

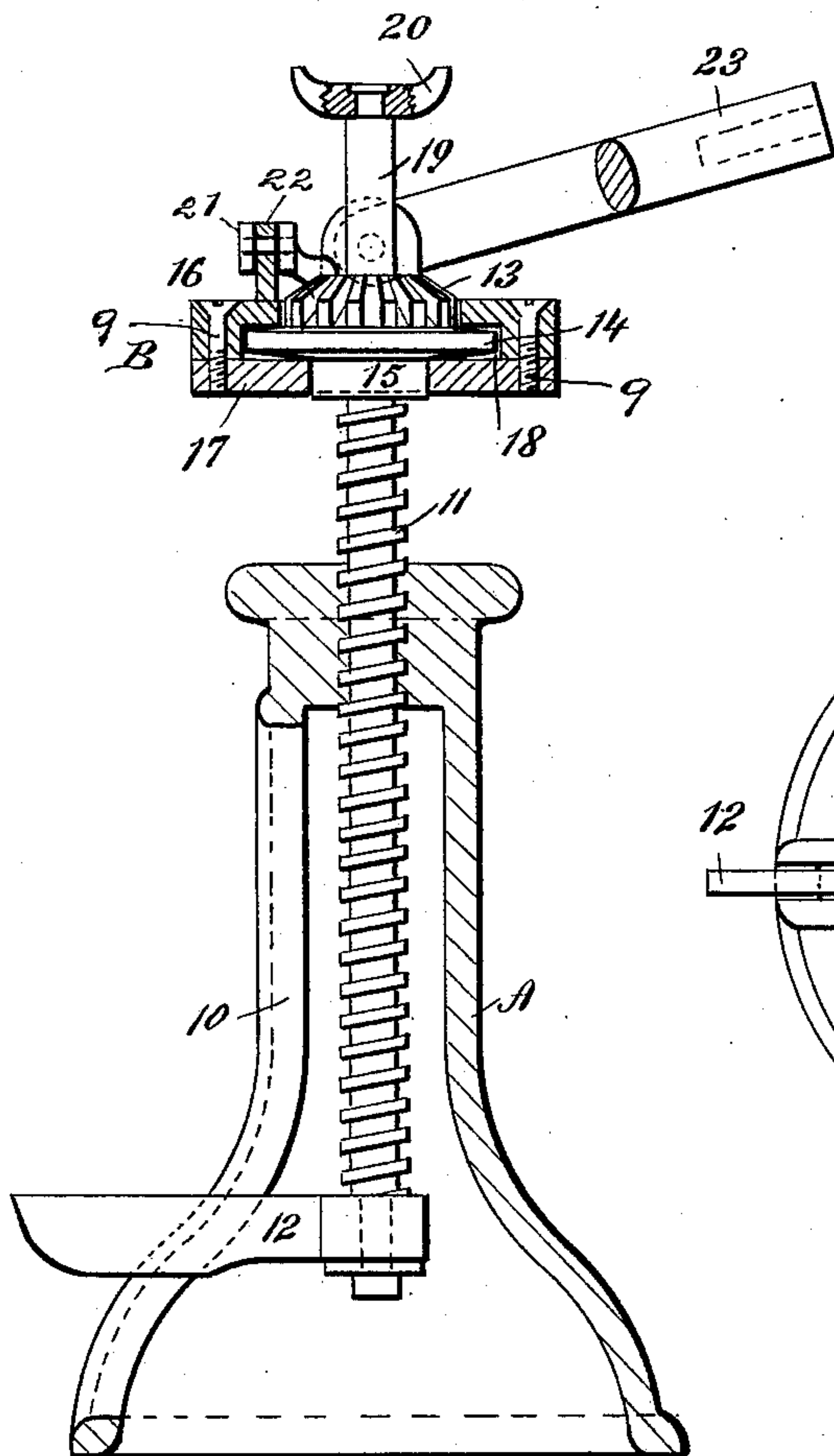
(No Model.)

M. D. KALBACH.  
JACK SCREW.

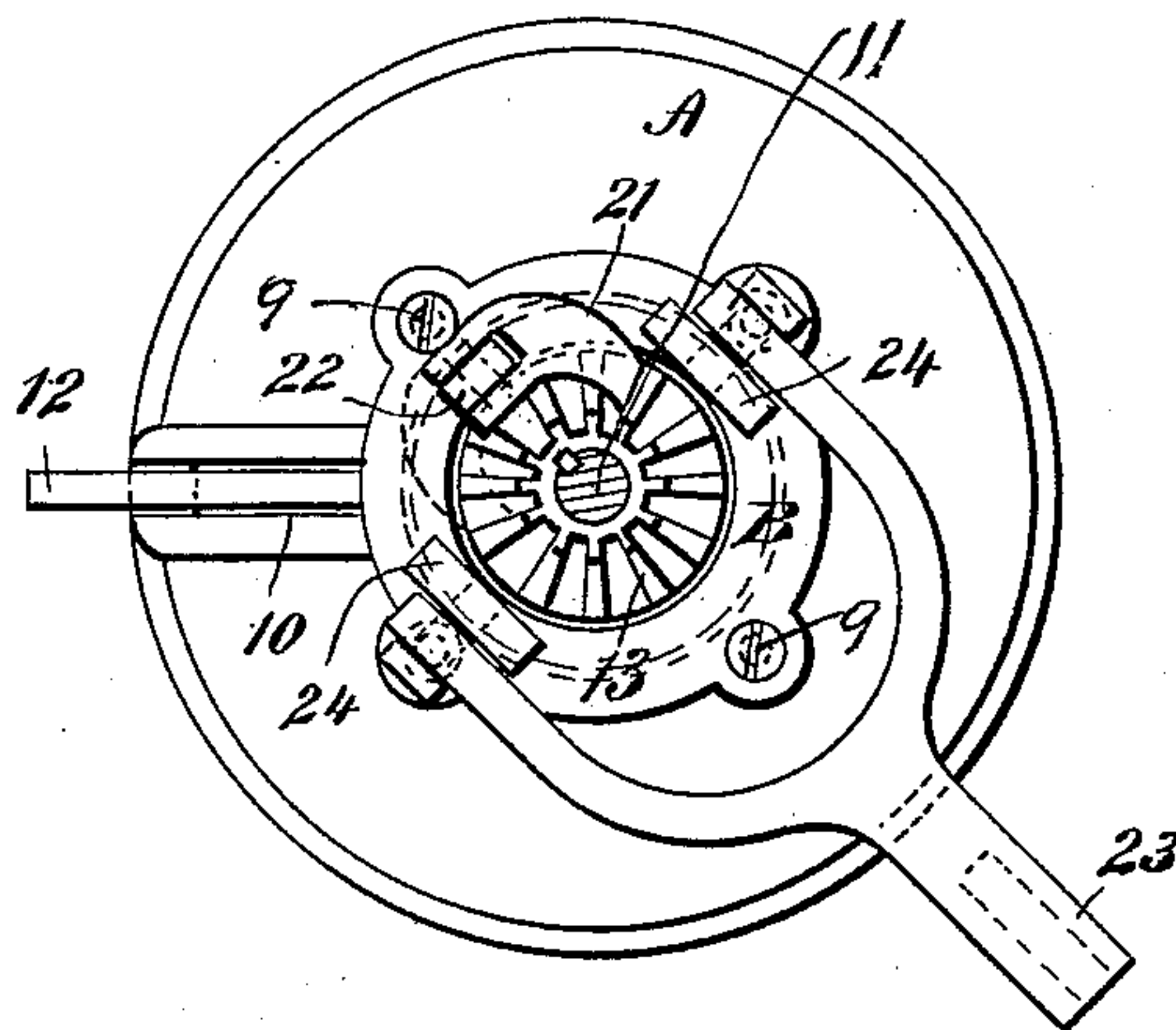
No. 452,225.

Patented May 12, 1891.

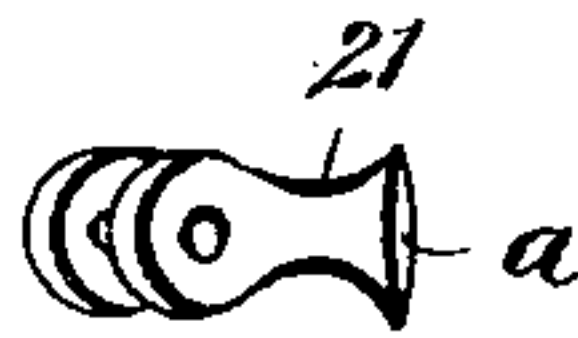
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



WITNESSES:

*Don Twitchell*  
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# UNITED STATES PATENT OFFICE.

MORGAN D. KALBACH, OF LEBANON, PENNSYLVANIA.

## JACK-SCREW.

SPECIFICATION forming part of Letters Patent No. 452,225, dated May 12, 1891.

Application filed February 18, 1891. Serial No. 381,960. (No model.)

*To all whom it may concern:*

Be it known that I, MORGAN D. KALBACH, of Lebanon, in the county of Lebanon and State of Pennsylvania, have invented a new and useful Improvement in Jack-Screws, of which the following is a full, clear, and exact description.

My invention relates to an improvement in jack-screws, and has for its object to provide a device operating upon the principle of a ratchet and capable of being manipulated within a very small space, and to so construct the device that it will be durable and light, and whereby the operating-lever may be manipulated when it is on a level with the ratchet or above or below said level.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a central vertical section through the jack-screw. Fig. 2 is a plan view thereof, and Fig. 3 is a detail perspective view of the dog removed.

The base or body A of the device is hollow, being open and flaring at the bottom and provided at its upper end with an interiorly-threaded bore. The body or base is also provided with a longitudinal slot 10, which extends from a point near the bottom to within a slight distance of the top, as is best shown in Fig. 1.

The screw 11 is held to revolve in the threaded bore of the base or body and the screw extends some distance downward within the base, the lower end thereof being provided with a foot 12, extending outward through the base-slot 10. The aperture in the foot through which the screw passes is of such a size as to allow the screw to work freely therein. The upper portion of the screw 11 has formed integral therewith or attached thereto a beveled ratchet-wheel 13, the said wheel being horizontally located and pro-

vided at its lower end with a peripheral annular flange 14 and integral with its under face a hub-section 15.

A yoke B is held to revolve around the beveled ratchet-wheel 13, the said yoke being preferably made in two sections 16 and 17, united by bolts 9 or equivalent fastening devices. The yoke is maintained in position by creating an annular channel or groove 18 in its inner face, into which groove or channel the flange 14 of the ratchet-wheel extends. The upper portion of the opening in the yoke is of such diameter that the walls thereof do not engage with the teeth of the ratchet, and the diameter of the lower portion of the opening is so calculated that the walls will engage with the hub or collar 15, as is best shown in Fig. 1.

The screw is provided with an unthreaded upper end 19, located above the ratchet, and upon the upper extremity of the screw a shoe 20 is swiveled. A dog 21 is pivoted upon a lug 22, formed upon the upper surface of the yoke, which dog is curved so that its inner end will engage with the teeth of the ratchet, and the inner engaging end of the dog is beveled, as illustrated at *a* in Fig. 3, whereby the position of the dog may be reversed to reverse the movement of the screw and yet engage with the ratchet.

The jack is manipulated through the medium of a handle 23, the inner end whereof is bifurcated, and the members of the bifurcated end are pivoted upon oppositely-arranged lugs or ears 24, attached to or forming a portion of the yoke.

When the jack is placed in a vertical position and it is desired to elevate an object, the dog is made to engage with the ratchet-wheel, as shown in Fig. 2, and the handle 23 is laterally reciprocated, whereupon the same movement is imparted to the yoke, and the dog is compelled to force the ratchet-wheel around, thereby turning the screw 11. When the screw is to be lowered, the dog is thrown to the opposite side of its fulcrum to an engagement with the ratchet-wheel, and the handle is manipulated as before. The foot 12 may also be utilized for lifting purposes



or for exerting pressure when the shoe 20 cannot be conveniently applied.

It is evident that the jack may be manipulated in very little space, as the handle may  
5 be operated with equal effect when located on a level with the ratchet or when inclined to extend either above or below it.

Having thus described my invention, I claim as new and desire to secure by Letters  
10 Patent—

1. In a jack-screw, the combination, with a base, a screw held to revolve in the base, and a ratchet-wheel forming a portion of the screw and provided with a marginal flange,  
15 of a yoke loosely mounted upon the flange of the ratchet-wheel, a handle pivoted upon the yoke, and a reversible dog also pivoted upon the yoke and adapted to engage with

the ratchet-wheel, as and for the purpose specified. 20

2. In a jack-screw, the combination, with a base, a screw held to revolve in the base, provided with an attached arm at its lower end and a swiveled shoe at its upper end, and a ratchet-wheel forming a portion of the screw, 25 of a flange fast to the screw beneath the ratchet, a yoke loosely mounted upon the flange, a lever pivoted upon the yoke, and a reversible dog also pivoted upon the yoke, which dog is adapted for engagement with 30 the ratchet, as and for the purpose specified.

MORGAN D. KALBACH.

Witnesses:

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