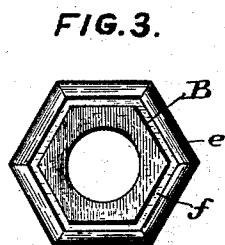
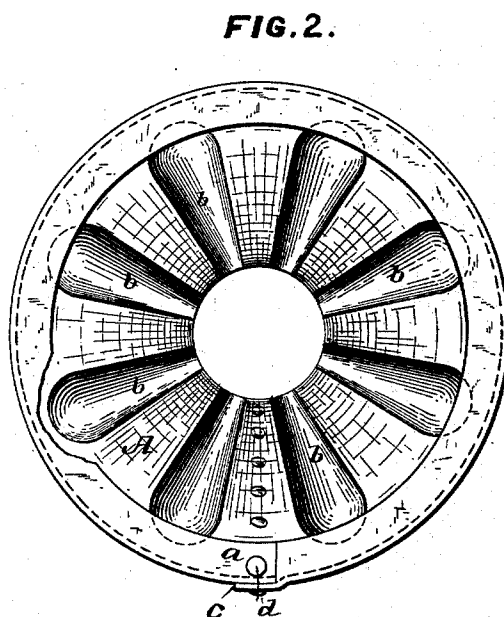
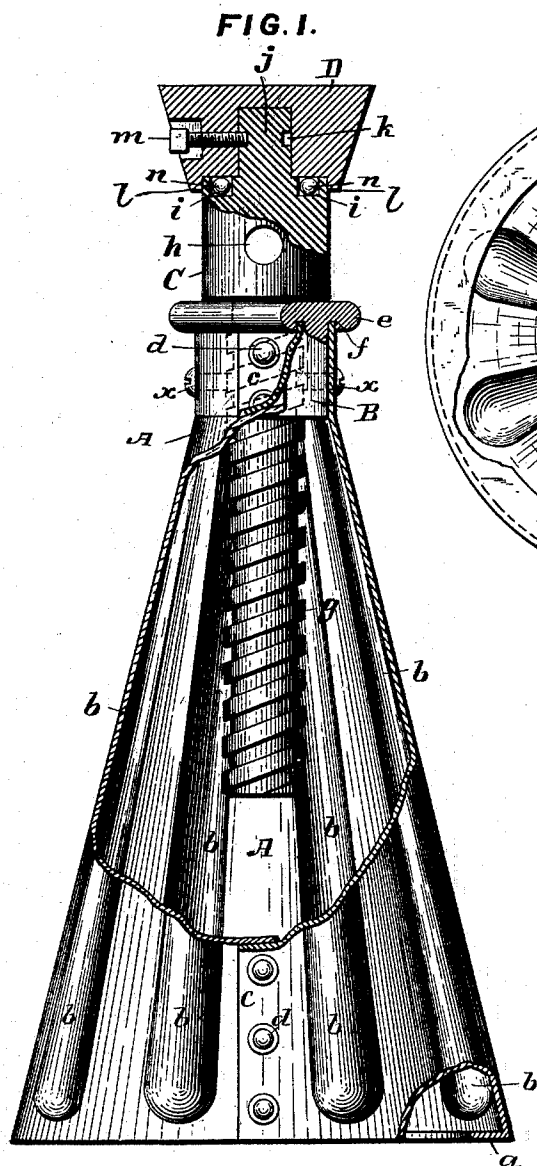


(No Model.)

W. H. WILD.  
JACK SCREW.

No. 483,487.

Patented Sept. 27, 1892.



WITNESSES:

*J. Henry Kaiser.*  
*Benj. Munro*

INVENTOR.

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ATTORNEY.

# UNITED STATES PATENT OFFICE.

WILLIAM H. WILD, OF VALATIE, NEW YORK, ASSIGNOR TO THE WILD  
ENGINEERING COMPANY, OF SAME PLACE.

## JACK-SCREW.

SPECIFICATION forming part of Letters Patent No. 483,487, dated September 27, 1892.

Application filed September 12, 1890. Serial No. 364,786. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. WILD, a citizen of the United States, residing in the village of Valatie, county of Columbia, and State of New York, have invented new and useful Improvements in Jack-Screws, of which the following is a specification.

My invention relates to that class of jack-screws wherein a flared base-piece or bell-shaped bottom carrying a nut at its top for the screw to operate in has commonly been made of cast-iron and of considerable weight; and the objects of my invention are to provide a simple, efficient, and inexpensive means or device for dispensing with so great a body of metal, so that the implement may be lighter and more easily transported and handled, while it shall at the same time possess equal or superior strength; to provide a means or device for reducing the friction when under load, whereby the labor of operating is materially lessened, and also to cheapen the cost of manufacture. I attain these objects by means of a hollow, drawn, formed, or stamped-up body or base-piece of plate iron, steel, or other suitable metal, which to increase its strength and stiffen it may be corrugated vertically and have a flange turned on the lower edge thereof, by means of a nut securely mounted upon or in the upper end of said hollow base-piece and of such a form of construction as to embrace the upper edge of the latter all round and prevent its spreading or splitting, and in combining with the screw, screw-head, and jam-head friction-balls with a peculiarly-formed channel in which the latter operate, and in further details and modifications, all of which, together with the foregoing, are hereinafter fully set forth and claimed.

In the drawings, Figure 1 is a vertical elevation, partly sectional, of my improved jack-screw, illustrating forms of construction and manner of operation of the several elements or devices employed. Fig. 2 is a bottom end view of the drawn, formed, or stamped-up base-piece. Fig. 3 is a bottom view of a modified form of nut.

Like letters indicate corresponding parts throughout the several figures.

A is a drawn, formed, or stamped-up base-

piece, which may be plain, but which I have shown with a flange *a*, corrugations *b*, and seam *c*, secured by rivets *d*.

B is a nut internally threaded, (which may be of circular cross-section, as in Fig. 1, or hexagonal, as in Fig. 3, or any other practical form,) having a rolled flange *e*, with under groove *f* in the latter to receive the upper edge of the base-piece A, to the upper end of which it is secured by tap-bolts or screws *x* or in any other convenient manner.

C is a head of a screw *g*, which operates in the nut B, having lever-holes *h* and provided with an annular channel *i*, of rectangular cross-section, in the shoulder surrounding the reduced projection *j*, in which latter a groove *k* is cut.

D is a jam-cap fitted to overlap the edge of the head C by a slight extension *l*, and secured to the same loosely by a screw or pin *m*, the end of which engages the groove *k*.

*n n* are friction-balls placed in the channel *i*, the diameter of which is slightly greater than the vertical depth of the latter, so that the bottom of the jam-cap D may rest all round on the friction-balls. The channel *i* is made rectangular in cross-section throughout to insure proper contact between the friction-balls and the bottom of the channel, and the least possible chance for frictional engagement of the balls with the lateral sides of the channel. The surfaces in contact with these friction-balls, both on the lower side of the jam-cap D and in the channel *i*, are hardened or chilled to prevent wear.

It will be seen that when doing service the form of the base-piece A, even if it were plain on the inner and outer surfaces with flange turned inwardly at the bottom all around, would, though made of quite light metal, withstand a great load, and that the groove *f* in the flange *e* of the nut B by embracing the upper edge of the base-piece A obviates any liability to spread or split the latter, and that the stiffness and strength of the base-piece throughout if corrugated, as shown, or in any convenient shape, vertically are greatly improved without adding but little, if anything, to its weight.

Jack-screws made as shown and described are many pounds lighter than those of common

construction, of equal power and strength, and are less costly to manufacture, more convenient to handle and transport, and very easy of operation.

5 The base-piece A may be drawn to form from one piece of metal, plain or corrugated, without seam or weld, without departing from the spirit of my invention.

10 I am aware that friction-balls have long been used in analogous manner for reducing friction between loaded, pivoted, abutting parts as in drawbridges; but the device consisting of an annular groove of specific rectangular cross-section is novel as applied between the screw-head and jam-cap in a jack-screw.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

A lifting-jack comprising a screw having an enlarged head provided with a groove in its upper end, balls in said groove, a jam-cap on said head, a stamped-up metal base provided with an inwardly-turned flange at its lower edge, and a flanged and grooved nut, the groove in the nut being adapted to receive and hold in place the upper end of the sheet-metal base, substantially as set forth.

WILLIAM H. WILD.

Witnesses:

HAMILTON B. RIDER,  
EVELYN L. HAMILTON.