No. 644,430. Patented Feb. 27, 1900.

W. JOHNSON.

CENTER GAGE.

(Application filed Dec. 6, 1898.)

(No Model.)

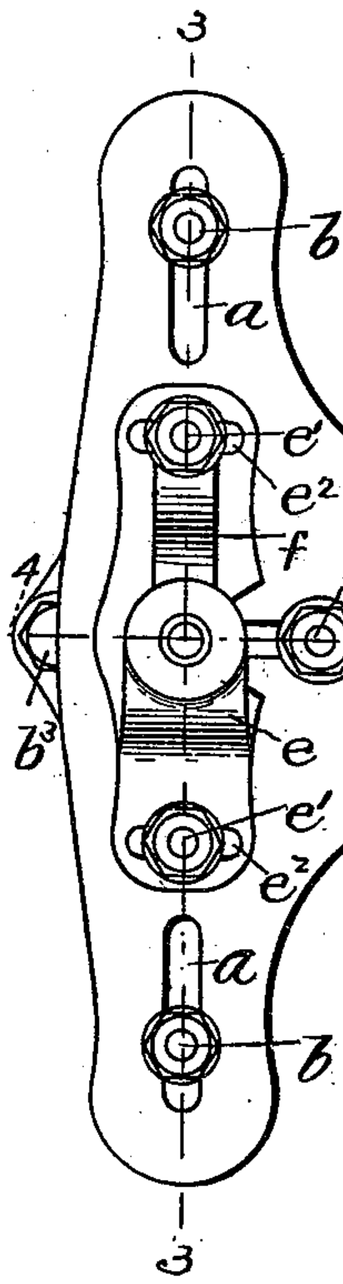

Fig. 1.

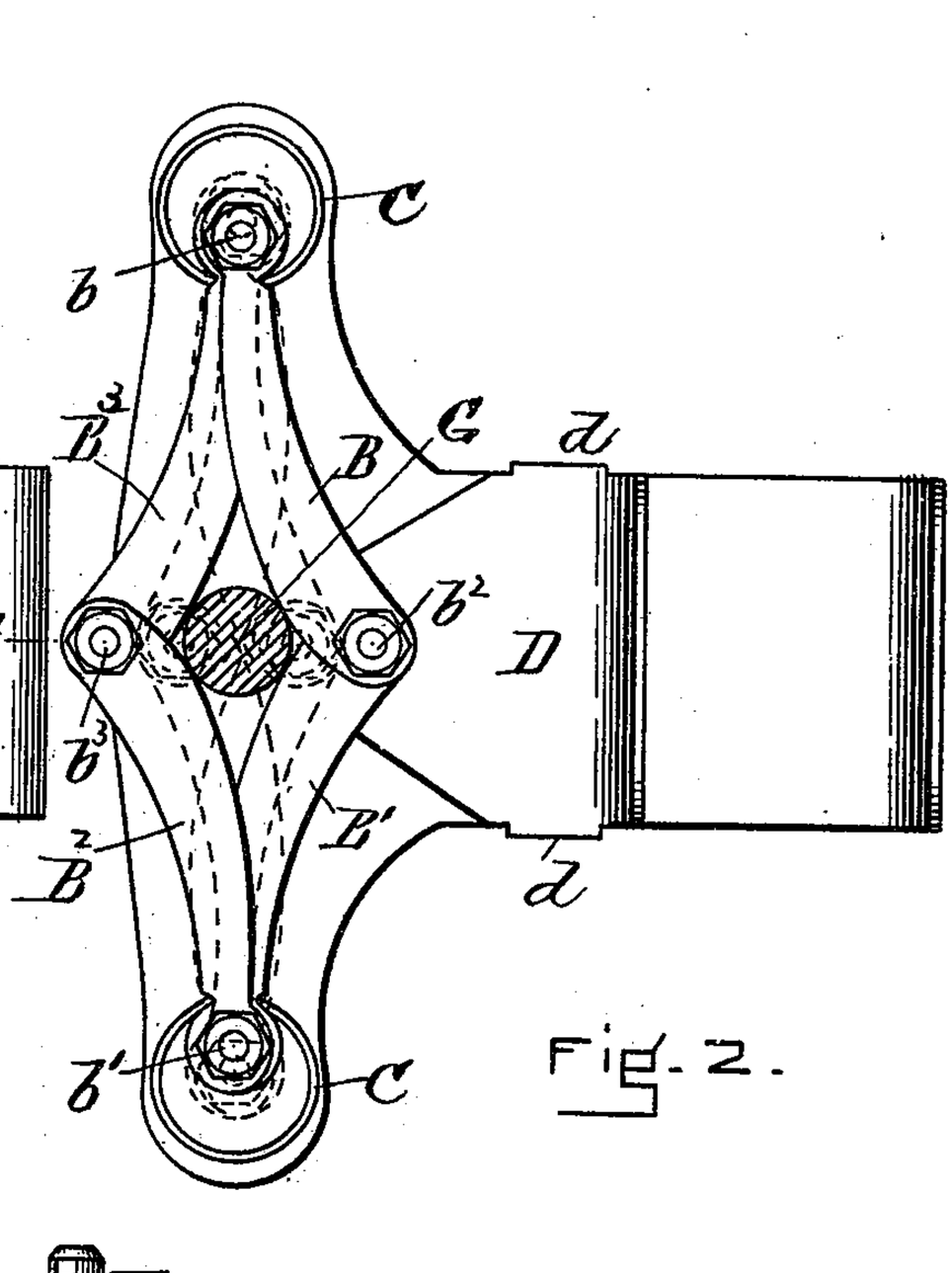

Fig. 2.

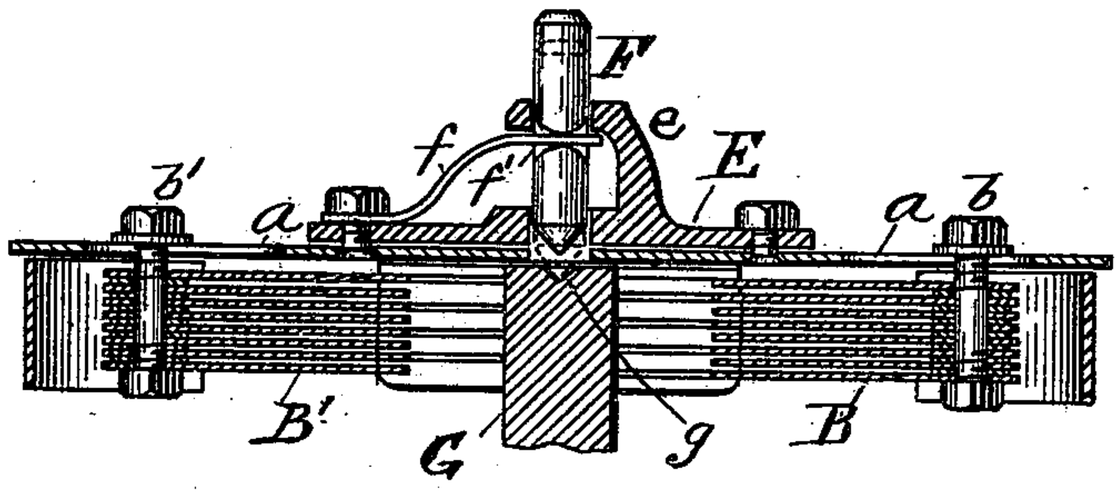

Fig. 3.

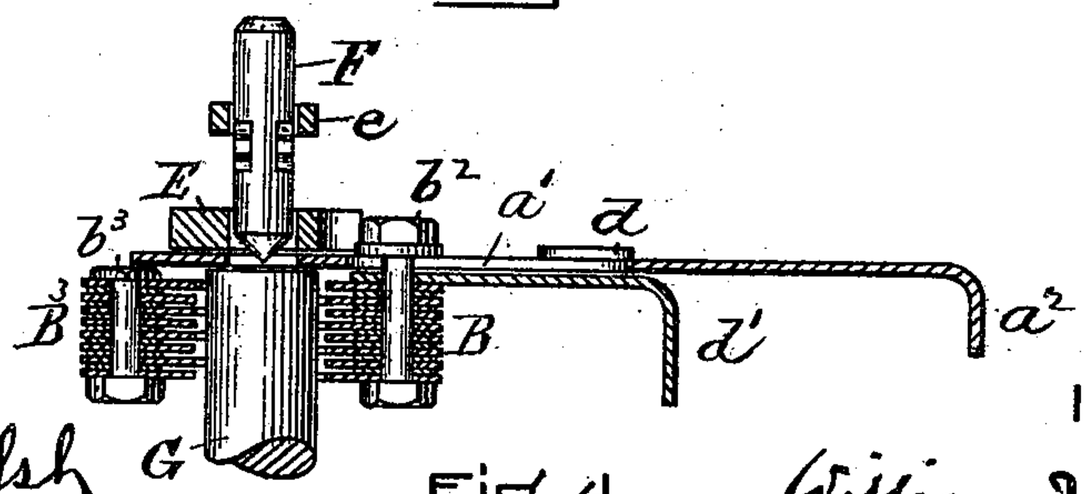

Fig. 4.

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WILLIAM JOHNSON, OF BOSTON, MASSACHUSETTS.

CENTER-GAGE.

SPECIFICATION forming part of Letters Patent No. 644,430, dated February 27, 1900.

Application filed December 6, 1898. Serial No. 698,418. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM JOHNSON, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Center-Gages, of which the following is a specification.

To find the center of the end of a rod or shaft, it has heretofore been customary to use dividers or some other like instrument and after marking the point found to indent it by means of a proper tool. This process requires considerable time and some skill on the part of the mechanic.

My center-gage is intended to do away with this operation and make the finding of the center of the end of the rod purely automatic and to reduce the indenting operation to an operation equally simple.

My invention consists in a center-gage having a set of centering-jaws arranged to close about the rod and force it to a given position between them.

My invention also consists in an indenting-tool of peculiar construction and location, as hereinafter described, and also to certain details of construction fully described below.

In the drawings, Figure 1 is a plan of a center-gage embodying my invention, Fig. 2 being an end view showing also the rod which is being centered in place. Fig. 3 is a vertical section on line 3 3 of Fig. 1, and Fig. 4 a vertical section on line 4 4 of Fig. 1.

A is a base-plate which is slotted at a and a'. The centering mechanism, as shown, consists of four jaws B B′ B² B³, formed from four sets of plates, each set connected at each end to two other sets, the four sets forming a rhombus.

C C are two springs which bite upon the adjacent ends of two of the sets of plates, so as to hold the jaws normally closed. The ends of these plates are connected by bolts b b' b^2 b^3, two of these bolts b b' passing through the slots a a, and thus attaching the jaws to the base-plate A and guiding their movement by means of the slots.

D is a slide having ears d, which catch over the side edges of the base-plate A, and a finger-rest d', by means of which and the end a^2 of the base-plate A the slide may be readily drawn outward by hand along the base-plate A. A bolt b^2, connecting the ends of two sets of plates B B′, passes through the slot a' and into the slide D. The slide D when moved carries with it the bolt b^2 and the ends of the plates B B′, which are connected by it to the slide D. This outward movement of the connected ends of the plates B B′ results in an inward movement of their further ends and of the ends of the plates B² B³, connected to them and to the base-plate A by the bolts b b', because of the direction of the slots a, through which these bolts b b' pass. Thus the jaws are opened to receive the rod. A reverse movement closes the jaws, this reverse movement being caused by the springs C.

The operation of this portion of my device is as follows: The jaws are opened to receive the end of the rod G to be centered by withdrawing the slide D, as above described. The end of the rod being inserted and the slide D being released, the springs C cause the jaws to close about the rod and drive it to the center of the rhombus. This mechanism which I have above described is "the centering mechanism," properly so called, and as will appear to any mechanic it may be constructed in a variety of ways, the important part of the invention being that a set of connected jaws shall be so guided in its movements that all will move simultaneously toward and from a given point and carry the rod or piece to that point.

The second portion of my invention relates to the indenting or marking device. As shown, this consists of a plate E, having an overhanging arm e, through an opening in which passes downward a pin F, the pin also passing through a hole in the plates A and E. The pin is held in position by a spring f, which straddles a narrowed portion f' of the pin. The plate E is attached by bolts e' to the plate A, slots e^2 being preferably provided in the plate E in order that the position of the device may be readily adjusted over the meeting-point of the jaws when the parts are first assembled or in any other desired position.

The operation of my device is as follows: The rod G in the end of which it is desired to mark the center is placed, preferably, in a vise. The mechanic then opens the centering-jaws in the manner above described. The gage is then placed upon the top of the

rod G, so that the rod will be within the rhombus formed by the four sets of plates B B′ B^2 B^3 and the slide D is released. The springs C will then cause these jaws to close about the rod and the gage will adjust itself on the end of the rod. The position of the tool F having been properly adjusted in the first place upon the base-plate A, a sharp blow is given the top of the tool with the hammer, and the nick shown at *g* is made in the upper end of the rod G. The gage is then removed.

I prefer to make the plates in sets of four, which lie upon each other in the manner indicated in Figs. 3 and 4, as by this means they adjust themselves easily and readily to the pressure of the springs and against the rod, and I also prefer to use four jaws, as shown, as the means for operating them is simple and they together apply pressure at four points about the rod. Moreover, this results in a more simple form of construction than if a larger or smaller number of jaws were used. The novelty of my invention, however, I believe resides in applying jaws in the manner described on three or more sides of the rod, thus bringing the end of the rod always to a fixed position.

The number of plates used to form each jaw may be varied as desired, and instead of the marking-tool above described any other form of marking-tool, whether located upon the device or not, may be used to mark the rod after the centering operation has taken place. It is also apparent that the so-called "centering" consists in so locating the gage upon the rod that the gage and rod will be in a predetermined relation to each other. This having taken place, the center of the end of the rod may be marked or a point a given distance off the center may be marked according to the position of the marking-tool with relation to the centering-jaws.

It will be noted that the base-plate above referred to carries the marking-tool in a fixed position thereon, and it is of course apparent that if the marking-tool were omitted, the gage being provided with a proper hole instead of the marking-tool and being placed upon the end of a rod, the necessary indentation might be made by a prick-punch through said hole or in any other way. It will be noted also that the ends of the jaws are free to move toward and from the centering-point, their only connection with the base-plate being where they are connected with the guiding-slots therein.

What I claim as my invention is—

1. The center-gage above described consisting of a base-plate having a fixed centering-point and a set of centering-jaws, each jaw of said set being pivoted to the jaw on each side of it, certain of the pivots being slidably secured to the base-plate, whereby said jaws are adapted to be adjusted about said centering-point, as set forth.

2. The center-gage above described consisting of the base-plate provided with guiding-slots and a set of movable centering-jaws pivotally connected to each other and to said base-plate in the manner described, whereby the direction of movement of said jaws with relation to a fixed center between them, is controlled by the location of said guiding-slots, as and for the purposes set forth.

3. The centre-gage above described consisting of a base-plate having a fixed centering-point thereon, and a set of centering-jaws pivotally connected together and to said base-plate and movably mounted on said base-plate and guided in their movements thereon, in combination with springs whereby said jaws are kept normally closed about said centering-point, as set forth.

4. The center-gage above described consisting of a base-plate provided with guiding-slots and a centering-point, in combination with a set of movable centering-jaws connected to each other and to said base-plate and movable in said guiding-slots, in combination with a slide adapted to slide on said base-plate and connected to one of the pivots of said jaws, as and for the purposes set forth.

5. In a center-gage, a base-plate and a marking-tool located in a fixed position thereon, and means whereby the gage and the object to be centered are brought into a predetermined relation with each other, said means consisting of centering-jaws each pivotally connected to the jaw adjacent thereto and to said base-plate and adapted to adjust themselves about said marking-tool, as and for the purposes set forth.

In testimony whereof I have hereunto set my name this 25th day of July, 1898.

WILLIAM JOHNSON.

Witnesses:

GEORGE O. G. COALE,

E. A. GUILD.