

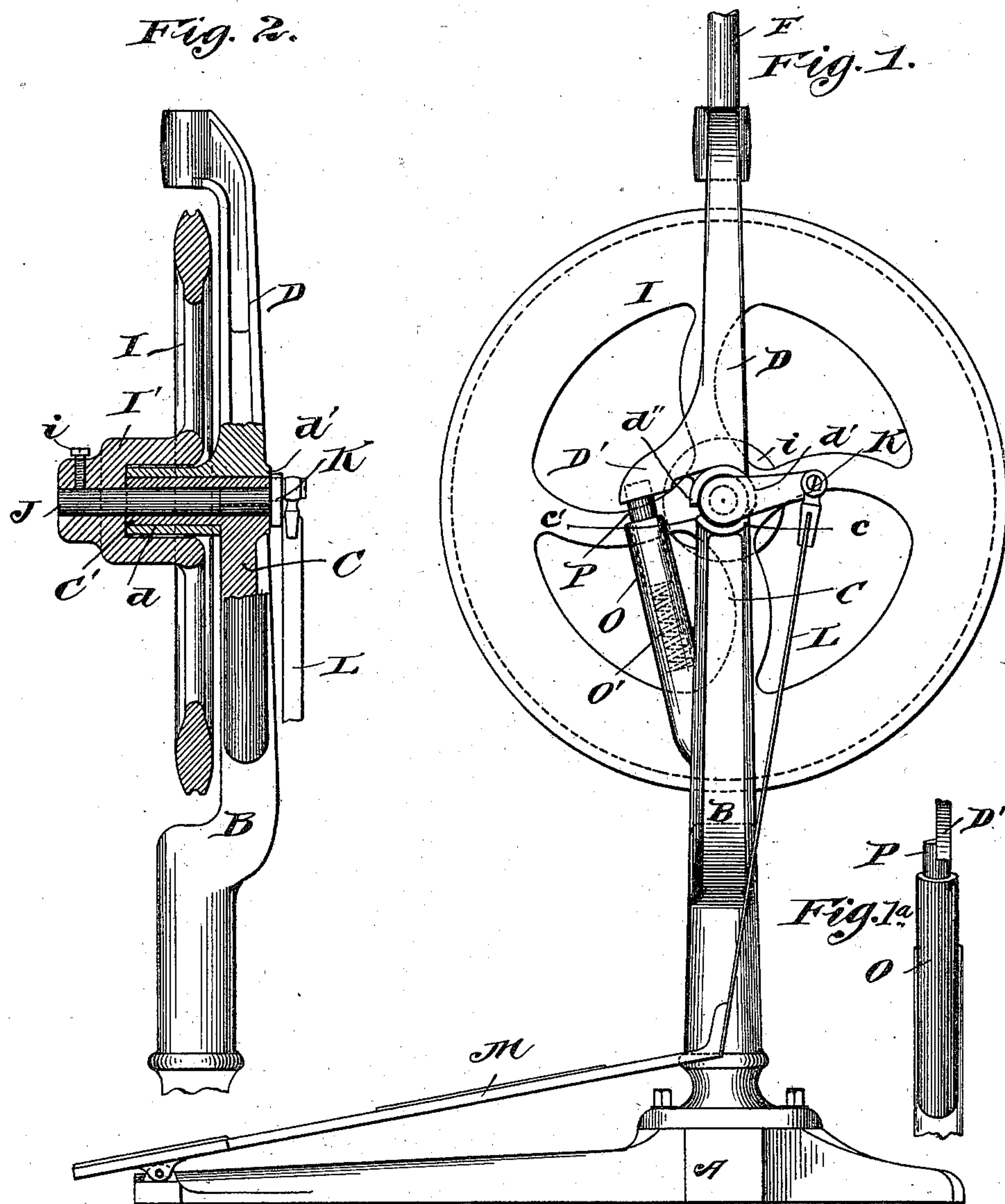
(No Model.)

2 Sheets—Sheet 1.

J. D. WILKENS.
DENTAL ENGINE.

No. 559,426.

Patented May 5, 1896



Witnesses,
J. D. Mann
Frederick Goodwin

Inventor,
John D. Wilkens
By Offield, Towle & Luthicrum
Attys.

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Fig. 4.

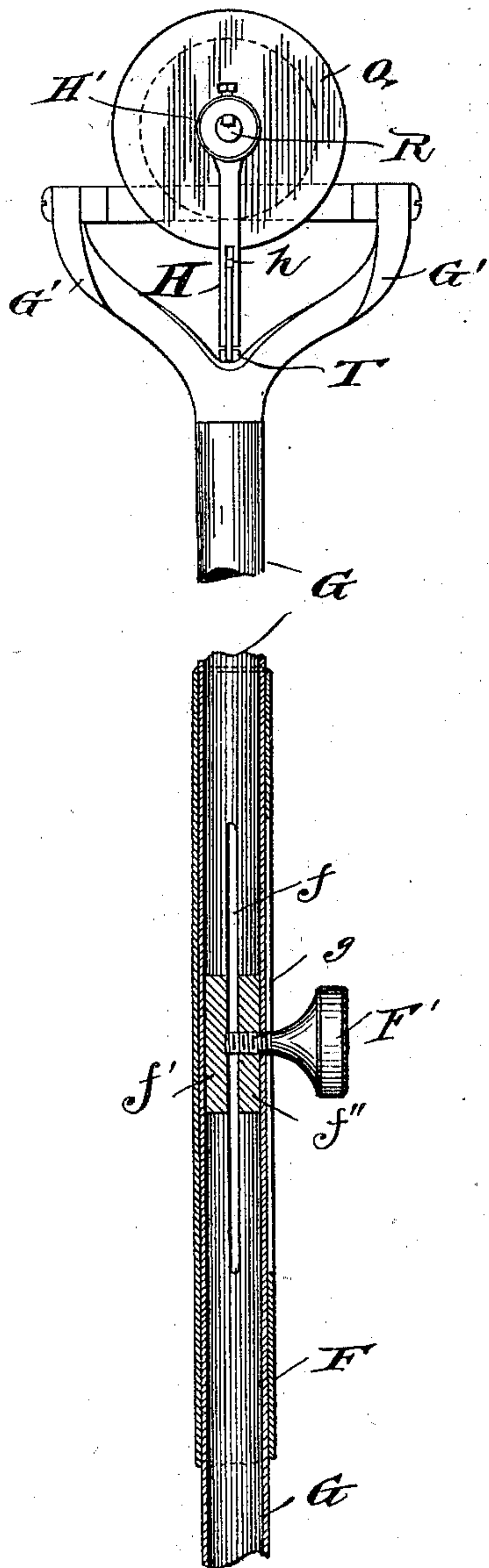


Fig. 3.

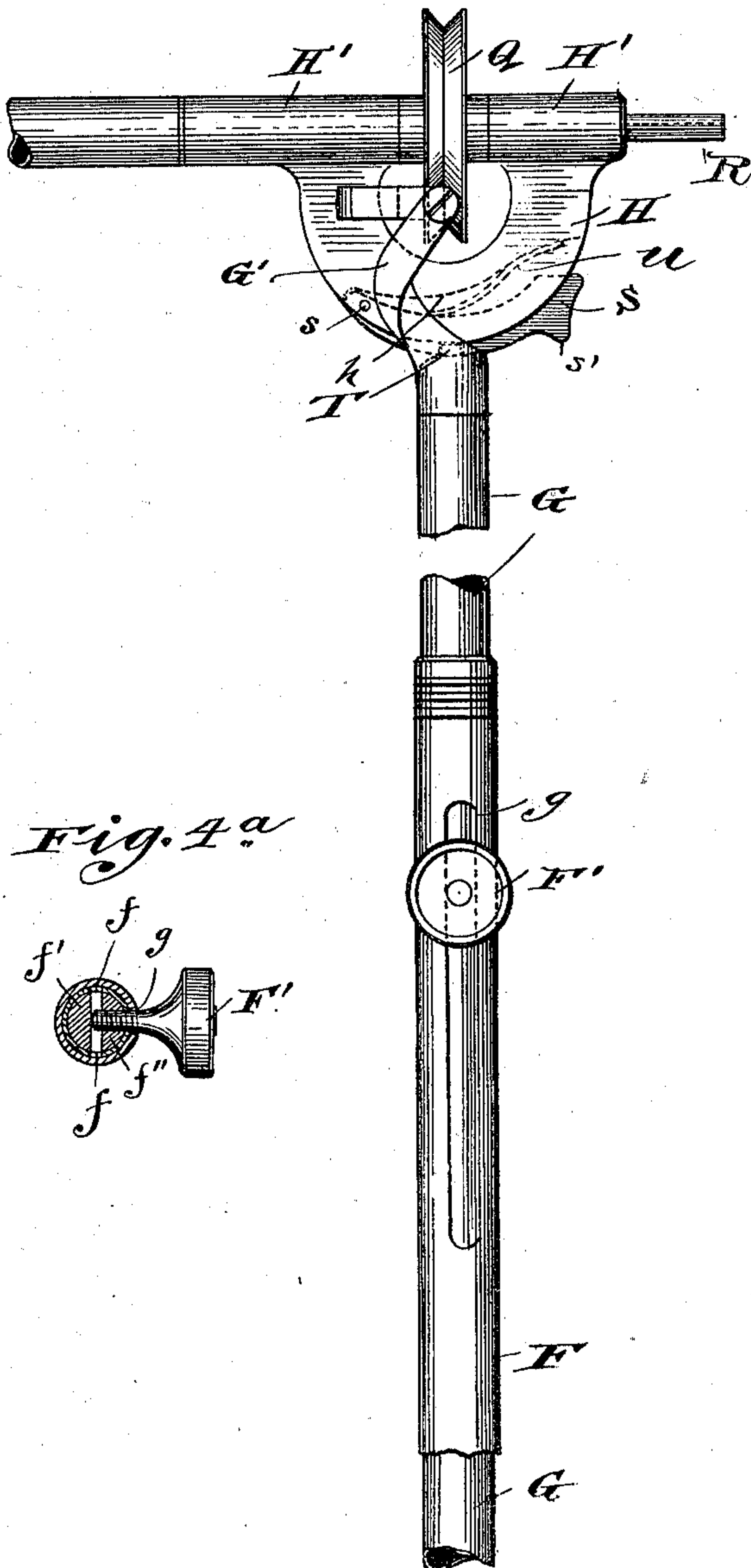
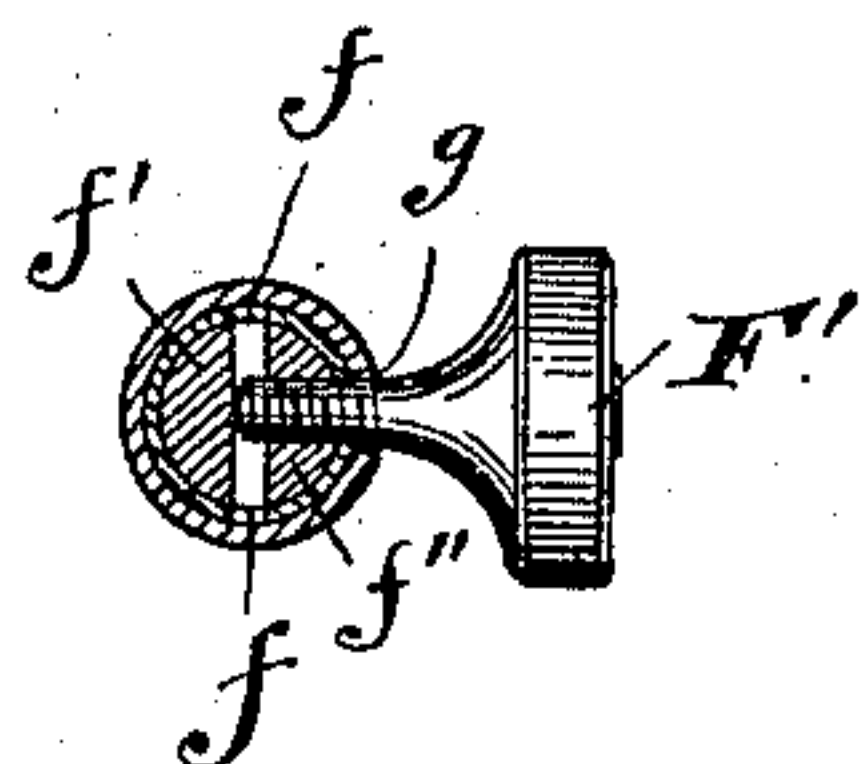


Fig. 4a



Witnesses

J. D. Mann
Frederick Goodwin

Inventor,

John D. Wilkens.
By Offield, Towle & Smith
Attys.

UNITED STATES PATENT OFFICE

JOHN D. WILKENS, OF CHICAGO, ILLINOIS, ASSIGNOR TO JOHN N. CROUSE,
OF SAME PLACE.

DENTAL ENGINE.

SPECIFICATION forming part of Letters Patent No. 559,426, dated May 5, 1896.

Application filed July 10, 1894. Serial No. 517,077. (No model.)

To all whom it may concern:

Be it known that I, JOHN D. WILKENS, of Chicago, Illinois, have invented certain new and useful Improvements in Dental Engines, of which the following is a specification.

This invention relates to certain improvements in the structural features of dental engines, and more particularly to the bearing of the driving-wheel journal, a lock for the telescoping sections of the extensible standard, a stop for the vibrating standard, and a spring-lock for the arm carrying the flexible shaft.

In the accompanying drawings, Figure 1 is a side elevation showing the base, the lower or base section of the standard, the driving-wheel, and the pivoted section of the standard, the latter broken away; and Fig. 1^a is a detail of a part shown in Fig. 1. Fig. 2 is an elevation, partly in section, particularly intended to show the bearing of the driving-wheel journal. Fig. 3 is a broken elevation of the upper portion of the standard, and showing the spring-stop for the pivoted head. Fig. 4 is a broken elevation showing in section the extensible part of the standard, and Fig. 4^a is a cross-section taken through the telescoping tubes at the locking means.

The frame of the engine is made in sections, A indicating the base, to which is secured the fixed standard B, said standard being offset at its upper end, and the offset portion C having a horizontal cylindric extension C', bored to provide a bearing for the driving-wheel journal. A pivoted or rocking section D has its body disposed in line with the offset portion C and is provided with a lateral boss *d*, having a longitudinal bore to receive the cylindric bearing member C'. This boss is cut away on its lower side, thus providing shoulders or stops *d'* *d''*. The stop *d'* is normally engaged with a shoulder *c* on the section C, thus preventing the rocking of the standard in one direction, while the stop *d''* engages the shoulder *c'* to limit the rocking movement of the standard in the opposite direction. The upper extremity of the section D is disposed in line with the base-section B, and is apertured to receive the tubular section F, which has a telescopic connection with a tubular section G, carrying the pivoted head or bearing H. The telescopic sections F and G are

provided with means (shown in Figs. 3 and 4) for locking them at any desired position. The section G is slotted longitudinally at opposite points, as shown at *f*, Fig. 4^a, and has secured therein the bearing-block *f'* and a block *f''*, having a threaded aperture. A set-screw F' is screwed through the block *f''* and bears against the block *f'*. The stem of the screw passes through a slot *g* in the tube F. By turning the set-screw blocks *f'* and *f''* are separated, spreading or expanding the tube G and thus causing it to frictionally lock with the tube F. Thus a suitable vertical adjustment is provided and a simple and efficient locking means is furnished.

I represents the driving-wheel, having straight spokes and a chambered hub I' concentric to the boss *d*, and the hub is provided with an aperture in line with the bore of the bearing in the part C', and in which is revolutely mounted the wheel-journal J. A set-screw *i* secures the driving-wheel to its journal, the latter being provided with a crank K, with which is connected the spring-pitman L, connected at its lower end to the foot-treadle M.

It will be seen that the driving-wheel I has its rim and spokes in the same vertical plane and in the vertical plane of the base-section of the standard, and that thus requisite stability and smoothness of running may be secured, and that by providing the laterally-offset chambered hub to receive the boss of the standard-section a long bearing is provided for its journal.

The section D has a lateral extension or bracket D', which engages a spring-actuated plunger P, working in a barrel O, formed integrally with the base-section B and containing the spring O'. This plunger has its upper end cut away or notched, and the shoulder thus formed engages the inner side of the section D', as shown in Fig. 1^a, thus preventing any binding between the end of the boss *d* and the end of the chamber in the hub of the driving-wheel. The function of the spring-plunger is normally to maintain the pivoted standard in an upright position and to keep it laterally in position.

The next feature of my invention relates to the provision of a spring-stop for the pivoted

head H. Said head or bearing is pivoted to the furcations G' of the standard and comprises a curved web having tubular bosses H', bored to provide bearings for the shaft R, carrying pulley Q. The curved rib or web of the head H is longitudinally slotted, as seen at h, and a locking-plate S is pivoted at s therein and has its lower edge provided with a locking-notch to receive a locking-lug T at the junction of the furcations G'. Locking-plate S has also the finger-hold s'. The locking-plate may be a thin metal plate snugly fitting the slot of the head H, which furnishes a suitable seat and guide. A spring U normally thrusts the locking-plate down into position to engage the locking-lug.

I claim—

1. In a dental engine, the combination with an offset standard having a lateral extension providing a journal-bearing, of a driving-wheel having its spokes and rim in the same vertical plane and a laterally-offset hub chambered to receive the extension of the standard and a journal revolvably mounted in the bearing and to which the wheel is secured, substantially as described.

2. In a dental engine, the combination with a sectional standard offset to receive the driving-wheel, one of the sections having a lateral extension providing a journal-bearing and the other of said sections having an apertured boss sleeved over said bearing, a driving-wheel having straight spokes and a chambered hub to receive said boss and a journal secured with the driving-wheel and adapted to said bearing, substantially as described.

3. In a dental engine, the combination with

the base, of a stationary standard having a barrel, a spring mounted therein, a plunger seated on said spring and working in the barrel, a rocking-standard-section having a lateral bracket or bearing seated on the plunger and the latter having a shouldered or offset projection bearing on the side of the bracket and tending to maintain it in proper alignment to the base-section, substantially as described.

4. In a dental engine, an extensible standard having two of its members composed of tubes telescoped together, the walls of said tubes being longitudinally slotted, and a set-screw having a threaded engagement with the wall of the inner tube and a bearing against the wall at an opposite point and the shank of said screw being extended through the slot in the outer tube, substantially as described.

5. In a dental engine, the combination with the standard, of a bearing-head pivotally mounted thereon and provided in its lower side with a narrow vertical slot, a thin locking-plate pivoted at one end and adapted to vibrate in said slot and provided on its lower edge with a locking-notch, a rigid lug on the upper end of the standard and a leaf-spring interposed between the upper edge of the locking-plate and the upper wall of the slot and normally tending to force the plate into engagement with the locking-lug, substantially as described.

JOHN D. WILKENS.

Witnesses:

FREDERICK C. GOODWIN,
N. M. BOND.