June 10, 1941. B. N. BLETSO 2,245,320

DIE MOUNTING

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FIG. 1.

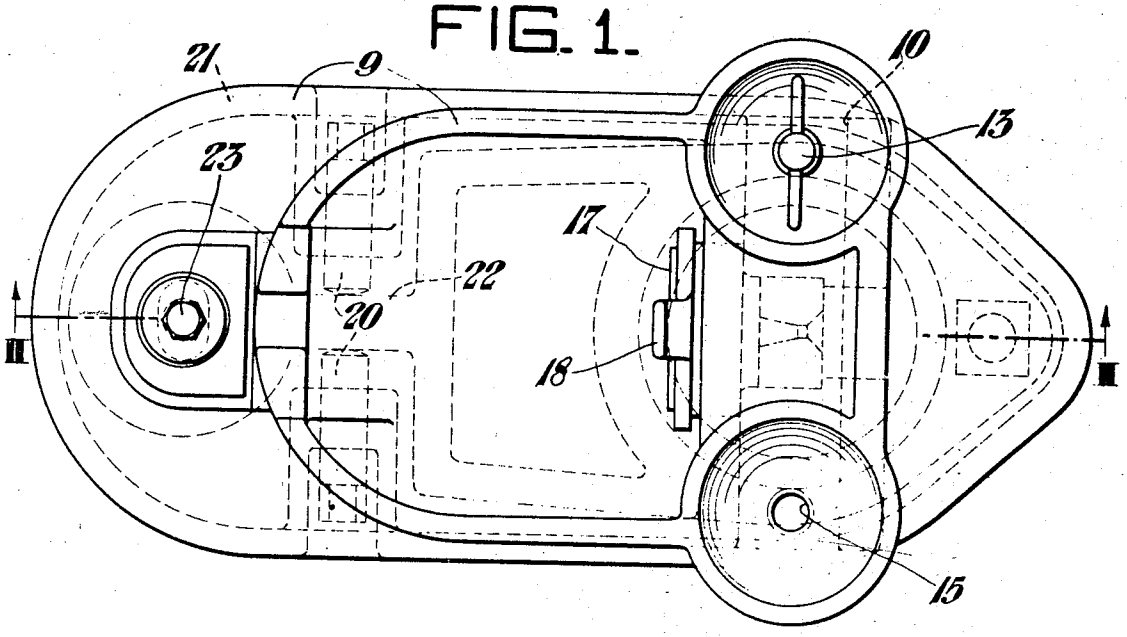
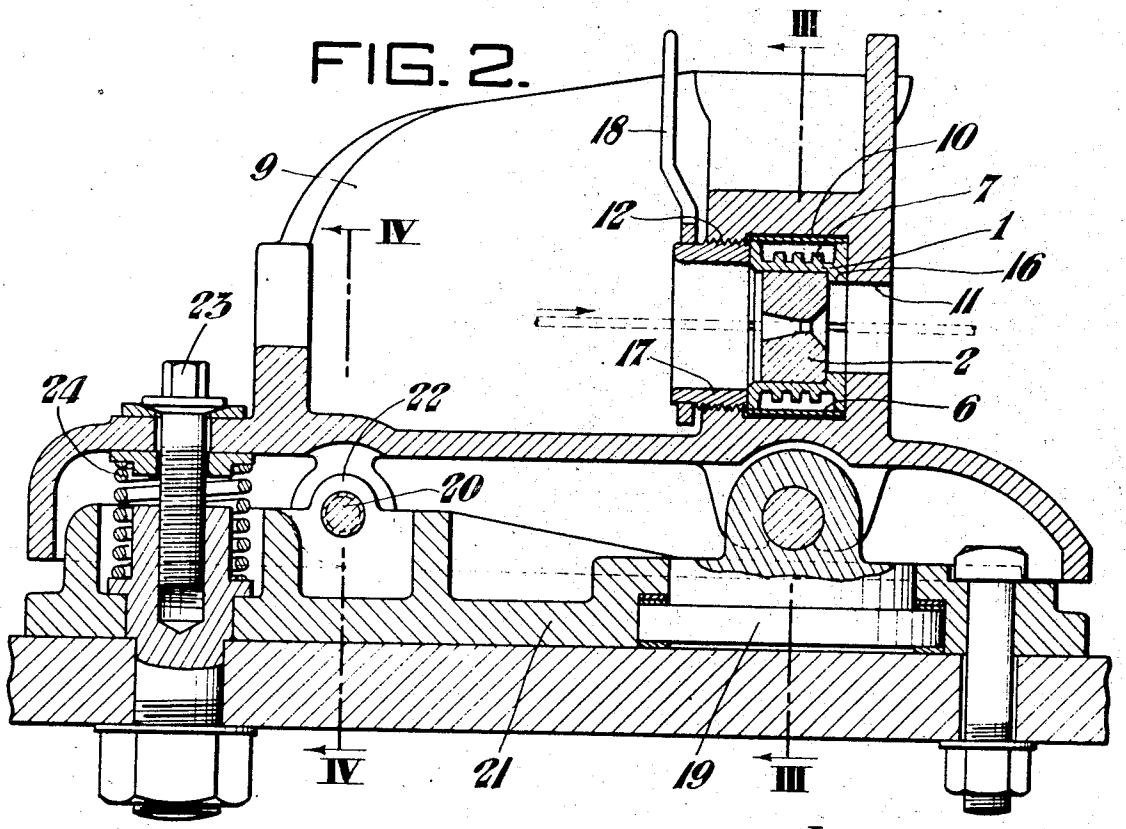


FIG. 2.



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FIG. 3.

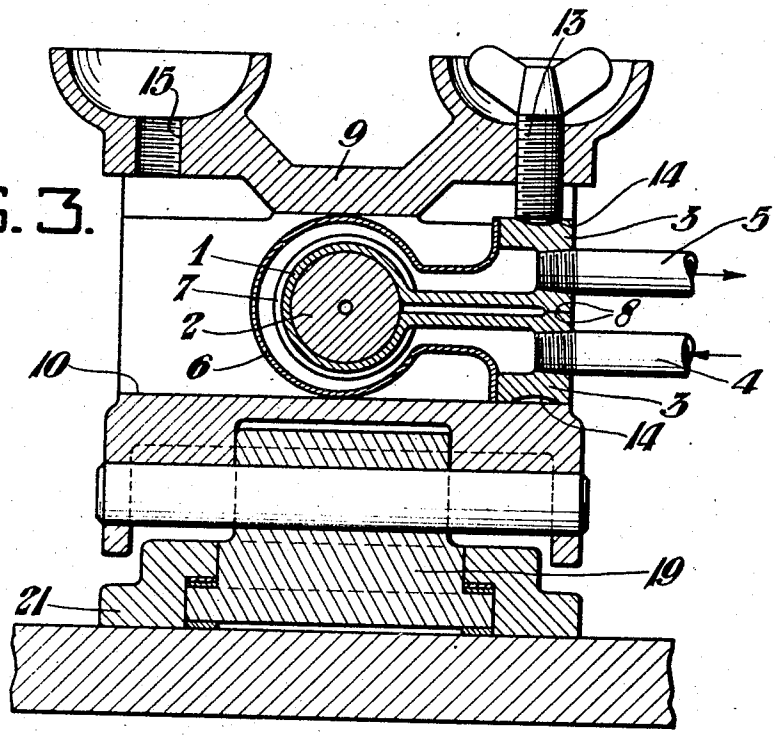
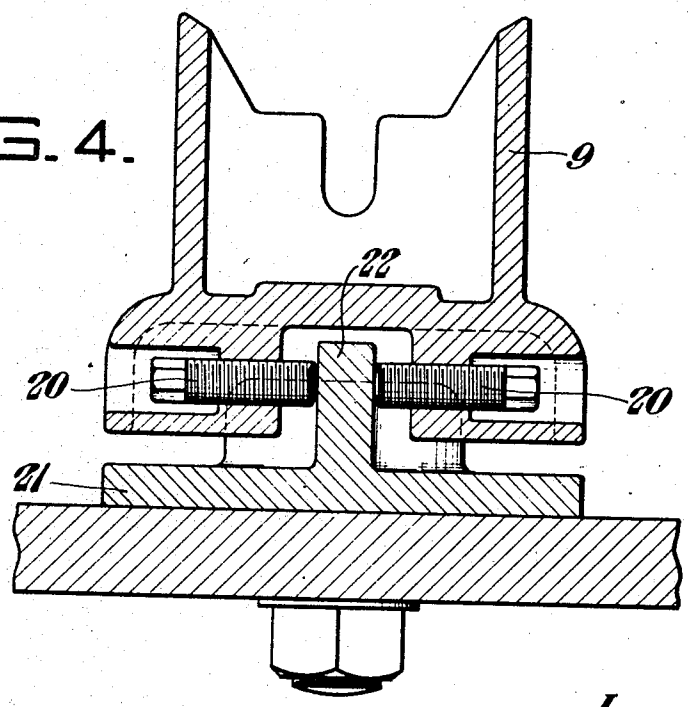


FIG. 4.



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UNITED STATES PATENT OFFICE

2,245,320

DIE MOUNTING

Bruce N. Bletso, East Cleveland, Ohio

Application November 6, 1939, Serial No. 303,139

7 Claims. (Cl. 205—25)

This invention is an apparatus for mounting metal drawing dies, such as the dies used in the drawing of wire.

A specific example of the invention is illustrated by the accompanying drawings, in which:

Figure 1 is a top view;

Figure 2 is a vertical longitudinal section taken from the line II—II in Figure 1, and

Figures 3 and 4 are vertical cross sections taken from the lines III—III and IV—IV, respectively, in Figure 2.

More specifically, these drawings illustrate a die holder in the form of an elastic metal loop 1 in which the die 2 may be placed, levers 3 transversely extending from the ends of the loop 1 for constricting the same about the die. Both the loop 1 and the levers 3 are hollow, their insides intercommunicating and the ends of the levers 3 being respectively provided with an inlet 4 and an outlet 5 through which water or other cooling fluid may be circulated through the inside of the loop 1.

The die holder just described is mainly a casting, the loop and levers being integral. The casting is in the form of outwardly facing channel shapes, and a strip 6 is welded to the edges of the flanges of these shapes to provide the hollow loop and levers described. The casting may include fins 7 about which the cooling fluid circulates. Also the adjacent faces of the ends of the levers 3 may be provided with abutments 8 for limiting the approach of the levers in performing their function of constricting the loop 1. The metal used in making this casting may be cast spring bronze.

A die box 9 serves to mount this die holder, the box 9 providing a transverse passage 10 with registering openings 11 and 12 formed in the opposite walls of the box bounding this passage 10. The die holder is adapted to be slid transversely into this passage 10 so that the die 2 registers with the openings 11 and 12, the box being provided with a screw 13 which extends down into the passage 10 so as to engage and work the end of the upper one of the levers 3. This screw is at the outer end of the passage 10, and the surface of the end of the lever engaged by the end of this screw 13 is provided with a recess 14 in which the end of the screw seats, the arrangement being such that the die 2 is then properly positioned in registration with the openings 11 and 12. Preferably the ends of both levers are arranged to cooperate in this fashion with the screw 13, and the box is provided with a screw hole 15 at the other end of the passage 10 into which the screw 13 may be screwed, if desired. With this arrangement, the die holder can be inserted with either lever uppermost through either end of the passage 10.

The opening 11 through the wall of the box 9 bounding the passage 10, is smaller than the loop 1 of the die holder, and the latter is provided with inwardly projecting lugs 16 for restraining movement of the die 2 in the direction the die holder is itself restrained by reason of the portions of the wall of the passage 10 surrounding the opening 11. Tightness is effected by an annular screw 17 operated by a convenient handle 18, this screw being threaded through the hole 12 so as to bear against the loop 1 and force it against the opposite wall of the box.

Alignment of the die respecting the wire being drawn is effected by reason of the box 9 being pivoted to a turntable 19. This permits a universal movement of the box 9, such movement being horizontally controlled by opposed screws 20 which engage the box and oppositely bear against an abutment 22 provided by a base 21, the turntable 19 being also mounted by this base. These screws 20 may slide up and down on the abutment 22 and serve only to secure horizontal adjustment. Vertical adjustment is obtained by a screw 23, the action of which is opposed by a compression spring 24. Both the screws 20 and the screw 23 are located at sufficiently remote positions from the turntable 19 to properly effect their function.

I claim:

1. A die holder comprising an elastic metal loop in which the die may be placed and levers extending from the ends of said loop transversely respecting the latter for constricting the same about the die, said loop being hollow and provided with means for circulating cooling fluid therethrough.

2. A die holder comprising an elastic metal loop in which the die may be placed and levers extending from the ends of said loop transversely respecting the latter for constricting the same about the die, said loop being hollow and said levers being hollow with their insides communicating with the inside of said loop, means being provided for introducing cooling fluid to said loop and for exhausting said fluid therefrom by way of said levers.

3. The combination of a die box having a transverse passage with registering openings in the opposite walls bounding said passage, a die holder in the form of an elastic metal loop in which the die may be placed with levers extending from

the ends of said loop transversely respecting the latter for constricting the same about the die, and pressure means mounted by said box and extending into said passage so as to work said levers when said die holder box is placed in said passage to position the die in said loop in at least approximate registration with said registering openings in said walls.

4. The combination of a die box having a transverse passage with registering openings in the opposite walls bounding said passage, a die holder in the form of an elastic metal loop in which the die may be placed with levers extending transversely from the ends of said loop for constricting the same about the die, and pressure means mounted by said box and extending into said passage so as to work said levers when said die holder box is placed in said passage to position the die in said loop in at least approximate registration with said registering openings in said walls, said loop and said levers of said die holder being hollow and intercommunicating, and the ends of said levers being accessible from the adjacent end of said passage of said die box, said ends having openings for the passage of cooling fluid.

5. The combination of a die box having a transverse passage with registering openings in the opposite walls bounding said passage, a die holder in the form of an elastic metal loop in which the die may be placed with levers extending transversely from the ends of said loop for constricting the same about the die, and pressure means mounted by said box and extending into said passage so as to work said levers when said die holder box is placed in said passage to position the die in said loop in at least approximate registration with said registering openings in said walls, one of said openings being smaller than said die holder and the other being provided with an annular pressure member for clamping said die holder against the one of said walls of said passage having said smaller hole.

6. The combination of a die box having a transverse passage with registering openings in the opposite wall bounding said passage, a die holder in the form of an elastic metal loop in which the die may be placed with levers extending transversely from the ends of said loop for constricting the same about the die, and pressure means mounted by said box and extending into said passage so as to work said levers when said die holder box is placed in said passage to position the die in said loop in at least approximate registration with said registering openings in said walls, one of said openings being smaller than said die holder and the other being provided with an annular pressure member for clamping said die holder against the one of said walls of said passage having said smaller hole, said loop of said die holder having die engaging lugs positioned to restrain die movement in the direction said die holder is restrained from moving by being clamped by said annular pressure member against said one of said walls.

7. The combination of a die box having a transverse passage with registering openings in the opposite walls bounding said passage, a die holder in the form of an elastic metal loop in which the die may be placed with levers extending transversely from the ends of said loop for constricting the same about the die, and pressure means mounted by said box and extending into said passage so as to work said levers when said die holder box is placed in said passage to position the die in said loop in at least approximate registration with said registering openings in said walls, said pressure means being a screw and at least one of said levers having a depression engaged by the end of said screw and functioning to properly position said loop of said die holder in said passage of said die box.

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