

Sept. 4, 1928.

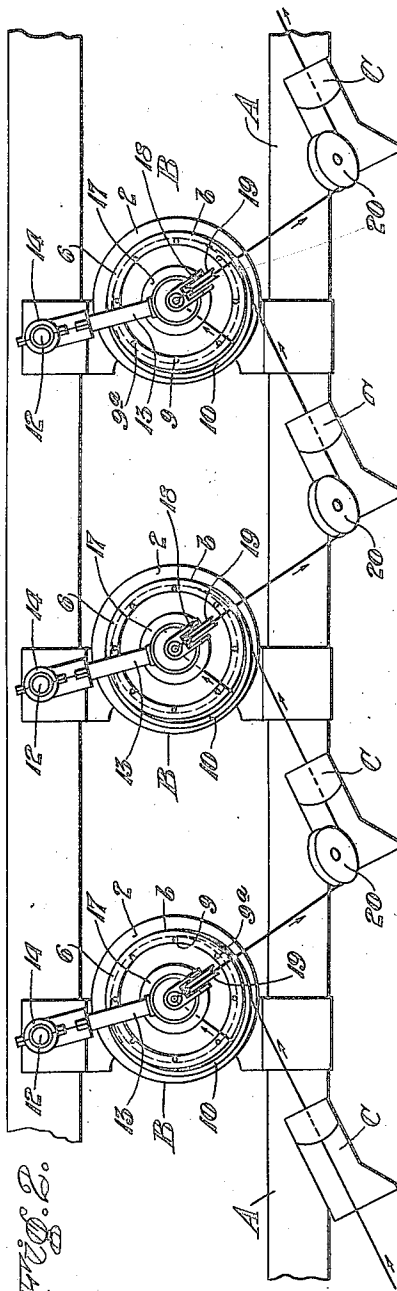
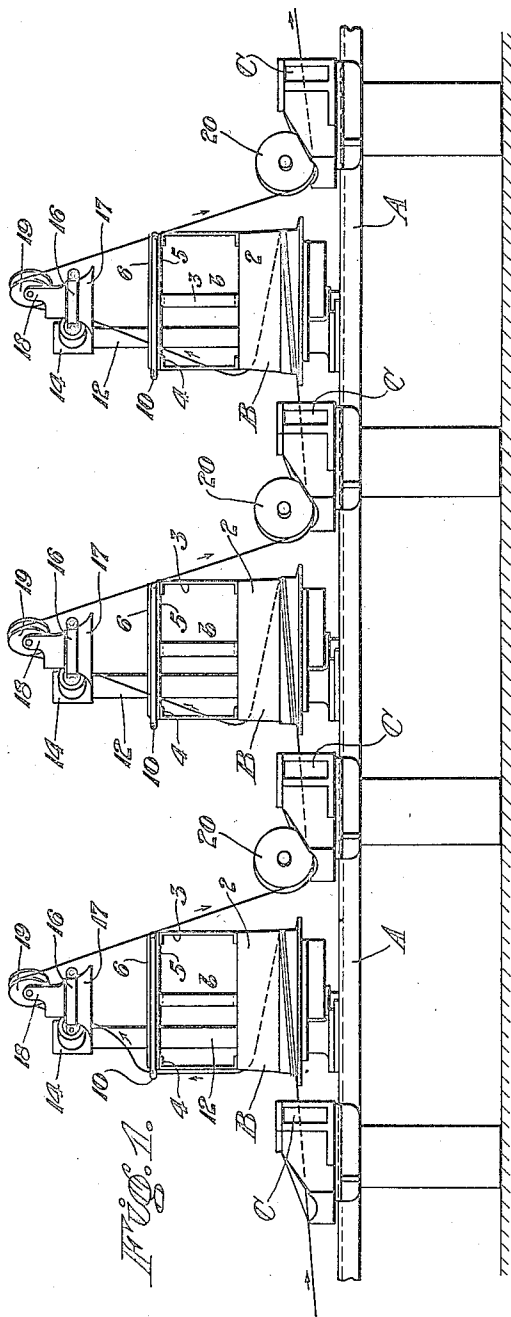
1,683,482

J. S. PHIFER

WIRE DRAWING BLOCK

Filed July 30, 1924

2 Sheets-Sheet 1



Witnesses:

Edwin Truel

Inventor:
JAMES STUART PHIFER,

by

Anthony J. Reina
his Attorney.

Sept. 4, 1928.

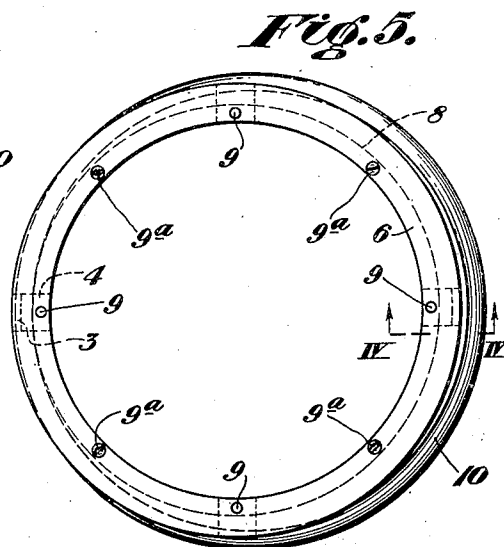
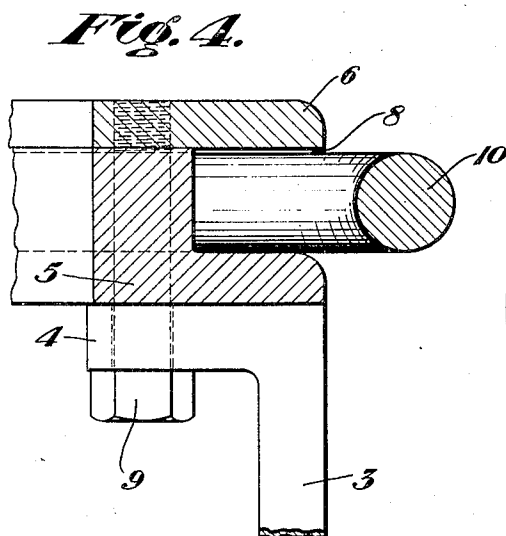
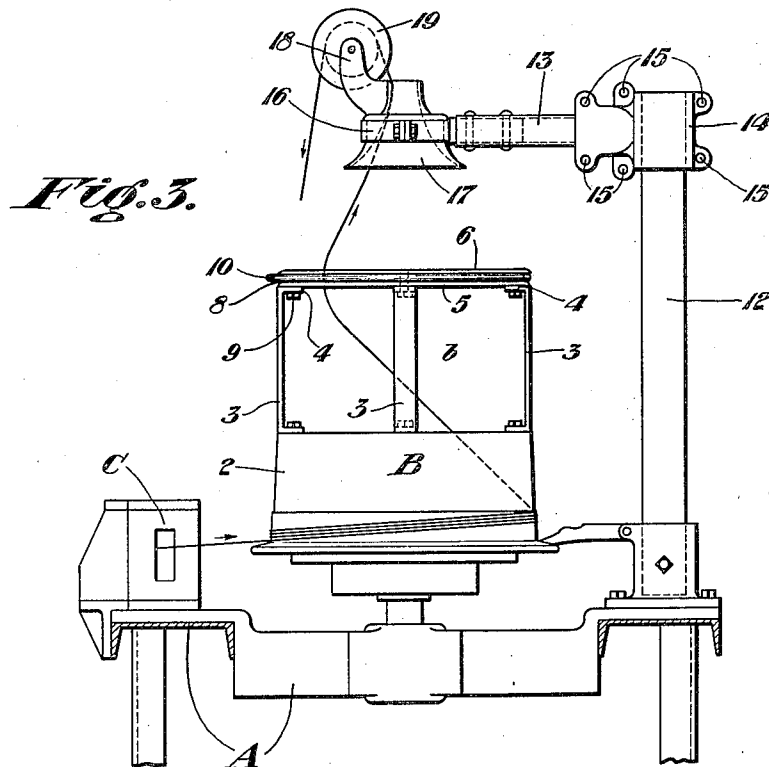
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WIRE DRAWING BLOCK

Filed July 30, 1924

2 Sheets-Sheet 2



Witnesses:
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UNITED STATES PATENT OFFICE.

JAMES STUART PEIFER, OF ALLENTOWN, PENNSYLVANIA, ASSIGNOR TO THE AMERICAN STEEL AND WIRE COMPANY OF NEW JERSEY, A CORPORATION OF NEW JERSEY.

WIRE-DRAWING BLOCK.

Application filed July 30, 1924. Serial No. 729,109.

This invention relates to wire drawing blocks and while not limited thereto relates more particularly to wire drawing blocks for continuous wire drawing benches, having means for permitting the withdrawal of the wire accumulated on said blocks at speeds different from the peripheral speeds of said blocks, and has for its object the provision of an improved means for maintaining a tension upon the wire accumulated on the blocks.

Another object is to provide a wire drawing block having the novel design, construction, and combination of parts hereinafter described and illustrated in the accompanying drawings.

In the drawings, Figure 1 is a side elevation of a portion of a wire drawing bench equipped with the improved drawing blocks of this invention.

Figure 2 is a top plan thereof.

Figure 3 is an end elevation thereof.

Figure 4 is an enlarged detail sectional elevation on the line IV—IV of Figure 5.

Figure 5 is a plan of the upper end of the drawing block, showing the friction ring in position.

Referring more particularly to the drawings, the letter A designates the drawing bench, which may be of any desirable construction, having mounted thereon a plurality of drawing blocks B and die holders or boxes C.

The drawing blocks B are rotatably mounted in suitable bearings on the bench and may be rotated by any suitable mechanism (not shown). Each of the blocks B comprises a drum portion 2 adapted to receive a sufficient number of convolutions to cause the tractive effort of the block to draw the wire through the preceding die, and having a reel-like extension 6 to receive the accumulation of wire on the blocks. The reel-like extension 6 is composed of upstanding arms 3, which have their upper ends bent inwardly at right angles as at 4 to form supports for a retaining rim or ring 5. The rim or ring 5 is cut away around its periphery forming an offset, and a circular ring-like plate 6 is mounted on top of the rim 5 and extends over the offset formed in the

outer periphery of the rim 5, thus forming a groove 8.

The rim 5 and plate 6 are removably secured together and to the arms 3 by bolts 9 and screws 9^a, so that when desired to remove the plate 6 it is only necessary to unscrew the bolts 9 and screws 9^a out of the plate 6 and then lift the plate from position.

A one piece continuous friction ring 10 is mounted in the groove 8 and co-operates therewith to form a friction retard for the wire being drawn from the block.

The ring 10 is of a materially greater internal diameter than the greatest distance across the block at the groove and of a less internal diameter than the greatest distance between the outside edges of the block. Therefore it is movable in the groove to permit the wire to pass between the ring and block and yet is not large enough to permit displacement out of the groove 8, unless the plate 6 is removed.

A standard 12 is mounted to one side of each of the blocks B and has a horizontal arm 13 mounted in a split sleeve 14 adjacent its upper end. The sleeve 14 is held together and clamped in position by bolts 15 and is adjustable around the standard 12. The arm 13 is provided with circular bearing member 16 at its free end, in which is rotatably mounted a guide bell 17. An arm 18 extends upwardly from one side of the bell 17 and carries a guide sheave 19.

The wire from the block B is passed under the ring 10. That is, between the ring and block and then through the guide bell 17 and over the sheave 19, so that the wire leaves the block by uncoiling, as distinguished from unwinding, which is the method of taking the wire from the ordinary blocks in use heretofore, and the ring 10 serves to retard the passage of the wire sufficiently to prevent the wire accumulated on the block from slipping off the same, and also to cause a sufficient tension on the wire to cause it to remain taut on the guide sheaves.

The die holders or boxes are each provided with a guide sheave 20 adapted to receive the wire from the sheave 19 and guide it to the die.

In operation the wire is accumulated on the standards or arms forming the reel-like extension of the blocks, and is loosely held thereon. Therefore, when the demand of
 5 the next block is greater than the preceding block is delivering, the deficit is supplied by a gradual uncoiling (as distinguished from unwinding) of the topmost convolutions or
 10 turns of the wire on the reel-like portion of the block, it being obvious that this is made possible by the fact that the wire comes off the block, not tangentially as in the ordinary wire drawing, but in a path substantially axially of the block.

15 The tension or braking ring 10 serves to keep the wire leaving the blocks taut and also to prevent the uncoiling of the wire on the blocks.

As the wire is uncoiled from the blocks
 20 due to the demand of the next succeeding block being greater than the preceding block can normally deliver, there occurs a relative backward peripheral movement of the point where the tension or braking action of the ring 10 is effective. Therefore, the ring
 25 is caused to move relative to the block. However, when the demand of the succeeding block is less than the delivery of the preceding block, the ring 10 will remain stationary and move with the block due to its
 30 frictional engagement therewith.

While I have shown only one specific form of my invention, I do not wish to be limited thereto, since various modifications may be

made without departing from the scope of
 35 my invention as defined in the appended claim.

I claim:—

A wire drawing block comprising a drum portion, a skeleton reel-like extension extending upwardly from said drum portion
 40 and terminating in a retaining rim, said rim being cut away around its periphery to form an offset, the base portion of said offset portion having its outer edge rounded, a circular ring-like plate secured to the upper
 45 face of said retaining rim and projecting outwardly over the base portion of said offset portion to form a groove, a one-piece continuous rigid ring mounted in said groove,
 50 said ring being of round cross-section and having a materially greater internal diameter than the greatest distance between two diametrically opposite points on the back wall of said groove, and of a less internal diameter
 55 than the greatest distance between two diametrically opposite points on the outer periphery of said retaining rim, said ring being adapted to be frictionally rotated with said block and being free to move relative
 60 to said block in an eccentric path, and the wire being withdrawn from said block being passed between said ring and said retaining rim.

In testimony whereof, I have hereunto set
 65 my hand.

JAMES STUART PHIFER.