

No. 711,095.

Patented Oct. 14, 1902.

J. BRADY.
ENGRAVING MACHINE.

(Application filed June 4, 1902.)

(No Model.)

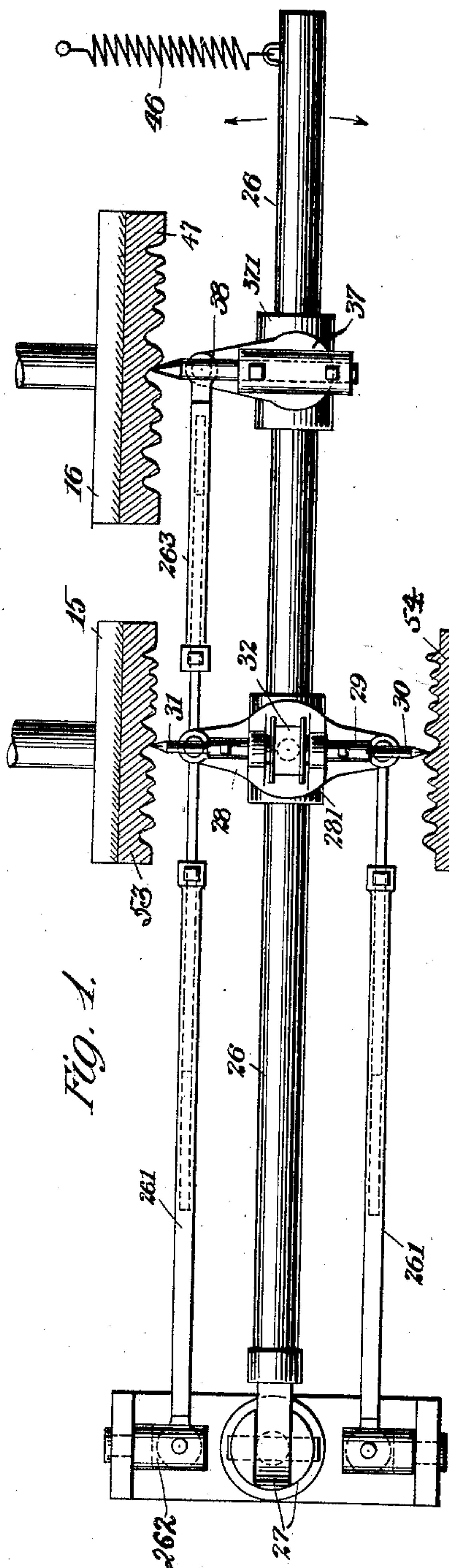


Fig. 1.

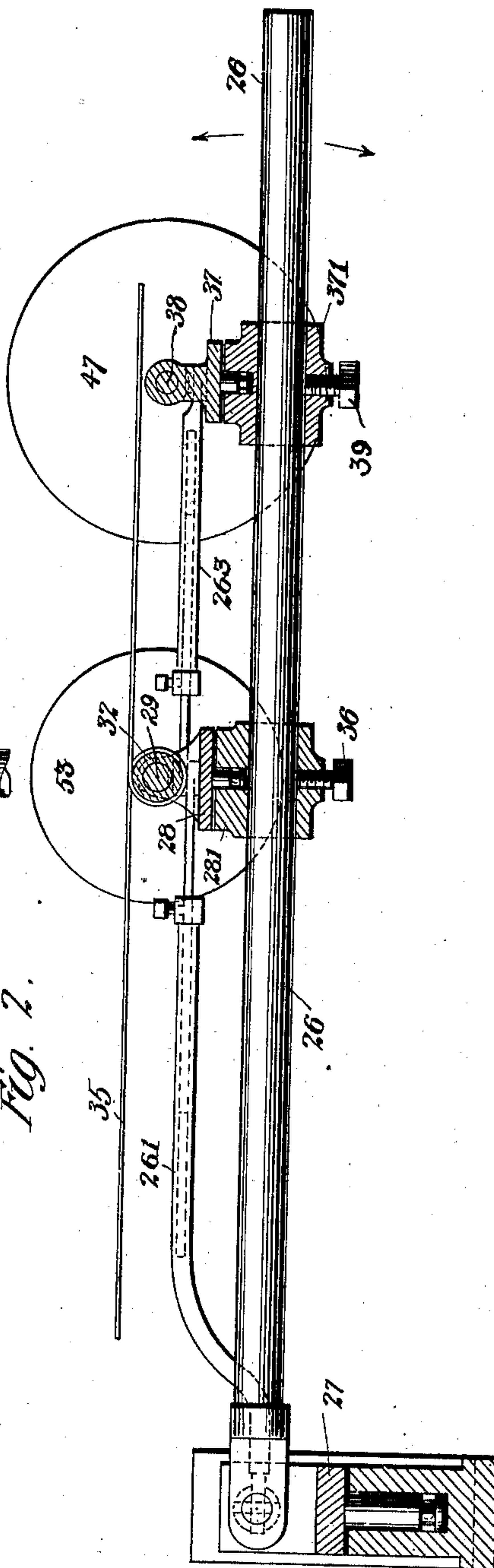


Fig. 2.

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ENGRAVING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 711,095, dated October 14, 1902.

Application filed June 4, 1902. Serial No. 110,127. (No model.)

To all whom it may concern:

Be it known that I, JAMES BRADY, a citizen of the United States, residing at Brooklyn, Kings county, New York, have invented certain new and useful Improvements in Engraving-Machines, of which the following is a full, clear, and exact description.

My invention relates to engraving-machines, and particularly to a machine which is adapted to simultaneously produce a force and a die, such a machine being shown in my former application for Letters Patent, Serial No. 108,178, filed May 20, 1902.

The main object of this invention is to improve certain details of construction of an engraving-machine, so that the feed of the cutting-tool and the stylus—that is, the tool by which the cutter is controlled—will be in a straight line, hence always parallel to a given plane, thus producing most accurate work.

In the drawings, Figure 1 is a plan view of such portions of an engraving-machine as are necessary to properly illustrate my invention. Fig. 2 is a side elevation, partly in section.

26 is a boom universally mounted at 27, so that it can be swung horizontally or moved vertically, thus permitting a universal action of the free end of the boom. Adjustably mounted upon the boom is a block 281, which may be secured by means of a set-screw 36. 371 is another block adjustably mounted upon the said boom and also secured by means of a set-screw 39. Pivotally supported upon the block 281 is a frame 28, in which is journaled a shaft 29, carrying cutters 30 31.

32 is a pulley fixedly mounted upon the shaft 29.

Pivotally mounted upon the block 371 is a frame 37.

38 is a stylus mounted in the frame 37.

In the form shown the frames 28 37 have their axes parallel and are so placed that the cutters 30 31 and the stylus 38 may swing in a horizontal plane.

261 is a link pivoted at one end to the frame 28 and at the other end to a universal support 262. 263 is another link connecting the frame 28 with the frame 37. The links 261

263 are preferably telescopic, so that they can be lengthened or shortened when the blocks 281 and 371 are adjusted upon the boom 26.

15 22 are revoluble blank-carriers, any suitable means being provided to rotate said blank-carriers simultaneously in the same direction at the same angular speed, said means being too well known to require illustration and being shown in detail in my former application.

16 is a pattern-carrier, the same being revolvably mounted in a manner similar to the carriers 15 22 and so that it will revolve simultaneously with and at the same angular speed and in the same direction as said blank-carriers 15 22.

53 54 are blanks carried by the carriers 15 22, respectively, and 47 is a pattern carried by the carriers 16. In the particular form shown the cutter 31 is adapted to act upon the blank 53 and the cutter 30 is adapted to act upon the blank 54. The stylus 38 is adapted to bear against the pattern 47 and is yieldingly held against said pattern by means of a spring 46 or other suitable means, so that as said pattern is rotated or moved the said stylus will follow the irregularities thereof. The boom 26 will therefore be correspondingly moved back and forth, imparting to the cutters 30 31 a movement similar to the movement of the stylus 38. The cutters 30 31 are rapidly rotated to cut out the metal of the blanks. The means for rotating the cutters 30 31 may be a belt 35, passing over the pulley 32. When the parts are in the form shown in Fig. 1, it will be observed that as the boom is moved back and forth the boom 26 and the links 261 and 263 are parallel, and hence since they support the frames 28 and 38 said cutters and stylus will remain parallel to each other at all times. In this manner a straight-line feed is imparted to each cutter as well as to the stylus. Were it not for this parallel link-motion, the cutters would not move in a true straight line, and hence the metal of the blanks would not be worked out so as to produce with absolute precision the same design. While parallel

feed is not always necessary, there are certain designs that require it, and in all cases it is better that the feed be in a straight line. It should be understood that one of the blanks—for example, 54—represents a force, while the other, 53, represents a die. The pattern in this arrangement is that of a die, and in order that the force 54 shall accurately fit the die 53 it is most desirable that the design and the proportion of each detail of the design of both the force and the die shall be identically alike. This is attainable by means of the parallel link-motion herein shown and described.

Suitable means is of course provided and is well known in the art for elevating or depressing the free end of the boom 26, so that as the stylus moves across the face of the pattern and the latter is rotated the stylus will traverse said pattern.

If desirable, two parallel links 261 may be provided, such an arrangement being shown in the drawings. The mere duplication of these elements is, however, immaterial.

What I claim is—

1. In an engraving-machine in combination, a blank-carrier, means for rotating the same, a pattern-carrier and means for rotating the same at the same angular speed as the blank-carrier, a boom, a support therefor said boom being mounted universally thereon, a stylus carried by the boom and adapted to bear against and traverse the face of the pattern, a cutter carried by the boom and adapted to traverse the face of the blank, and means for maintaining the parallelism

of the said cutter relatively to the axis of rotation of said blank-carrier.

2. In an engraving-machine, a pair of blank-carriers, means for rotating the same simultaneously, a pattern-carrier and means for rotating the same at the same angular speed as the blank-carriers, a boom universally mounted and carrying a stylus adapted to bear against and traverse the face of the pattern, and carrying oppositely-arranged cutting-tools located between the blank-carriers and adapted to simultaneously form a die and a force, and means for maintaining the parallelism of the cutter and the stylus relatively to the axis of rotation of said carriers.

3. In an engraving-machine, a blank-carrier and means for rotating the same, a pattern-carrier and means for rotating the same at the same angular speed as the blank-carrier, a boom universally mounted, a stylus carried by a rotatable support thereon and adapted to bear against and traverse the face of the pattern, a cutter carried by a rotatable support thereon and adapted to traverse the face of the blank, a support for the boom, and a link connecting said support and said cutter and said stylus, and a link connecting said stationary support and said rotatable supports for said cutter and said stylus for maintaining said cutter and stylus parallel to the axis of rotation of the carriers.

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