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PATENTED MAY 1, 1906.

G. E. WHITNEY.

STUFFING BOX ADJUSTER.

APPLICATION FILED OCT. 2, 1902. RENEWED SEPT. 30, 1905.

Fig. 1:

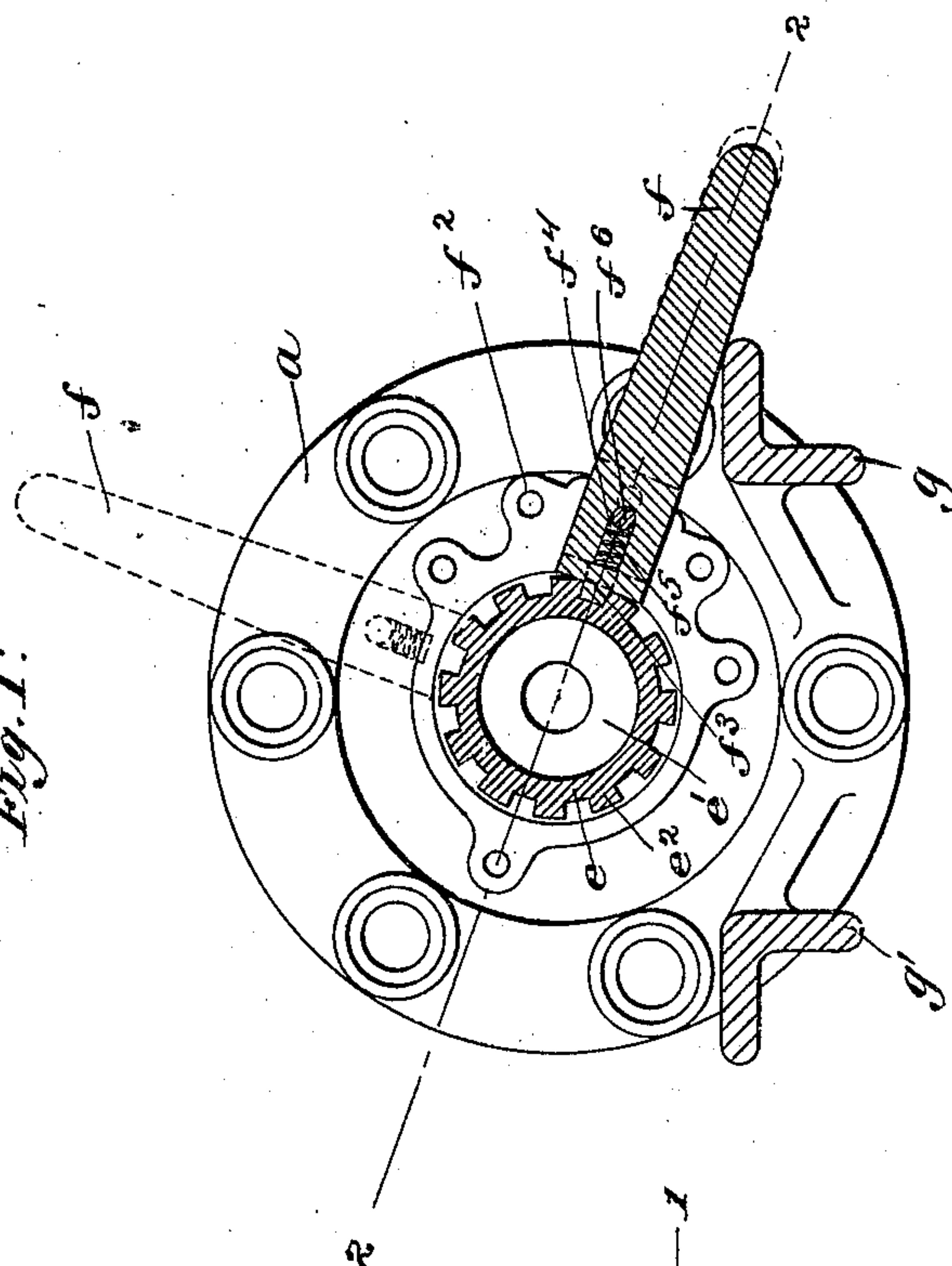
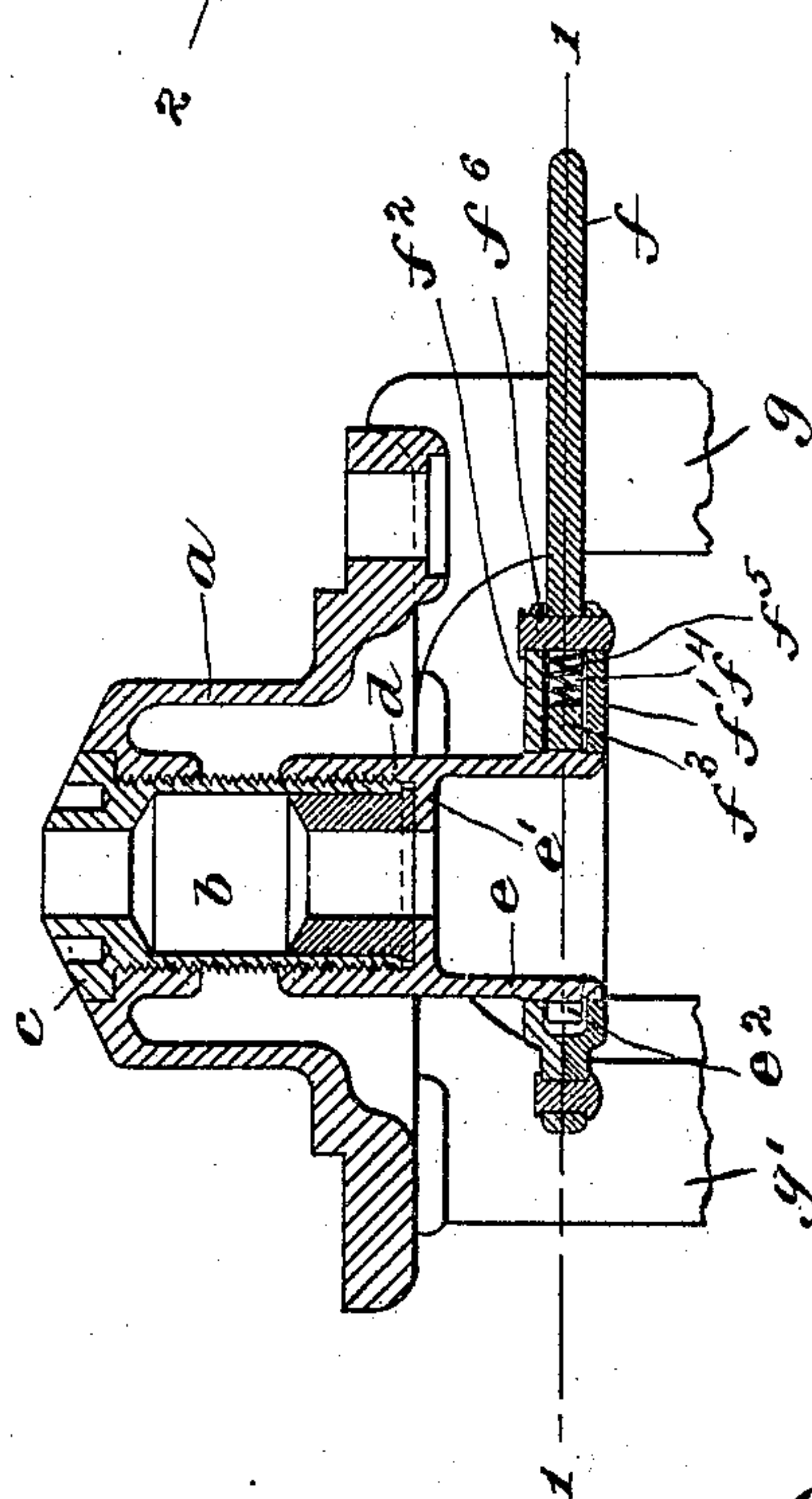


Fig. 2:



Witnesses,
Ernest L. Emery
Annie E. Chesley

Inventor,
George E. Whitney,
by Marcell L. Emery
Atty.

UNITED STATES PATENT OFFICE.

GEORGE E. WHITNEY, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO
WHITNEY MOTOR WAGON COMPANY, OF KITTERY, MAINE, A
CORPORATION OF MAINE.

STUFFING-BOX ADJUSTER.

No. 819,485.

Specification of Letters Patent.

Patented May 1, 1906.

Application filed October 2, 1902. Renewed September 30, 1905. Serial No. 280,831.

To all whom it may concern:

Be it known that I, GEORGE E. WHITNEY, a citizen of the United States, residing at Boston, in the county of Suffolk and Commonwealth of Massachusetts, have invented an Improvement in Stuffing-Box Adjusters, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My invention aims to provide an improved form of adjustable stuffing-box by means of which any desired adjustment of the gland-retaining member of the stuffing-box may be effected in a simple, convenient, and expeditious manner.

My invention will be best understood from the description and accompanying illustration of one specific embodiment thereof, while its scope will be particularly pointed out in the appended claims.

Referring to the drawings, Figure 1 is a sectional view through the adjusting member on the dotted line 1 1 in Fig. 2 looking upward at the engine-cylinder head and the attached stuffing-box. Fig. 2 is a central sectional elevation on the dotted line 2 2 in Fig. 1 through the cylinder-head and stuffing-box.

In the drawings, *a* represents a cylinder-head of any suitable construction provided with a piston-rod stuffing-box *b*, formed in the present instance for convenience in construction in a removable member *c*, which is threaded into the inner side of the cylinder-head against a shoulder formed thereon. This stuffing-box is provided with the usual gland *d* and is retained in any desired position within the stuffing-box by the adjustable member *e*, adapted to engage with the externally-threaded portion of the stuffing-box member *c* and having the retaining-shoulder *e'* adapted to engage with the gland *d* and force the same against the within-contained packing. The threads upon the two engaging members are sufficiently fine to afford the required delicacy of adjustment corresponding to any angular movement of the adjusting member.

The means by which I effect the movement of the adjusting member to produce any desired adjustment comprises the laterally-

projecting member or lever *f*, slidably held in operative relation to the adjusting member in any desired way so as to be capable of radial movement—as, for example, by a suitable holder or carrier, which herein consists of the two plates *f'* and *f''*, forming a recess for the reception of the lever *f*. The plates *f'* and *f''* are suitably formed so as to encircle the adjusting member *e* and may be rotated about the same and are fastened together in any desired manner so as to embrace between them the teeth *e''*, projecting laterally from the said adjusting member and bring into adjustment therewith the toothed projection *f'''* on the lever *f*, whereby the latter is adapted for coöperation with the recessed portions between the teeth *e''* on the adjusting member *e*. In the lever *f* at that portion within the recess formed by the plates *f'* and *f''* is formed a short longitudinal slot *f''''*, containing the spring *f''''''*, bearing at one end against the stop *f''''''''*, secured in the plates *f'* and *f''* and normally forcing the toothed portion of the lever *f* into engagement with some one recess on the adjusting member *e*, but affording a sufficient outward or radial movement for the lever when the spring is compressed by an outward or radial pull upon the end of the lever as to permit the lever-tooth *f'''* to clear the peripheral line of the teeth on the adjusting member—as, for example, is shown in the superimposed dotted-line position in Fig. 1. When the spring is compressed in this manner, the lever may be moved through any desired angle affording an unobstructed path for the same, the plates *f'* and *f''*, which carry the lever, being freely rotatable about the adjusting member, but prevented from axial movement thereupon. In the drawings I have shown an unobstructed path of angular movement for the lever *f* from the position shown in Fig. 1, where it rests against the portion *g* of the engine-framework in a counter-clockwise direction, to the position where it would contact with the portion *g'* of the engine-frame; but any suitable or desired stop to limit the angular movement of the lever may be provided where desired.

The operation of the device is as follows: If it is desired to compress the packing material within the stuffing-box, the spring *f''''* is

compressed by an outward pull upon the lever until the latter is disengaged from the teeth of the adjusting member. Assuming the threads upon the adjusting member to be right-handed, the lever is rotated in a left-handed direction to the limit of its movement if the full limit of adjustment is desired or to a correspondingly lesser extent—as, for example, the lever position shown in dotted lines at right angles to the full-line position—if a lesser adjustment is desired and the lever brought into engagement with the nearest recess on the adjusting member by relieving the same of the radial pull. The lever is then rotated in a right-handed direction to the limit of its movement, if desired, the adjusting member moving therewith through a corresponding angle and forcing the gland against the packing to compress the same. This operation may be repeated if further compression is desired.

It will be observed that the adjustment of the gland is effected by a substantially single movement of the lever and that the adjustment by this movement may be carried to any desired extent.

The adjusting-lever *f* may be of any desired shape or form and may be carried to any desired operating-point which convenience may dictate, and it may be itself adapted for manipulation or may be combined with other hand-operated members and receive movement therefrom. After the adjustment has been effected the lever may be returned to a position of engagement in contact with a stop or abutment—such as *g'*, for example—and provided in such position a locking means to prevent the adjusting member from moving in a reverse direction and working loose.

The lever *f* constitutes a manipulating member removed from the oily or dirty parts of the engine or the moving parts thereof and affords a means for adjusting the stuffing-box in a simple and rapid manner.

It will be evident that my invention is not limited to the specific form of construction shown, which is submitted for illustrative purposes only, but that it may be embodied in a great variety of forms, all of which are within the scope of my invention.

I claim—

1. The combination of a stuffing-box, a gland, a threaded adjusting member therefor, a radially-extended operating member to cause movement of said adjusting member and a holder therefor.

2. The combination of a stuffing-box, a gland, a threaded adjusting member therefor, an operating-lever connected with said adjusting member for moving the same by an angular movement thereof about said stuffing-box and a holder for said lever.

3. The combination of a stuffing-box, an adjusting member therefor, and operating

means for said adjusting member adapted to be moved coaxially therewith either in or out of engagement with said adjusting member.

4. The combination of a stuffing-box, an adjusting member therefor, operating means capable of independent movement thereof for effecting a movement of said adjusting member, and adapted within its path of movement to engage said adjusting member in a plurality of positions and holding means for said operating means.

5. The combination of a stuffing-box, an adjusting member, operating means for moving said adjusting member adapted for engagement with and disengagement from said operating member and capable of independent though guided movement during periods of disengagement.

6. The combination of a stuffing-box, an adjusting member swingingly mounted, operating means normally in engagement with said adjusting member for moving the same, and means to release said operating means and engage the adjusting member in a different position.

7. The combination of a stuffing-box, an adjusting member, a laterally-extended swingingly-mounted operating-lever in engagement with said adjusting member for moving the same, and means to release said operating-lever and engage the adjusting member in a different position.

8. The combination of a stuffing-box, an adjusting member therefor, a laterally-extended operating-lever for moving the same, means for engaging and disengaging the same from said adjusting member and a holder for said lever.

9. The combination of a stuffing-box, an adjusting member therefor, an operating member having an operating movement for moving the same, cooperating locking parts upon the operating member and adjusting member, and means to engage the adjusting member by the operating member in a plurality of positions said operating member when unlocked having a movement similar to its operating movement.

10. The combination of a stuffing-box, a rotary adjusting member therefor provided with a plurality of peripheral locking-surfaces, an operating-lever capable of independent rotary movement about said adjusting member and having cooperating locking-surfaces adapted for engagement with the several locking-surfaces on said adjusting member and means for engaging and disengaging the cooperating locking parts.

11. The combination of a stuffing-box, a rotary adjusting member therefor provided with a plurality of peripheral teeth, an operating member capable of independent rotary movement about said adjusting member and having a latch adapted for engagement with several teeth upon said adjusting member,

and means for causing the engagement and disengagement of the latch with the said teeth.

5 12. A stuffing-box comprising an adjusting member, a swingingly-mounted radial operating member, and cooperating locking devices upon said operating member and adjusting member to permit the same to be engaged and disengaged.

10 13. A stuffing-box comprising an adjusting member, a swingingly-mounted radial operating member, cooperating locking devices upon said operating member and adjusting member to permit the same to be engaged and disengaged, and holding means to
15 hold said operating member in operative relation to said adjusting member.

20 14. An adjustable stuffing-box having an adjusting member, an operating member to move the same but capable of movement in-

dependently thereof, and means for holding said operating member at all times in operative relation to said adjusting member.

15. An adjustable stuffing-box having an adjusting member, an operating member to
25 move the same but capable of movement independently thereof, means for holding said operating member at all times in operative relation to said adjusting member, and means for releasing said operating member
30 from said adjusting member by radial movement of the former.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE E. WHITNEY.

Witnesses:

VICTOR LINDEROTH,
THOMAS B. TAYLOR.