No. 629,501. Patented July 25, 1899.

P. M. HAAS.

DRAWING DIE.

(Application filed Jan. 25, 1899.)

(No Model.)

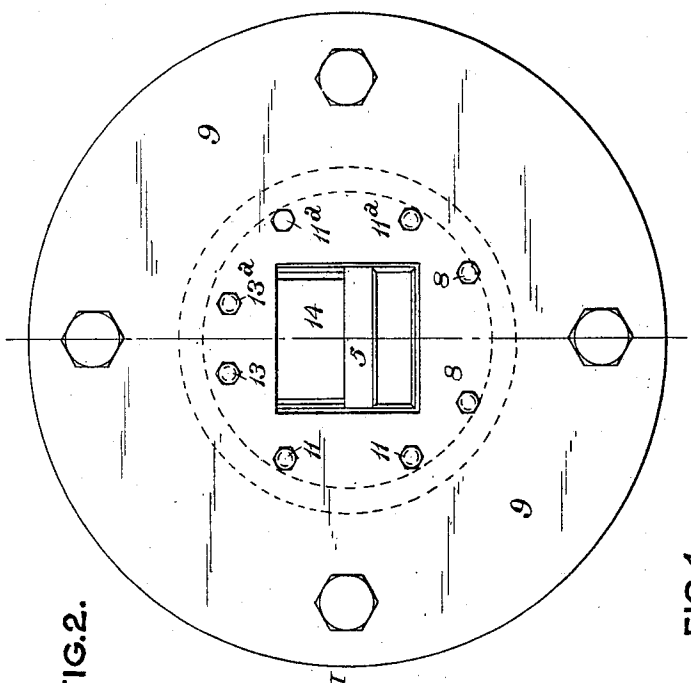


FIG. 2.

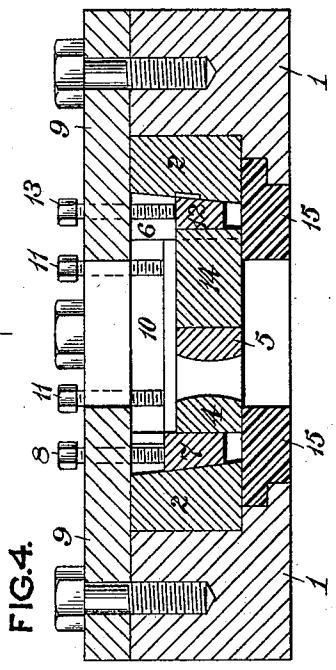


FIG. 4.

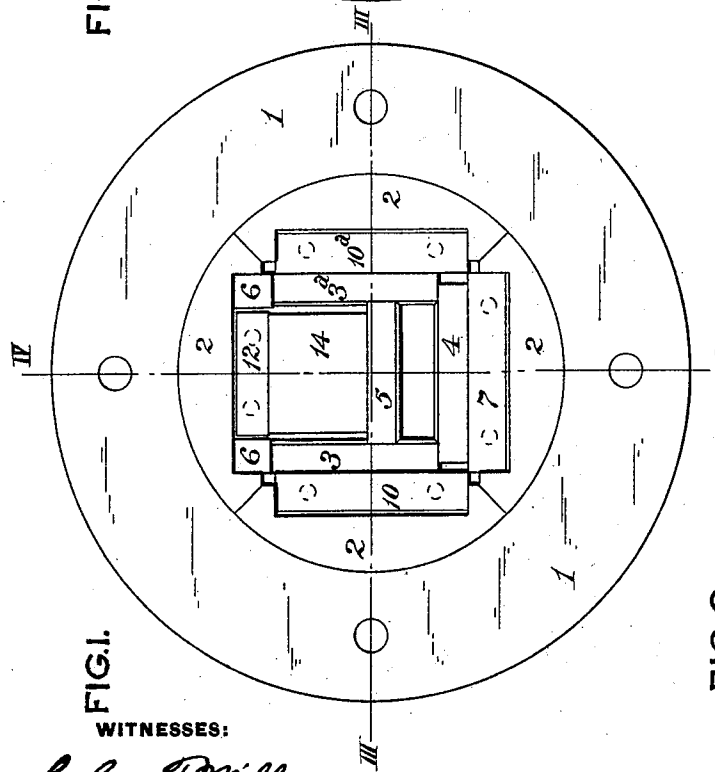


FIG. 1.

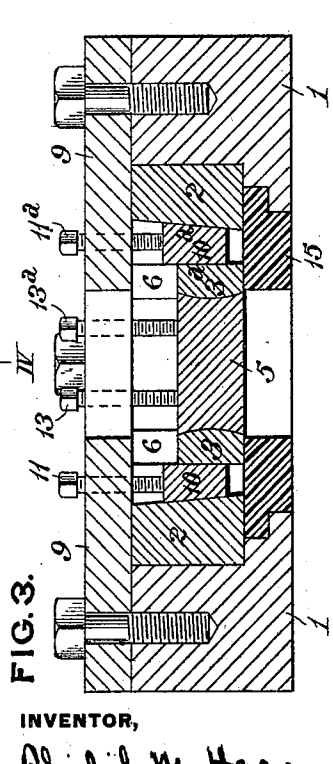


FIG. 3.

WITNESSES:

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Att'y.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

PHILIP M. HAAS, OF YOUNGSTOWN, OHIO, ASSIGNOR TO THE FINISHED STEEL COMPANY, OF SAME PLACE.

DRAWING-DIE.

SPECIFICATION forming part of Letters Patent No. 629,501, dated July 25, 1899.

Application filed January 25, 1899. Serial No. 703,318. (No model.)

To all whom it may concern:

Be it known that I, PHILIP M. HAAS, a citizen of the United States, residing at Youngstown, in the county of Mahoning and State of Ohio, have invented or discovered certain new and useful Improvements in Drawing-Dies, of which improvements the following is a specification.

The invention described herein relates to certain improvements in dies for drawing bars flat or square in cross-section, and has for its object a construction whereby various shapes or sizes may be drawn in the same die; and it is a further object of the invention to provide for such adjustment of one of the sides of the dies as will permit of a change of draft along or adjacent to one edge of the bar.

In general terms the invention consists in the construction and combination, substantially as hereinafter more fully described and claimed.

In the accompanying drawings, forming a part of this specification, Figures 1 and 2 are front elevations of my improved die, the cap-plate being removed in Fig. 1. Figs. 3 and 4 are sectional views, the respective planes of section being indicated by the lines III III and IV IV, Fig. 1.

In the practice of my invention a block of metal 1, preferably circular in contour, is circularly recessed in one side and an opening is formed through the bottom of such recess. Segmental filling-blocks 2, having their outer walls shaped to fit the sides of the recess, are arranged therein as shown in Fig. 1. The inner walls of the filling-blocks are recessed for the reception of the holding and adjusting wedges. The drawing or reducing matrix is formed by the side die-blocks 3 3^a, the bottom die-block 4, and the intermediate die-block 5. As shown, the bottom die-block is made of a length somewhat greater than the width of the widest bar to be drawn and has its inner or operative face convexed, as shown in Fig. 4. The side die-blocks 3 3^a bear at one end, which is suitably concaved, against the inner face of the die-block 4 and at the opposite ends against the abutments or stops 6 6, interposed between the ends of the die-blocks 3 3^a and the filling-pieces 2. As these abutments or stops simply perform the function of filling or bearing pieces, it is evident that they might be formed integral with the die-blocks 3 3^a or the latter made sufficiently long to bear against the filling-pieces 2. The die-block 4 is firmly held against the ends of the side blocks 3 3^a by the wedge 7, which is shifted by set-screws 8, passing through the cap-plate 9. The intermediate die-block 5 has its ends concaved, so as to fit the convex inner or operative faces of the side blocks 3 3^a, which are held and adjusted by means of wedges 10 10^a, said wedges being shifted by the set-screws 11 11^a, (two for each wedge,) passing through the cap-plate. The intermediate die-block is adjusted and held in adjusted position by a wedge 12, between which and the die-block is interposed a block 14. This wedge is adjusted to shift the bar by means of set-screws 13 13^a. The block 5, which is formed with a convex inner or operative face, is made of a length equal to the width of the article to be drawn, and when wider or narrower articles are to be operated on a longer or shorter die-block is substituted.

In drawing strips and bars it frequently occurs that by reason of unequal reduction along or adjacent to the edges the drawn strip or bar will be curved or bent edgewise, necessitating the straightening of the finished strip. Such straightening is at all times difficult and at times impossible. In order to equalize the reduction along the edges of the strip or bar, and thereby prevent the bending or curving of the same, the set-screw 13 or 13^a is turned to force in that end of the wedge 12 in line with the edge of the strip along which the reduction is too small, or the screw at the opposite end of the wedge may be slackened, so that said end of the wedge will move out, permitting a slight movement or easing up of the corresponding end of the die-block 5. It will be observed that the ends of the side blocks 3 3^a adjacent to the die-block 4 may be similarly adjusted to regulate the reduction of the edges of the piece being drawn.

It is a distinguishing characteristic of my improvement that not only can the die by an adjustment of its sections be employed for the reduction of articles of different sizes and shapes, but in addition thereto one or more of the die-sections are capable of adjustment

to vary the reduction along different lines during the movement of the bar or strip through the die.

I claim herein as my invention—

1. A die consisting of a series of blocks and means for so adjusting one or more of said blocks as to increase or diminish the reducing action of a portion of the operative face of such block, substantially as set forth.

2. A die consisting of bottom, side and intermediate die-blocks and means for independently adjusting the ends of one or more of said blocks, substantially as set forth.

3. A die consisting of a bottom block, side blocks movable along the bottom block, a removable intermediate block and means for adjusting the side and intermediate blocks, substantially as set forth.

4. A die consisting of bottom, side and intermediate blocks, wedges for adjusting said blocks and means for so shifting the wedges as to increase or diminish the reducing action of different portions of said blocks, substantially as set forth.

In testimony whereof I have hereunto set my hand.

PHILIP M. HAAS.

Witnesses:

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F. E. GAITHER.