

(No Model.)

C. M. PIELSTICKER.

MACHINE FOR DRAWING RODS AND TUBES.

No. 382,729.

Patented May 15, 1888.

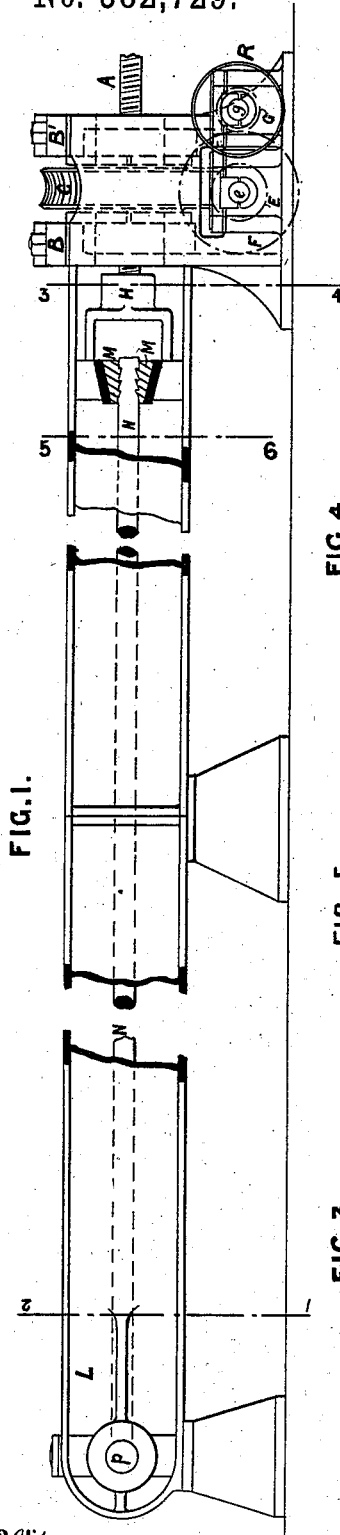


FIG. 1.

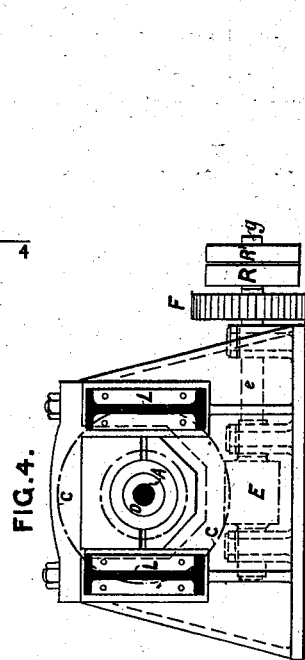


FIG. 4.

FIG. 5.

FIG. 3.

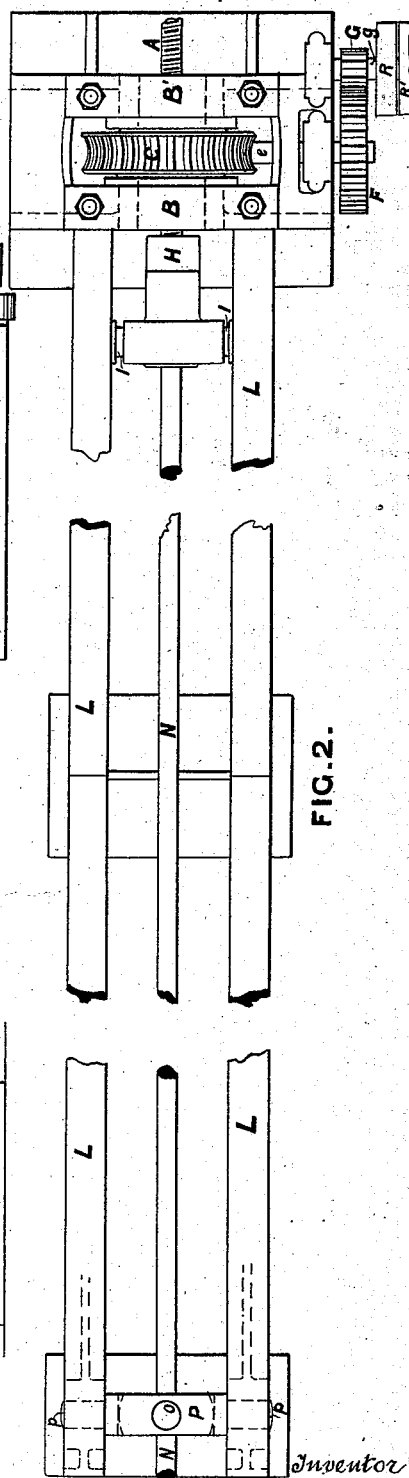
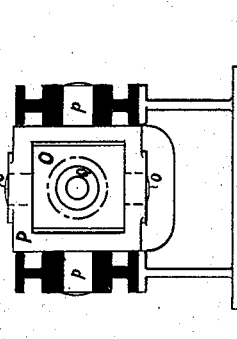


FIG. 2.

Witnesses.  
H. A. Lamb.  
Stephen J. Jannus.

Inventor.  
Carl Maria Pielsticker.  
By his Attorney Frankland Jannus.

# UNITED STATES PATENT OFFICE.

CARL MARIA PIELSTICKER, OF LONDON, COUNTY OF MIDDLESEX, ENGLAND.

## MACHINE FOR DRAWING RODS AND TUBES.

SPECIFICATION forming part of Letters Patent No. 382,729, dated May 15, 1888.

Application filed September 5, 1887. Serial No. 248,875. (No model.) Patented in England July 14, 1886, No. 9,174, and in Germany August 4, 1886, No. 39,156.

*To all whom it may concern:*

Be it known that I, CARL MARIA PIELSTICKER, a subject of the Queen of Great Britain, residing at London, in the county of Middlesex and Kingdom of England, have invented certain new and useful Improvements in Machinery for Cold-Drawing Rods and Tubes, (for which I have obtained a patent in Great Britain, No. 9,174, bearing date July 14, 1886, and in Germany, dated August 4, 1886, No. 39,156,) of which the following is a specification.

My invention relates to an improved machine for cold-drawing rods and tubes, whereby not only is the production increased to twice that of other machines now in use, but also rods of any length can be drawn. In addition to which, from the construction of my apparatus, the die through which the tube or rod is drawn is rendered absolutely self-centering, whereby I am enabled to produce rods and tubes of one uniform section and practically free from crooks or bends.

And in order that my invention may be better understood, reference is had to the accompanying sheet of drawings, upon which—

Figure 1 represents a side elevation of one-half of a duplex machine embodying my improvements, Fig. 2 being a plan of the same. Fig. 3 is a transverse section as seen through line 1 2. Fig. 4 is a transverse section as seen through line 3 4. Fig. 5 is a transverse section as seen through line 5 6.

A is a screwed shaft working within the wheel C; B B', housing for worm-wheel. C is a worm-wheel arranged to revolve within the housing B B'. D is a screwed bush or nut secured within the wheel C; E, worm in gear with wheel C; e, worm-shaft; F, spur-wheel; G, pinion in gear with same; g, driving-shaft; H, cross-head secured upon each end of the screw-shaft A; I I, guide-rollers secured upon each side of cross-head H; K, guides on girders for cross-head H. L L are two girders or struts extending from housing B to die-plate O; M M, grippers or jaws for holding rod to be drawn; N, rod or bar to be drawn; O, plate for securing die; o o, studs or pivots secured upon same; P, swing-frame; p p, studs or pivots secured upon same and fitted within the girders or side frames, L L; Q, the die; R R', pulleys for driving-shaft.

My improved machine may be either single or duplex. For convenience of illustration, one part only, or the parts constituting a single machine, are herein shown, it being obviously sufficient to state that the duplex machine consists of a duplication of the parts shown forward of the housings, Figs. 1 and 2.

In construction my machine consists, essentially, of a screw-shaft, A, arranged to work within a worm-wheel, C, revolving on suitable bearings mounted in the housings B B'. This worm-wheel C is provided within the boss with a nut or thread, D, corresponding with the thread of the screw-shaft A, and engages with the worm E upon the shaft e, motion being imparted thereto by means of the spur-wheel F and pinion G.

The screw-shaft A receives a backward or forward movement according to the direction in which the wheel C is made to revolve, and has secured upon it a suitable cross-head, H, provided with guide-rollers I I, arranged to run upon a flange or rod, K, attached to the side frames, L L. Within the cross-head H is a pair of steel jaws, M M, for the purpose of gripping the rod or tube N to be operated upon.

At the opposite end of the frame is the die-seat O. This die-seat consists of a vertically-pivoted plate, O, arranged within an outer frame, P, the latter being pivoted horizontally within suitable bearings on the side supporting-frames, L L. Within this plate O is the die Q, through which the rod N is drawn. By this arrangement the die is free to move slightly in a vertical or horizontal direction, so as to admit of its adjusting itself to the line of draft at all times.

When the bar to be drawn is inserted in the die and caught between the jaws M M, it is evident that as soon as the slightest pull is exerted by moving the screw-shaft A the center of the die Q will place itself accurately in a line with the center of the rod N and the screw-shaft A, and in consequence any crooks or bends will be obviated and the bar require but little or no straightening at all.

By making the screw-shaft A hollow rods of any length can be drawn.

By drawing the length of the screw-shaft, then causing the latter to travel back again, the drawn part of the rod passing then inside the

hollow shaft, and by clutching a further length of the rod the drawing operation is repeated until the entire length has passed through the die.

5 The rods being drawn through a die of a smaller diameter than their own section are compressed, and in consequence their textile strength and elastic limit greatly increased, while the surface is equal to that of turned  
10 shafting. At the same time, the die being absolutely self-centering, they are perfectly straight and at once fit for all uses for which turned rods are now required, without any further truing or manipulation.

15 Having fully described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a machine for cold-drawing rods and tubes, the combination of a screw-shaft carrying a cross-head and gripping-jaws, means for reciprocating said screw-shaft, longitudinal  
20 frames supporting the cross-head, and a self-centering drawing-die mounted between the extremities of the frames, substantially as described.  
25

2. In a machine for cold-drawing rods and tubes, the combination of a hollow screw-shaft carrying a cross-head and gripping-jaws, means for reciprocating said screw-shaft, longitudinal  
30 side frames supporting the cross-head, and a die secured between the extremities of the side frames, substantially as described.

3. In a machine for cold-drawing rods and tubes, the combination of a screw-shaft provided with a cross-head and gripping-jaws, and means for reciprocating said shaft, side frames  
35 provided with lateral guiding-surfaces arranged to support the cross-head, and a self-centering drawing-die mounted between the extremities of the side frames, substantially as described.

4. In a machine for cold-drawing rods and tubes, a self-centering die in a support comprising a horizontally-pivoted frame, a die-holding plate or seat vertically pivoted within  
45 the frame, and a die-plate supported within the plate or seat, substantially as described.

5. In a machine for cold-drawing rods and tubes, a self-centering die in a support comprising the horizontally-pivoted frame P, the die-holding plate or seat O, vertically pivoted within the frame P, and a die-plate, Q, supported within the plate or seat O, longitudinal  
50 side frames between the extremities of which the frame P is pivotally supported, and a cross-head and gripper arranged to be reciprocated between the side frames, substantially as described.

6. In a machine for cold-drawing rods and tubes, the combination of a screw-shaft, a rotating nut on said screw, a worm-wheel engaging said nut, a counter-shaft carrying a worm-pinion engaging the worm-wheel, and suitable driving-pulleys on the counter-shaft, a cross-head and gripping-jaws on the screw-shaft, longitudinal frame-pieces provided with guides  
60 for the cross-head, and a drawing-die supported between the extremities of the frame-pieces, substantially as described.

CARL MARIA PIELSTICKER.

Witnesses:

JNO. DEAN,

HERBERT E. DALE,

Both of No. 17 Gracechurch Street, London.