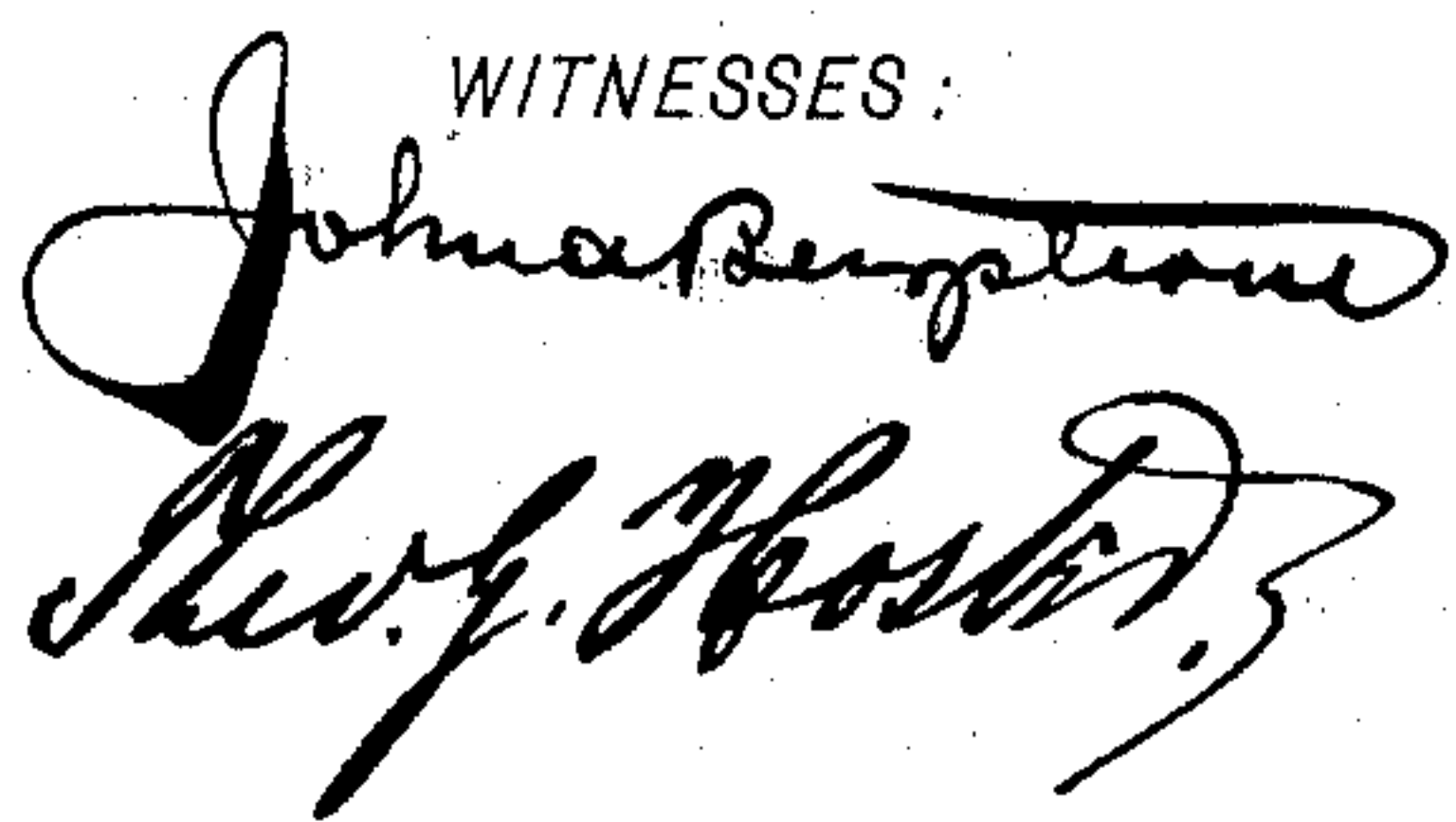


2 Sheets—Sheet 1.

No. 603,888.

Patented May 10, 1898.



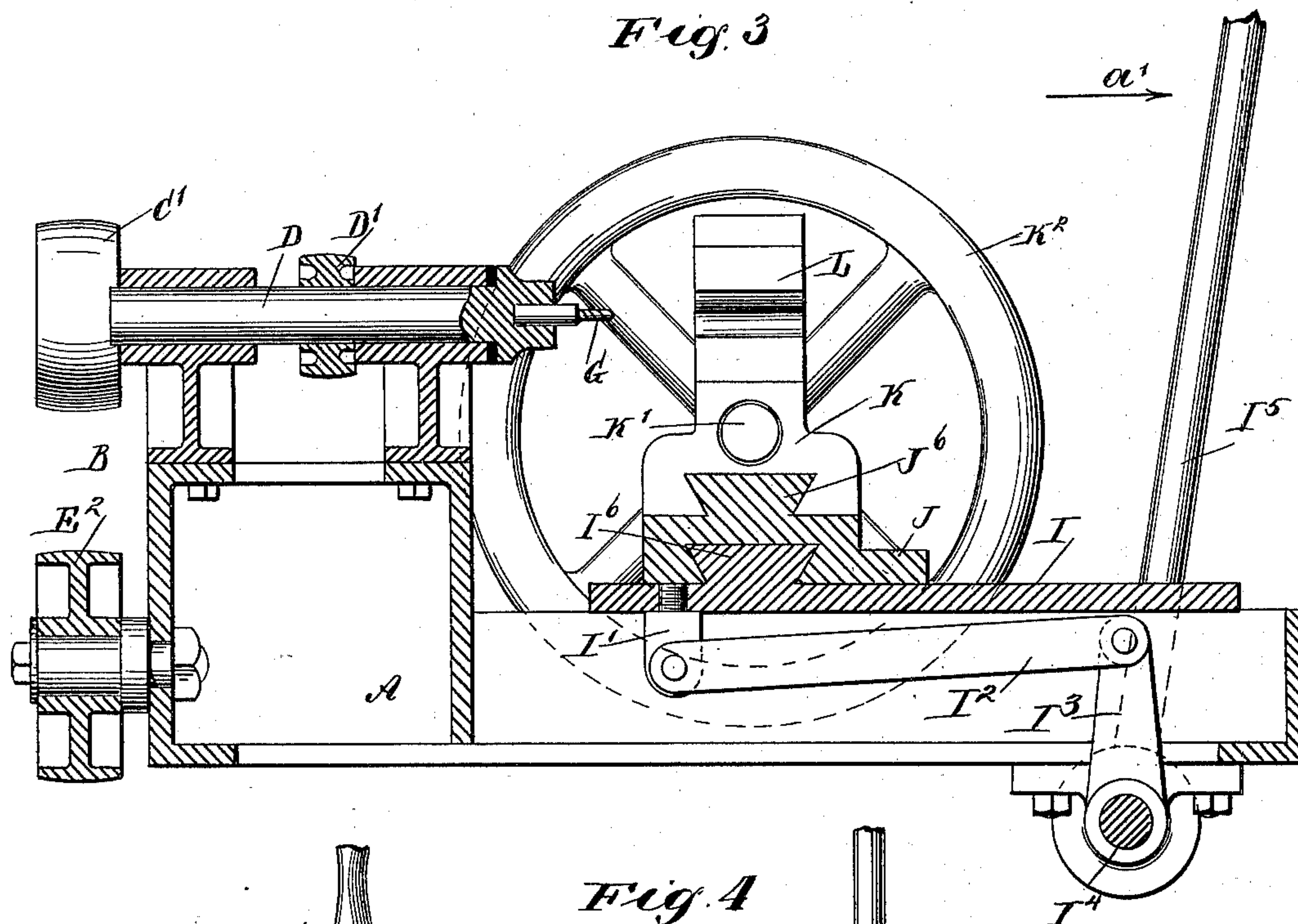
INVENTOR  
J. H. Brewer  
BY *munx*  
ATTORNEYS.

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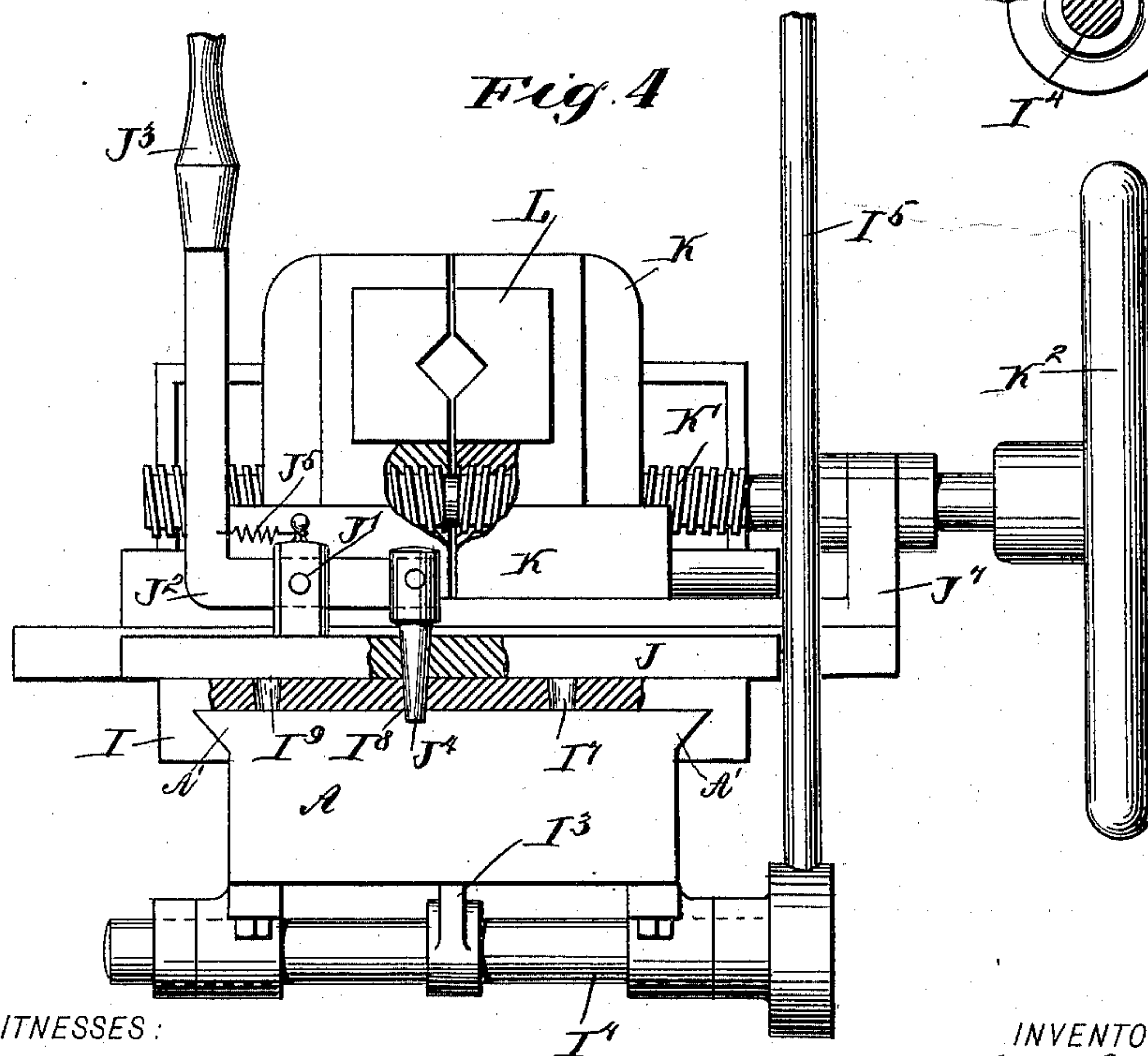
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Fig. 3



*Fig. 4*



WITNESSES :

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# UNITED STATES PATENT OFFICE.

JACOB H. BREWER, OF NEW STRAITSVILLE, OHIO.

## CENTERING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 603,888, dated May 10, 1898.

Application filed November 12, 1897. Serial No. 658,329. (No model.)

*To all whom it may concern:*

Be it known that I, JACOB H. BREWER, of New Straitsville, in the county of Perry and State of Ohio, have invented a new and Improved Centering-Machine, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved centering-machine which is simple and durable in construction, easily manipulated, and more especially designed for conveniently, quickly, and accurately centering the stock to be turned in a lathe or like machine.

The invention consists of novel features and parts and combinations of the same, as hereinafter more fully described, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improvement. Fig. 2 is a plan view of the same. Fig. 3 is a sectional side elevation of the same on the line 3 3 of Fig. 2, and Fig. 4 is an end elevation of the same with parts broken out.

The improved centering-machine is mounted on a suitably-constructed bed A, on which is fastened a head-stock B, carrying bearings for a number of spindles C, D, and E, preferably arranged in the same horizontal plane and provided with suitable pulleys C', D', and E', connected by belts with a counter-shaft for imparting rotary motion to the said spindles, the belts for the pulleys C' E' passing over an idler E<sup>2</sup>, journaled on a suitable stud attached to the bed A.

On the inner ends of the spindles C, D, and E are attached a squaring-tool F, a drill G, and a reamer H, respectively, adapted to engage successively the end of the work, so that the squaring-tool first squares the end of the work, and then the tool G bores centrally a hole in the said end, and the reamer H finally reams the said hole to form the desired center for engagement with the point in the lathe. In order to accomplish this result, I provide the top of the bed A with longitudinal guideways A', on which is fitted to slide a carriage I, provided on its under side with a lug I', connected by a link I<sup>2</sup> with an arm I<sup>3</sup>, attached to a transversely-extending shaft I<sup>4</sup>, journaled

in suitable bearings on the bed A. On the shaft I<sup>4</sup> is secured a lever I<sup>5</sup>, under the control of the operator, for conveniently rocking the said shaft and moving the carriage I toward and from the head-stock to carry the work to and from the tools F, G, and H, as hereinafter more fully described.

On the carriage I is formed a transversely-extending guideway I<sup>6</sup>, on which is fitted to slide a cross-slide J, provided with a bracket J', in which is fulcrumed a lever J<sup>2</sup>, preferably made L shape, the vertical or handle end J<sup>3</sup> being under the control of the operator for moving the slide J transversely on the guideway I<sup>6</sup> and bringing the work successively to the tools F, G, and H, as hereinafter more fully stated.

The inner end of the lever J<sup>2</sup> is provided with a pin J<sup>4</sup>, adapted to pass through the slide J to engage one of a series of apertures I<sup>7</sup> I<sup>8</sup> I<sup>9</sup> formed in the carriage I, as is plainly indicated in Fig. 4, to securely lock the cross-slide J in place on the said carriage at the time the work is in alinement with a corresponding tool F, G, or H, it being understood that the apertures I<sup>7</sup>, I<sup>8</sup>, and I<sup>9</sup> are arranged a distance apart corresponding to the distance between the several tools F, G, and H.

The lever J<sup>2</sup> is normally held in the position shown in Fig. 4 by a spring J<sup>5</sup> for locking the slide J to the carriage I; but when it is desired to shift the slide the operator pulls on the handle J<sup>3</sup> to move the pin J<sup>4</sup> out of engagement with the corresponding aperture I<sup>7</sup>, I<sup>8</sup>, or I<sup>9</sup> in the carriage I. A further pull on the handle J<sup>3</sup> will then move the slide J transversely and bring the work to the desired position—that is, in alinement with any of the tools F, G, or H.

On the top of the slide J is arranged a transverse guideway J<sup>6</sup> for a two-part chuck K to slide on, the said chuck being adapted to receive and hold dies L, engaging the work and holding the same in place during the centering operation. The chuck K is engaged by a right and left hand screw-rod K', mounted to turn in a suitable bracket J<sup>7</sup>, carried by the cross-slide J, and one outer end of the said screw-rod is provided with a hand-wheel K<sup>2</sup>, under the control of the operator, for opening and closing the chuck K to permit of conveniently inserting or removing the work



and for fastening the same in place in the dies L, the openings of which are in the same horizontal plane as the tools F, G, and H.

The operation is as follows: The operator  
5 first takes hold of the lever I<sup>5</sup> and moves the same in the direction of the arrow *a'* to shift the carriage I and the parts supported thereby into a right-hand position on the bed A, to allow of conveniently introducing the work  
10 into the dies L, the latter being opened for this purpose by the operator turning the hand-wheel K<sup>2</sup> to move the chuck K into an open position. When the work is introduced into the dies, the hand-wheel K<sup>2</sup> is turned in  
15 an opposite direction to close the chuck and securely hold the work in place in the dies. The operator now takes hold of the handle J<sup>3</sup> of the lever J<sup>2</sup> and moves the pin J<sup>4</sup> out of alinement with the corresponding aperture,  
20 and then pushes on the said handle to move the cross-slide J transversely until the pin J<sup>4</sup> registers with the aperture I<sup>7</sup>. The operator again takes hold of the lever I<sup>5</sup> and swings the same in the inverse direction of the arrow  
25 *a'*, so as to bring the end of the work in engagement with the squaring-tool F to cause the latter to form a square end on the work, with a small hole in the center of the squared portion, owing to a center F' projecting from  
30 the face of the squaring-tool F. When this has been done, by manipulating the levers I<sup>5</sup> J<sup>2</sup>, as above described, the work can be brought into position to be operated upon by the drill G and reamer H, successively. The  
35 work having been squared, drilled, and reamed, the lever I<sup>5</sup> is moved back to its former position, and then the work is removed from the dies L by the operator turning the hand-wheel to open the chuck K. Another  
40 piece of work is now inserted in the dies and the latter are closed. The above-described operation is then repeated.

It will be seen that by the arrangement set forth and shown in the drawings the work is  
45 successively engaged for squaring the end, boring a central aperture in the square end, and then reaming the hole, so as to form a proper center for the work and insure a proper turning of the article in the lathe. It is understood that usually both ends of the work  
50 are centered in the manner described.

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

55 1. A centering-machine comprising a series of revoluble spindles adapted to carry a squar-

ing-tool, a drill, and a reamer arranged in the same plane, a carriage mounted to slide toward and from the said tools, a cross-slide movable on the said carriage at right angles  
60 to the movement thereof, a holding device on the said cross-slide, for holding the work in the same plane as the said tools, means for moving the carriage forward and backward, to carry the work to and from the tools, and  
65 means for adjusting the cross-slide, to carry the work successively in alinement with the said tools, and for locking the slide to the carriage after it has been adjusted, substantially as shown and described. 70

2. In a centering-machine, the combination with a tool-carrying head-stock, a carriage, and means for moving the carriage toward and from the head-stock, of a work-carrier  
75 sliding transversely on the carriage, and a lever engaging said carrier and carriage to move the said carrier and lock it to the carriage, substantially as described.

3. In a centering-machine, the combination with a head-stock carrying a plurality of tools,  
80 a carriage provided with a plurality of openings corresponding to the number of tools carried by the head-stock, and means for operating the carriage, of a work-carrier sliding transversely on the carriage and provided  
85 with an opening adapted to register with either of the openings of the carriage, and a pivoted lever provided with a pin at one end engaging the opening of the carrier and adapted to engage any one of the openings of the  
90 carriage, substantially as described.

4. A centering-machine, comprising a head-stock provided with a series of revoluble  
95 spindles carrying a squaring-tool, a drill, and a reamer, a carriage mounted to slide toward and from the tools and provided with openings corresponding in number to that of the tools, a slide mounted to slide transversely  
100 on the carriage and provided with an opening, a pivoted lever provided at one end with a pin entering the opening of the slide and adapted to enter any one of the openings of the carriage, a two-part chuck mounted on the slide and adapted to hold dies, and a  
105 right and left hand screw for operating the chuck, substantially as herein shown and described.

JACOB H. BREWER.

Witnesses:

EMMA PETTY,  
N. B. FORESMAN.