(No Model.)

W. R. COATS & W. H. VIBBARD.

JACK SCREW.

No. 251,698. Patented Jan. 3, 1882.

Fig. 1.

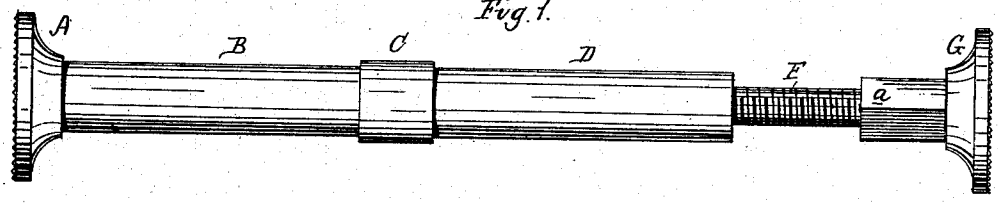


Fig. 2.

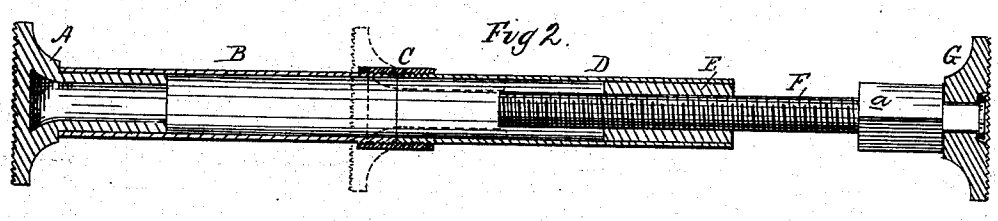


Fig. 3.

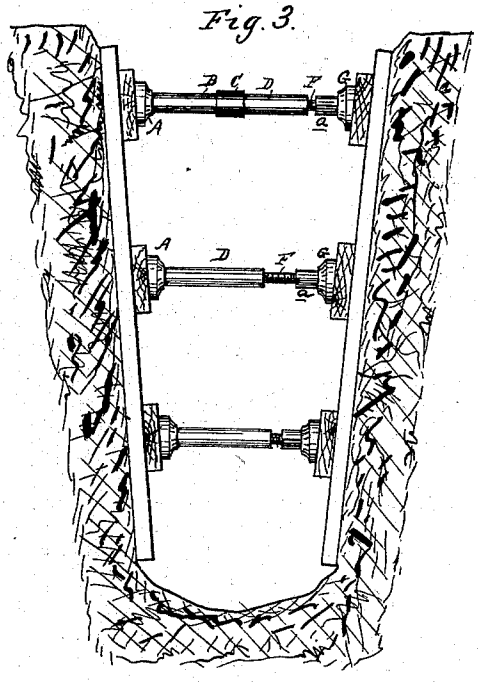


Fig. 5.

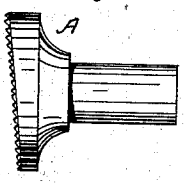
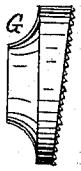


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM R. COATS AND WILLIAM H. VIBBARD, OF KALAMAZOO, MICH.

JACK-SCREW.

SPECIFICATION forming part of Letters Patent No. 251,698, dated January 3, 1882.

Application filed October 7, 1881. (No model.)

To all whom it may concern:

Be it known that we, WM. R. COATS and WM. H. VIBBARD, citizens of the United States, residing at Kalamazoo, in the county of Kalamazoo and State of Michigan, have invented certain new and useful Improvements in Jack-Screws, of which the following is a specification, reference being had therein to the accompanying drawings.

Our invention relates to jack-screws; and it consists in the peculiar construction and arrangement of the parts, as hereinafter more fully described, and then pointed out in the claims.

Heretofore jack-screws have usually been made with stocks of cast-iron and without any means of adjusting the length of the stock, the only adjustment of which such jacks were capable being through the movement of the screw. This construction necessitated a heavy stock and allowed of but comparatively little variation in the length of the jack, whereas by our construction not only is the jack made very light, but the length of the stock can be readily varied.

In the drawings, Figure 1 is a side view of one of our jacks. Fig. 2 is a vertical longitudinal section of the same. Fig. 3 shows an excavation with the sides supported by our jacks, and Figs. 4 and 5 are details of the head and foot pieces employed when the jacks are used in excavations, &c.

A represents the base or foot piece, which may either be made of the shape shown in Figs. 1 and 2 or of that shown in Fig. 5, as desired. This base I usually make of cast-iron, and it may be of such size as will readily slip inside of the tube B, forming the lower section of the stock; or it may be firmly fastened to the interior of the tube by shrinking said tubes on, or by other convenient means of fastening. The upper end of this tube is provided with a screw-thread, by means of which and the union C the top section, D, of the stock is secured in place. This top section has in its upper end a nut-piece, E, which is first firmly secured therein by welding or otherwise, and then bored and tapped to receive the screw F, which has its upper end, *a*, formed square or hexagonal to fit an open wrench, by means of which the screw is turned. Above this portion is the head-piece or cap G, fitted so that the screw may readily turn in it, and shaped either as shown in Figs. 1 and 2 or as shown in Fig. 4, according to the use to which the jack is to be applied.

By this construction a jack is provided which may be readily used in positions where the ordinary jack is not readily applicable, owing to its weight and shape—such, for instance, as that shown in Fig. 3, where the jacks may be used as steps for the workmen in descending into excavations; or they may be used for supporting scaffolding on which to throw earth taken out of the excavation during the progress of the work, or for receiving materials to be put into such excavations.

The length of the stock may be varied in different ways, viz: by having a series of bases with different lengths of tubes firmly attached to them, so that by changing the lower section the jack may be extended to any desirable length; or by having the base loosely fitted to the pipe it can either be placed in the bottom of the upper section, as shown by dotted lines in Fig. 2, or inserted in a removable extension-piece, forming with the base the lower section of the stock, as shown in full lines in the same figure. The base may either be made solid or cast hollow to make it lighter and to admit of the screw passing into it when the base is inserted in the lower end of the upper section of the stock. By the use of either of these methods the stock can be extended to any desired length, and the usefulness of the instrument thus greatly extended, as there is no limit within reason to which such a jack may not be extended, whereas in the old plan the extension of the jack is limited by the screw, and recourse is had to blocking up, which is very troublesome even when the jack is set vertically, and particularly so when it is acting horizontally, often resulting in serious accidents.

The peculiar form of base and cap shown in Figs. 4 and 5 will be found especially useful where the jack is to be used against inclined surfaces, as when used to support timbers in excavations, &c.

What we claim as new is—

1. The combination with the screw of a jack

of an extensible stock, whereby the length of the jack can be altered independently of the screw, substantially as described.

2. The combination, with the screw of a jack, of a stock made in two or more sections, whereby its length may be varied independently of the screw, substantially as specified.

3. The combination, with the screw of a jack, of a stock provided with a removable base, whereby the stock may be lengthened independently of the screw, substantially as described.

4. A jack provided with an inclined base and cap, substantially as described, and for the purpose set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

WILLIAM R. COATS.
WM. H. VIBBARD.

Witnesses:
LYMAN M. GATES,
GUSTAVUS M. GATES.