United States Patent [19]

Nakasone

[11] **3,744,758**

[45] **July 10, 1973**

[54] **LEVER AND FULCRUM COMBINATION**

[76] Inventor: **Harold Y. Nakasone,** 91-336 Papipi Road, Ewa Beach, Hawaii 96706

[22] Filed: **Dec. 1, 1970**

[21] Appl. No.: **94,087**

[52] **U.S. Cl.** **254/129**

[51] **Int. Cl.** **B66f 3/00**

[58] **Field of Search** 254/25, 129, 130, 254/131; 29/245

[56] **References Cited**

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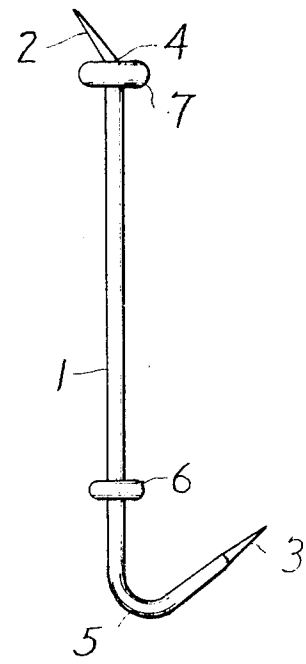
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Primary Examiner—Othell M. Simpson
Assistant Examiner—Robert C. Watson
Attorney—James C. Wray

[57] **ABSTRACT**

This invention is for special fulrum means for crowbars and the like. The fulcrum comprises ring-like means which slide onto and along the shaft of a crowbar so that the fulcrum can be useful at either end of the crowbar.

6 Claims, 7 Drawing Figures



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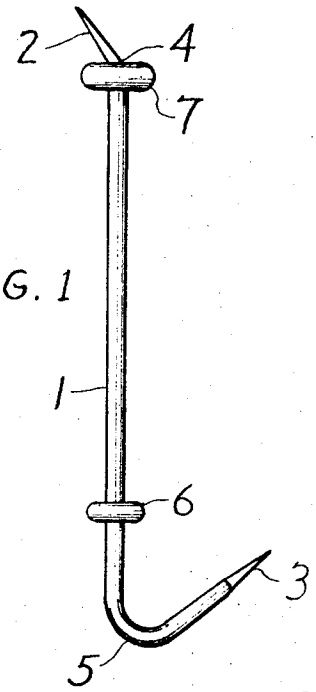


FIG. 1

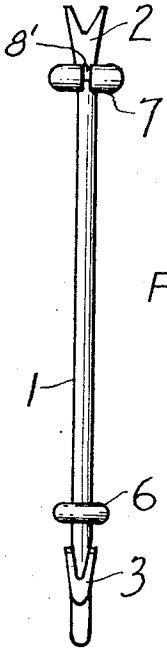


FIG. 2

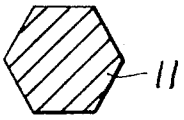


FIG. 7

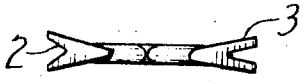


FIG. 3

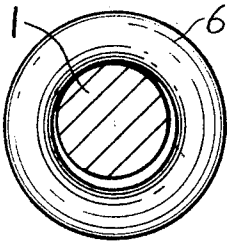


FIG. 4

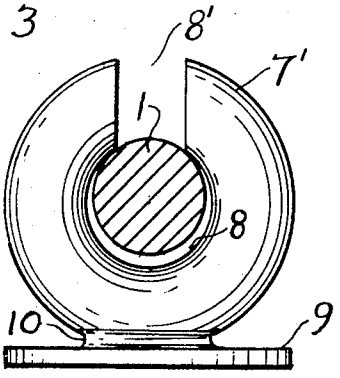


FIG. 5

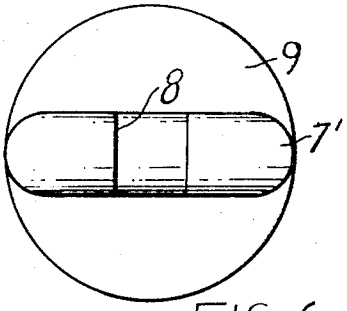


FIG. 6

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LEVER AND FULCRUM COMBINATION

This invention relates to a combination lever and fulcrum wherein the fulcrum is a ringlike member which is shiftable along the lever. Such levers are referred to as crowbars, wrecking bars and lift-bars. Generally, such bars have one or bottom ends bevelled so that the lever end can be operated as a pry. Such levers have heel portions near their ends which act as fulcrums, but it very often happens that such built-in fulcrums are not great enough to give a sufficient lift of the thing to be raised or separated from another thing. Although such levers may be made of various materials, a strong tough metal is used such as iron and steel.

The principal object of this invention is to present a crowbar and the like with a shiftable fulcrum and with or without an auxiliary fulcrum of a greater size.

Another object is to provide a lifting lever with a shiftable fulcrum which may be of a doughnut shape or any other shape suitable for its intended purpose.

Still another object is to provide a lever-fulcrum combination which is economical to make and manufacture.

In the drawings:

FIG. 1 is an elevational view of a wrecking bar with the invention applied thereto;

FIG. 2 is an elevational view illustrated in a manner which is at right angles to that shown in FIG. 1;

FIG. 3 is a top plan view of that shown in FIG. 1;

FIG. 4 is an enlarged sectional view of that shown in FIGS. 1 and 2;

FIG. 5 is an enlarged view, partly sectional and partly elevational, showing a modified form of the invention;

FIG. 6 is a plan view of that shown in FIG. 5;

FIG. 7 is a sectional view of the middle section of a bar that is in the form of a hexagon.

As illustrated, the invention comprises an elongated crowbar or wrecking bar having the central stem portion indicated by the reference character 1. One end of this bar has a V-shaped tool end or crowsfoot portion 2 and the other end has a curved portion with a crowsfoot tool end 3. These ends are slightly tapered and also flattened and have a somewhat bevelled edge used for prying purposes. The first mentioned end is bent at an angle and forms a heel part 4 which can be used as a fulcrum for limited short lifts, that is, a lift only sufficient to loosen a board or the like wherein the lift may not be enough to entirely free a board from its support. Instead of a board, the thing lifted may be a block of heavy material such as a boulder, for instance, or a thick plank with long nails or spikes.

Two fulcrum type rings or bands 6 and 7 are shown on the crowbar's stem 1. One ring is larger than the other and they have the general configuration of a doughnut. They are similar in appearances in that they do perform as fulcrums and are shiftable along the stem. They are shown as circular bands of metal but may be of any suitable material. The band 6 for instance is a closed ring, as shown in FIG. 4. Its center opening is large enough to assure easy sliding action along the stem 1 eventhough the stem may be rusty. This particular ring or fulcrum is designed to remain on the bar at all times and can be shifted to the heel 4 when needed there as a fulcrum and then shifted to the other end at 5 when needed as a fulcrum there or pushed there to be out of the way of the end 2.

The other fulcrum ring 7 is larger in that it is thicker and makes a higher fulcrum. Fulcrum 7 is similar to fulcrum 7' as shown in FIGS. 5 and 6. Each, has the regular size opening 8 which is large enough to neatly slide along the stem 1 even though this stem or the ring happen to be rusty. Each doughnut-like fulcrum 7 and 7' has the opening 8' so that when this particular fulcrum is needed, it can be slipped onto the bar or stem 1 by passing the flat crowsfoot 2 through the opening 8'. This ring 7' as shown in FIGS. 5 and 6 has a flat plate 9 welded or brazed thereto as indicated at 10. The purpose of this plate 9 is to provide a suitable rest for the fulcrum when used upon soft material which might be damaged, for instance, the plate 9 may be used against a finished furface like a plastered wall when removing door trims and baseboards.

The stem of the bar 1 may not necessarily be round as shown in FIG. 1, for instance, for this stem may have a hexagon cross-section as shown at 11 in FIG. 7 or have any other desired cross-section.

Certain novel features and details of this invention are disclosed herein, and in some cases in considerable detail, and this is thought necessary in order to make the invention clear in at least one form thereof. However, it is to be clearly understood that the invention as disclosed is not necessarily limited to the exact form and details disclosed since it is apparent that various modifications and changes may be made without departing from the spirit and scope of the invention as described and claimed.

Having thus described my invention, what is claimed and believed new and which is desired to be secured by Letters Patent is:

1. In a lever and fulcrum combination wherein the lever has a stem having an elongated axis with working ends, and the fulcrum has a body looped loosely about the stem which allows the fulcrum to be shifted along the stem, the fulcrum body having first and second round cross sections on opposite sides of the stem and on a plane including a longitudinal axis of the stem of material thickness which functions well as a fulcrum, wherein the fulcrum has a round edge enlarged bottom plate of material area so as not to damage a surface against which it may be pressed.

2. In a lever and fulcrum combination wherein the lever has a stem having an elongated axis with working ends, and the fulcrum has a body looped loosely about the stem which allows the fulcrum to be shifted along the stem, the fulcrum body having first and second round cross sections on opposite sides of the stem and on a plane including a longitudinal axis of the stem of material thickness which functions well as a fulcrum, and wherein the fulcrum has a gap for passing over one of the working ends which is a flat crowfoot.

3. In a lever and fulcrum combination wherein the lever has a stem having an elongated axis with working ends, and the fulcrum has a body looped loosely about the stem which allows the fulcrum to be shifted along the stem, the fulcrum body having first and second round cross sections on opposite sides of the stem and on a plane including a longitudinal axis of the stem of material thickness which functions well as a fulcrum, wherein the working ends are flattened and widened, and wherein the fulcrum comprises a first fulcrum permanently mounted on the stem, and further comprising a second fulcrum having a similar cross section and having a gap opening whereby the second fulcrum may

be slid over one of the working ends with a flattened and widened portion thereof in the gap.

4. The combination recited in claim **1** wherein the fulcrum has an opening gap in a side so that the opening can be a passage for a portion of the lever so that the fulcrum can be easily put onto the lever and removed therefrom.

5. The lever and fulcrum combination recited in claim **1** wherein the fulcrum has a uniform cross section.

6. The lever and fulcrum combination recited in claim **3** wherein the second fulcrum has a cross section which is larger than a cross section of the first fulcrum.

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UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3744758 Dated July 10, 1973

Inventor(s) Harold Y. Nakasone

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Add the following claims:

Claim 7. The combination recited in claim 1 wherein the fulcrum is a round closed ring.

Claim 8. The combination recited in claim 1 wherein the fulcrum is a round closed band of material.

Claim 9. The combination recited in claim 1 wherein the fulcrum is doughnut shaped to give it great body and thus be more effective to function as a fulcrum.

On the cover sheet after the abstract, "6 Claims" should read -- 9 Claims --.

Signed and sealed this 29th day of January 1974.

(SEAL)
Attest:

EDWARD M.FLETCHER,JR.
Attesting Officer

RENE D. TEGTMEYER
Acting Commissioner of Patents

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* U.S. GOVERNMENT PRINTING OFFICE : 1969 O—366-334