E. J. McILVRIED.

WIRE WORKING MACHINE.

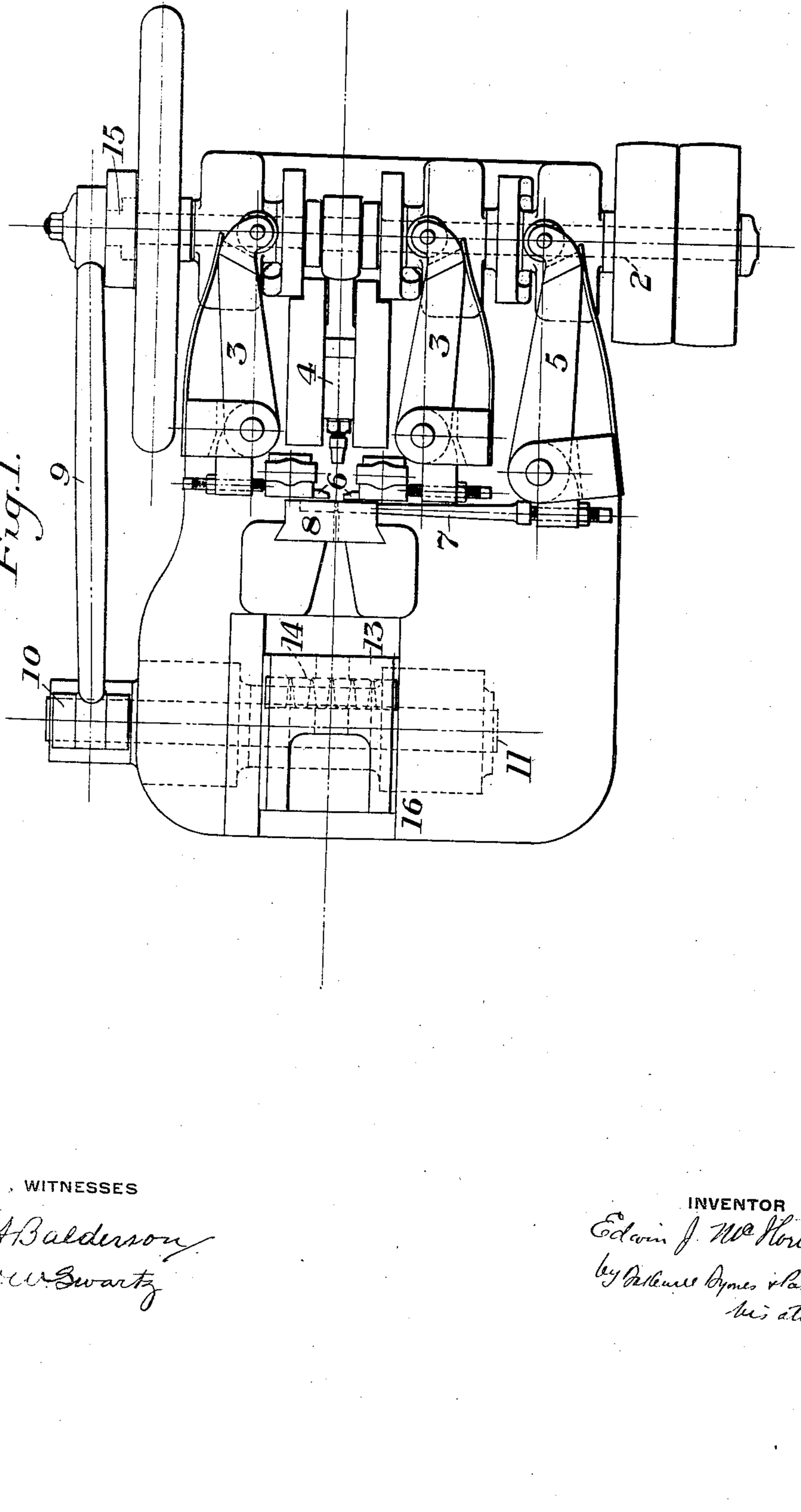
APPLICATION FILED OCT. 17, 1907.

999,052.

Patented July 25, 1911.

3 SHEETS—SHEET 1.

Fig. 1.



WITNESSES

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W. W. Swartz

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his attys

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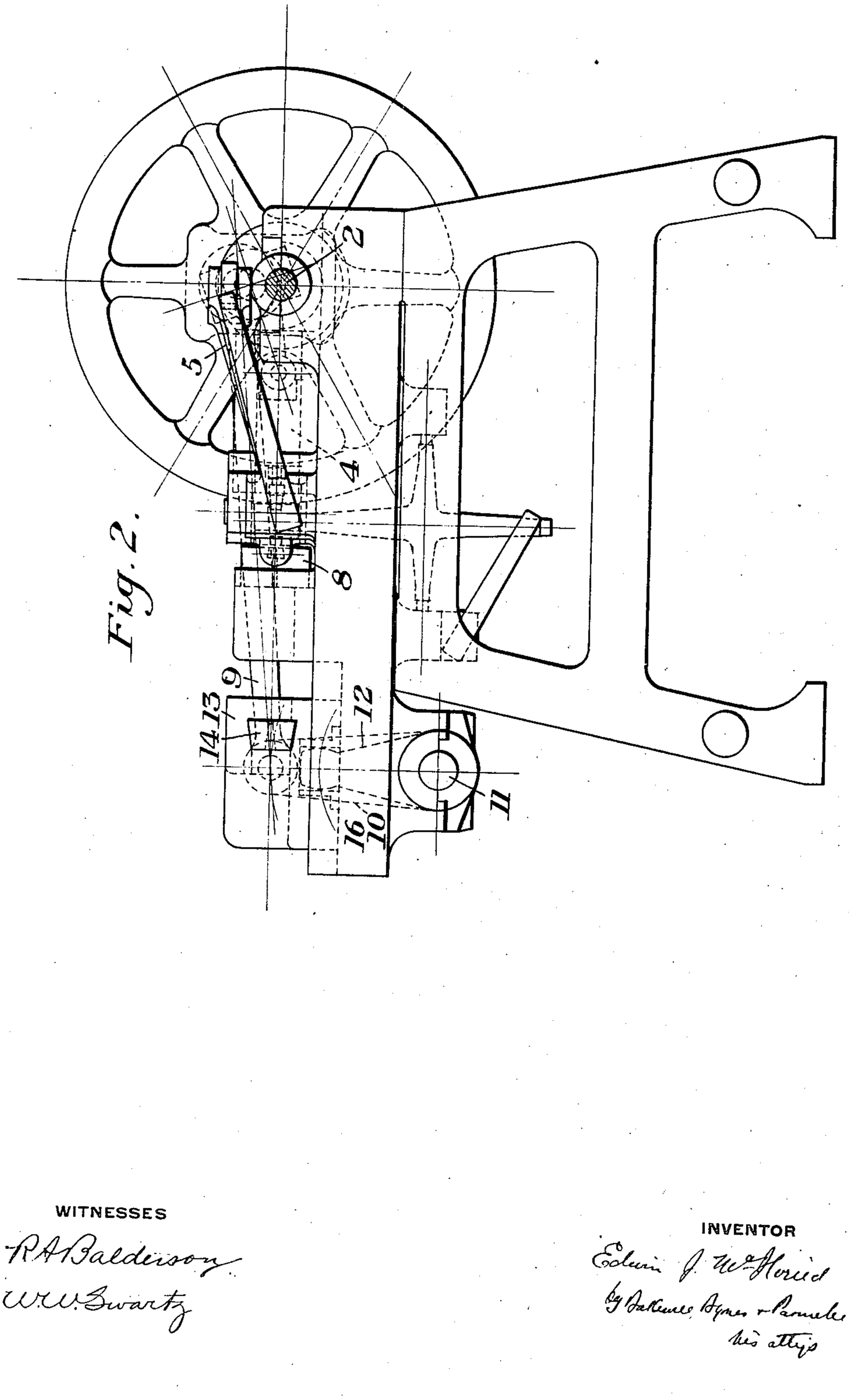

Fig. 2.

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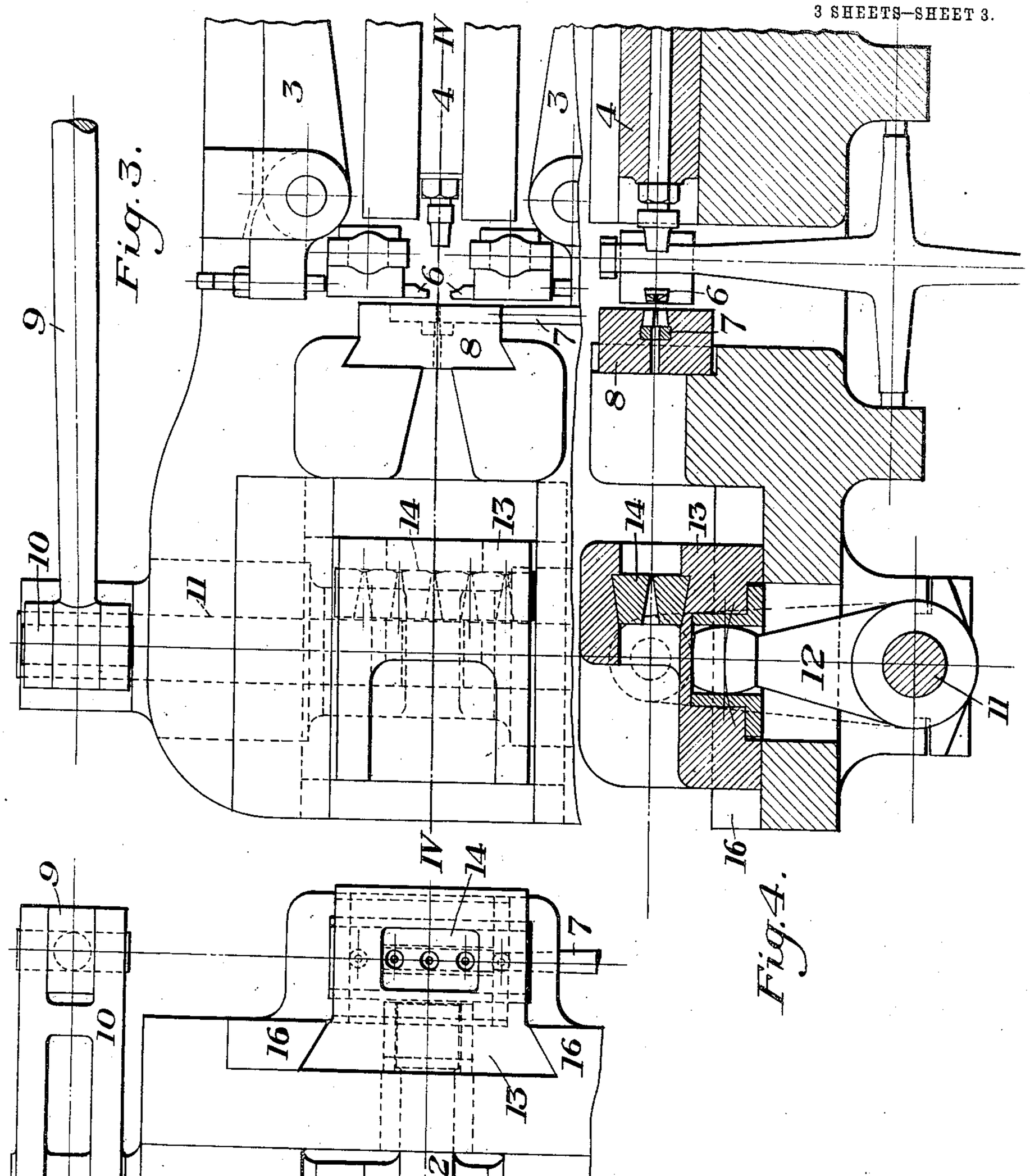

Fig. 3.

Fig. 5.

Fig. 4.

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UNITED STATES PATENT OFFICE.

EDWIN J. McILVRIED, OF PITTSBURG, PENNSYLVANIA.

WIRE-WORKING MACHINE.

999,052. Specification of Letters Patent. Patented July 25, 1911.

Application filed October 17, 1907. Serial No. 397,875.

To all whom it may concern:

Be it known that I, EDWIN J. McILVRIED, of Pittsburg, Allegheny county, Pennsylvania, have invented a new and useful Improvement in Wire-Working Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view of a wire nail machine constructed in accordance with my invention; Fig. 2 is a side elevation of the same; Fig. 3 is an enlarged partial plan view; Fig. 4 is a section on the line IV—IV of Fig. 3; and Fig. 5 is a partial front elevation showing the drawing mechanism.

My invention relates to the class of wire working machines and is designed to provide a feeding attachment for such machines which will draw the wire or wire rod to the necessary gage for the required article; thus doing away with the previous drawing operation before feedng the material to the machine.

To that end the invention consists in combining with a wire working machine, a wire drawing mechanism which acts as a feed for the wire working machine. In the preferred form, this wire drawing mechanism takes the place of the ordinary reciprocating feed device, the drawing mechanism forming the functions both of drawing and feeding, as it reciprocates.

In the drawings, I show a wire nail machine of the ordinary type, provided with my improved drawing and feeding device. In this form, 2 represents the main driving shaft of the machine carrying the usual cams and eccentrics or cranks which operate the cut-off levers 3, 3, the heading die or slide 4 and the pinch lever 5.

6 are the usual cut-off dies and 7 the pinch rod, 8 being the removable heading die. The connecting rod 9 is pivoted to a lever 10 secured to and operating the transverse rock shaft 11, which is provided with lever arm 12, actuating the slide 13 as shown in Fig. 4. This slide 13 is provided with an endwise removable and adjustable drawing and feeding die 14 which is shown as secured by a dovetailed connection. The die is provided with a series of conical or tapered drawing holes, any one of which may be adjusted into line with the hole in the heading die so as to thread the wire through it. The stroke or length of feed may be adjusted by means of the sliding block 15. The slide carrying the feeding and drawing die moves within suitable guides 16.

In the operation of the machine the wire is pulled through the dies and gripped by the pinch lever 7 in the header dies. The machine is then started into motion, the slide 13 having been drawn back over the wire, drawing it to gage as the header is coming forward to head the wire. The header and the slide 13 reverse their direction of movement at the same time that the gripping or pinching device releases the wire. The wire is then fed forward following up the header until the header and feeding slide again change direction, at which time the grip again operates to pinch or grip the wire and the cutter levers operate to point and cut off the nail. At every backward motion of the feeding slide, the drawing die acts upon the wire to draw it to gage, during this movement, the wire being held at this time by being gripped in the wire working machine. The operations are repeated at each revolution of the crank shaft.

The advantages of my invention will be obvious to those skilled in the art. The previous drawing of the wire to the gage required in the wire working machine is avoided and the reciprocating feed for the wire working machine itself performs the drawing operation. The cost of the product is thus reduced while the wire working machine is not materially increased in complexity since the feed performs the double function of feeding and drawing.

The wire working machine may be of any desirable type or may turn out any desired article other than nails; the machine may be used with either wire or wire rods, additional gripping or feeding means may be used to aid the drawing die in the forward feed, and the form, arrangement and actuating means for the combined feeding and drawing device may be otherwise varied without departing from my invention.

I claim:—

1. The combination with a wire working machine, of a combined feed and drawing device therefor, and connections for moving the same back and forth, the wire working machine having gripping mechanism arranged to hold the wire during the drawing

stroke of the feed and release it for the feeding movement thereof, substantially as described.

2. In a machine of the character described, a heading tool for heading wire, a drawing die, a gripping device for gripping the wire while it is being drawn, and means for imparting a reciprocating movement to the drawing die, the parts being arranged so that the wire is drawn when the die is moved in one direction and fed forward when moved in the other direction; substantially as described.

3. In a machine of the character described, a heading tool, a gripping device adjacent to the tool for holding the wire while it is being headed, a drawing die in the rear of the gripping device, and means for actuating the gripping device and for imparting a drawing movement to the drawing die in timed relation to the operation of the gripping device; substantially as described.

4. The combination with a wire working machine, of a combined feed and drawing device therefor, a heading tool, connections for moving said device back and forth, the feed and drawing device being arranged to feed the wire forward during its movement in one direction and to draw the wire during its movement in the other direction, and gripping mechanism arranged to hold the wire when it is being drawn and headed and to release it when feeding the wire forward; substantially as described.

In testimony whereof, I have hereunto set my hand.

EDWIN J. McILVRIED.

Witnesses:

LAURENCE H. LEE,

H. M. CORWIN.