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L. MEISTER

2,383,008

WORK POSITIONING APPARATUS

Filed June 1, 1942

Fig-1

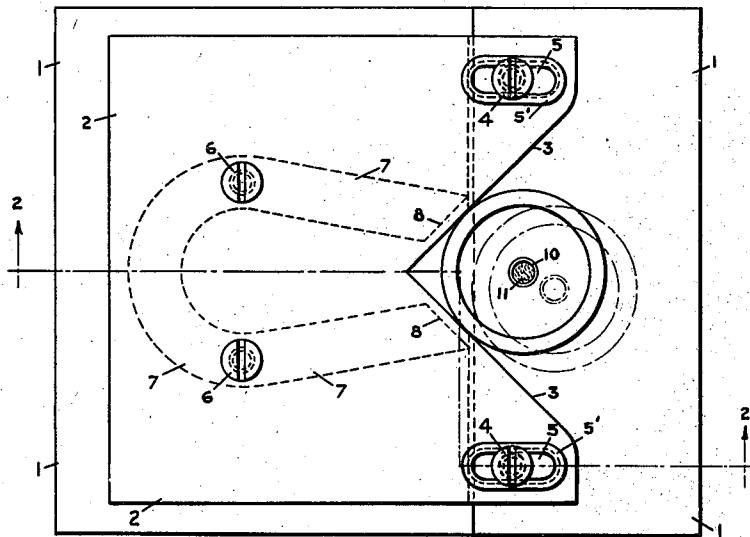
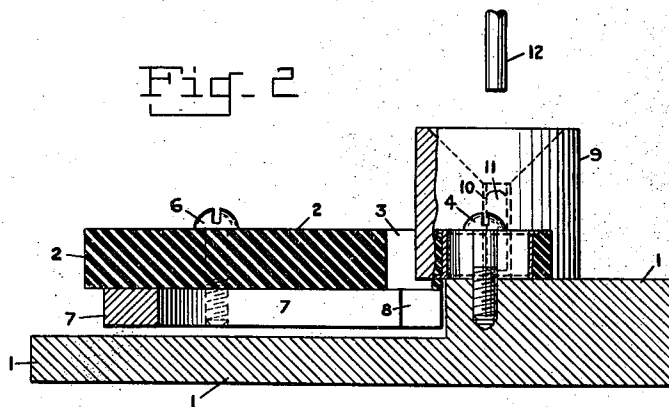


Fig-2



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UNITED STATES PATENT OFFICE

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WORK POSITIONING APPARATUS

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Application June 1, 1942, Serial No. 445,383

8 Claims. (Cl. 90—59)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

The invention described herein may be manufactured and used by or for the Government for governmental purposes, without the payment to me of any royalty thereon.

This invention relates to a device for work positioning apparatus which is automatic in action. In processing articles a work holding expedient frequency employed is to position the article in a V-shaped slot in a block on the work table. The slot itself will determine the position of the work accurately, but the extraneous means used to position the work in tangency with the slot walls will not always function satisfactorily with the result that the work is not positioned accurately and damage results.

It is therefore an object of the invention to provide work holding means which shall be automatic and certain in action.

It is a further object of the invention to provide work holding means which will function independently of the processing machinery.

According to the invention the accurate positioning is perfected by providing a magnetic field in the V-block which will ensure accurate contact of the work with the faces of the block.

The specific nature of the invention as well as other objects and advantages thereof will clearly appear from a description of a preferred embodiment as shown in the accompanying drawing in which:

Fig. 1 is a top plan view of a work holding block, and

Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1.

Referring to the drawing by characters of reference, there is shown a mounting platen 1 and a block 2 of non-magnetic material with a V-slot 3 which is attached to the platen 1 for adjustability as by screws 4 passing through elongated perforations 5 reinforced by sleeves 5'. On the under side of block 2 is fastened as by screws 6 a magnet 7 with poles 8 adjacent to the edges of the V-slot 3 and oriented therewith so as to direct the lines of force perpendicular thereto. The magnet is spaced from the platen 1 so as to maintain the intensity of its force at the poles.

A work holder 9 is shown which by way of example is designed to represent a holder for an ammunition or pyrotechnic shell 10 loaded with material 11 and ready for compressing operation of a plunger 12. The work piece when tangent to the sides of the V-slot will be in exact position to receive the plunger 12. However, as shown in Figure 1 in phantom, the work piece

may not be accurately positioned by the ordinary positioning units (not shown) or may have been jarred away from true work holding position by vibrations or shocks. With the present invention if the work piece is placed anywhere near the true work holding position it will be within the field of the magnet and will be drawn into tangency, and once placed it will not be dislocated by minor disturbing forces. The work holder 9, or some portion thereof should be of magnetic material. While a permanent magnet is shown, it will be understood that the magnet may be energized by an electric current if the load requires such. Obviously the magnet may be located in other positions than the one shown. For instance, it may be positioned atop the insulating block 2.

I claim:

1. Work positioning apparatus comprising a block of non-magnetic material having sides angularly placed with respect to each other to receive a work piece and magnetic means of opposite polarity closely adjacent each of said sides for automatically positioning said work-piece.

2. Work positioning means comprising positioning means of non-magnetic material for a work piece, and magnetic means of opposite polarity adjacent said positioning means for automatically positioning said workpiece.

3. Work positioning means comprising a block of non-magnetic material having sides angularly placed with respect to each other to receive a work piece, and magnetic means of opposite polarity closely adjacent each of said sides for automatically positioning said workpiece.

4. Work positioning means comprising a block of non-magnetic material having sides angularly placed with respect to each other to receive a work piece, and magnetic means of opposite polarity adjacent said sides respectively whereby a magnetic flux is established between said sides for automatically positioning said workpiece.

5. A work positioning apparatus for positioning a cylindrical workpiece of magnetic material, comprising a platen for supporting the work, a non-magnetic block attached to said platen, said block being provided with a V-shaped slot, a magnet attached to the block with opposite poles adjacent the sides, respectively, of said slot whereby a magnetic flux is established across the slot to draw the cylinder therein with its periphery in tangential contact with the sides of the slot.

6. A work positioning apparatus comprising a block of non-magnetic material provided with a slot of a shape of predetermined accuracy with respect to a workpiece of magnetic material to be positioned by contact with said slot, and magnetic means for effecting such contact whereby the workpiece is automatically accurately positioned.

7. A work positioning apparatus comprising a block of non-magnetic material having a V-shaped slot therein for the reception of a cylindrical workpiece of magnetic material, magnetic

5 means of opposite polarity arranged to draw the cylinder into said slot with its periphery in tangential contact with the sides of the slot whereby said cylinder is automatically accurately positioned.

8. The invention of claim 5 characterized in that there is means carried by the platen and means carried by the non-magnetic block whereby the block may be adjusted relative to the platen to accommodate work pieces of different diameters.

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