

No. 690,083.

Patented Dec. 31, 1901.

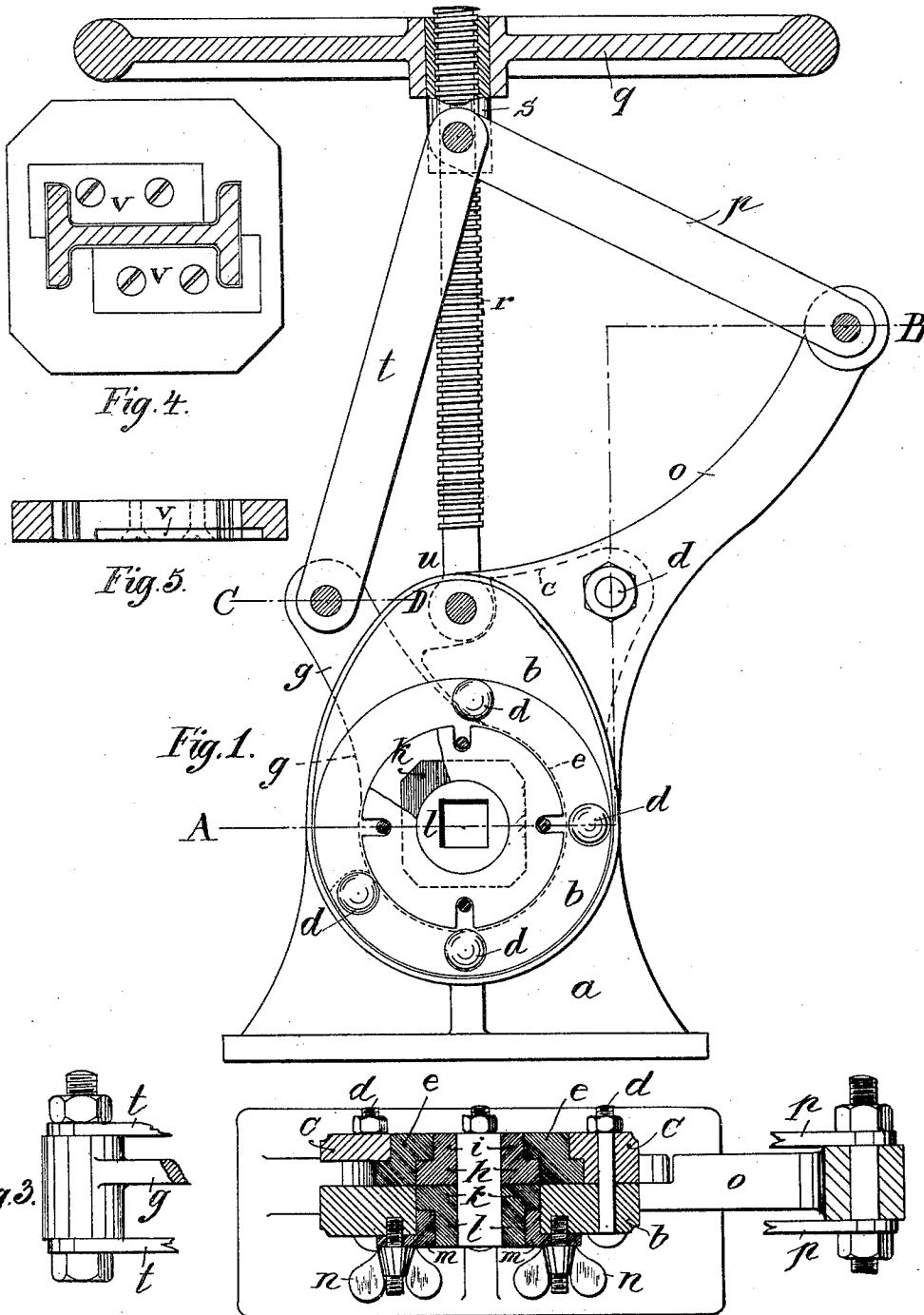
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SHEARING MACHINE FOR PROFILE IRON CUTTING.

(Application filed Feb. 23, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses.
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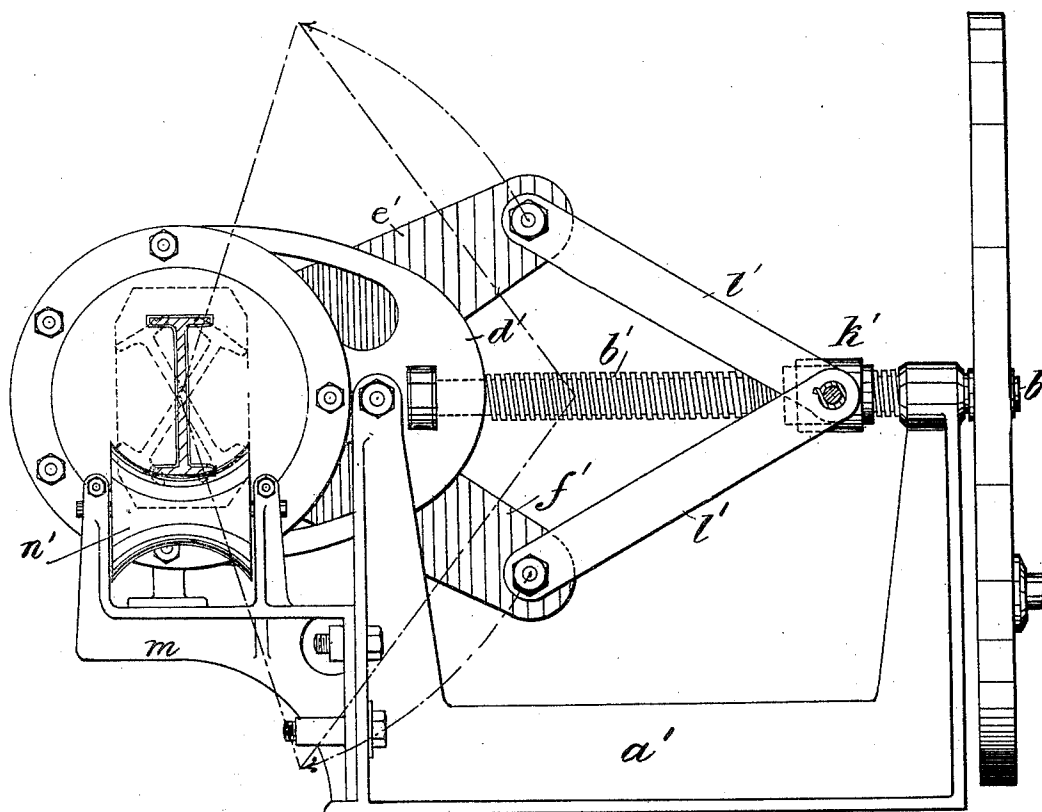


Fig. 6.

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UNITED STATES PATENT OFFICE.

HUGO STOLPE, OF POSEN, GERMANY.

SHEARING-MACHINE FOR PROFILE-IRON CUTTING.

SPECIFICATION forming part of Letters Patent No. 690,083, dated December 31, 1901.

Application filed February 23, 1901. Serial No. 48,531. (No model.)

To all whom it may concern:

Be it known that I, HUGO STOLPE, a subject of the Emperor of Germany, residing at 20 Wilhelmstrasse, Posen, German Empire, have invented a new and Improved Shearing-Machine for Profile-Iron Cutting, of which the following is a specification.

The present invention consists of a new and improved shearing-machine for profile-iron cutting.

The invention proper consists of two knives provided with cut-away sections corresponding to the iron profile, and which knives rotate toward each other about the axis of the inserted profile-iron. It is only necessary to rotate the knives about forty-five degrees when it is desired to cut square iron rods, whence the latter when drawn out break off smoothly at the tap of a hammer.

In the accompanying drawings, in which similar letters of reference refer throughout to similar parts, Figure 1 illustrates in side elevation a shearer embodying the present invention. Fig. 2 is a horizontal sectional view on the line A B of Fig. 1. Fig. 3 is a partial section on line C D of Fig. 1. Figs. 4 and 5 are plan and sectional views, respectively, of one kind or form of knives which may be employed. Fig. 6 represents a modification of Fig. 1 in the form of the frame and illustrates means for simultaneously rotating both knives.

The new machine consists of a frame or standard *a* or *a'*, (see Fig. 6,) on which a plate *b* is mounted. Secured to said plate *b* is a second plate or spider, which is held in firm position by bolts *d d*. Spider *c* is centrally provided with a circular opening in which a cylindrical and rotatable knife-chuck *e* is mounted. A square knife-plate *h*, provided with beveled corners, has a cylindrical boss which is gripped in the said chuck. Plate *b* serves to guide the knife *h* and also to carry the knife *k*. This knife may be arranged stationarily, as illustrated in Fig. 1, or may be constructed so as to simultaneously rotate with knife *h*, as shown in Fig. 6. Knife *k* is also square formed with its corners beveled, similar to knife *h*. The end of knife-plate *k* forms a cylindrical shoulder *l*, thereby providing an annular groove for receiving a flanged ring *m*, held in position on said plate *b*

by thumb-screws *n*. The screws pass through suitable slots and can be easily loosened when it is desired to remove or adjust the knife *k*. The knives are provided with cut-away sections corresponding to the profile of the iron to be cut.

Connected with the knife-chuck *e* aforesaid is a short lever or arm *g*, to the outer end of which is pinioned the one end of two pitmen or connecting rods *t*, whose upper ends are pivotally connected with a nut *s*, mounted on a screw-threaded spindle *r*. Said spindle is mounted at its lower end between the plate *b* and spider *c* aforesaid and carries on its upper end a drive-wheel *q*. Two links *p*, also connected with said nut at one end, are secured at their other ends to a projection *o* on plate *b*, thereby serving to hold said spindle in proper position. It is obvious that as the nut is screwed up or down on the spindle the latter, governed by said link *p*, will swing within certain limits about its mounting-point. For this reason the adjoining spider *c* is cut away so as to allow such movement. (See dotted lines in Fig. 1.) The operation of the shearer is obvious. When, for example, a square-shaped iron rod is inserted within the knives, the wheel *q* is revolved and the arm *g* necessarily depressed while the knives are forced into the iron. By reversing the wheel the iron is withdrawn, and when tapped falls apart at the point of cutting.

In Figs. 4 and 5 modified forms of knives are shown, provided with I-shaped cut-away sections. In this construction steel knife-plates *v* are provided, which can be easily and quickly replaced. As before mentioned, the machine may be so arranged that one knife rotates or both. In Fig. 6 such a latter construction is illustrated, which embraces the identical feature of invention as hereinbefore described. Here the machine is shown assembled horizontally instead of vertically, as in Fig. 1. The frame *a'* has suitable boxes for carrying the spindle *b'*, on one end of which latter is mounted a hand-wheel, as shown in Fig. 1, or a crank-wheel, as seen in Fig. 6. A nut *k'* is carried on spindle *b'*, and to which are pivotally secured the adjacent ends of two pairs of arms or pitmen *l' l'*, which at their opposite ends engage with levers or arms *e' f'*, corresponding to arm *g* described, and which

arms are respectively connected with the knife-plates, (shown in dotted lines.) In this instance plate *b* is replaced by two plates *d'*, (but one shown,) which two plates are screwed
5 against each other by bolts in the same manner as above, as shown, and mounted in the frame *a'*, as will be seen from Fig. 6, each carrying their respective rotatable knife-plate. By rotating the crank or wheel the
10 arms *e' f'* assume the positions indicated by the dotted lines, the coacting parts relatively moving in union therewith in order to sever the iron. In order to facilitate the insertion and withdrawal of the profile-iron, suitable
15 guide-rollers *n'* may be employed (shown in Fig. 6 and omitted from Fig. 1 for sake of clearness) and which may be mounted in any desired manner in correct position—as, for instance, on bracket-irons *m*.
20 Having now described the invention, what

I claim as new, and desire to protect by Letters Patent, is—

A shearing or cutting machine for profile-iron comprising a frame, two rotatable knife-plates mounted therein adjacent to each other 25 and provided with suitable cut-away sections, and adapted to receive through their centers a piece of iron rod and to rotate when cutting about the same, a screw-threaded spindle mounted in said frame so that its axis is 30 in line with the center of said cut-away sections, a nut on said spindle, arms in connection with said knife-plates, pitmen connecting said nut and said arms and means for easily and quickly rotating said spindle, sub- 35 stantially as described.

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Witnesses:

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