(No Model.)

S. COONS.

PUNCH.

No. 313,991. Patented Mar. 17, 1885.

Fig. 2.

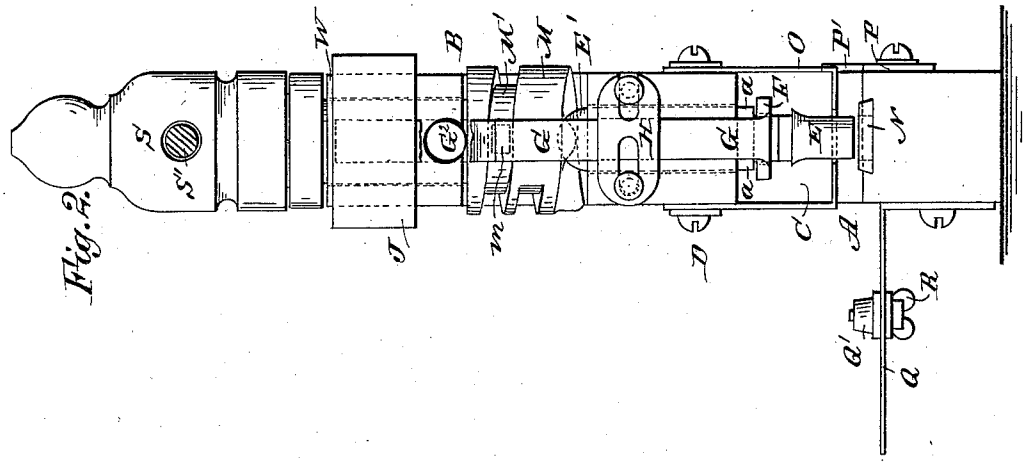
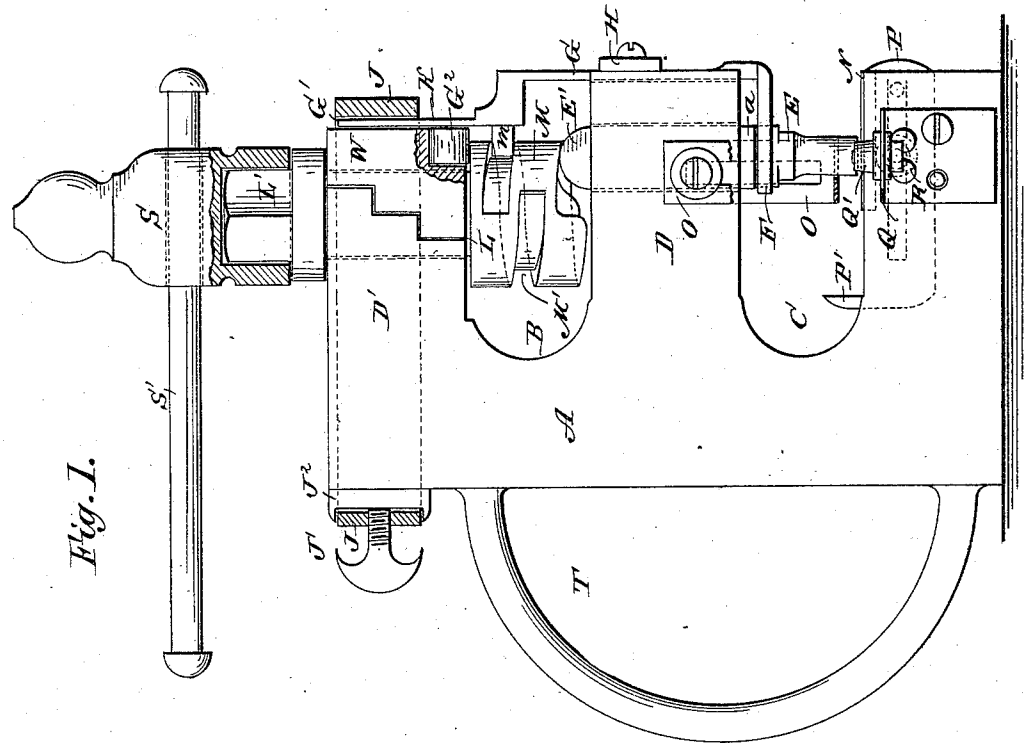


Fig. 1.



WITNESSES:

H. Holzbeyer

C. Sedgwick

INVENTOR:

S. Coons

BY Munn & Co

ATTORNEYS.

N. PLYERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

SOLOMON COONS, OF ORBISONIA, PENNSYLVANIA.

PUNCH.

SPECIFICATION forming part of Letters Patent No. 313,991, dated March 17, 1885.

Application filed June 6, 1884. (No model.)

To all whom it may concern:

Be it known that I, SOLOMON COONS, of Orbisonia, in the county of Huntingdon and State of Pennsylvania, have invented a new and Improved Punch, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved punch for punching iron, steel, and other metals.

The invention consists in the combination, with a block, of a die held to slide in the same, and a spindle provided with a head or nut having a spiral end surface adapted to act on the die, and a spiral groove, into which a prong or pin from a sliding bar passes, which sliding bar is connected with the die, and is used to raise the same.

The invention also consists in parts and details and combinations of the same, as will be fully set forth hereinafter.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 is a longitudinal elevation of my improved punch, parts being broken out and others shown in section. Fig. 2 is a front end view of the same.

A block or frame, A, is provided with two notches or recesses, B and C, between which a horizontal prong, D, is formed, in which the male die E is held to slide vertically.

The die E is provided on its lower end with shoulders, offsets, or projections *a*, which rest on the prongs of a fork, F, formed on the lower end of a bar, G, held to slide in longitudinal grooves in the end of the block, the forked end of the said bar being bent into the bottom recess or notch, C.

The sliding bar G is held in its grooves by a clip, H, held on the end of the prong D, and by a band or frame, J, surrounding the top of the block, and provided with a binding-screw, J′, for clamping the band on the block, which screw acts on a key, J^2, held between the block and the end cross-piece of the frame J. The front cross-piece of the band or frame J is provided with a groove, G′, for receiving a sliding guide-tongue, K, projecting upward from the bar G.

A spindle, L, is held to turn in the end of the top prong, D′, of the block, and has a squared or other suitable head, L′, on its upper end.

On the lower end of the spindle L a nut or head, M, is formed, which is provided with a spiral groove, M′, into which a prong, *m*, projects from the bar G. The bottom of the head M forms a spiral plane adapted to act on the rounded top E′ of the male die E, which top projects more or less from the bottom of the upper recess, B. The female die N is dovetailed, and slides into a dovetail groove in the bottom recess, C.

A U-shaped frame, O, having slotted prongs, is held on the sides of the prong D in such a manner that the cross-piece of the frame O passes over the bottom of the recess C and over the die N, and as the prongs of the frame O are slotted the cross-piece of the frame O can be held a greater or less distance from the die N, as may be desired.

A longitudinal slotted gage-plate, P, having an upwardly-projecting lug, P′, is held on one side of the block A, the top edge of the plate P being flush with the bottom of the recess C. From the opposite side of the block a longitudinally-slotted bar, Q, projects, on which a movable gage, Q′, is mounted, which can be locked in place by means of a winged screw, R.

A key, S, having a rod, S′, for turning it, is adapted to fit on the head L′.

The block A is provided with a handle, T, for holding it.

A block, W, forming half of the box for the spindle L, is held on the front or outer end of the prong D′ by the frame J, and in the bottom edge of the front of the block W an anti-friction roller, G^2, is held, on which the top edge of the head M runs.

The operation is as follows: The piece of metal to be punched is placed on the female die N, and the spindle L is turned by means of the key S, and the spiral plane on the bottom of the head M, acting on the rounded top E′, which may be an anti-friction ball, of the male die E, forces the said die downward and through the plate, &c., on the female die. If the spindle L is then moved in the inverse direction, the bottom of the spiral groove M′ acts on the pin or prong *m* and pulls the bar G upward, which in turn pulls the male die E upward. The cross-piece of the frame O

prevents the punched plate from rising with the die E, and thus the punched plate is pushed off the die.

The punch can easily be held in any desired position. It operates rapidly, and comparatively little power is required to work it.

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

1. In a punch, the combination, with a block or frame and a sliding die held in the same, of a spindle provided with a head having a spiral end surface for acting on the end of the said spindle, and means for revolving the said spindle, substantially as herein shown and described.

2. In a punch, the combination, with a block or frame and a sliding die held in the same, of a spindle having a spiral end surface, sliding bar operated by the spindle for raising the die, and means for operating the spindle, substantially as herein shown and described.

3. In a punch, the combination, with a block or frame, of a sliding die, a spindle having a spiral groove, and also a spiral end surface adapted to act on one end of the die, and a sliding rod connected with the die and having a prong or pin projecting into the spiral groove in the spindle, substantially as herein shown and described.

4. In a punch, the combination, with the block or frame A, of the sliding die E, the spindle L, having a head or nut, M, provided with a spiral end surface, and the roller G^2, against which the top of the nut M works, substantially as herein shown and described.

5. In a punch, the combination, with the block or frame A, of the sliding die E, the spindle L, having a nut or head, M, provided with a spiral groove, M′, and a spiral end surface, the sliding bar G, having a forked end, F, holding the die E, and the prong *m*, projecting from the sliding bar G into the groove M′, substantially as herein shown and described.

6. In a punch, the combination, with the block or frame A, of the spindle L, a die adapted to be acted on by the spindle, the block W, the band or frame J, and the screw J′, substantially as herein shown and described.

7. In a punch, the combination, with the block A, having recesses B C, forming a prong, D, of the die E, having the rounded top E′, and fitted to slide freely in said prong, and the spindle L, provided with a head, M, having a spiral end surface for acting on the rounded end of the spindle, substantially as herein shown and described.

8. In a punch, the combination, with the block or frame A, of the sliding die E, the spindle L, having a squared head, L′, and a head or nut, M, adapted to act on the die, the key S, fitting on the head L′, and the handle S′ in the said key, substantially as herein shown and described.

9. In a punch, the combination, with the block or frame A, of the sliding die E, the spindle L, having a nut or head, M, adapted to act on the die, the adjustable gage plate P, having a lug, P′, the gage-plate Q, and the adjustable gage Q′ on the same, substantially as herein shown and described.

SOLOMON COONS.

Witnesses:
NEUVILLE SHOVER,
D. F. HARRISON.