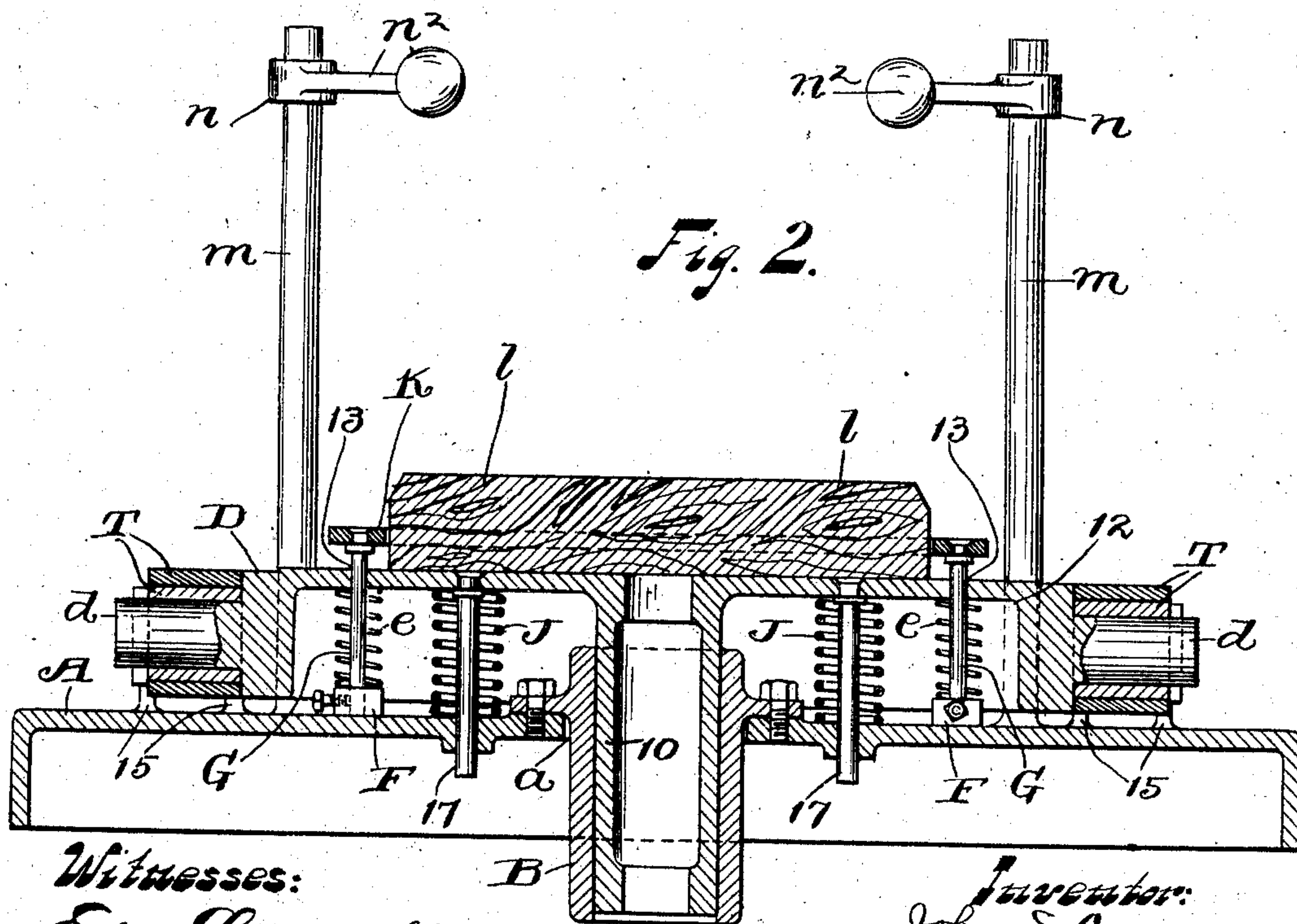
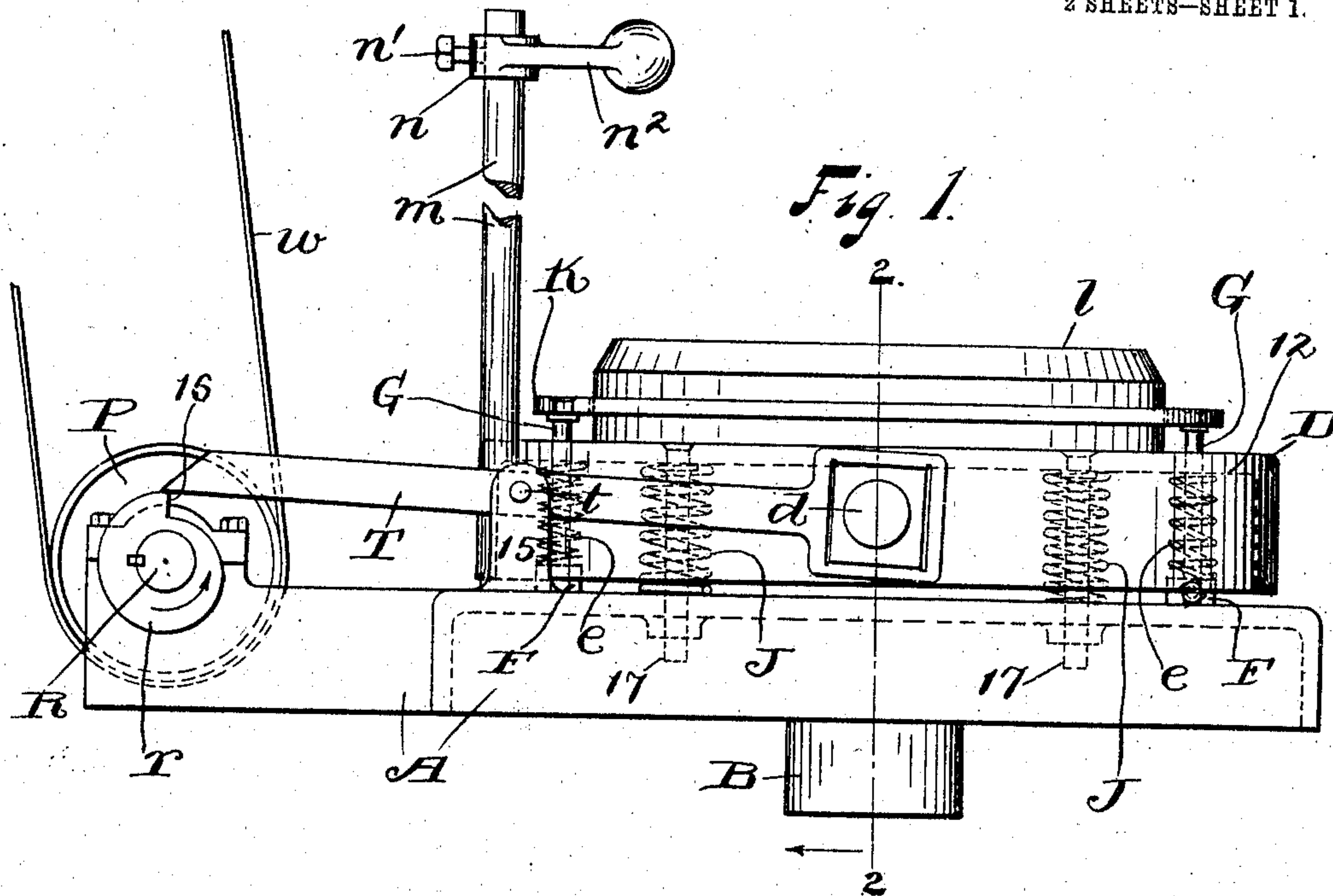


No. 846,602.

PATENTED MAR. 12, 1907.

J. S. ORAM.  
BARREL LEVELING MACHINE.  
APPLICATION FILED JUNE 11, 1906.

2 SHEETS—SHEET 1.



Witnesses:  
Edw. Lindmueller.  
B. C. Brown.

Inventor:  
John S. Oram.  
By *[Signature]*  
His Attorneys.

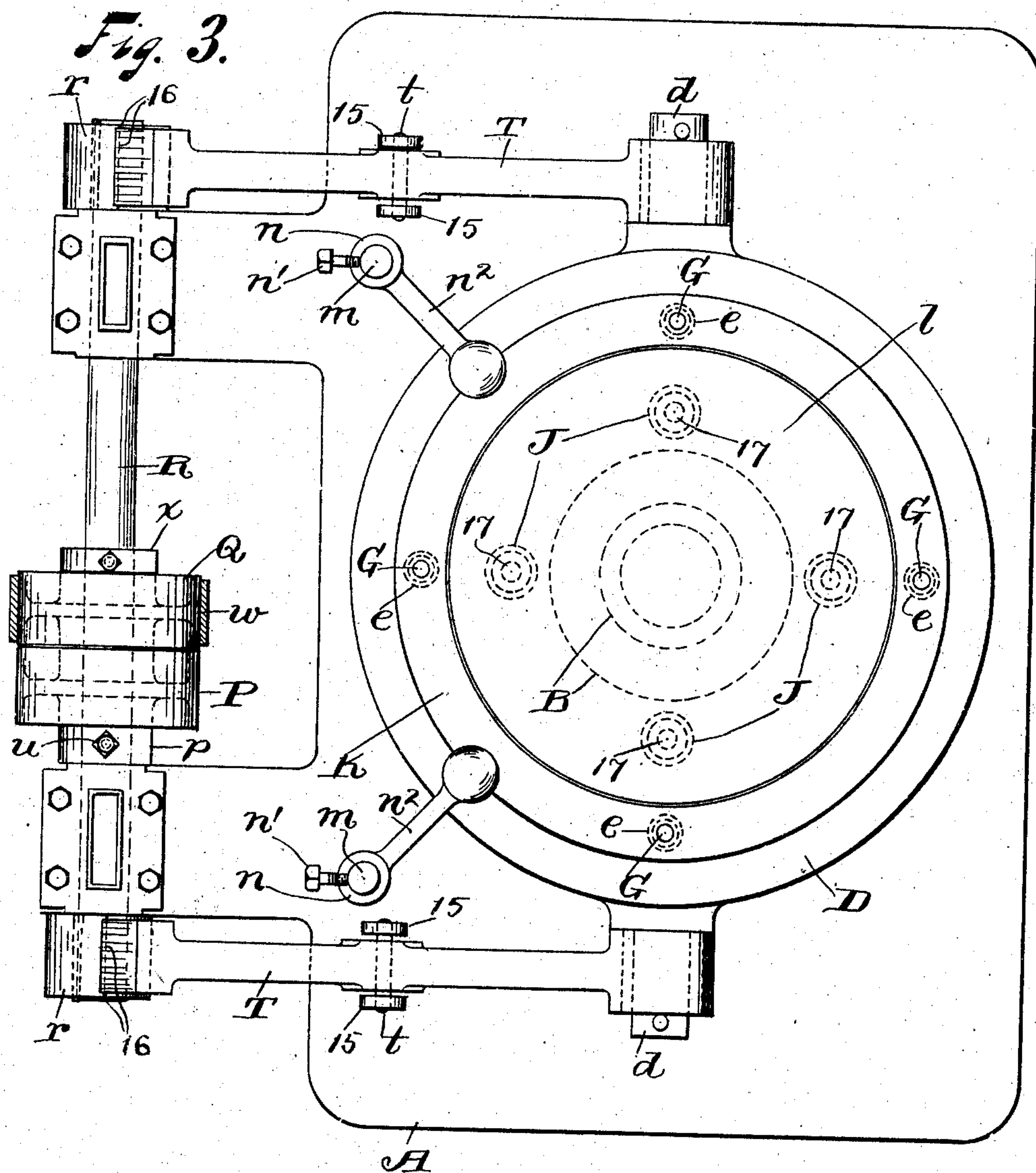
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2 SHEETS.—SHEET 2.



*Witnesses:*

Edw. Lindwall:  
B. C. Brown.

Inventor:  
John S. Oram  
By Spencer  
His Attorneys.



# UNITED STATES PATENT OFFICE.

JOHN S. ORAM, OF CLEVELAND, OHIO.

## BARREL-LEVELING MACHINE.

No. 846,602.

Specification of Letters Patent.

Patented March 12, 1907.

Application filed June 11, 1906. Serial No. 321,192.

*To all whom it may concern:*

Be it known that I, JOHN S. ORAM, a citizen of the United States of America, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Barrel - Leveling Machines; and I hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

This invention relates to improvements in barrel-leveling machines.

The primary object of this invention is to provide a machine of the character indicated in which the staves of a barrel to be operated upon and placed on end are rapidly leveled by blows delivered upwardly against the lower ends of the staves to be leveled through the medium of a spring-actuated head.

With this object in view and to the end of realizing other advantages hereinafter appearing this invention consists in certain features of construction and combinations of parts hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a machine embodying my invention, and portions are broken away in this figure to reduce the size of the drawing. Fig. 2 is a vertical section on line 2 2, Fig. 1, looking in the direction indicated by the arrow. Fig. 3 is a top plan relative to Fig. 1.

Referring to the drawings, A indicates a stationary base. The base A (see Fig. 2) is provided centrally with a hole *a*, which extends vertically through the base and is engaged by a correspondingly-arranged box B, extending a suitable distance above and below the base. The box B is suitably secured to the base A.

A vertically-reciprocating blow-striking head D is arranged centrally relative to the box B and is composed, preferably, of a horizontally-arranged metal casting which is provided at its under side and centrally with a depending stem 10, which has lateral bearing within and is adapted to slide endwise of the box B. The box B and stem 10 are instrumental in guiding the head B during its reciprocation. The head D is provided interiorly (see Fig. 2) with an annular chamber 12, which surrounds the upper or inner end of the stem 10 and accommodates the location

of the box B during the operation of the said head. The chamber 12 is open at the bottom of the head D and extends into suitable proximity to the upper side or face of the head. The arrangement of the parts is such that the head D in its lower position is a short distance above the base A.

A stave-leveling ring K is arranged horizontally above the head D. The ring K is movable up and down above the head D. The ring K is movable upwardly or from the head D independently of the head. The ring K is placed central relative to the head D and in their lower position arranged a suitable distance above the head. The ring K is arranged to form a seat for the lower end of an upright barrel (not shown) which is in the process of construction and has staves which are to be leveled.

Spiral springs *e* are spaced preferably equidistantly from and around the stem 10, being located within the chamber 12, which is large enough to accommodate the location of the said springs. Each spring *e* is interposed (as shown in Fig. 2) between the top wall of the chamber 12 and a shoulder-forming collar F, which is suitably secured to and embraces the lower end of a vertically-arranged pin G, around which the said spring is coiled and which in the lower position of the head D and ring K rests upon the base A. The said pin G extends loosely through a hole 13 formed in the top wall of the chamber 12 and is secured at its upper end to the ring K, which loosely embraces and is movable up and down relative to barrel-centering means comprising a circular block *l*, which is mounted upon and secured to the head D. The block *l* is loosely embraced by and projects a suitable distance above the ring K in the lower position of the head D. It will be observed, therefore, that the barrel to be leveled is adapted to be placed on end upon the stave-leveling ring K and in position embracing the barrel-centering block *l*; that the head D during its reciprocation strikes upwardly against the said ring from below, and blows are intermittently delivered upwardly against the lower ends of the staves required to be leveled; that the head D in its lower position engages the upper ends of the springs *e*, and that each spring *e* is interposed between a downwardly-facing surface of the base A and a shoulder of a pin or member G, depending from and attached to the ring K.



The head D is provided with two laterally and outwardly projecting horizontally-cylindrical lugs *d*, arranged at opposite sides, respectively, of the head and in line endwise, and parallel corresponding levers T loosely embrace the lugs *d* and are fulcrumed, as at *t*, horizontally centrally between their ends to upwardly-projecting members 15 of the base. The levers T are therefore operatively connected at one end with the head D and at their opposite end rest upon the peripheral and working surfaces of cams *r* formed on a shaft R, which is arranged horizontally and parallel with the axes of the levers and supported from the base A. The shaft R is rotated, when operated, in the direction indicated by the arrow placed thereon in Fig. 1. Each cam is provided with a shoulder 16, which faces opposite to the direction in which the cam turns during the operation of the shaft, and the peripheral and working surface of the cam extends from the lower end of the said shoulder circumferentially of the shaft to the upper end of the shoulder.

A pulley P is operatively mounted on the shaft R, being provided with a hub *p*, which is secured to the shaft by a suitably-applied set-screw *u*. Another pulley Q is loosely mounted on the shaft R at one end of the pulley P, being interposed between the pulley P and a collar *x*, mounted upon and suitably secured to the shaft. A suitably-driven belt *w* operatively engages the loose pulley Q and is shiftable from the said pulley into operative engagement with the pulley P. Means for shifting a driving-belt from one to the other of two adjacent pulleys are too well understood in the art to require description and illustration in this specification.

The head D is shown arranged in its lower position with the power-receiving or free ends of the levers T resting upon the cams *r* at the upper ends of the shoulders 16 of the cams, and in the said position the levers hold the head downwardly against the action of suitably-applied springs J, which are interposed and confined between the top wall of the chamber 12 in the said head and the base A, being preferably coiled around vertically-arranged pins or members 17, which are suitably attached at their upper ends to the head D and depend into the base A. The springs J are preferably arranged equidistantly from and around the stem 10 of the head D, between the springs *e* and the said stem. It will be observed that as soon as the power-receiving or free ends of the levers T are released from the peripheral or working surfaces of the said cams at the upper ends of the shoulders 16 during the rotation of the shaft in the direction indicated by the arrow placed thereon in Fig. 1 the springs J, which are compressed in the lower position of the head D, as already indicated, are rendered

free to actuate the said head upwardly. It will be observed, therefore, that the head D is reciprocated vertically during the rotation of the shaft R, and the arrangement of the parts is such that the said head during each upward movement thereof will be actuated far enough to deliver a suitable blow against the underside of the ring K, and consequently upwardly against the lower ends of the staves required to be leveled; but of course the arrangement of the parts is furthermore such that the barrel being operated upon shall not be lifted off the barrel-centering member *l* during the stave-leveling operation.

By the construction hereinbefore described it will be observed that the levers T are correspondingly operated in unison during the operation of the shaft R; that the pins G hold the ring K a suitable distance above the head B, but within striking distance of the head; that the ring K is movable upwardly independently of the head D; that the ring K is driven upwardly, therefore, by a blow against the downwardly-facing surface of the ring; that the ring during its ascent does not move above the barrel-centering block *l*; that the head D frees the springs *e* during the upward movement of the head; that the springs *e* and shoulders formed by the collars F form stops for limiting upward movement of the ring K independently of the head D; that of course the ring K tends to remain in its lower position by gravity, but that the head D during its descent next after delivering a blow upwardly against the ring K comes into engagement with the springs *e* and insures the prompt return of the ring K, upon being driven upwardly by the head, into the proper position relative to the head preparatory to the next upward movement of the head, and that the levers T are actuated by the cams *r* during the rotation of the shaft R in the direction required to lower the head D against the action of the springs J, which act to retain the said head in its upper position.

As already indicated, the means for centering the barrel relative to the ring K comprises a lower barrel-centering device consisting of the block *l*. Preferably the means for centering the barrel relative to the ring K comprises also an upper barrel-centering device consisting of two posts *m*, arranged externally of the space to be occupied by the barrel to be leveled. Each post *m* is rigid with the base A and is provided a suitable distance above the barrel-centering block *l* with a sleeve *n*, which is slidably mounted on the said post and is therefore adjustable vertically, being secured in the desired adjustment by a suitably-applied set-screw *n'*. Each sleeve *n* is provided with a laterally and inwardly projecting arm *n*<sup>2</sup>, and the arms *n*<sup>2</sup> of the sleeves *n* of both posts *m* are ar-



ranged a suitable distance apart circumferentially of the space to be occupied by and in position to afford lateral bearing to the barrel to be leveled upon the ring K in the operation of the machine. The sleeves  $n$  are adjusted to bring the bearing-forming members  $n^2$  thereof into position between the central portion and upper extremity of the barrel to be leveled and into such position relative to the ring K that when the barrel upon the leveling operation is arranged exactly vertically and central relative to the ring K the barrel will be in position to have lateral bearing against the arms  $n^2$ , and the attendant can with the assistance of the upper and lower barrel-centering devices readily maintain the barrel in proper position relative to the ring K during the leveling operation.

I would also remark that claims broadly covering the structure described in this specification are presented in a contemporaneous application, Serial No. 318,716, filed by me May 25, 1906.

What I claim is—

1. In a barrel-leveling machine, a blow-striking head movable up and down; means for guiding the head; springs acting to retain the head in its upper position; means for intermittently lowering the head; an upwardly-movable stave-leveling ring which in the lower position of the head is held opposite and a suitable distance above the head but within striking distance of the head, and means for centering the barrel relative to the ring.

2. In a barrel-leveling machine, a suitably-guided movable blow-striking head; springs acting to retain the head at one extremity of its movement; means for intermittently actuating the head against the action of the springs; a stave-leveling ring which in its blow-receiving position is held opposite and a suitable distance from the head but within striking distance of and movable from the head, and means for centering the barrel relative to the ring.

3. In a barrel-leveling machine, a suitably-guided blow-striking head movable up and down; springs acting to retain the head in its upper position; suitably-supported levers operatively connected with the head and adapted to intermittently actuate the head against the action of the springs; means for operating the levers, and a stave-leveling ring which in the lower position of the head is held opposite and a suitable distance above the head but within striking distance of the head and movable upwardly.

4. In a barrel-leveling machine, a suitably-guided movable blow-striking head; springs acting to retain the head at one extremity of its movement; suitably-supported levers operatively connected with the head and adapted to intermittently actuate the head against

the action of the springs; a suitably-operated shaft provided with cams arranged to operate the levers during the rotation of the shaft, and a stave-leveling ring which in its blow-receiving position is held opposite and a suitable distance from the head.

5. In a barrel-leveling machine, a stave-leveling ring arranged to support a barrel on end and movable up and down, and spring-actuated means for delivering blows upwardly against the ring from below the ring.

6. In a barrel-leveling machine, a blow-striking head movable up and down; means for guiding the head; means acting to retain the head in its upper position; means for intermittently depressing the head; a suitably-supported upwardly-movable stave-leveling ring arranged to extend under the lower ends of the staves of a barrel to be leveled, and means for centering the barrel relative to the said ring.

7. In a barrel-leveling machine, a stationary base provided with a suitably-guided blow-striking head movable up and down above the base and having an interior chamber which is open at the bottom, which head is provided with members depending from the top wall of and through the said chamber and into the base; spiral springs coiled around the said depending members and confined between the said wall and the base; means whereby the head is intermittently lowered against the action of the springs, and an upwardly-movable stave-leveling ring which in the lower position of the head is held opposite and a suitable distance above but within striking distance of the aforesaid head.

8. In a barrel-leveling machine, a blow-striking head movable up and down; means for guiding the head; springs for actuating the said head in one direction; cam-actuated means for actuating the head in the opposite direction; a movable stave-leveling ring movable up and down above the head and forming a seat for the lower end of the barrel to be leveled, which ring is arranged within striking distance of the head.

9. In a barrel-leveling machine, a blow-striking head movable up and down; a suitably-driven shaft having cams; levers arranged to be operated by the cams and operatively connected with the head to depress the head during each rotation of the shaft; means acting to retain the head in its upper position, and a stave-leveling ring movable up and down above the head and forming a seat for the lower end of the barrel to be leveled, which ring in the lower position of the head is arranged a suitable distance above but within striking distance of the head.

10. In a barrel-leveling machine, a reciprocating blow-striking head; means for actu-

ating the head in one direction; springs for actuating the head in the opposite direction; means for guiding the head, and a stave-leveling ring arranged opposite and movable from  
5 and toward the head and arranged to be struck by the head during the reciprocation of the head.

In testimony whereof I sign the foregoing specification in the presence of two witnesses.

JOHN S. ORAM.

Witnesses:

C. H. DORER,  
B. C. BROWN.