

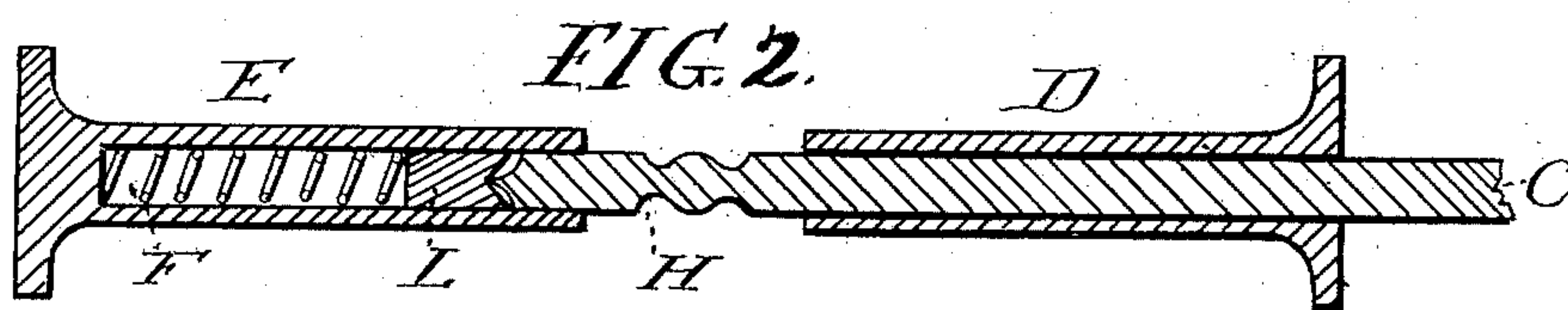
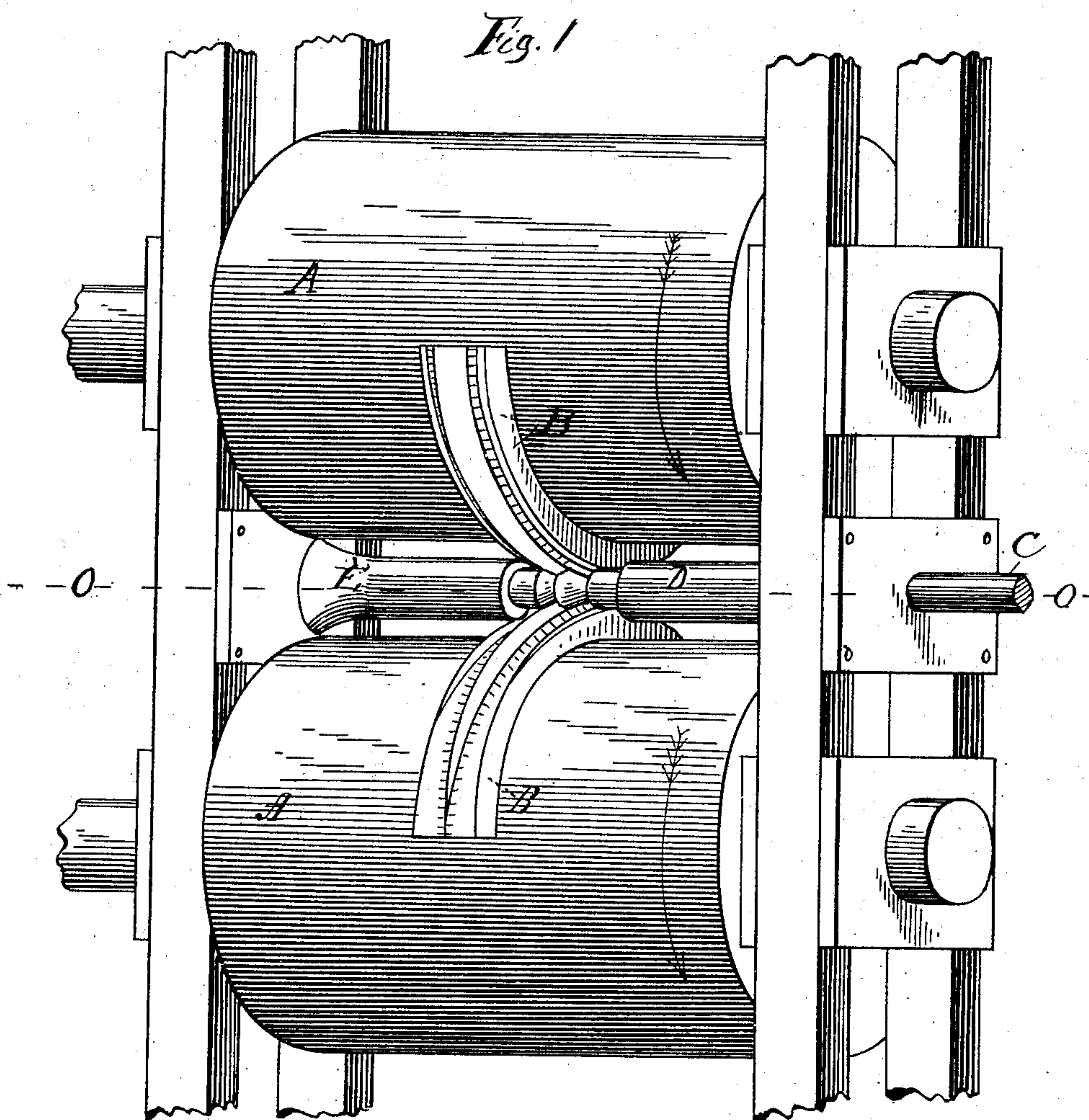
(No Model.)

C. F. TEBBETTS.

DEVICE FOR ROLLING METALLIC BODIES TO SPHEROIDAL FORMS.

No. 375,783.

Patented Jan. 3, 1888.



Attest:
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UNITED STATES PATENT OFFICE.

CHARLES FRANCIS TEBBETTS, OF FITCHBURG, MASSACHUSETTS.

DEVICE FOR ROLLING METALLIC BODIES TO SPHEROIDAL FORMS.

SPECIFICATION forming part of Letters Patent No. 375,783, dated January 3, 1888.

Application filed March 12, 1887. Serial No. 230,734. (No model.)

To all whom it may concern:

Be it known that I, CHARLES FRANCIS TEBBETTS, a citizen of the United States, residing at Fitchburg, in the county of Worcester and State of Massachusetts, have invented a new and useful Machine for Rolling or Making Metallic Articles Spherical and Circular in Cross Sectional Area, a description of which, in connection with the accompanying drawings, is fully set forth in the following specification.

My invention consist, essentially, of a machine for making rolled forgings, or rolling or making metallic articles circular and spherical in cross-sectional area, in which a pair of dies on cylinders or rolls operate in conjunction with a supporting guide and an extensible guide with which is combined a spiral spring.

The objects of my improvements are, first, to roll or make metallic articles or rolled forgings by means of dies affixed to cylinders or rolls; second, to furnish appliances for the proper adjustment and support of the work; and, third, to hold the work upon the high point, or the point at which the article is being made, between the two cylinders or rolls.

In the drawings, Figure 1 represents a general view, in perspective, of that portion of the frame of a machine bearing the rolls, together with the rolls and the dies attached, the guides for the adjustment and support of the work, and the bar of metal with article in process of formation from same, to show the method of working of the rolls, the arrows indicating the direction of their motion. Fig. 2 is a section on the line O O through the guides, the bar of metal, and the object being formed.

Like letters on the drawings represent like parts.

The operation set forth is accomplished by a pair of rolls or cylinders, A A, placed one above the other and moving the same way, the arrows showing the direction of the motion. To the rolls or cylinders at their circumference are affixed the dies B B, adjusted in the same line, or so that one shall be directly over the other. The dies B B are made in halves,

preferably of steel, and hardened, each half forming one half of the article to be made, and their outer edges rounded and knurled or roughened to control and rotate the bar as the article is formed. Their diameter at their finishing end is one-half the diameter of the article to be made, from which place they taper to a point at the opposite or entering end, where they are on a level with the die-block. Two guides, D and E, at opposite sides of the frame, control the work and hold it in position between the rolls. A bar of metal, C, with article forming H, is introduced to show the method of adjustment and procedure of the work. To the guide E is attached an adjustable spiral spring, F, Fig. 2, which is extensible to any point between the two rolls, to provide for the elongation of the bar during the work and prevent cramping.

The bar C is introduced into the guide D, which supports it while the work is being done, and the end of the bar, passing into guide E, rests against the movable plug L on spiral spring F, Fig. 2, which yields to it as it elongates, while it rotates in the dies B B by the motion of the rolls A A, and the article H is formed.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. In combination, the supporting frame, the rolls supported thereby, and the dies carried by said rolls, the said dies being tapered from their finishing to their forward ends, substantially as described.

2. In combination, the rolls A A and the extensible and yielding guide or holder for controlling the work, substantially as described.

3. In combination, the rolls A A and the extensible and yielding guide or holder consisting of the parts D and E and the spring and plug, substantially as described.

4. In combination, the rolls A, suitable supports for the work, and the dies B B, provided with roughened edges adapted to rotate the work, substantially as described.

5. In combination, the rolls having suitable dies and the guide and support for the work positioned between the rolls and upon

either side of the working-dies, said guides being also in the plane of the axes of said rolls, substantially as described.

5 6. In combination, the rolls having suitable dies and the tubular guides, substantially as set forth.

7. In combination, the rolls having suitable dies and the guide or guides extending

between the contiguous surfaces of the rollers and in line with the plane of their axes, substantially as described.

CHARLES FRANCIS TEBBETTS.

Witnesses:

CHAS. S. HAYDEN,
EUGENE G. DWYER.