E. P. GLEASON.

SCROLL DIE PLATE.

No. 28,747. Patented June 19, 1860.

Fig: 1.

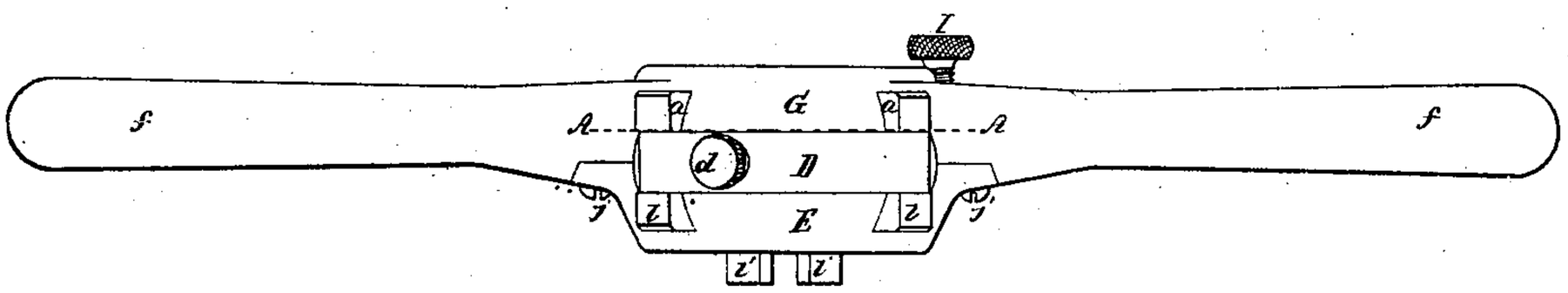


Fig: 3.

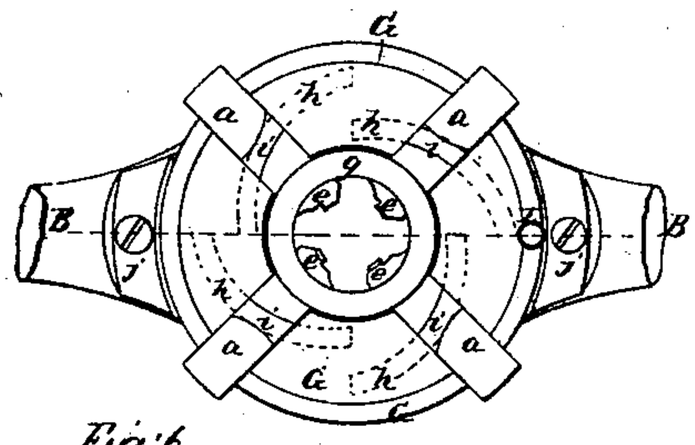


Fig: 4.

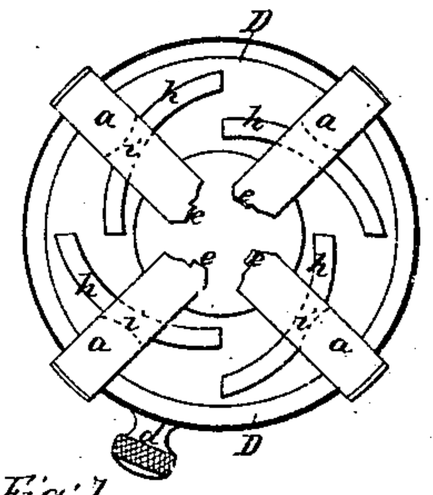


Fig: 5.

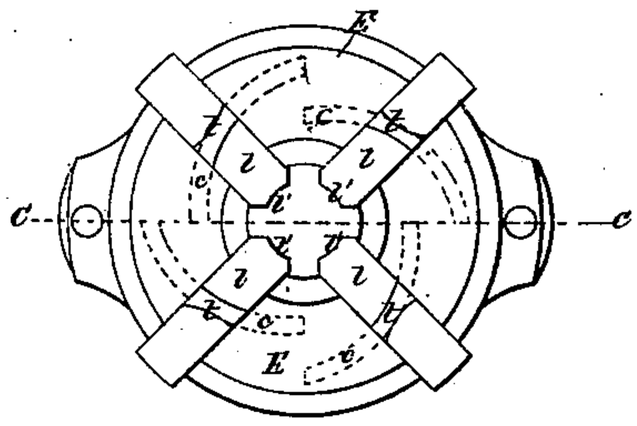


Fig: 6.

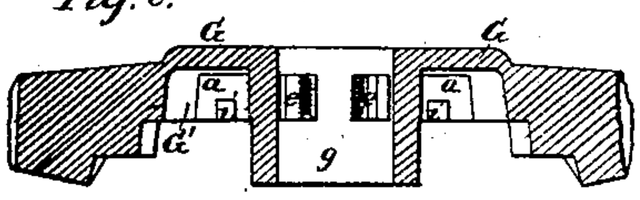


Fig: 7.

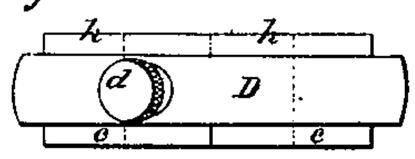


Fig: 8.

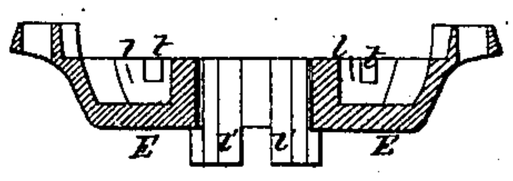
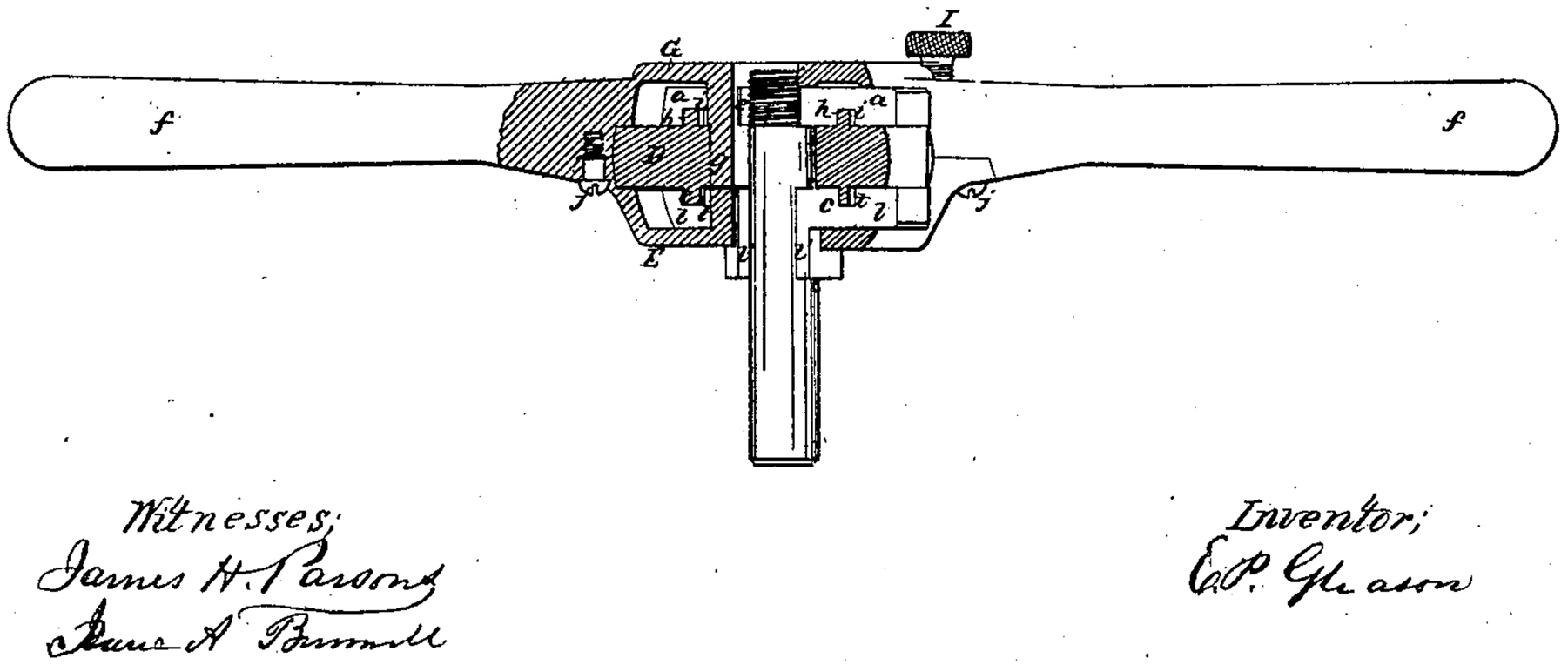


Fig: 2.



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UNITED STATES PATENT OFFICE.

E. P. GLEASON, OF PROVIDENCE, RHODE ISLAND.

DIE-PLATE FOR CUTTING SCREWS.

Specification of Letters Patent No. 28,747, dated June 19, 1860.

To all whom it may concern:

Be it known that I, ELLIOTT P. GLEASON, of Providence, in the county of Providence and State of Rhode Island, have invented a new and useful improvement in the "scroll die-plate," so called, for the purpose of guiding or giving direction to the dies in the operation of cutting screw-threads upon metal pipes, rods, &c.; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1, is a side view of the dieplate complete with my improvement, combined. Fig. 2 exhibits a section of the same. Fig. 3 is a plan of a section through line A, A, of Fig. 1, hub G. Fig. 4 is a plan of the upper side of scroll plate D, Fig. 1. Fig. 5 is a plan of cap E, Fig. 1. Fig. 6 is a section through line B, B, of Fig. 3. Fig. 7 is a side view of Fig. 4. Fig. 8 is a section through line C, C, of Fig. 5.

Similar letters of reference where they occur, denote like parts in the different figures.

My invention has special reference to that construction of die-plate in which the thread cutting dies are formed of square elongated slips of steel—three or four in number—radiating from the center of the plate at equal distances asunder, the cutting ends of each being made to embrace at the same time the object to be threaded, and forced into the same, by the action of a set of scrolls or circular wedge, upon a notch or recess in each die, such scrolls being found upon the face of a circular plate which is rotated to force up or to withdraw the dies, and for the purpose of accommodating pipes or rods of different diameters.

My invention consists in combining with the thread cutting dies, thus arranged, a like number of smooth steel jaws situated directly beneath the said dies in recesses formed for their reception—the same being acted upon by a separate set of scrolls, for mud upon the reverse side of the circular plate above mentioned—in a manner to surround in a loose embrace the pipe or rod to be threaded, for the purpose of giving direction to the cutting dies, and to insure a true and correct inclination of the thread relatively with the outer surface of the object to be threaded.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation with reference to the drawings.

The body of the die-plate is composed of three parts, the hub G, Figs. 1, 3, and 6, the scroll plate D, Figs. 1, 4, and 7 and the cap E, Figs. 1, 5, 8.

The hub G is of cast iron and is provided with handles, or shanks *f*, *f*, by which the plate is rotated. It is cored out upon the inside to form an outer shell G and a central tube or cylinder *g*, Figs. 2, 3, and 6. Through apertures forced in the shell and cyinder, slide the dies *a*, *a*, *a*, *a*, having threads *e*, *e*, *e*, *e*, cut upon the ends within the cylinder as shown in Figs. 3 and 6. The lower portion of the cylinder fits into a hole in the center of the scroll-plate D, thus forming an axis around which the latter rotates.

The scroll-plate is furnished with scrolls *h*, *h*, *h*, *h*. These are curved ridges extending from the circumference toward the center, and act in the notches *i*, *i*, *i*, *i*, of the dies as shown in Figs. 2, 3, and 6. The rotating movement of this scroll plate acts to force the dies in a direct line toward the center against the end of object to be threaded, and to adjust said dies to rods of different diameters. The scroll-plate is rotated by means of the knob *d*, and fixed when adjusted by the thumb-screw I, the point of the latter pressing upon the edge of the face of the scroll-plate, as shown in Fig. 3.

The machine thus far described does not differ essentially from well known devices heretofore in use for this purpose.

Three dies are found to work more perfectly than four, less resistance arising from three cutting points or edges than from four. While the angle and position of the dies relatively with each other, and with the object to be threaded, contribute to produce a smoother cut, with less force applied to the dies, the force applied to the dies in the first arrangement being directed to a point between the other two dies instead of directly upon the one opposite, as in the case when four dies are employed.

From the nature and position of the dies, in either of the above arrangements this

die-plate is liable to cut an untrue thread, or to deviate and incline from the object to be threaded. To remedy which is the object of my improvement, a description of which is as follows:

In Figs. 1, 5 and 8,—E, is a cap formed internally like hub G, and secured to the latter upon each side by screws, *j*, *j*. In this cap are formed recesses in which slide the guiding jaws *l*, *l*, *l*, *l*, the same being placed directly beneath the cutting dies, and are formed with an elongated surface *l'*, *l'*, &c., which surrounds the pipe or rod, Fig. 2, thus forming a loose bearing for directing the action of the dies, notches *t*, *t*, *t*, *t*, are cut in the upper side of these jaws which take in scrolls *c*, *c*, *c*, *c*, formed upon the under face of the scroll-plate D.

The scrolls correspond exactly with those which carry the dies and act in the same manner to cause the guiding jaws *l*, *l*, &c., to surround the rod or object to be threaded, without gripping the same, the dies being arranged to seize the pipe or rod while the guides loosely embrace said rod. By this arrangement, the dies *a*, *a*, &c., and the jaws *l*, *l*, are both adjusted and controlled, by the common scroll-plate D.

I do not claim a die-plate composed of the hub G, the dies *a*, *a*, *a*, *a*, the scroll-plate D, and the scrolls *h*, *h*, *h*, *h*, the same having been before used for the purpose specified, but

I claim,

Combining with such die-plates the guiding jaws *l*, *l*, *l*, *l*, or their equivalent in the manner and for the purpose herein specified.

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Witnesses:

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