R. BANDHAUER.

COMPOUND METAL WORKING MACHINE.

No. 188,494. Patented March 20, 1877.

Fig. 1.

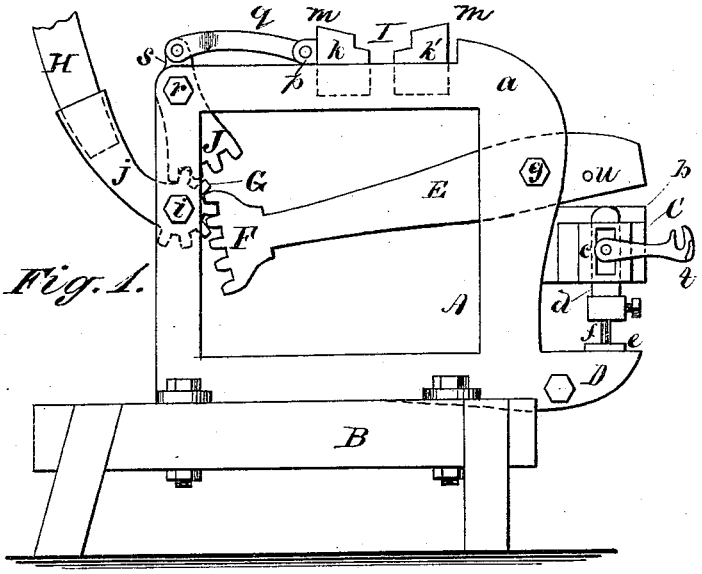


Fig. 2.

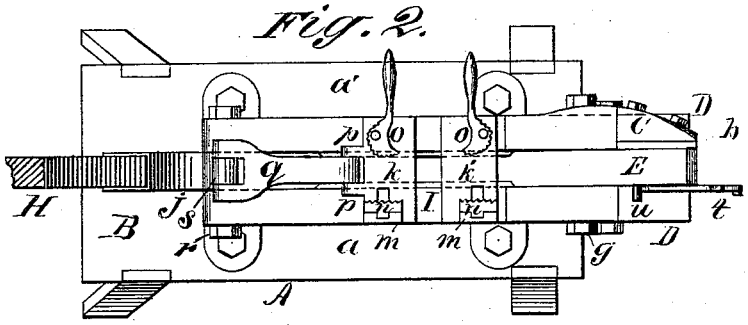
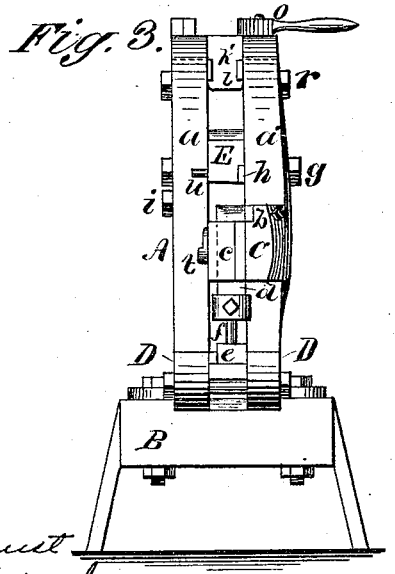


Fig. 3.



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ROBERT BANDHAUER, OF DENVER, COLORADO.

IMPROVEMENT IN COMPOUND METAL-WORKING MACHINES.

Specification forming part of Letters Patent No. **188,494**, dated March 20, 1877; application filed January 19, 1877.

To all whom it may concern:

Be it known that I, ROBERT BANDHAUER, of Denver, in the county of Arapahoe and State of Colorado, have invented a new and Improved Combined Tire-Upsetter, Shears, and Punch, of which the following is a specification:

Figure 1 is a side elevation. Fig. 2 is a top view. Fig. 3 is a front elevation.

Similar letters of reference indicate corresponding parts.

The invention will first be described in connection with the drawing, and then pointed out in the claim.

Referring to the drawing, A is a frame of iron or other suitable material, the general form of which is rectangular. This frame is composed of two similar side pieces, *a a'*, which are attached together, and fastened to a bench, B. The side piece *a'* is provided with a horizontally-projecting arm, C, to the upper edge of which a shear-blade, *b*, is attached, and to the vertical inner face of which the guide *c* for the punch-follower *d* is attached. D D are arms projecting from the lower portion of the side pieces *a a'* for supporting the die *e*. E is a shear-lever, placed between the side pieces *a a'*, and moving on the bolt *g*, that passes through both of the said side pieces, and provided with a shear-blade, *h*, between which and the stationary blade *b* sheets or bars of metal may be cut. The longer end of the lever E is provided with a toothed segment, F, which is engaged by a segmental pinion, G, that turns on the bolt *i*, and is provided with a socket, *j*, for receiving the lever H. I is a tire-upsetting device, which consists of the blocks *k k'*, placed upon the upper portion of the frame A, and having the projections *l*, that extend downward, and are grooved in their sides, so as to fit ribs formed on the inner surfaces of the parts *a a'* of the frame A. The blocks are provided with vertical lugs *m m'*, which are faced with steel-ribbed or serrated blocks *n*. Eccentric levers *o* are pivoted to the blocks, and are oppositely arranged, so that they may automatically clamp the tire held between them as the block *k* is made to approach the block *k'*. The block *k'* rests against lugs formed upon the side pieces *a a'*, and the block *k* is provided with ears *p*, between which the connecting-rod *q* is pivoted. J is a lever that turns upon the bolt *r*, and has upon its lower end teeth that engage with the teeth of the segmental pinion G, and is provided with a short arm, *s*, with which the rod *q* is connected. *t* is a hook that is pivoted on a stud that projects from the follower *d*, and engages with a pin, *u*, that projects from the side of the lever E for drawing the punch *f* out of the die *e*, and out of the metal being punched.

The operation of the machine is as follows: When it is desired to use it as a punch the hook *t* is hooked over the pin *u*, when the upper end of the follower *d* comes into contact with the shorter end of the lever E. The punch *f* is raised by throwing the lever H upward, and is made to descend by carrying the lever H downward. By detaching the hook *t* the follower *d* drops out of the way, and the shears may be used, and the same lever that moves the shears and punch causes the block *k* to approach the block *k'*, so that a tire clamped in the said blocks may be upset.

The advantage claimed for the machine is, that it combines, in a single tool, three of the heaviest, most bulky, and most expensive tools used in a smith's shop, and the frame or support that answers for one is sufficient for all, and economy of space, as well as saving in material and labor in its manufacture, is effected.

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

An improved tire-upsetter, shear, and punch, consisting of the frame A, having arms C D, the shear-blade and punching mechanism, supported on said arms, the shearing-lever E, that may be attached, by hook and lug, to punch, the hand-lever H and the upsetter, united by link with a lever, S, the three levers being connected by racks and pinion, as shown and described.

ROBERT BANDHAUER.

Witnesses:

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