Dec. 2, 1952 E. M. ZINKE 2,620,011

BODY AND FENDER JACK

Filed Oct. 31, 1949

Fig. 1.

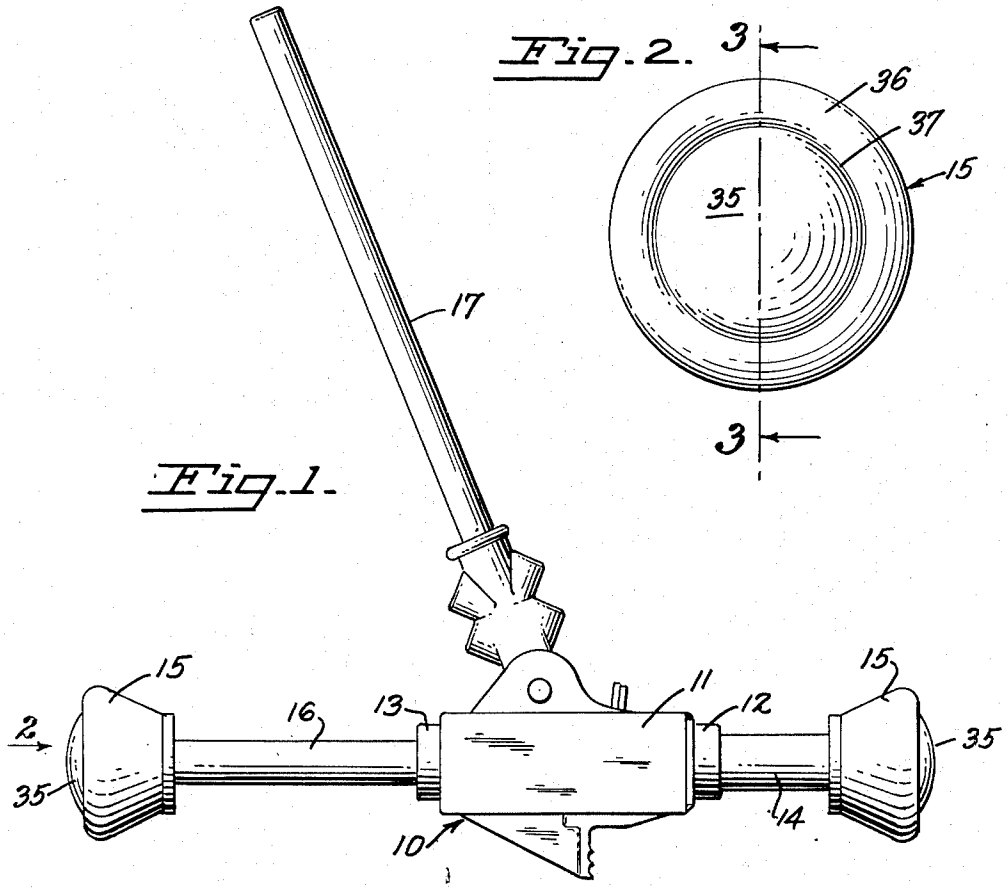


Fig. 2.

Fig. 3.

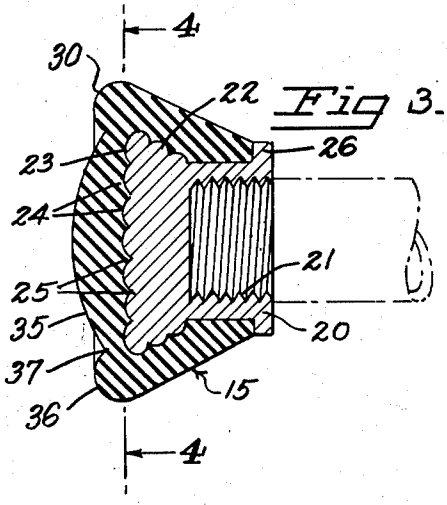
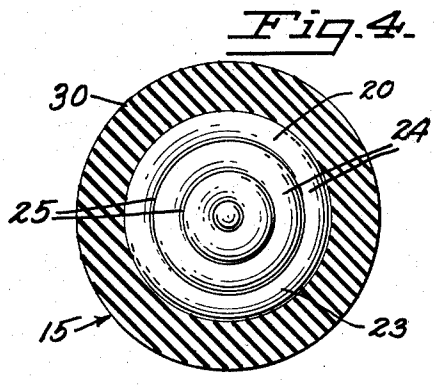


Fig. 4.



INVENTOR
ERWIN MAX ZINKE
BY A. Dekam Owen
ATTORNEY

Patented Dec. 2, 1952

2,620,011

UNITED STATES PATENT OFFICE

2,620,011

BODY AND FENDER JACK

Erwin Max Zinke, Oakland, Calif.

Application October 31, 1949, Serial No. 124,712

4 Claims. (Cl. 153—48)

1

This invention relates to an improved rubber-covered head for body jacks and the like.

The invention has solved several problems. One of these has arisen because of the considerable pressures that are placed on the heads of such tools as body jacks. The trouble has been that these pressures have often been directed at an angle to the axis of the rubber-covered heads, and the direction and intensity of the force has often wrenched the rubber covering off its metal support or base, thereby rendering the head useless.

The problem has been solved by the present invention, which employs a novel metal base member to which is bonded a novel rubber covering. The base is flared outwardly to a stub end on which a series of concentric ribs and recesses are provided. The rubber covering is then vulcanized or otherwise bonded to the base around this flared end. The rubber fills all the recesses and mates with the up-and-down surface of the flared end. Shearing forces merely result in the rubber ridges (formed where a recess in the metal was filled) being forced against the metal ribs on one side or other of the recess, depending on the direction of the force, and the rubber covering is not torn off.

Another problem that has existed with rubber-covered heads for tools like body jacks has been that different types of work have demanded different forms of rubber coverings. With some types of work a rounded, ball-like surface is necessary, and a flat surface would be objectionable. With other types of work a rounded surface will slip off. Heretofore this has means that the mechanic had to carry around two types of heads, one round and the other flat, and replace one with the other at frequent intervals, according to the type of work.

The present invention has solved that problem by providing a single head that will satisfactorily perform both types of work. The rubber-covered head of this invention has a central, rounded, ball-like portion that is surrounded by a convex, annular rim. The central portion accommodates surfaces that demand a rounded head, while other types of work can be supported by the edge of the head, adjacent the groove-like portion that joins the rim to the central portion. There is no slippage; in fact the rim portion holds work better than a flat surface did. Since both types of work can be accommodated, there is no need for two types of heads, and the time that would be taken in replacing one type with another is saved.

2

Other features of the invention will appear from the following description of a preferred embodiment thereof. It is to be understood that the detailed presentation of this preferred form of the invention is given in compliance with United States Revised Statutes, section 4888, as an illustrative example, and its description is not intended to narrowly limit the invention. The scope of the invention is defined by the appended claims.

In the drawings:

Fig. 1 is a view in elevation of a body jack, having at each end a rubber-covered head that embodies the principles of this invention.

Fig. 2 is an enlarged view looking toward the end of one of the heads, taken in the direction of the arrow **2** in Fig. 1.

Fig. 3 is a view in section taken along the line **3—3** in Fig. 2; a portion only of the extension fitting being shown in dot-dash lines.

Fig. 4 is a view in section taken along the line **4—4** in Fig. 3, with the rubber removed from between successive concentric ribs in the metal base, to show the ribs and the depressions between them more clearly.

In order to illustrate the utility of the invention, it is shown as applied to a body jack **10** (see Fig. 1). The jack **10** may be used to push two objects apart: for example, a dented automobile fender may be straightened by pushing it out with one end of the jack **10**, the other end of the jack **10** meanwhile resting against a frame member of the automobile.

The jack **10** includes a body **11**, having bushings **12**, **13** at its two ends. A tubular fitting **14** may be threaded into the bushing **12** at one end, for the purpose of extending the length of the jack, and a rubber-covered head **15**, of the type embodying the principles of this invention, may be threaded on the outboard end of the fitting **14**. Another head **15** may be threaded on the outboard end of a jack rod **16**, which is the moving member of the jack **10**. When the handle **17** is moved back and forth the rod **16** will move to the left in Fig. 1, and the two heads **15** will force apart the objects which they rest against.

The rubber-covered head **15** is shown enlarged and in detail in Figs. 2 through 4. It includes a metal base **20** and a rubber covering **30** vulcanized or otherwise bonded to the base **20**.

The base **20** may be made from aluminum or other suitable metal. It has a threaded socket **21** at one end to receive the fitting **14** or rod **16**. Its other end is flared outwardly at **22** toward a stub end **23**. (See Fig. 3.) Both the flared por-

tion 22 and the stub end 23 may be provided with surface features that, when the rubber covering 30 is conformed to them, help maintain the cover 30 in firm engagement. Those on the stub end 23 are particularly important. They include a plurality of concentric, rounded beads 24, between which are troughs or valleys or depressions 25.

A flange 26 may be provided at the socket end of the base 20, to protect the rubber cover 30 from thrusts from that direction.

The covering 30 has been referred to as "rubber." By that term, wherever used herein and in the claims, it is meant to include not only natural rubber but also synthetic rubber and all practicable rubber substitutes.

Preferably the covering 30 is formed by molding, directly on the base 20. It is vulcanized or otherwise bonded to the base 20, and is so formed that it fills all the surface features and irregularities of the base 20. It has concentric depressions that correspond with the metal ribs 24 and concentric ribs or ridges that correspond with the depressions 25. Any pressure against the head 15 will compact the rubber more firmly against the base 20, instead of tending to shear it off the base.

The end surface of the head 15, which is the end surface of the rubber covering 30, is so constructed that it can accommodate a great variety of surfaces in the objects it may bear against. The central portion 35 is ball-shaped; that is, it is arcuate. A convex rim 36 encircles the arcuate central portion 35, the two portions meeting at the annular groove 37.

The arcuate portion 35 accommodates any surface that normally requires a spherically-shaped or rounded head. Other surfaces can be accommodated by the rim-portion 36, the groove 37 helping by enabling the adjacent part of the central portion 37 to be used as a side wall, thereby helping in alignment.

I claim:

1. A head for body tools and the like, including in combination, a metal base member having a threaded socket in one end and a flared portion at the other end terminating in a stub end having a surface formed to provide raised portions and depressed portions; and a rubber covering member surrounding the flared portion of said base and molded to conform to its surface features, said member being bonded to said base member.

2. The head of claim 1 in which said rubber covering member has an external end with a rounded central portion surrounded by a convex annular rim portion.

3. The head of claim 1 in which the surface features of said stub end comprise a plurality of concentric rounded beads.

4. A head for body jacks and the like, including in combination a metal base having a flared portion at one end and a rubber covering bonded to said base and encircling said flared portion, said covering having at its outer end a rounded central portion surrounded by an annular convex rim.

ERWIN MAX ZINKE.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
938,883	Maier	Nov. 2, 1909
2,455,664	Ferguson et al.	Dec. 7, 1948
2,463,966	Hauschild	Mar. 8, 1949