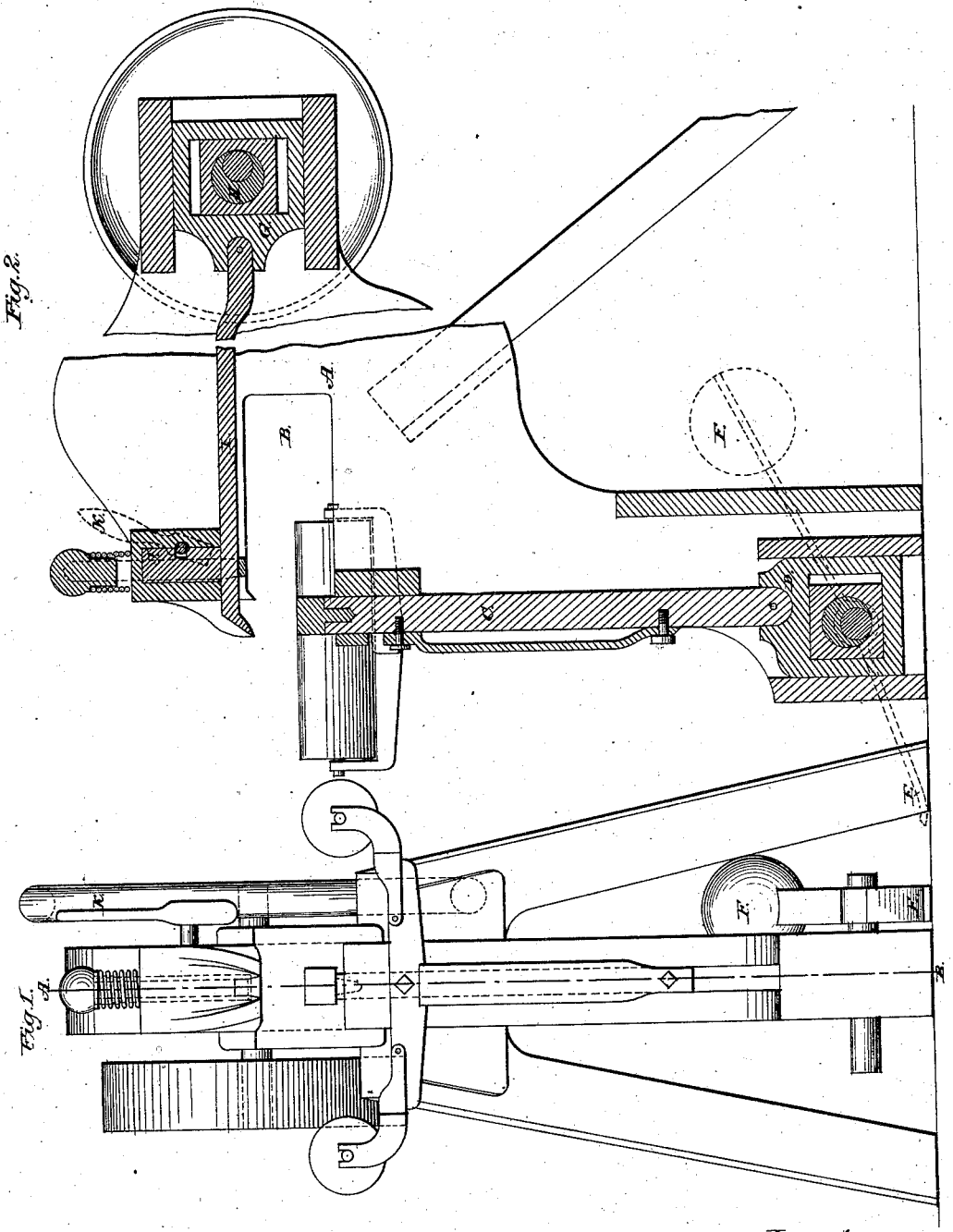
2 Sheets—Sheet 1.

H. M. SMITH.

MACHINES FOR PLANING OFF THE HEADS AND POINTS OF RIVETS.

No. 194,736. Patented Aug. 28, 1877.



Attest:
Isaac S Tower
Geo H Hardwick

Inventor:
H M Smith

2 Sheets—Sheet 2.

H. M. SMITH.

MACHINES FOR PLANING OFF THE HEADS AND POINTS OF RIVETS.

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Fig. 3.

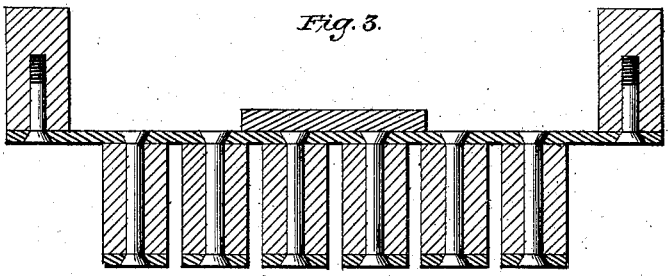


Fig. 4.

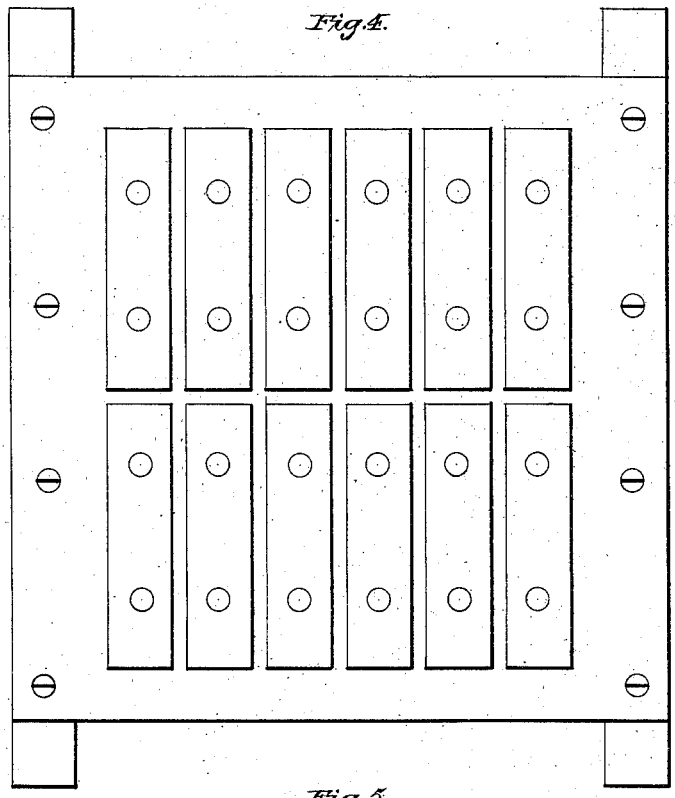
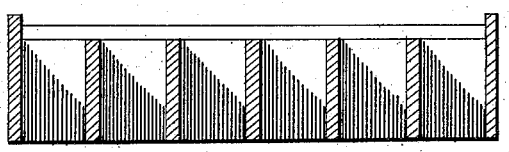


Fig. 5.



Attest:

Isaac S. Moore

Geo. H. Hardwick

Inventor:

H. M. Smith

UNITED STATES PATENT OFFICE.

HIRAM M. SMITH, OF RICHMOND, VIRGINIA.

IMPROVEMENT IN MACHINES FOR PLANING OFF THE HEADS AND POINTS OF RIVETS.

Specification forming part of Letters Patent No. **194,736**, dated August 28, 1877; application filed October 3, 1876.

To all whom it may concern:

Be it known that I, H. M. SMITH, of the city of Richmond and State of Virginia, have invented a new and useful Machine for Planing off the Heads and Points of Rivets of Tobacco-Shapes, which invention is fully set forth in the following specification, reference being had to the accompanying drawings.

The object of my invention is to produce more perfect work than can be done in the old way, as well as to economize in expense of files and labor in removing the heads and points after riveting, while the frame is under the same pressure.

The machine is illustrated more in detail in Figure 1, and cross-section, Fig. 2, of drawings. Figs. 3, 4, and 5 are drawings of a tobacco-shape.

I make a strong iron frame, A, with jaw opening at B, of strength to resist fifty thousand pounds pressure. In the lower jaw and foot of the machine I have a mandrel, C, which has guides in the frame, works easily up and down, and may be provided with interchangeable dies of different lengths for different thicknesses of shapes. The lower end of this mandrel rests in a movable box, D, which is worked by an eccentric moved by a foot-lever, E, balanced by weight F.

The shape is placed between the jaws of the frame with the rivet-head upon the die in the mandrel C, when the operator bears upon the foot-lever E, and raises the said mandrel with great force, driving rivet home, compressing the iron back, sinker-block, and face-plate at once to the maximum necessity, when the protruding end of the rivet is easily upset and driven into the countersink with hand or power hammer, working through an opening in the upper jaw, without crippling the body of the rivet, requiring no repeated blows to draw the work together, or re-examination to secure perfection. This operation, repeated on each rivet, secures all against protrusion when subjected to hydraulic pressure in daily use.

In the rear of the opening of the jaws I have a reciprocating box, G, worked by eccentric H, which is driven by a fly and belt-wheel. A chisel, I, reaches from the center of the upright mandrel C to, and is secured in, this box. This chisel, just back of its cutting end, works through a steel bridle, which extends up through the jaw, where it is supported by a spiral spring, which holds it and the chisel above the lower face of the upper jaw.

To feed the chisel down when it is desired to plane off the rivet, I have a sliding mandrel, J, the end of which rests on the back of the chisel, while an eccentric works in a square notch on one edge of said mandrel, and is worked by lever *k* with great accuracy.

When a rivet is finished the lever is raised and the chisel is again controlled by the bridle. While each rivet can be planed as soon as the rivet is formed, it is found best in practice to rivet an entire shape, and then plane both heads and points of rivets in a whole frame.

In front of the machine, and attached to the upright mandrel, I have an adjustable frame, which carries two rollers for the purpose of supporting the weight of the shape while being riveted and planed. The arms are adjustable by set-screws, and the whole frame is upon a spring to yield to any irregularity of frame or rivets.

I claim—

1. The combination of the rectilinearly-reciprocating cutter with the devices for changing the direction of movement of the cutter, substantially as described.

2. The combination of the reciprocating cutter with the shape-supporting rolls.

3. The combination of the sliding mandrel C, the supporting-rolls, the eccentric, and weighted foot-lever, substantially as described.

H. M. SMITH.

Witnesses:
ISAAC S. TOWER,
GEO. H. HARDWICKE.