

No. 629,502.

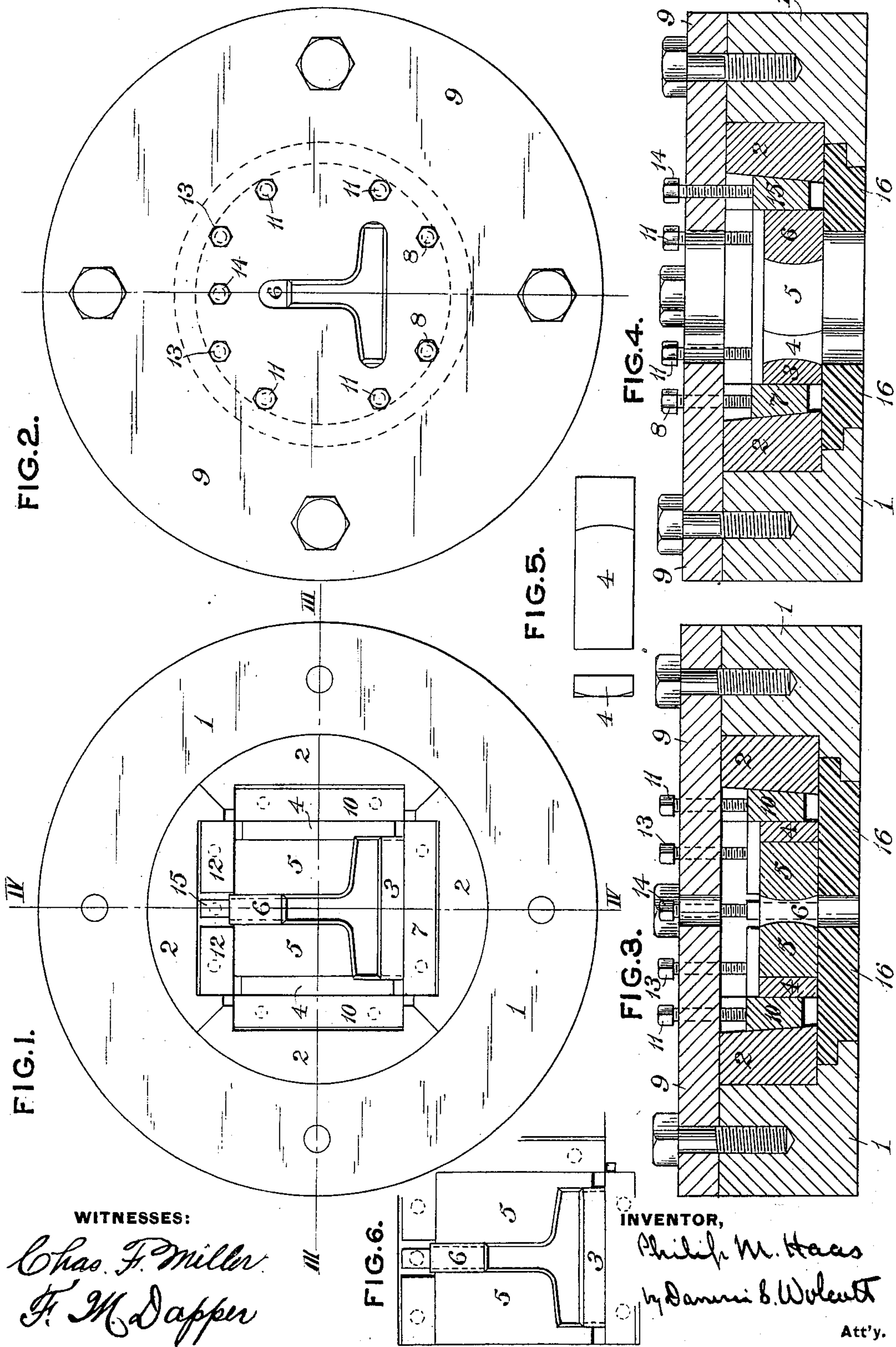
Patented July 25, 1899.

P. M. HAAS.

DRAWING DIE FOR STRUCTURAL SHAPES.

(Application filed Jan. 25, 1899.)

(No Model.)



WITNESSES:

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# UNITED STATES PATENT OFFICE.

PHILIP M. HAAS, OF YOUNGSTOWN, OHIO, ASSIGNOR TO THE FINISHED  
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## DRAWING-DIE FOR STRUCTURAL SHAPES.

SPECIFICATION forming part of Letters Patent No. 629,502, dated July 25, 1899.

Application filed January 25, 1899. Serial No. 703,319. (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 for Structural Shapes, of which improvements the following is a specification.

The invention described herein relates to certain improvements in dies for drawing T-bars and other structural shapes, and has for its object such a construction of die as will permit of a variation of the draft or amount of reduction along different lines, so as to insure the production of straight shapes.

The invention is 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. Fig. 5 shows side and end elevations of one of the edge die-blocks, and Fig. 6 is an elevation illustrating a modified structure.

The die block or holder 1, which is preferably circular in contour, is formed with a recess circular in shape for convenience of construction, and an opening corresponding in contour to the shape to be drawn is formed through the bottom of the recess. The shape of this recess is made angular by means of exteriorly-curved filling-blocks 2 and having their inner faces angularly recessed for the reception of holding and adjusting wedges. The matrix of the die is formed by a bottom block 3, edge blocks 4, flange and web blocks 5, and intermediate block 6. The bottom block 3 is formed with a convex inner or operative face and has its ends concave, so as to fit closely against the convex inner or operative faces of the edge blocks 4. The bottom block 3 is adjusted and held in proper relation to the other die-blocks by means of a wedge 7, which is shifted by means of set-screws 8, passing through the cap-plate 9. The die-blocks 5, which are designed to operate on the sides of the web and the flange-faces adjacent thereto, have one side

and the adjacent ends made convex and the corner intermediate of such sides and ends rounded. The intermediate block 6 has its sides concave, so as to seat closely against the convex sides of the blocks 5, between which it is arranged. The edge blocks 4 and the web and flange blocks 5, which rest against the inner faces of the edge blocks, are adjusted laterally by means of wedges 10, operated by set-screws 11, passing through the cap-plate. The blocks 5 are adjusted longitudinally to regulate the draft or reduction on the flanges of the T-bar by means of wedges 12, which are shifted by set-screws 13, passing through the cap-plate. The adjustment of the intermediate block is effected by a set-screw 14, operating through a wedge 15.

In case of too great draft or reduction along one flange, thereby effecting a greater elongation of that flange than the other, the reducing action of the block 5 operating on such flange can be reduced by slackening its adjusting-screw 13, or the block 5 operating on the other flange can be adjusted so as to increase its action by turning in its adjusting-screw 13. By thus adjusting the draft of the blocks 5 the reduction of the two flanges of the T-bar can be so regulated as to insure the production of practically straight bars.

In case of such irregularity in the reduction of the flanges as will cause a bending of the bar the draft can be regulated by forcing in or slackening up of one or the other of the ends of the wedge 7, thereby altering the draft at the corresponding end of the block 3.

In lieu of making the inner or operative faces of the die-blocks convex, such faces can be plane and so tapered or inclined from the front toward the rear as to form a bell-shaped die.

While it is preferred to so construct and arrange the bottom block 3 and edge blocks 4 that the ends of the former will rest against the edge blocks, it will be evident to the skilled mechanic that the bottom block can be made sufficiently long to extend under the edge blocks, the latter being made correspondingly shorter and having their lower ends concave, so as to have a good bearing on the inner convex face of the block 3.

As shown in the drawings, the bottom of



the recess in the holding-block can be made with a removable section 16, in which is formed the opening through which the bar to be drawn passes. By having a series of 5 these sections with different-shaped openings and making them interchangeable in the holding-block one such blocking can be used for drawing a large variety of shapes. It will be understood that a like series of cap-plates 10 having openings corresponding to those in the removable sections would be needed. While these interchangeable sections are especially adapted for dies for structural shapes, they are also applicable to dies for any purpose where the matrix is formed of removable or adjustable sections.

It will be readily understood by those skilled in the art that the edge blocks 4 and the flange and web blocks 5 may be formed 20 integral with each other, as shown in Fig. 6, the parts of such compound die-blocks corresponding to the blocks 4 being made sufficiently short to permit of the described adjustments of the blocks 5.

25 I claim herein as my invention—

1. A die for drawing T-bars and other

structural shapes having its matrix formed by a series of suitably-arranged blocks one or more of said blocks being constructed to 30 operate on two adjoining faces of the shapes being drawn in combination with means for independently adjusting one or more of the blocks for regulating its draft or reducing action, substantially as set forth.

2. A die for drawing T-bars having in combination a bottom block, edge blocks, independently-adjustable flange and web blocks, an intermediate block and means for independently adjusting one or more of said 40 blocks, substantially as set forth.

3. A die for drawing T-bars, &c., the combination of a recessed holding-block having a removable bottom section, a removable cap, and removable die-blocks arranged within the 45 block, substantially as set forth.

In testimony whereof I have hereunto set my hand.

PHILIP M. HAAS.

Witnesses:

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