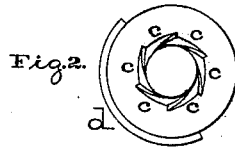
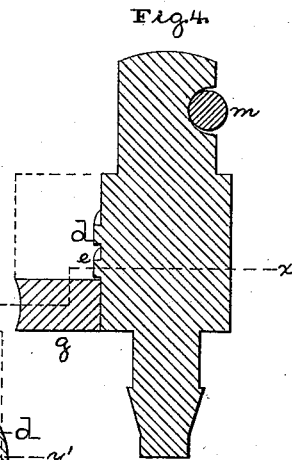
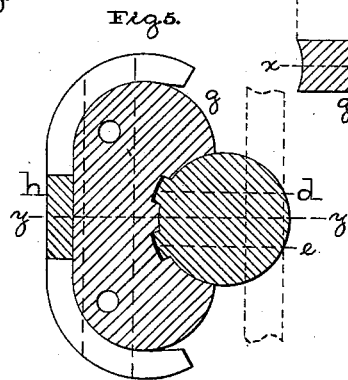
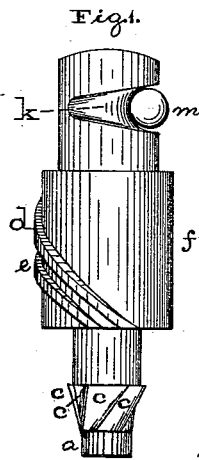
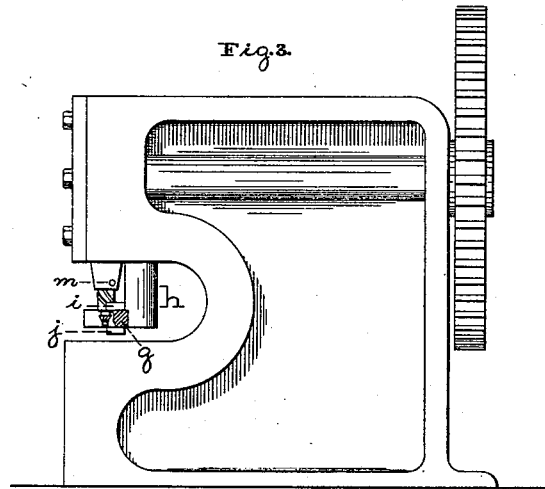


J. L. PEARSON.
Punching-Machine.

No. 215,663.

Patented May 20, 1879.



Witnesses:
J. E. Shaw
H. F. Kitcher

Inventor:
Jacob L. Pearson

UNITED STATES PATENT OFFICE.

JACOB L. PEARSON, OF CHESTER, PENNSYLVANIA, ASSIGNOR OF ONE-HALF
HIS RIGHT TO JOHN HUESTON, OF SAME PLACE.

IMPROVEMENT IN PUNCHING-MACHINES.

Specification forming part of Letters Patent No. **215,663**, dated May 20, 1879; application filed
February 15, 1879.

To all whom it may concern:

Be it known that I, JACOB L. PEARSON, of Chester, Delaware county, Pennsylvania, have invented a new and useful Improvement in Punching-Machines, of which invention the following is a specification.

The punch herein described is designed for punching iron ship-plates and boiler-plates, and for forming the countersinks therein for the rivet-heads, at one operation of the punch.

In the drawings, Figure 1 is a side elevation of the punch. Fig. 2 is a lower-end view of the same. Fig. 3 is a side elevation of an ordinary punching-machine, showing my said punch in its proper working position. Fig. 4 is a longitudinal section of the punch and a cross-section of the holding plate or guide *g* on the line *y y'* of Fig. 5; and Fig. 5 is a transverse section of the same on the line *x x'* of Fig. 4, showing, in addition, the forks of the foot *h*.

Referring to Fig. 1, it will be seen that the lower or penetrating end, *a*, of the punch is of the ordinary solid cylindrical form. *c c c c c c* are tapered cutters formed around the punch, as shown, three-eighths ($\frac{3}{8}$) of an inch (more or less) from the face of the penetrating end *a* of the punch, according to the thickness of the iron plates on which the punch is intended to be used. The office of the cutters *c* is to form a countersink for a rivet-head with each hole punched.

d and *e* are screw-threads formed on the shoulder *f* of the punch, as shown. *g*, Figs. 4 and 5, is a holding plate or guide, which is provided with screw-threads corresponding to those on the shoulder *f*. This guide is located in the forks of the foot *h*, (see Figs. 3 and 5,) which is employed in all punching-machines to keep the iron plates from rising up with the punch as the latter is drawn up after a hole has been formed.

i and *j*, Fig. 3, are plates, one being above

and the other below the forks of the foot *h*, for holding the guide *g* in its place, these plates being secured together by means of bolts passed through bolt-holes made in them and in the guide *g* for the purpose.

The slot *k*, Fig. 1, for the holding-pin *m* is lengthened and deepened as compared with the corresponding slot in ordinary punches. This is for the purpose of allowing the punch to turn in its socket.

When the machine is put in operation, the punch descends with a partially rotary movement, caused by the screw-threads *d e* working in the corresponding screw-threads of the guide *g*, and as soon as the penetrating end of the punch has forced the wad or punching out of the plate the cutters *c* come into operation, forming in the plate the countersink for the rivet-head.

The extent of the longitudinal movement of the punch is defined by the distance between the face of the penetrating end of the punch and the top of the cutters *c*, so that the screw-threads *d e* never disconnect themselves from the corresponding threads in the guide *g*.

I do not confine myself to the use of the two screw-threads *d e*, as a single broad thread, which equals in strength the two threads shown, answers the purpose equally well, the corresponding change being made in the screw-threads of the guide *g*.

I claim—

The combination of the punch constructed with the cutters *c*, the screw thread or threads on the shoulder *f*, the guide *g* and the foot *h* of a punching-machine, for forming the countersink in the plate in the same movement by which the plate is punched, substantially as set forth.

JACOB L. PEARSON.

Witnesses:

J. E. SHAW,
BENJ. B. WELSER.