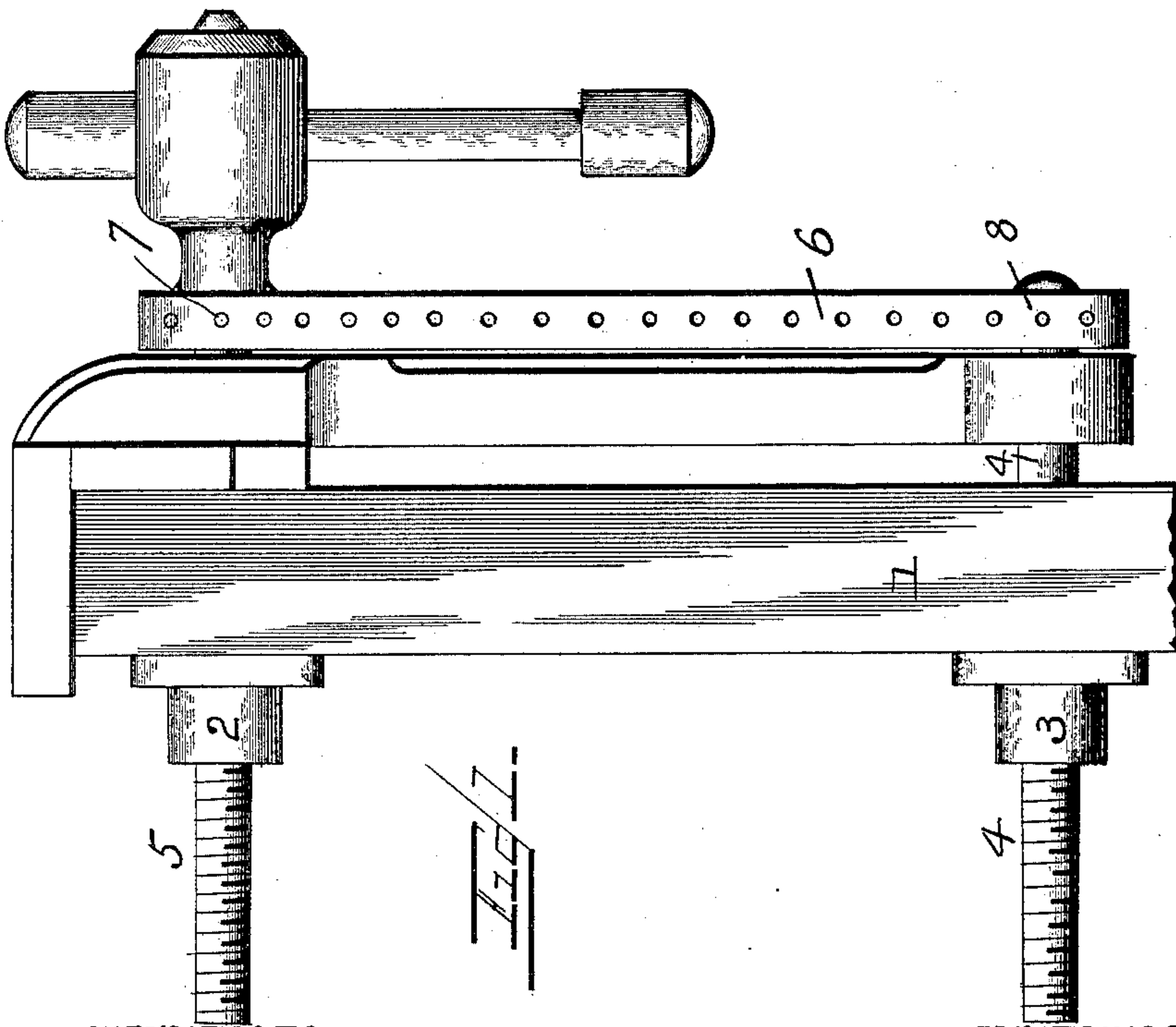
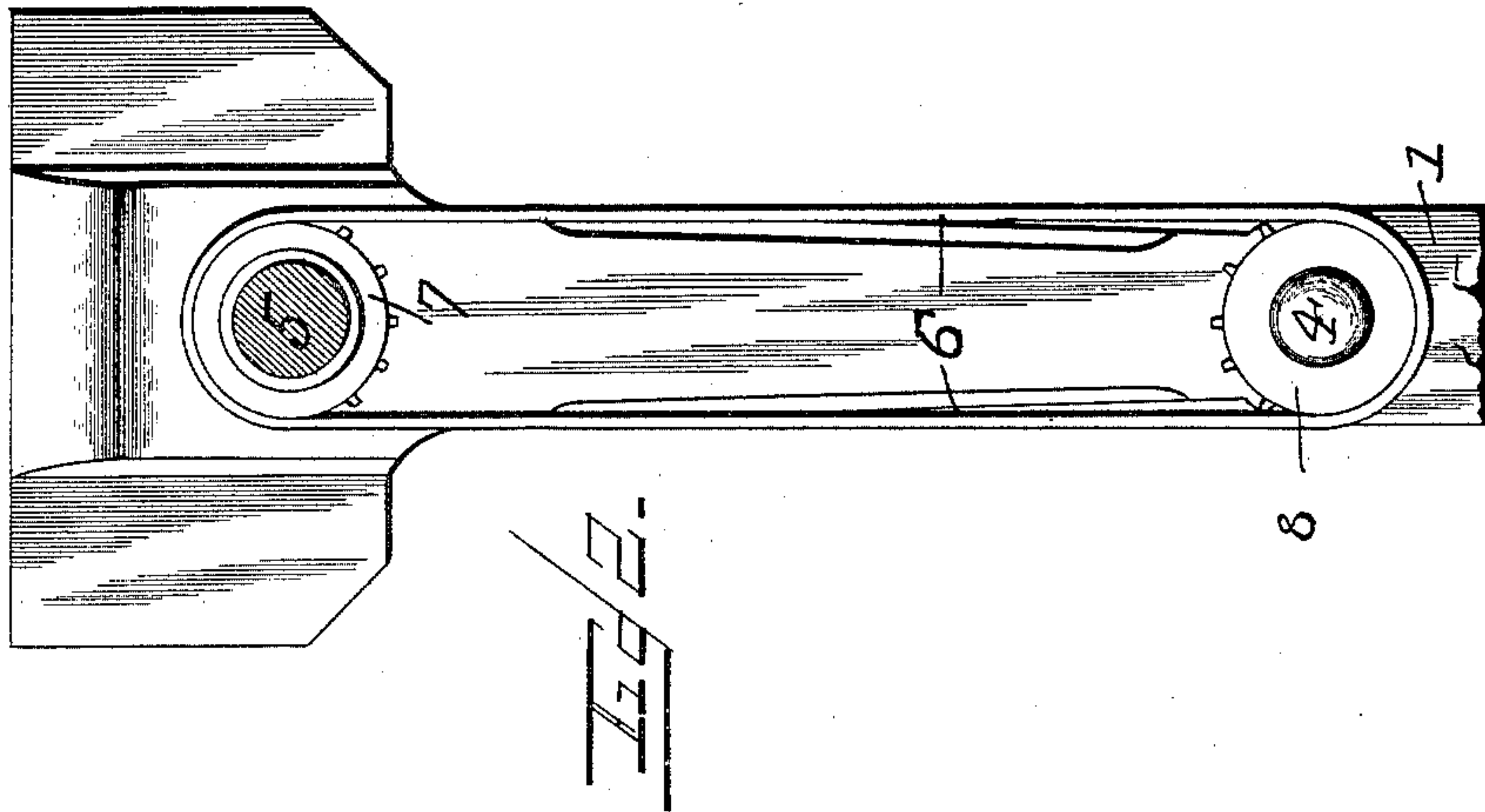


(No Model.)

J. M. PALM & J. H. AKIN.  
BENCH VISE.

No. 467,781.

Patented Jan. 26, 1892.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

JOHN M. PALM AND JAMES H. AKIN, OF ARKANSAS CITY, KANSAS.

## BENCH-VISE.

SPECIFICATION forming part of Letters Patent No. 467,781, dated January 26, 1892.

Application filed August 26, 1891. Serial No. 403,797. (No model.)

*To all whom it may concern:*

Be it known that we, JOHN M. PALM and JAMES H. AKIN, citizens of the United States, and residents of Arkansas City, in the county of Cowley and State of Kansas, have invented certain new and useful Improvements in Bench-Vises; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

Our invention relates to bench-vises, and especially to that class of bench-vises termed or known as "parallel" bench-vises; and the invention consists in the construction and novel combination of parts, as hereinafter fully described, and particularly pointed out in the claim appended.

In the drawings, Figure 1 is a side elevation of our improved bench-vise, the portion of the work-bench essential to the operation of the vise being also shown. Fig. 2 is a detail view showing the belt or chain broken away to show the sprocket-wheels.

Referring by numerals to the accompanying drawings, 1 designates the bench-leg, which is provided near its upper and lower ends with screw-seats, with which are aligned the upper and lower interiorly-threaded nuts 2 and 3, said nuts being provided with perforated flanges, through which securing-screws are driven into the inner or rear face of the bench-leg.

4 is the lower screw, which is provided at its outer end or head with a sprocket-wheel or rag-wheel 8. The upper screw 5 is provided with a head having an operating-lever by which to turn it, and this screw is provided

with a sprocket-wheel or rag-wheel 7, which is connected by an endless belt or chain 6 with the sprocket-wheel or rag-wheel 8 on the lower screw 4. By this construction we provide a vise the movable jaw of which moves parallel to the fixed jaw when the operating-lever is turned, whereas in the constructions heretofore used in this class of vises the movable jaw has been hinged or pivoted at or near its lower end, and when operated its upper end has moved necessarily in the arc of a circle and has tended to press upwardly on the arc of a circle against the object to be clamped or held, thereby marring its surface or pressing it upwardly out of the position desired to be attained.

Having thus fully described our invention, what we claim, and desire to secure by Letters Patent, is—

The combination, with the bench-leg provided with a stationary vise-jaw at its upper end and screw-seats near its upper and lower ends having aligned threaded nuts at their inner terminations, of the movable parallel jaw having screw-seats near its ends, the lower screw provided with a sprocket-wheel at its outer end, the upper screw provided with a sprocket-wheel near its head, and the endless belt or chain connecting the upper and lower sprocket-wheels, substantially as specified.

In testimony that we claim the foregoing as our own we have hereunto affixed our signatures in presence of two witnesses.

JOHN M. PALM.  
JAMES H. AKIN.

Witnesses:

JOSEPH GOAS,  
ROBERT A. GILMER.