H. THOMAS.

Planer-Chuck.

No. 168,064. Patented Sept. 21, 1875.

Fig. 1.

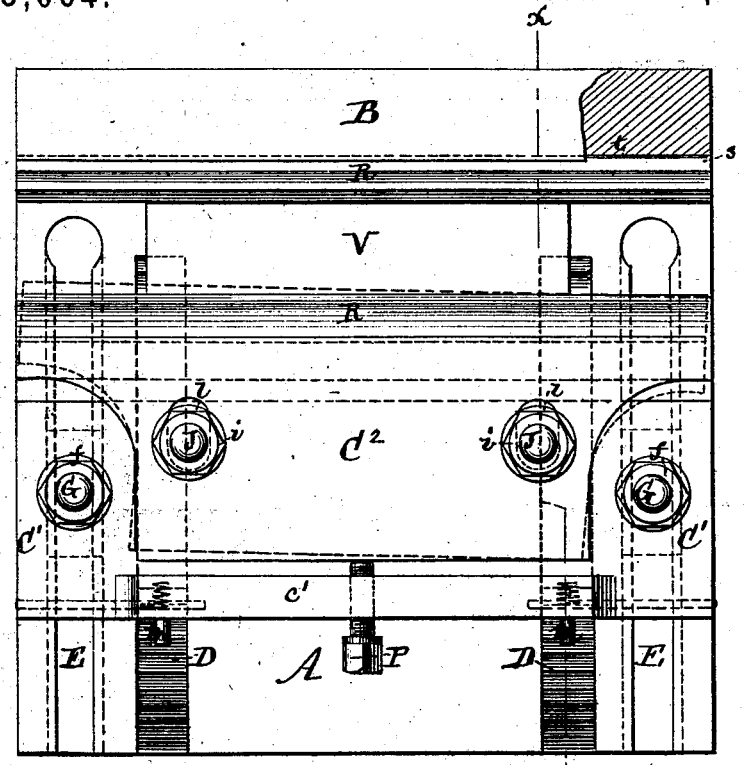


Fig. 2.

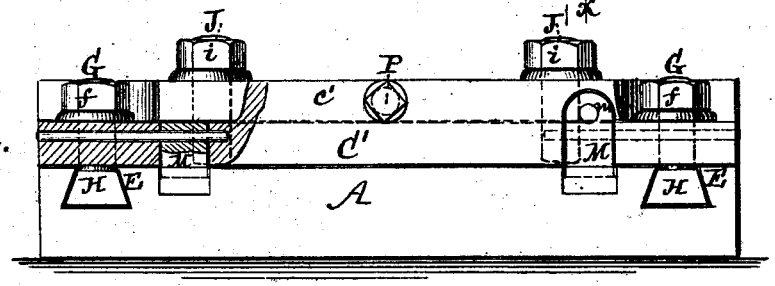
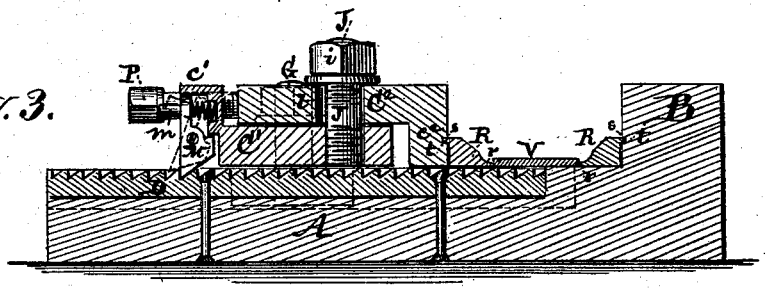


Fig. 3.



Witnesses.
John Becker
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UNITED STATES PATENT OFFICE.

HUGH THOMAS, OF NEW YORK, N. Y.

IMPROVEMENT IN PLANER-CHUCKS.

Specification forming part of Letters Patent No. **168,064**, dated September 21, 1875; application filed June 5, 1875.

To all whom it may concern:

Be it known that I, HUGH THOMAS, of New York, in county and State of New York, have invented an Improved Planer-Chuck; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which forms part of this specification.

My invention relates to a vise which is intended for application to the bed-plate of a metal-planing machine, or other machine tool for working metal, for the purpose of holding the work in place.

The invention consists, first, in a novel construction, arrangement, and combination of a base, a fixed jaw, and a movable jaw, and means for operating and adjusting the same, whereby great facility is afforded for adjusting the vise to the shape and size of the work, for the purpose of holding the same properly and securely in place in the machine. The invention consists, further, in the combination, with the vise, of a gib or gibs of novel construction, whereby very thin pieces of metal are held securely in place, and whereby the displacement of the gibs themselves is prevented.

In the accompanying drawing, Figure 1 is a top view of my improved vise. Fig. 2 is a side view, partly in section. Fig. 3 is a vertical section, taken in the line *x x* of Fig. 1.

The base A is of any suitable construction, and is provided with suitable means for attaching it to the bed-plate of the machine. The fixed jaw B is formed with or attached to the base A, near one edge thereof. In the upper side of the base one or more ratchets, D, are provided, which ratchets may be formed directly in the metal of the base, or may be formed on separate pieces of metal and inserted in recesses in the base. Two or more grooves, E, are formed in the base, about equal in length to the ratchets D, and arranged parallel therewith. The grooves E are of dovetail or similar form, being wider at the bottom than at the top, and their outer or front ends are open, as shown in Fig. 2. The movable jaw is made in two parts, C^1 C^2. The lower part consists of a flat plate, C^1, with a flange-like projection, c^1, on its upper side, at or near its outer edge. The upper part consists of a flat plate, C^2, with a flange-like projection, c^2, on its lower side, at its inner edge. In the lower plate C^1 are two holes at points immediately over the grooves E. Through each of these holes passes a bolt, G, provided at its upper end with a screw-thread and a nut, *f*, and carrying at its lower end a swivel-head, H, corresponding in shape with the groove E, so as to fit nicely therein. To the lower plate C^1 are attached two bolts or studs, J, which project upward and pass through slots *l* in the upper plate C^2, and are provided at their upper ends with screw-threads for the reception of nuts *i*. In the outer edge of the lower plate C^1, at points immediately over the ratchets D, are two pivoted pawls, M, working in recesses in the plate, and provided with springs for holding them in position for engagement with the ratchets, and with studs or projections *m* for releasing them from such engagement. Through the flange-like projection c^1 passes a tightening-screw, P, the point of which bears against the edge of the upper plate C^2. The plates C^1 C^2 are attached together by placing the upper one over the lower one, with the bolts J passing through the slots *l* and fastened by the nuts *i*. The movable jaw thus constructed is attached to the base A by inserting the heads H in the grooves E, and moving the jaw along on the base until the pawls M engage with the ratchets D, and it is held in place on the base by means of the nuts *f* on the bolts G. When a piece of work is placed between the jaws the movable jaw is pushed toward the fixed jaw, with the work between the jaws, until it cannot be moved any farther and preserve the engagement of the pawls and ratchets. The nuts *f* are then tightened, by which means the lower plate C^1 is held firmly down upon the base, while the engagement of the pawls and ratchets prevents any backward movement of the jaw. The tightening-screw P is then turned so as to press the upper plate C^2 closely and tightly against the work, the slots *l*, through which the bolts J pass, allowing it to move along on the lower plate when driven by the screw. When the upper plate is properly adjusted against the work the nuts *i* are tightened so as to hold it firmly down on the lower plate, and thus the work is securely

clamped between the jaws. If the work should be tapering in form, or wider at one end than at the other, the slots *l* permit the inclination of the upper plate to correspond with such form, as indicated by dotted lines in Fig. 1.

In order to provide for the clamping between the jaws of thin pieces of work, I employ two gibs, R R, each of which has its bottom and one side forming a right angle, and its upper side inclined diagonally and tapered to a thin edge, *r*. On the vertical side of each gib is a rib or tongue, *s*, for engagement with a groove, *t*, in the jaw of the vise. The gibs are placed on the base A, with the vertical side of one gib bearing against the fixed jaw, and the vertical side of the other gib bearing against the movable jaw, and with the ribs or tongues *s* inserted in the grooves *t*, as shown. The work V is then placed on the base, between the gibs, and the jaws adjusted thereto. The tapering inner edges of the gibs enable very thin pieces of work to be held in the vise without interference of the tool with the jaws, and the engagement of the tongues *s* and grooves *t* prevents the gibs from riding up or tipping inward, as they would otherwise have a tendency to do, and thus the work is held firmly and securely in place upon the base A, which base presents a perfectly true surface, and thus insures the planing of the work V to a uniform thickness throughout, with its upper and lower sides parallel.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the base and stationary jaw A B, grooved, as at E, to receive the screws H, and provided with ratchets D, with the movable jaw composed of the parts C^1 C^2, these parts being slotted, the part C^1 provided with pawls M, and adjustably attached to the base, and the part C^2 adjustably attached to the part C^1 by screw-bolts, through their respective slots, substantially as shown and described.

2. The gibs R, constructed with their faces tapering to thin edges *r*, and with tongues *s s* on the upper parts of their jaws having grooved backs in combination with jaws B C^2, having the grooves *t*, substantially as and for the purpose herein described.

HUGH THOMAS.

Witnesses:
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