

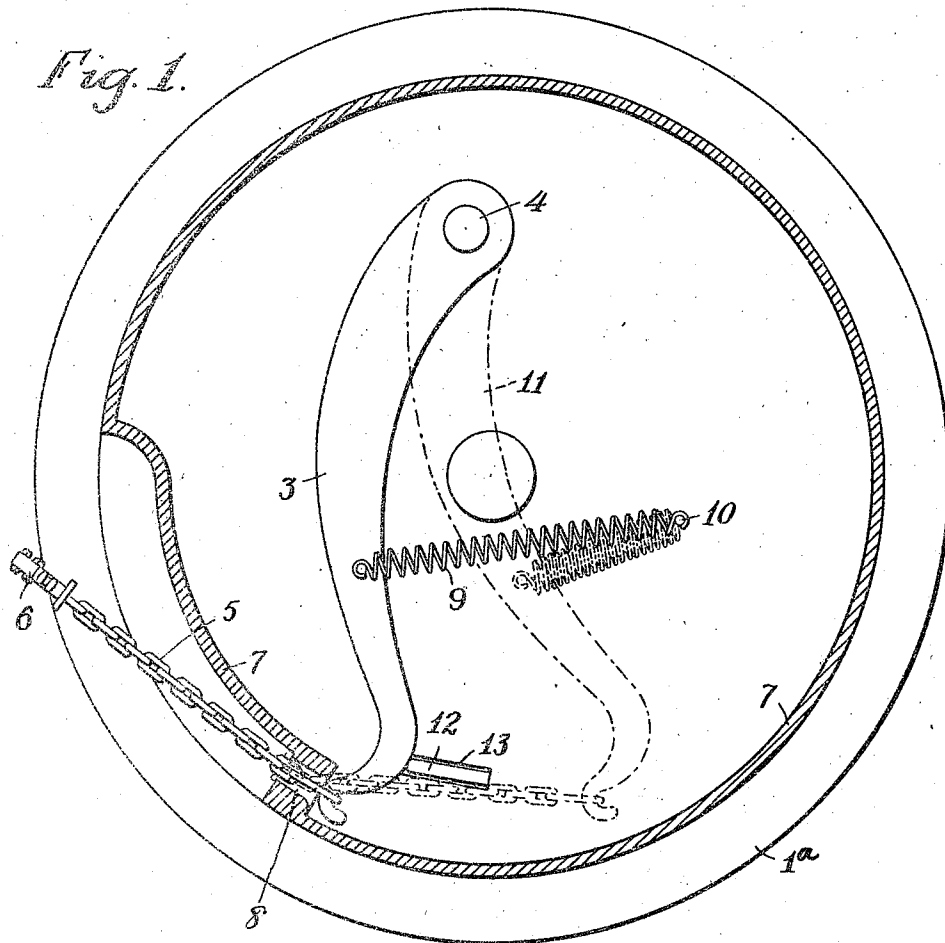
E. H. CARROLL.
WIRE DRAWING BLOCK.
APPLICATION FILED APR. 24, 1909.

1,008,950.

Patented Nov. 14, 1911

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses.

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Envelope & Son, Inc.

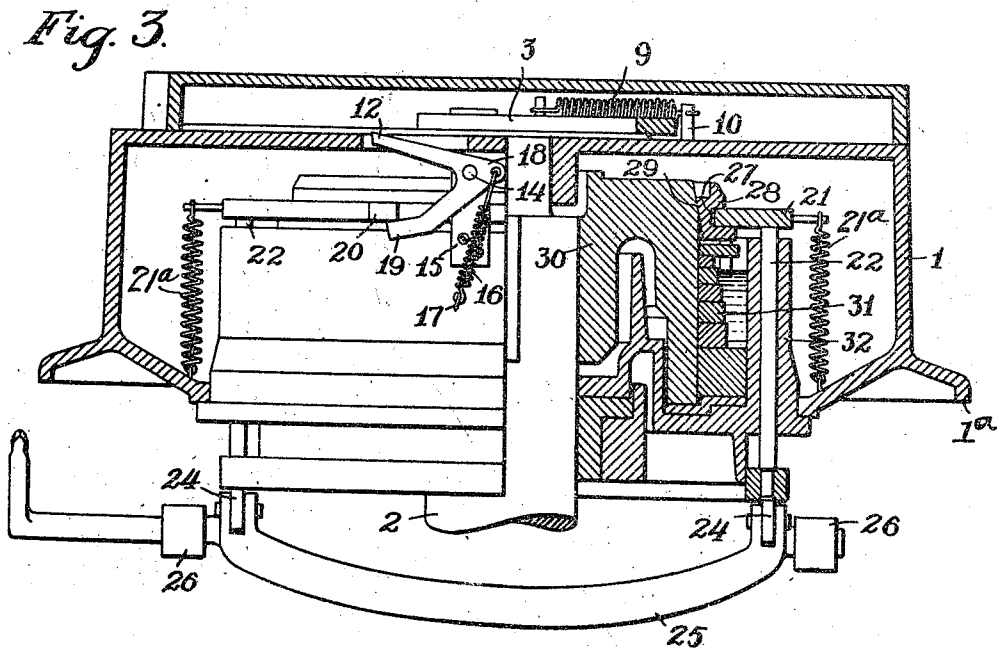
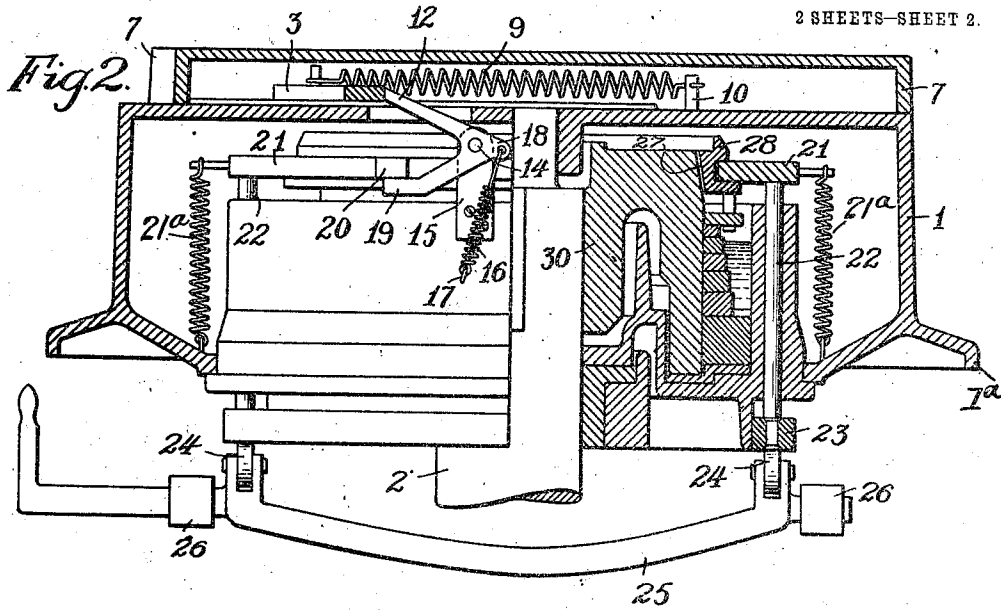
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UNITED STATES PATENT OFFICE.

ELBERT H. CARROLL, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO MORGAN CONSTRUCTION COMPANY, OF WORCESTER, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

WIRE-DRAWING BLOCK.

1,008,950.

Specification of Letters Patent. Patented Nov. 14, 1911.

Application filed April 24, 1909. Serial No. 492,075.

To all whom it may concern:

Be it known that I, ELBERT H. CARROLL, a citizen of the United States, residing at Worcester, in the county of Worcester and Commonwealth of Massachusetts, have invented a new and useful Improvement in Wire-Drawing Blocks, of which the following is a specification, accompanied by drawings forming a part of the same, in which—

Figure 1 represents a top view of a wire drawing block embodying my present improvement. Fig. 2 is a side elevation with portions of the block shown in sectional view to disclose the operating mechanism. Fig. 3 is a side view partly in section, similar to the view shown in Fig. 2, but with the latch operating mechanism in a different position from that shown in Fig. 2.

Similar reference letters and figures refer to similar parts in the different views.

My present invention has for its object to provide means whereby a flexible connection between the rotating block and the wire gripping mechanism will be immediately drawn entirely within a shield or protecting rim upon the top of the block, whenever the strain upon the flexible connection is relieved, as by the breaking of the wire, thereby preventing the centrifugal movement of the flexible connection caused by the rotation of the block, and further to provide means for locking the flexible connection in an extended position to facilitate the application of the gripping mechanism to the wire to be drawn before the rotation of the block is begun. These objects are accomplished by the construction and arrangement of parts as hereinafter described and set forth in the annexed claims.

Referring to the accompanying drawings 1 denotes the outer shell or winding surface of a wire drawing block having a flange at the bottom 1^a. 2 is a vertical rotating shaft by which power is applied to the outer shell 1 by means of any suitable clutching mechanism, either positive or frictional, said clutching mechanism being operated at will to throw the wire drawing block into and out of connection with the driving power.

In the accompanying drawings I have shown the block as driven from the shaft 2 through a frictional clutching mechanism, now in common use, but other types of clutching mechanisms now in use may be

employed for connecting the block with the driving power. Mounted upon the top of the block is a swinging lever 3 having one end pivoted upon a stud 4 and connected at its opposite end by means of a chain 5, or other suitable flexible connection with a wire gripping mechanism 6 of any known form of construction.

Projecting from the top of the block is a curved rim 7 forming a shield and provided with an opening 8, through which the chain 5 is drawn in tangential relation to the periphery of the block during the operation of the block, as represented by solid lines in Fig. 1. Attached to the lever 3 between its free end and the stud 4 is a spiral spring 9 attached at its opposite end to a stud 10, said spring exerting a tension to draw the lever 3 when the strain upon the chain 5 is relieved from its position shown in Fig. 1 to the position shown by broken lines at 11, Fig. 1. The lever 3 is held in the position shown in Fig. 1 with the free end in contact with the shield 7 at the opening 8 and with the chain 5 extended beyond the shield 7 by means of a latch 12 operating through an opening 13 in the top of the block to engage the edge of the lever 3. The latch 12 is pivoted at 14 on a bracket 15 attached in the present instance to an interior portion of the wire drawing block, and the latch is held in position to engage the lever 3 by means of a spiral spring 16 attached at one end to a stud 17 held in an interior portion of the block, and at its opposite end to an arm 18 projecting from the latch 12. The latch is acted upon by the spring 16 but the movement of the latch 12 by the spring 16 is restrained by an arm 19 of the latch which is brought in contact with the under side of a lug 20 projecting from the periphery of the ring 21. The ring 21 is held by springs 21^a upon the upper ends of lifting spindles 22 carried by a ring 23 beneath the block which is supported upon the friction rolls 24 carried in a yoke 25, capable of being rocked in bearings 26 by the attendant, so as to raise or depress the friction rolls 24 and lift the rings 23 and 21, or allow them to fall by gravity.

The latch 12 is raised to hold the lever 3 in contact with the shield 7 against the force of the spring 9 and also to hold the flexible connection 5 extended beyond the shield 7 to provide for the attaching of the

wire to be drawn to the flexible connection 5. When this is accomplished, the rotation of the block is started and the latch 12 is lowered, leaving the flexible connection 5 free to be withdrawn immediately within the shield 7 by the lever 3 operated by the spring 9 in case the strain upon the flexible connection 5 by the wire is released for any reason, thereby preventing liability of injury to the attendant while the block is in rotation by the swinging of the flexible connection by centrifugal force caused by the rotation of the block.

The ring 21 enters a peripheral groove 27 in a friction ring 28 which, in its lowest position frictionally engages a beveled surface 29 on a central block 30, which is keyed to the shaft 2. The block 30 is inclosed by a spiral spring 31, one end of which is connected with an oil receptacle 32, and the other end is connected with the friction ring 28. When the friction ring 28 is raised out of contact with the beveled surface 29 of the driving block 30, the latter is allowed to rotate within the spiral spring 31 which remains at rest. When the friction ring 28 is lowered into contact with the beveled surface 29 of the driving block 30, the ring is rotated with the block which winds up the spiral spring 31 upon the driving block 30 until the spring is rotated by the block 30 and rotary motion imparted to the oil receptacle 32 and connected outer winding shell 1.

The specific frictional clutching mechanism shown forms no part of my present invention, but is described herein to illustrate a method of making a connection between the latch releasing mechanism and the clutch operating device in order that the lowering of the latch 12 and the beginning of the rotation of the wire drawing block may be simultaneous.

I claim,

1. A wire drawing apparatus, comprising a rotatable block upon which the wire is wound, a gripping mechanism for seizing the wire, a connection between said gripping mechanism and said block, and means for automatically withdrawing said connection within said block as soon as the strain of the wire is removed.

2. A rotatable wire winding block, a gripping mechanism, a connection between said block and said gripping mechanism, a shield on said block, and automatic means for withdrawing said connection behind said shield as soon as the strain of the wire upon said connection is removed.

3. A wire drawing apparatus, comprising a rotatable block, a gripping mechanism for the wire to be drawn, a connection between said block and said gripping mechanism, positive means for holding said connection to resist the strain of the wire, and

means for moving said connection automatically in the opposite direction to the strain of the wire as soon as the strain of the wire is removed.

4. In a wire drawing apparatus, a rotatable block, a gripping mechanism for the wire to be drawn, a connection between said block and said gripping mechanism, means for holding the inner end of said connection in contact with a portion of the periphery of said block to resist positively the strain of the wire, and means applied to said inner end for drawing automatically said connection within said periphery as soon as the connection with the wire to be drawn is broken.

5. A rotatable block, a gripping mechanism for the wire to be drawn, a connection between said block and said gripping mechanism, a shield carried by said block, a spring having its tension applied to said connection arranged to withdraw said connection entirely into the space between said shield and the center of said block when the strain of the wire is removed from said connection, whereby the centrifugal motion of said connection is prevented.

6. A rotatable block, a gripping mechanism for the wire to be drawn, a connection between said block and said gripping mechanism, a rim upon the top of said block forming a shield, and automatic means for withdrawing said connection behind said shield as soon as the strain of the wire upon said connection is removed.

7. A rotatable block, a gripping mechanism for the wire to be drawn, a connection between said block and said gripping mechanism, a shield carried by said block, a lever behind said shield pivoted upon said block, with said connection attached to the free end of said lever, and a spring at right angles to said lever arranged to exert a pulling strain upon said connection.

8. In a wire drawing apparatus of the class described, a rotatable wire winding block, a gripping mechanism, a connection between the block and gripping mechanism, a lever pivoted on said block having its free end attached to one end of said connection, a spring applied to said lever to exert a pulling strain on said connection, and a latch for holding said lever against the tension of said spring.

9. In a wire drawing apparatus of the class described, a rotatable block provided with a clutching mechanism for connecting said block with the driving power, a lever pivoted on said block, a gripping mechanism, a connection between the gripping mechanism and the free end of said lever, a spring applied to said lever to exert a pulling strain upon said connection, a latch for holding said lever against the tension of said spring, and means for releasing said latch

and bringing said clutching mechanism into operation.

10. In a wire drawing apparatus of the class described, a rotatable block, clutching
5 mechanism between said block and the driving power, a gripping mechanism for seizing the wire, a connection between the gripping mechanism and the block, means for imparting a lengthwise movement to said
10 connection toward the block, a latch for re-

straining said connection moving means, and means for releasing said latch and bringing said clutching mechanism into operation simultaneously.

Dated this 22nd day of April 1909.

ELBERT H. CARROLL.

Witnesses:

PENELOPE COMBERBACH.

NELLIE WHALEN.