the invention with the dual purpose handle in contracted position for use as a single handed axe, or hatchet;

Fig. 2 is a view similar to Fig. 1, partly in section, illustrating the dual purpose handle in extended position for use as a two-handed axe;

Fig. 3 is a plan view of Fig. 1, partly in section, taken along the transverse lines 3—3 and looking in the direction of the arrows;

Fig. 4 is a transverse sectional view taken along the lines 4—4 of Fig. 1 and looking in the direction of the arrows; and

Fig. 5 is a perspective view of a fragmentary portion of the inner end of the extensible-contractable handle portion.

Referring more particularly to the drawing, there is illustrated generally at **10**, for example, an axe implement having an axe head **11** and, in this instance, a single edge cutting blade **12**. In this particular embodiment there is shown a conventional axe head having a handle receiving opening **13** therethrough, although it will be understood that the invention need not be so restricted since a solid unapertured axe head can be provided.

A dual purpose handle **14** is secured to the axe head. Preferably, this comprises a tapered tubular extension sleeve portion **15** integrally connected at its end of larger diameter to the axe head in any suitable manner, such as, for example, by welding as indicated generally at **16**. Where a conventional apertured type of head is used, in which the aperture is usually of oval or teardrop in cross section, a rod or reinforcing bar **17** is inserted therein beneath the sleeve **15** and welded thereto as at **18, 18**. Since the tapered sleeve is secured to the axe head at its area of greatest diameter, the portion of smaller diameter, or constricted area, will be at its free or outer end which provides a socket portion indicated generally at **19** whereby to receive and hold the extensible-contractable handle portion **20**. It will be noted that the sleeve **15** preferably is oval in cross section since the same may be considered an extension of the head surrounding the aperture or eye of the axe head.

The extensible-contractable inner handle portion **20** is mounted manually to be reciprocated within the sleeve **15** but not removable therefrom during ordinary use. In order to rigidify and strengthen the inner end of the inner handle portion, the same is made partly of metal. The metal portion is preferably secured to the wooden handle portion by slotting or bifurcating the latter as indicated generally at **21**. The metal portion **22** consists of an extension of the wooden portion of the inner handle and is flush therewith, being provided with a tongue **23** extending through the bifurcated portion **21**. The metal and wooden portions are secured together by suitable dowel pins **24**.

The metal portion **22** and the wooden handle adjacent to where it is flush with the metal portion are of a diameter which is slightly greater than the constricted socket area **19** of the tubular sleeve so that the inner handle when extended, will be firmly and grippingly engaged thereby. In this position the device can be used as a two-handed axe and will be found to be very sturdy and durable. There will be no telescoping during use because the outward centrifugal throw of the axe will wedge the extended handle more firmly in position. However, when it is desired to contract the handle, a slight tap on the knob end **25** will readily permit the inner handle portion **20** to be moved back into the sleeve **15**. It will be noted that there is a shoulder **26** at the knob end which will abut the outer end of the sleeve. How-

ever, in order to hold the inner handle firmly in contracted position the diameter of the inner handle **20** adjacent the shoulder **26** is such that it will frictionally engage the constricted outer end of the tapered sleeve.

In order to hold the inner handle portion in contracted position, and against vibration, there is provided a locking means, preferably a detent **27**, mounted in a shouldered recess **28** and outwardly urged by a spring **29** backed by a plug **30**, preferably in the metal portion **22** of the inner handle to receive the detent **27**. The sleeve adjacent thereto is provided with an opening therethrough as indicated generally at **31**. When it is desired to extend the inner handle **21**, it is but necessary to press the detent **27** out of the opening **31**, and, grasping the sleeve **15** adjacent the head **11** with one hand, and the knob **25** with the other, immediately pull the same to extended position whereby the inner end of the inner handle will become firmly seated in the socket or constricted area of the tapered metallic tube **15**.

A device, such as an axe provided with such a dual purpose handle has many advantages. For example, it can be extended or contracted to be used either as a two-handed or single-handed axe or hatchet; and when retracted may conveniently be carried in a sheath, belt or holster, and be stored in more limited space. Where the conventional type of axe head is used with a handle aperture or eye, the inner handle can be made of sufficient length to project therein and project slightly therethrough. It can then be tapped lightly to make it readily extensible. Where it projects beyond the aperture, it can easily be provided with frictional or other locking means thereon, other than the detent shown in the drawing and above described.

It will thus be seen that the objects hereinbefore set forth may readily and efficiently be attained, and since certain changes may be made in the above article and different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description, or shown in the accompanying drawing, shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

Having described my invention what I claim as new and desire to secure by Letters Patent is:

1. In a device of the character described, having a head with at least one cutting edge thereon, the improvement comprising a dual purpose handle, including a tubular extension sleeve handle integrally connected at one end to said head, and an extensible-contractable handle slidably mounted within said sleeve handle, said handles both being correspondingly oval in cross-section and so constructed and arranged with respect to each other that said extensible-contractable handle, when contracted, will remain in an out-of-the-way position within said sleeve handle, whereby said device can be used as a hatchet, and, when extended, will remain firmly and rigidly positioned at the opposite end of said tubular extension, whereby said device can be used as a two-handed axe, the free end of said tubular sleeve handle being constricted in a manner such that it will grippingly and rigidly engage the inner end of said extensible-contractable handle when the latter is in extended position, and frictionally engage the same, when in contracted position, adjacent its outer end, said inner handle having a corresponding increased cross-section at the inner and outer ends thereof for such engagement.

2. In a device of the character defined in claim 1, and further characterized in that said extensible-contractable handle is provided with means on its inner end cooperatively associated with means on said tubular sleeve handle adjacent said head to hold the same in a contracted position against vibration when said device is used as a hatchet.

3. In a device according to claim 2, and wherein said first named means comprises a spring-loaded detent element carried by the inner end of said extensible-contractable handle, and said second means consists of an opening therein adjacent its inner end to receive said detent element, lockingly to hold said portion in contracted position.

4. In a device of the character described, having a head with at least one cutting edge thereon, the improvement comprising the combination therewith of a dual purpose handle, said handle constituting a tapered tubular extension sleeve handle that is oval in cross-section integrally connected at its end of larger diameter to said head; and an extensible-contractable inner handle also correspondingly oval in cross-section, mounted manually to be reciprocated within said sleeve, substantial parts of the inner and outer ends of said inner handle being of a diameter that is greater than a substantial part of the other and smaller end of said tapered tubular sleeve handle, so that the inner end of said inner handle, when extended, will be firmly and grippingly engaged by the smaller end of said sleeve, and, when contracted, a portion adjacent the outer end of said inner handle will be frictionally engaged by the smaller end of said sleeve; and locking means to hold said inner handle in contracted position, whereby said device is adapted alternately to be used respectively as a two-handed axe and a hatchet.

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