Oct. 13, 1942. C. DODEGGE 2,298,643

SAW BLADE ATTACHMENT

Filed May 3, 1941

Fig. 1.

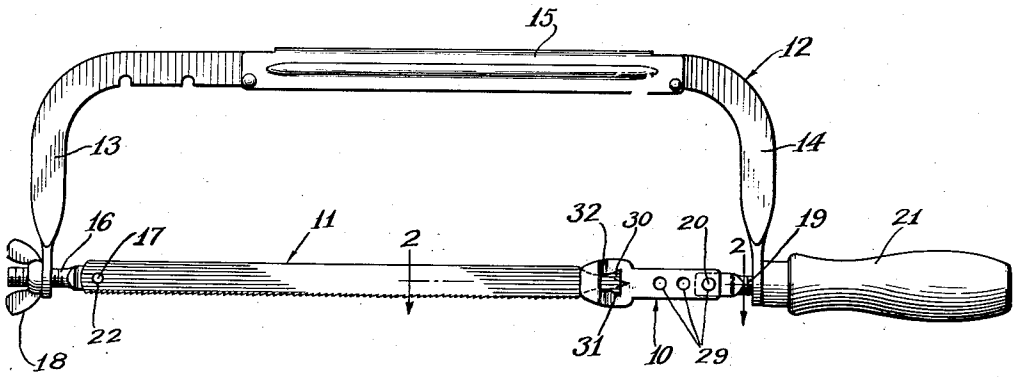


Fig. 2.

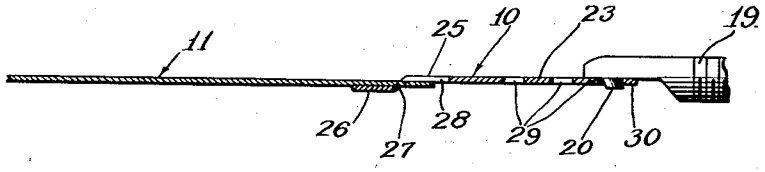
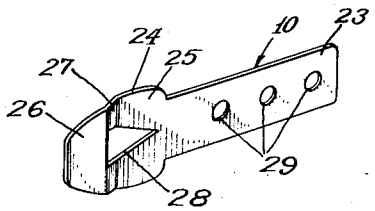


Fig. 3.



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SAW BLADE ATTACHMENT

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7 Claims. (Cl. 145—35)

This invention relates generally to saws, and particularly hacksaws, and especially to an attachment for mounting a hacksaw or like blades in a supporting frame.

It is well-known that hacksaw blades, in general, are relatively easily destroyed or rendered useless, that is to say, the softer, low-temper blades are easily bent, and the brittle, steel blades are easily broken.

The present invention is principally concerned with brittle, steel hacksaw blades which are frequently broken through lack of skill, carelessness, or accident. When such a blade is broken by improper use or accident it frequently breaks relatively near one end thereof. Heretofore it has been more costly to repair the broken blade for further use than it has been to replace it with a new blade. As a result, many broken blades have been discarded even though broken relatively near one end or the other thereof and the blade being thereby shortened relatively very little.

Accordingly, it is an object of my invention to effect and realize a device by means of which a broken hacksaw blade or other like blade may be operatively mounted in its supporting frame, for further use.

Another object of my invention is to construct the new attachment in such a manner that a broken hacksaw or like blade may be easily prepared or conditioned to receive the attachment by a comparatively simple operation.

A further object of my invention is to construct the new attachment in such a manner that an unskilled person may easily attach it to a broken hacksaw or like blade which has been properly prepared or conditioned for its reception.

Another object of my invention is to construct the new attachment in such a manner that an unskilled person may easily insert a broken hacksaw or like blade, having the new attachment attached thereto, in operative position in a hacksaw or like blade-supporting frame.

A further object of my invention is to effect and realize a device for attaching broken hacksaw blades to a hacksaw frame, and which device may be economically manufactured as by a stamping operation.

Other and further objects of the present invention will be apparent from the following description and claims, and are illustrated in the accompanying drawing which by way of illustration, shows a preferred embodiment of the invention and the principles thereof and what I now consider to be the best mode in which I have contemplated applying those principles. Other embodiments of the invention embodying the same or equivalent principles may be used and structural changes may be made as desired by those skilled in the art without departing from the present invention and the purview of the appended claims.

In the drawing:

Fig. 1 is an elevational view showing a preferred embodiment of the invention attached to a hacksaw blade and mounted in a hacksaw frame;

Fig. 2 is a fragmentary sectional view taken substantially along the line 2—2 in Fig. 1; and

Fig. 3 is a detail view showing a preferred embodiment of the present invention.

A preferred embodiment of the new attachment is shown in the drawing (Fig. 3) wherein it is generally indicated at 10 and is shown associated with a hacksaw frame which is generally indicated at 12 (Fig. 1).

The general purpose of my device or attachment 10 is to support a part of a broken hacksaw blade, such as 11, in a hacksaw frame 12 in a manner which is best illustrated in Fig. 1 of the drawing.

Hacksaw frames are customarily constructed with a front arm 13 and a rear arm 14 which are adjustably connected relative to each other through a channel-shaped member 15, as shown in Fig. 1.

The outer end portion of the front arm 13 of the frame 12 has a hole formed therein through which a threaded stud 16 is inserted. The stud 16 has a pin 17 on its inner end portion and a wing nut 18 is screwed onto the outer end portion of the stud 16.

The outer end portion of the rear arm 14 of the frame 12 has a hole formed therein through which a threaded stud 19 is inserted. The stud 19 has a pin 20 on its inner end portion and a handle 21 is screwed onto the outer end portion of the stud 19.

The conventional, complete and unbroken hacksaw blade has a hole, such as 22, provided in each of its end portions, and when a new and unbroken hacksaw blade is mounted within a hacksaw frame, such as that which is generally indicated at 12, the holes in the end portions of the hacksaw blade engage the pins 17 and 20, respectively, and the blade is properly tensioned in the frame 12 by adjusting the wing nut 18 or the handle 21 on the threaded studs 16 and 19, respectively.

Heretofore, whenever a hacksaw blade was

broken and it was desired to repair it, it was deemed necessary to grind a new hole, such as the hole 22, through the broken end portion of the blade in order to connect that end portion to one of the pins 17 or 20. When the softer or low-temper blades were broken such an operation was not difficult or expensive to perform and was often resorted to. However, to perform such an operation, a very small grinder, such as a pencil grinder, must be used, and, therefore, when a relatively brittle steel blade was broken, although such blades are relatively expensive, it was generally considered cheaper to replace the broken blade rather than to subject the small but expensive pencil grinders to the amount of wear necessary to grind a new hole in the broken blade. As a result, many broken hacksaw blades have been discarded in the past, even though broken relatively near one end thereof and even though the broken blade was still of sufficient length to use if there had been any practical means available for mounting it in a hacksaw frame.

The present invention provides a practical means of mounting a broken hacksaw or like blade within a hacksaw or like frame without the necessity for a relatively expensive pencil grinding operation and with the only operation required being an inexpensive grinding operation which may be performed on an ordinary grinding or emery wheel such as may be found in any machine shop.

The new attachment or device 10 may be made of hardened steel, or other suitable material, and preferably has a shank 23 and an enlarged or flared head 24. The head 24 has a body portion 25 and an outer tip portion 26 which is joined to the body portion 25 by a shoulder 27, this portion 26 being offset from the plane of the shank portion 23 of the attachment 10, as shown in Figs. 2 and 3. A triangular-shaped hole or opening 28 is formed in the center of the body portion 25 of the head 24 with its base lying along the shoulder 27 and its apex extending inwardly or rearwardly toward the shank 23.

A plurality or row of holes 29 are formed in the shank 23, along the center line thereof, for reasons which will be explained hereinafter.

When a steel hacksaw blade is broken, the broken end portion of the larger part of the blade, such as that indicated at 11, may be easily ground on an abrasive wheel to form a dovetail-shaped tongue 30 having an enlarged or flared end portion 31 and a relatively narrow neck portion 32, as is best illustrated in Fig. 1.

The width of the tongue 30 at its rear end is considerably greater than the width of the base of the triangular-shaped hole 28 which is formed in the head 24 of the attachment 10. However, the width of the tongue 30 at its rear end is less than the distance between the base and the apex of the triangular-shaped hole 28, so that the tongue 30 of the broken blade 11 may be inserted through the triangular-shaped hole 28 in the attachment 10. After inserting the tongue 30 of the broken blade 11 through the triangular-shaped hole 28 in the attachment 10, the blade 11 may be turned so that the rear edge of the tongue 30 of the blade 11 (right hand end as seen in Fig. 1) is parallel to but spaced from the base of the triangle 28, and when in this position, the side edges of the tongue 30 of the blade overlie the sides or side walls of the triangular-shaped hole 28 in the attachment 10, thereby securely connecting the broken blade 11 and the attachment 10 against tensional forces acting along their respective axes. When properly positioned within the triangular-shaped hole 28, the flat surface of the blade 11 rests against the flat surface of the offset tip 26 of the blade attachment 10 and is aligned with the shank portion 23 of the blade attachment 10, as shown in Fig. 2.

It will thus be seen that in the practice of the present invention, when a hacksaw blade is broken the longer portion 11 thereof may be ground to form the tongue portion 30 thereon, and at one end thereof. The broken blade 11 may then be attached to the new blade attachment 10 by inserting the tongue portion 30 thereof through the hole 28 formed in the attachment 10 and turning the blade 11 into alignment with the shank 23 of the attachment 10. The broken blade 11 and the new attachment 10 may then be inserted, as a unit, into a hacksaw frame such as 12, by inserting one of the pins 17 or 20 in the hole 22 which is formed in the unbroken end portion of the blade 11, placing the other pin 17 or 20 in one of the holes 29, and then properly tensioning the blade 11 and the blade attachment 10 within the hacksaw frame 12 either by adjusting the wing nut 18, on the threaded stud 16, or by adjusting the handle 21 on the threaded stud 19. When so positioned, and properly tensioned, the broken blade 11 is securely mounted in the hacksaw frame 12 and is ready for further use.

In the preferred embodiment of my invention which is illustrated in the accompanying drawing, I have shown three holes 29 formed in the shank 23 of the new blade attachment 10. These holes 29 are provided to offer greater adjustability in or between the assembled blade 11 and blade attachment 10 and a larger or smaller number of holes may be provided, as desired.

It is to be noted that the opening 28 in the blade attachment 10 is preferably (though not necessarily) triangular in shape, as shown, because such a formation provides a larger amount of metal underlying the tongue 30, and affords a stronger union between the blade 11 and the blade attachment 10, when the parts are assembled as in Figs. 1 and 2.

While the present invention is shown as being utilized in connection with a hacksaw of the hand or manually operable type, it is to be understood that it may also be utilized in conjunction with power-operated hacksaws and the like.

While I have illustrated and described a preferred form of my invention, it is understood that this is capable of variation and modification and I, therefore, do not wish to be limited to the precise details sets forth but desire to avail myself of such changes and alterations as fall within the scope of the following claims.

I claim:

1. A device for attaching an end portion of a broken and consequently shortened saw blade to a saw blade supporting frame so that the said broken and consequently shortened saw blade may again be used in said saw blade supporting frame, notwithstanding its shortened length, said device being especially adapted for use with broken hacksaw blades and hacksaw frames: said device comprising a member having a portion detachably engageable with a shaped end portion of said broken and shortened saw blade so as to provide an axial extension of the said saw blade at an end thereof and between the said saw blade and the said saw blade support-

ing frame, and means for detachably attaching the said member to the said saw blade supporting frame, said member being provided with a substantially triangular-shaped opening for the reception of a dovetail-shaped end portion of a broken hacksaw blade.

2. A device for attaching an end portion of a broken and consequently shortened saw blade to a saw blade supporting frame so that the said broken and consequently shortened saw blade may again be used in said saw blade supporting frame, notwithstanding its shortened length, said device being especially adapted for use with broken hacksaw blades and hacksaw frames: said device comprising a member having a portion detachably engageable with a shaped end portion of said broken and shortened saw blade so as to provide an axial extension of the said saw blade at an end thereof and between the said saw blade and the said saw blade supporting frame, and means for detachably attaching the said member to the said saw blade supporting frame, said member comprising a substantially flat piece of metal stock providing a shank portion on said member; a head portion having a part offset from the plane of said shank portion, said head portion having a substantially triangular-shaped opening formed therein for the reception of a dovetail-shaped end portion of a broken hacksaw blade which is adapted to lie against one side of the said offset part, the apex of said substantially triangular-shaped opening extending or facing rearwardly or toward the attaching element of the said hacksaw blade frame when the said member and the said hacksaw blade are attached thereto so that the said dovetail-shaped end portion of said hacksaw blade overlies those portions of the said member which define the sides or side walls of the said substantially triangular-shaped opening.

3. In a device of the character described, the combination of, a saw blade supporting frame. a broken and consequently shortened saw blade, and means for attaching a dovetail-shaped end portion of said broken saw blade to the said saw blade supporting frame so that the said broken saw blade may again be used in and with the said saw blade supporting frame notwithstanding its broken condition and consequently shortened length, said means comprising a member having a substantially flat strip portion attachable to said saw blade supporting frame, said substantially flat strip portion of said member having an opening formed therein through which said dovetail-shaped end portion of said saw blade extends when said saw blade is attached to said supporting frame by said attaching means.

4. A device for attaching an end portion of a broken and consequently shortened saw blade to a saw blade supporting frame so that the said broken and consequently shortened saw blade may again be used in said saw blade supporting frame, notwithstanding its shortened length, said device being especially adapted for use with broken hacksaw blades and hacksaw frames: said device comprising a member having a portion detachably engageable with a shaped end portion of said broken and shortened saw blade so as to provide an axial extension of the said saw blade at an end thereof and between the said saw blade and the said saw blade supporting frame, said member being detachably attachable to the said saw blade supporting frame and comprising: a substantially flat strip portion having an opening formed therein for the reception of an end portion of a broken saw blade; and another portion offset from said one portion and substantially parallel thereto and against which said saw blade is adapted to lie when properly positioned in said opening.

5. A device for attaching an end portion of a saw blade to a saw blade supporting frame, said device comprising a member having a substantially flat portion, said substantially flat portion having an opening formed therein through which said end portion of said blade extends when said blade is attached to said supporting frame by said device, said substantially flat portion also having an opening formed therein for the reception of an attaching device on said supporting frame.

6. A device for attaching a hacksaw blade to a hacksaw frame, said device comprising a member having a head and shank portion lying substantially in the plane of the said hacksaw blade, said member also having a tip portion offset from said head and shank portion but lying in a plane substantially parallel to said head and shank portion, said head portion having an opening formed therein for the reception of a shaped end portion of a hacksaw blade, said shank portion having an opening formed therein for reception of an attaching member mounted on a hacksaw frame.

7. A hacksaw blade attachment for attaching an end portion of a broken and consequently shortened hacksaw blade to a hacksaw blade supporting frame, said attachment having a substantially uniplanar portion attachable to said saw blade supporting frame, said substantially uniplanar portion having an opening formed therethrough and extending substantially perpendicular thereto and through which said end portion of said saw blade extends when said saw blade is attached to said frame by said attachment, said opening being shaped so that said blade must be positioned substantially perpendicular to said substantially uniplanar portion when inserting the end portion of said blade through said opening, said blade and said attachment lying substantially in the same plane when said blade is attached to the said frame by said attachment.

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