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APPLICATION FILED MAR. 5, 1919.

1,336,388.

Patented Apr. 6, 1920.

2 SHEETS—SHEET 1.

FIG. 1.

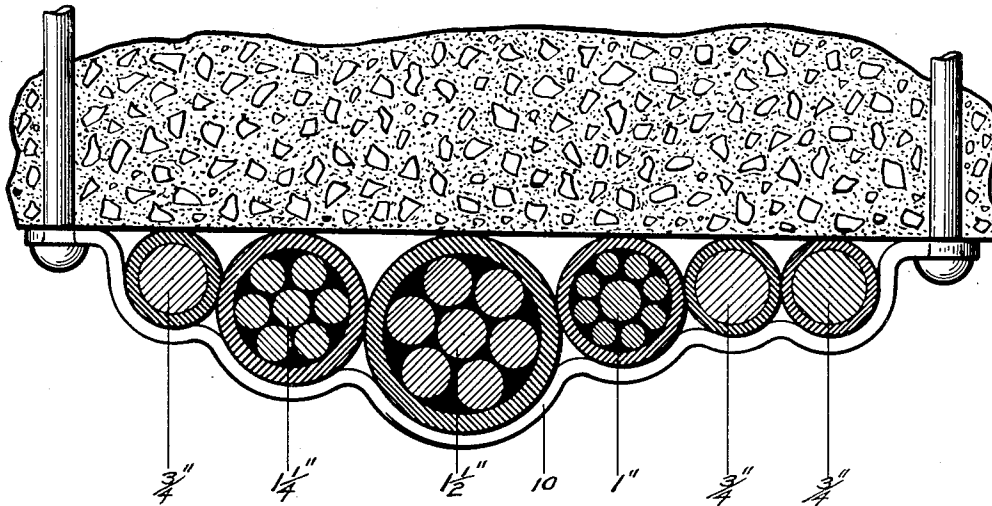
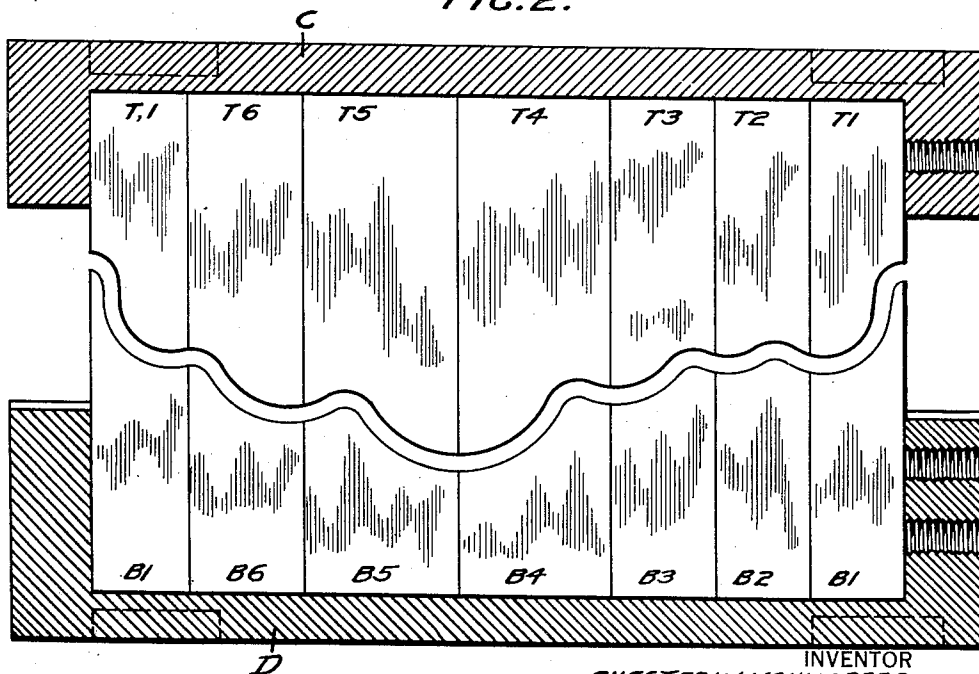


FIG. 2.



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2 SHEETS—SHEET 2.

FIG. 3.

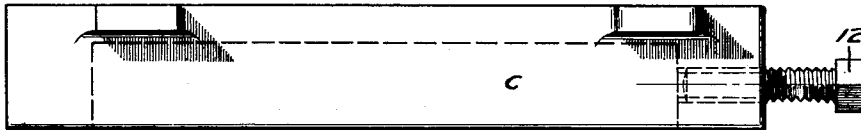


FIG. 4.

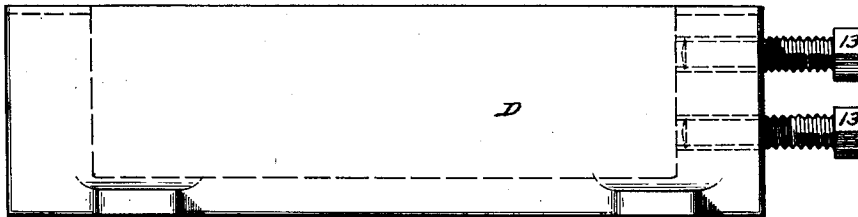


FIG. 5.

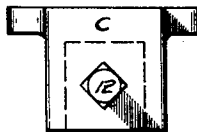
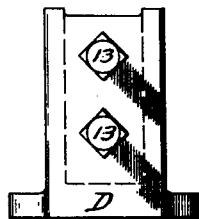


FIG. 6.



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1,336,388.

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To all whom it may concern:

Be it known that I, CHESTER W. YOUNGBERG, a citizen of the United States, residing at the city and county of San Francisco and State of California, have invented new and useful Improvements in Dies, of which the following is a specification.

This invention relates to a die and die block intended for use in bending or shaping machines, and particularly to pressers designed for the production of metal articles, such as pipe and cable hangers, straps, clips and the like.

One of the objects of the present invention is to provide a sectional die and a die block therefor in which the sectional dies may be rearranged or other sections inserted when it is desired to form straps or hangers of different lengths or shapes, thus eliminating the necessity of making a new die every time it is desired to change the shape or size of the hanger or other article manufactured.

Another object of the invention is to provide a simple and substantial block or box for the reception of the dies, and, in conjunction therewith, means for rigidly securing the same, said means being capable of quick manipulation to permit any die sections to be readily removed or inserted.

Further objects will hereinafter appear.

The invention consists of the parts and the construction, combination and arrangement of parts as will hereinafter be described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a side elevation of a hanger shaped by the dies forming the subject-matter of the present invention.

Fig. 2 is a side elevation in section showing the dies in position and secured in the die blocks.

Fig. 3 is a side elevation of the upper die block.

Fig. 4 is a side elevation of the lower die block.

Fig. 5 is an end view of the upper die block.

Fig. 6 is an end view of the lower die block.

Referring to the drawings in detail, C and D indicate a top and bottom die block respectively. These die blocks or boxes are designed to fit the machine in which they are to be used, for instance, a hydraulic or power press, and the inner faces of the

blocks are accurately machined to snugly receive the die sections, generally indicated at T and B, T indicating the top dies and B the bottom dies.

By referring to Fig. 2, it will be seen that both the upper and lower dies are built up of sections indicated at 1, 2, 3, 4, 5 and 6. The purpose of building the dies in sections is to enable the operator to change the hanger or clamp to conform to a different number of pipes, rods, or cables.

The sectional dies are so designed that each end forms that part of the whole hanger between any two adjacent centers or between any one center and the base to which the hanger is fastened, and against which the pipe, rod or cables are supported and run.

By referring to Fig. 1, it will be seen that the hanger 10 has been formed to support six cables. These cables vary in diameter from $\frac{3}{4}$ " to $1\frac{1}{2}$ ", all being marked according to their size. If it is desired to set the dies to form said hanger it is accomplished in the following manner: By referring to Fig. 1 it will be seen that the cables are arranged in the following order: $\frac{3}{4}$ "— $\frac{3}{4}$ "— 1 "— $1\frac{1}{2}$ "— $1\frac{1}{4}$ "— $\frac{3}{4}$ ". Since the hanger starts and ends with a $\frac{3}{4}$ " cable it is necessary to insert two die sections T^1 and B^2 . The sectional dies are therefore placed in the top block in the following order: T^1 , T^2 , T^3 , T^4 , T^5 , T^6 and T^1 the dividing planes of these sections containing the imaginary central axis of the pipes for which the hanger is made. If there is any space left in the box it is only necessary to fill it out with blanks and then to tighten the set screw shown at 12. The dies received by the lower block are then set up in the following order: B^1 , B^2 , B^3 , B^4 , B^5 , B^6 and B^1 , and these are also secured in the present instance by means of set screws 13. In setting up the dies it is possible to leave the lower block in the machine, but it is necessary to remove the upper block, as it is otherwise difficult to place the die sections in place. The upper die block is therefore placed in the press. The moment the dies have been set and the press is therefore ready for operation. A piece of strap iron cut to proper length and placed between the dies will therefore assume the shape shown in Fig. 1.

Under certain conditions some of the die sections may be interchanged and advantage

can be taken of this whenever such interchanging is possible, thus eliminating the necessity of making such sections.

From the foregoing description it can be seen that straps and hangers of practically any size and shape may be readily formed, as it is possible to arrange the die sections to produce any shape desired, this all being accomplished without constructing new and solid dies and without loss of time, as comparatively little labor is required when setting up or changing the dies. It is therefore possible to economically manufacture a small or large number of hangers and a great variety of the same, as the die cost is practically eliminated. This is of great importance, particularly when constructing hangers for ships as it usually requires thousands of hangers, and sometimes a hundred or more varieties and shapes.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. A bending die for forming pipe hangers comprising a plurality of sections dividing on lines coinciding with the center lines of the pipes to be supported, each die section being formed with a bending face shaped to produce the required curvature between the center lines of adjacent pipes.

2. A bending device for pipe hangers supporting a plurality of pipes or cables, comprising a die consisting of a plurality of sections, there being always a pair of end sec-

tions and intermediate sections, the bending face of each intermediate die section being curved to form that part of the hanger between the center lines of any two adjacent pipes and the bending face of the end die sections that part of the hanger which extends from the center lines of the outermost pipes to the base to which the hanger is secured.

3. A bending device for pipe hangers supporting a plurality of pipes or cables, comprising a die consisting of a plurality of sections, there being always a pair of end sections and intermediate sections, the bending face of each intermediate die section being curved to form that part of the hanger between the center lines of any two adjacent pipes and the bending face of the end die sections that part of the hanger which extends from the center lines of the outermost pipes to the base to which the hanger is secured, and a cooperating die consisting of a similar number of sections, the bending surface of each die section having a curvature reverse to the opposed section of the first named die.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

CHESTER W. YOUNGBERG.

Witnesses:

LAURA F. YOUNGBERG,
S. BELLE GORHAM.