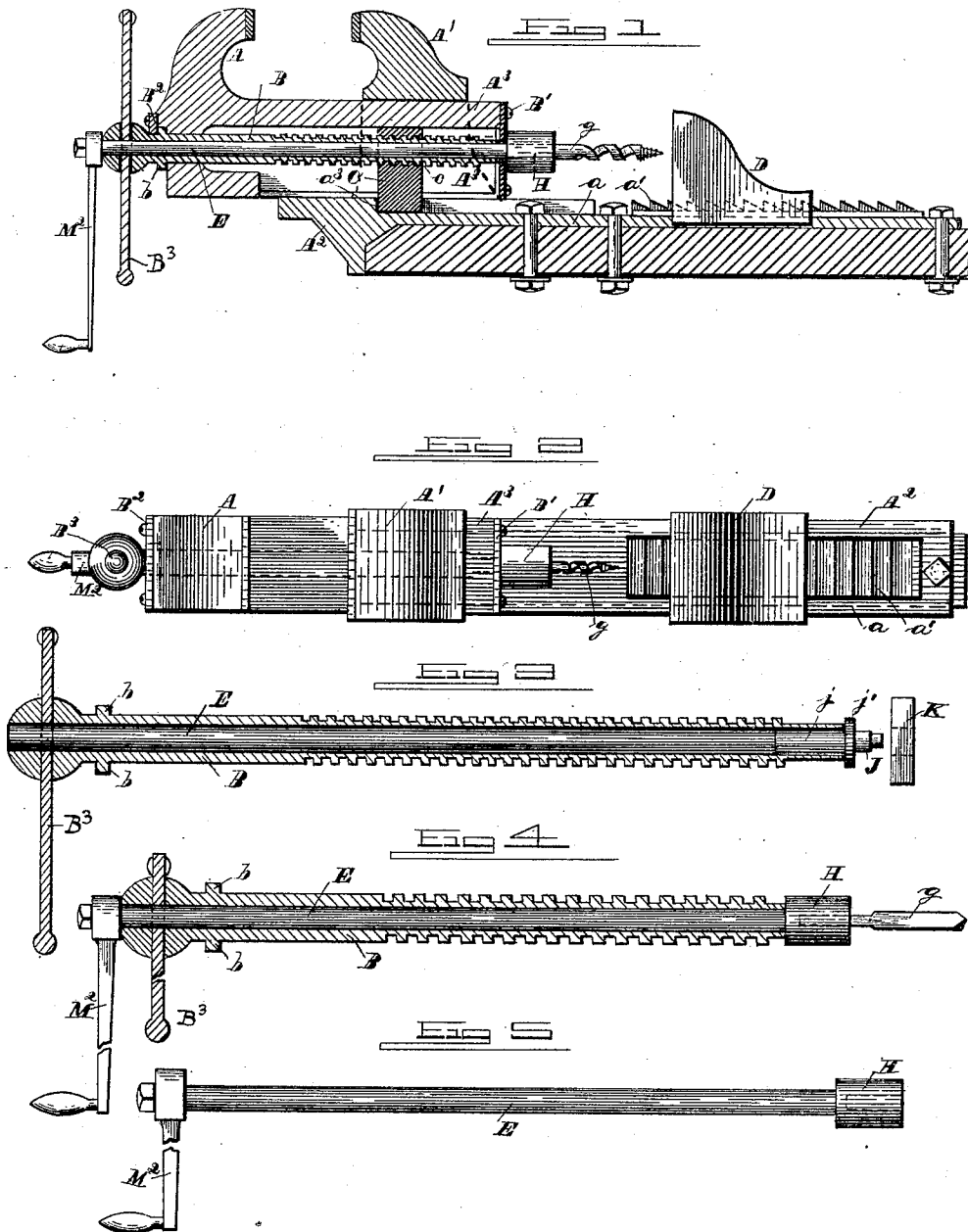


No Model.)

J. N. SARGENT.
COMBINED VISE, PUNCH, AND DRILL.

No. 437,047.

Patented Sept. 23, 1890.



Witnesses

C. H. Seville

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UNITED STATES PATENT OFFICE.

JOHN N. SARGENT, OF AURORA, INDIANA.

COMBINED VISE, PUNCH, AND DRILL.

SPECIFICATION forming part of Letters Patent No. 437,047, dated September 23, 1890.

Application filed July 9, 1890. Serial No. 353,180. (No model.)

To all whom it may concern:

Be it known that I, JOHN N. SARGENT, of Aurora, in the county of Dearborn and State of Indiana, have invented certain new and useful Improvements in a Combined Vise, Punch, and Drill; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification, in which—

Figure 1 is a vertical central longitudinal section through my improved combined vise, punch, and drill. Fig. 2 is a plan view. Fig. 3 is a sectional view of the screw-shaft and spindle removed and enlarged, together with the die-plates. Fig. 4 is a similar view showing the auger or bit. Fig. 5 is an enlarged detail view of the spindle.

The present invention is an improvement in metal and wood working tools, and it is a combined or combination vise, drill or boring-machine, and punch; and it consists in the novel construction and combination of parts hereinafter clearly described and claimed.

Referring to the drawings by letter, A designates the movable jaw of the vise; A', the stationary jaw, which is rigidly connected to the base-plate A², as usual, which plate is bolted to a proper support and has a rearwardly-extending portion *a*, on the face of which is formed or secured a ratchet or rack *a'*, and on this portion slides or is adjustably mounted a die-block D, which can be set at different positions and locked by engagement with the rack.

The movable jaw A has a rearwardly-extending hollow portion A³, into which projects a block C, having a threaded opening *c*, and abutting against a shoulder *c'* of base A², so that forward movement of the block is prevented.

B designates the screw-shaft for operating the movable jaw, passing through a bore in the front end of the jaw and extending through the hollow portion A³ and through the opening in block C, which it engages by its threads. The rear end of shaft B is supported on a plate B', closing the rear end of portion A³, and its front end is shouldered, as at *b*, and is confined to the jaw A by a plate B², as indicated, so that shaft B can rotate but not

longitudinally move in jaw A, though it moves with or rather causes the jaw to move toward or from jaw A' as screw-shaft B is turned, as in ordinary vises.

B³ designates a handle for operating shaft B, passing through an enlargement on the outer end thereof. The said shaft is tubular throughout, and handle B³ is centrally perforated to correspond with the bore of the shaft B.

The face of die-block D is recessed directly opposite the end of shaft B, and in this recess can be set die-plates K of various forms and sizes, and then punches J, corresponding to the dies and having a shank portion *j* and shoulder *j'*, can be slipped into the end of shaft B, and by then turning said shaft the punch is forced into the die and through any sheet or object interposed between them, as usual, thus making a screw-punching machine. The dies K and punches can be changeable for various sizes and forms of openings.

To use as a drill, a spindle E is slipped through shaft B, having on its inner end an enlarged socket H, which abuts against the rear end of shaft B, while the front end of the spindle projects slightly beyond the front end of shaft B and is engaged by a crank-handle M², by which it can be turned. A drill *g* or an auger L may be fixed in socket H, and then revolved by turning spindle E, and thus may be drilled or bored objects interposed between the vise and chuck D. By turning shaft B the drill or auger is fed up to the work as it cuts therein.

From the foregoing description it will be seen that the tool is useful as a vise for drilling, punching, and boring, and can operate on thick or thin sheets, and the screw makes a most powerful punch and powerfully feeds the drill or auger to its work.

The spindle does not interfere with the operation of the machine as a vise or punch, as the punch could be slipped into socket H as well as the augers or bits.

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

1. The combination of a vise having a fixed and a movable jaw and a tubular screw-shaft for operating the same, and a block having a

threaded opening engaged by said shaft, with a die-block opposite the end of the shaft and the removable punch or bit in the end of the shaft, substantially as described.

5 2. The combination of the vise having a fixed and a movable jaw and a tubular operating screw-shaft with a revoluble spindle mounted in the tubular shaft and having a socket at its rear end and adapted to receive
10 bits, punches, &c., and an operating-handle on its front end, substantially as and for the purpose described.

15 3. The herein-described tool, consisting of a vise having a movable jaw, a fixed jaw, a tubular screw-threaded shaft for operating

said movable jaw, and an adjustable die-block opposite the end of said shaft, with a spindle mounted in said shaft having a socket on its rear end opposite the said die-block and an operating-handle on its front end, and the bits or drill, &c., all constructed and arranged to operate substantially as and for the purpose specified.

In testimony that I claim the foregoing as my own I affix my signature in presence of two
25 witnesses.

JOHN N. SARGENT.

Witnesses:

WILLIAM A. GOODRICH,
ERNEST L. SMITH.