

(No Model.)

M. WADE.
BENCH VISE.

No. 591,903.

Patented Oct. 19, 1897.

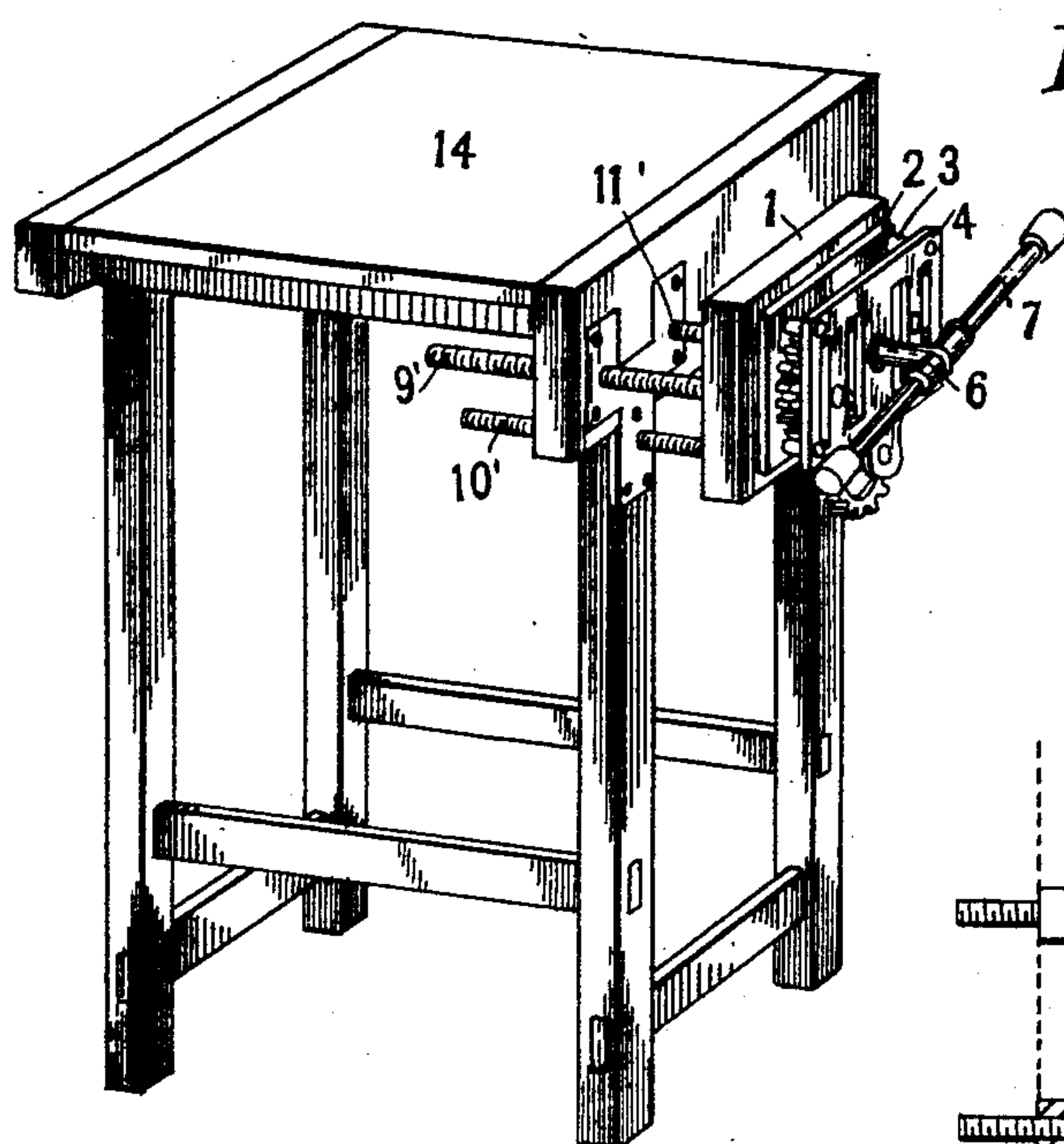


Fig. 1

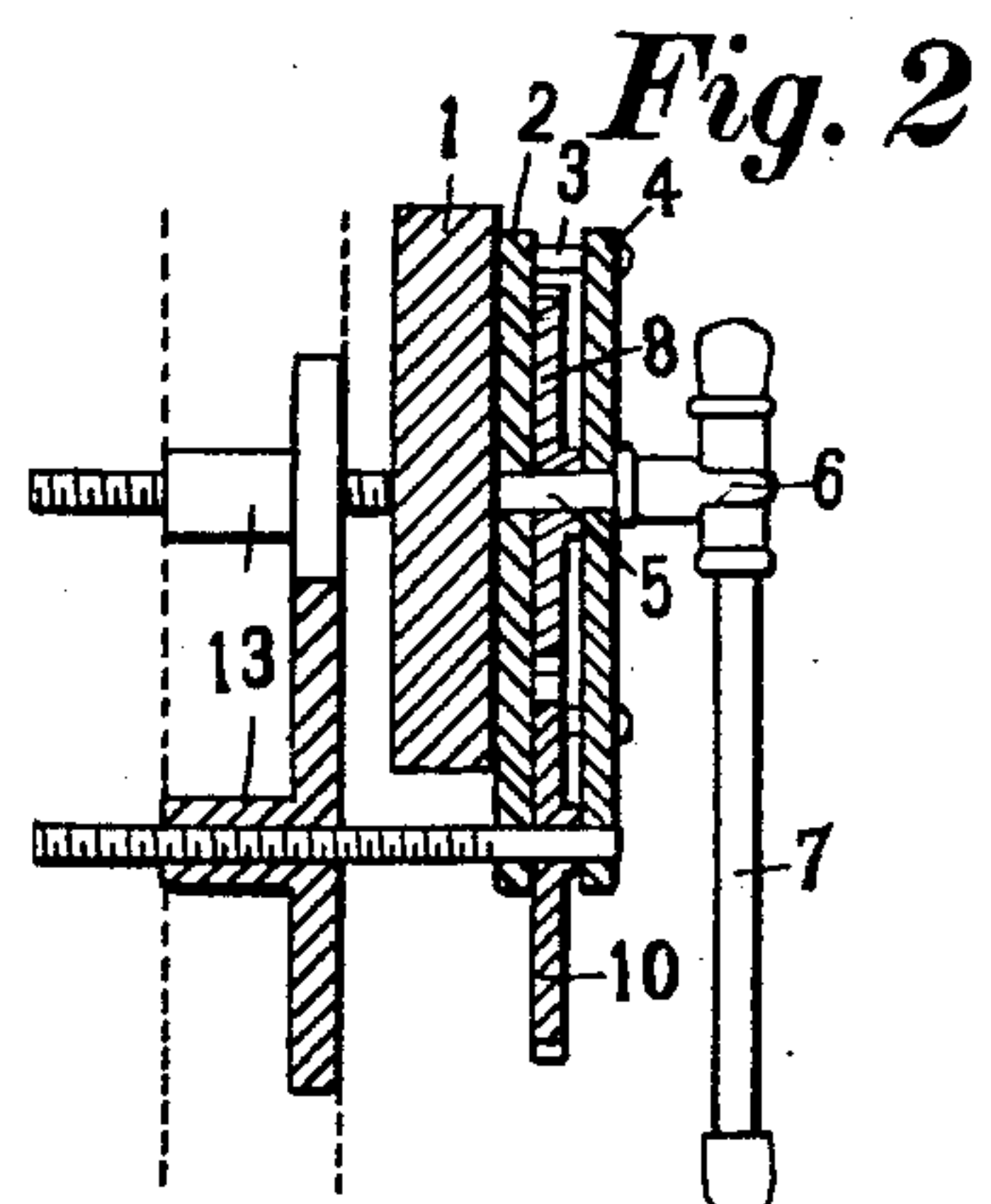


Fig. 2

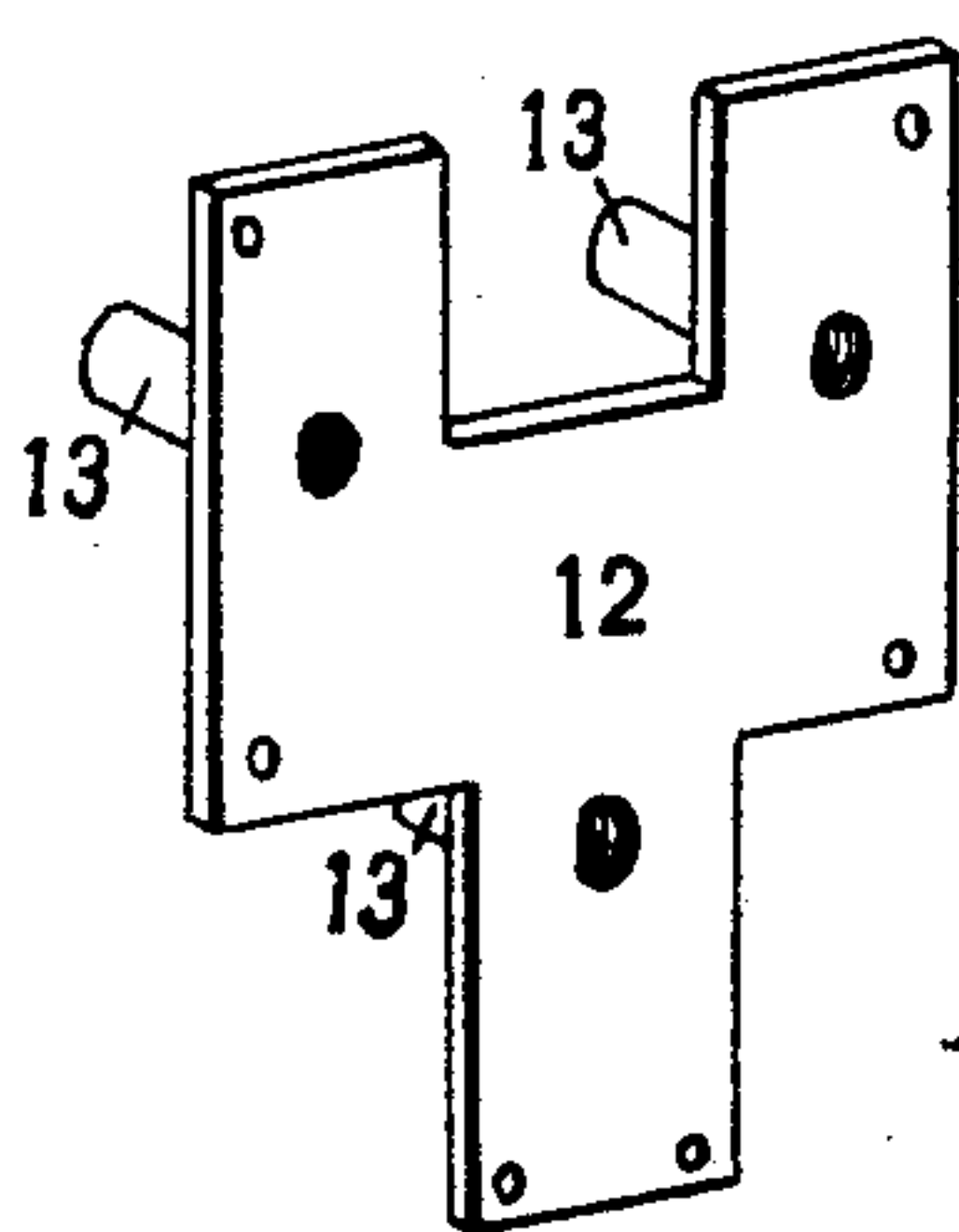


Fig. 4

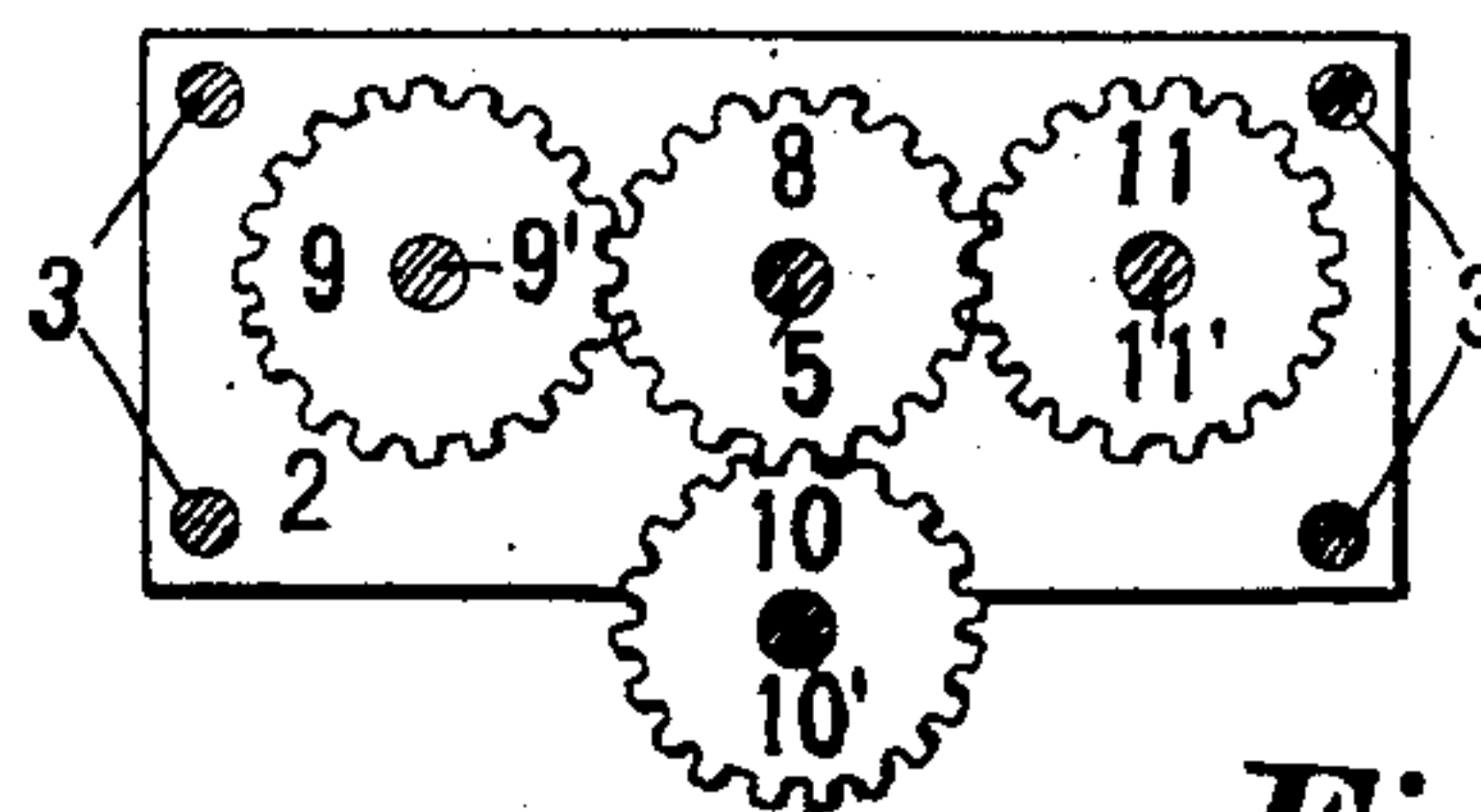


Fig. 3

WITNESSES.

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MERRITT WADE, OF DETROIT, MICHIGAN.

BENCH-VISE.

SPECIFICATION forming part of Letters Patent No. 591,903, dated October 19, 1897.

Application filed July 8, 1897. Serial No. 643,915. (No model.)

To all whom it may concern:

Be it known that I, MERRITT WADE, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Bench-Vises; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to new and useful improvements in bench-vises; and it consists in the construction and arrangement of parts, as hereinafter fully set forth, and pointed out particularly in the claims.

The object of the invention is to produce a device of the character set forth that shall be cheap and simple of construction, and one in which all portions of the clamping head or jaw may be simultaneously moved either toward or from the bench and with equal clamping power, which object is attained by the construction illustrated in the accompanying drawings, in which—

Figure 1 is a general perspective view of a bench having my improved vise mounted thereon. Fig. 2 is a central vertical section through the vise-head, gears, and screw-plate. Fig. 3 is an elevation of the operating-gears, the outer bearing-plate being removed. Fig. 4 is a detail in perspective, showing the formation of the screw-plate.

Referring to the numerals of reference, 1 designates the vise-head or the movable clamping members. Rigidly secured to the outer face of said head is a rectangular clamping-plate 2. Projecting from the front face of said plate 2, near each of its four corners, are studs 3. Secured in any suitable manner, but preferably so as to be easily removed for repair of any of the included parts, against the outer ends of said studs 3 is a plate 4, similar in size and strength to plate 2. Passing centrally through plates 4 and 2, and journaled therein, is a short counter-shaft 5, the outer end of said shaft terminating in or being provided with an angled or T socket 6. Passing loosely through said socket is the usual headed vise-operating lever 7. Securely

mounted upon shaft 5, between plates 4 and 2, is a gear-wheel 8. Also journaled between said plates 4 and 2 are corresponding gears 9, 10, and 11. The inner ends of the shafts upon which said gears 9, 10, and 11 are mounted terminate in elongated screws 9', 10', and 11', respectively, all of which are threaded in a corresponding direction.

12 designates a screw-plate which, in the present instance, is substantially U-shaped in elevation. Projecting from the rear face of said plate, and formed integral therewith, are nipples 13, said nipples being apertured and threaded, and said apertures leading outward through the front face of said plate 12. It will thus be seen that by embedding plate 12 in the front face of a work-bench, such a one as is shown at 14, by revolving handle 7 screws 9', 10', and 11' may be turned or screwed into their respective nipples 13. It will also be understood that by placing a piece of work between the outer edge of the bench and the inner face of head 1 it may be clamped with equal pressure throughout the length of said head. By a reverse operation of lever 7 said piece may be moved or its position altered, as desired.

Having thus fully set forth my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a bench-vise, the combination with a bench and a plate 12 having threaded nipples formed integral therewith, adapted to be secured to said bench, of a head, screws adapted to form guides for the head, and arranged to engage with the threaded nipples upon said plate and having their outer ends journaled in said head, gear-wheels secured to the outer ends of said screws, a counter-shaft journaled in said head, having a gear mounted thereon adapted to mesh with the gears upon said screws, and means for operating said counter-shaft whereby said screws are turned to force said head toward and from said bench, substantially as described.

2. A bench-vise of the character set forth, consisting of a head 1 having a plate 2 rigidly secured thereto, a corresponding plate 4 held distant from and secured to said plate 2, by means of studs 3, a counter-shaft journaled in said plates, said shaft having a gear se-

cured thereon between said plates, the outer
end of said shaft terminating in a socket in
which an adjustable operating-handle is lo-
cated, gears 9, 10 and 11 also journaled be-
5 tween said plates, the shafts of said gears
terminating in elongated screws, the screw-
plate 12 having threaded nipples formed in-
tegral therewith and said screws adapted to
enter and pass through said nipples by the

operation of said handle, for the purpose set fo
forth.

In testimony whereof I affix my signature
in presence of two witnesses.

MERRITT WADE.

Witnesses:

FRANK AVERY,
A. BERGMANN.