

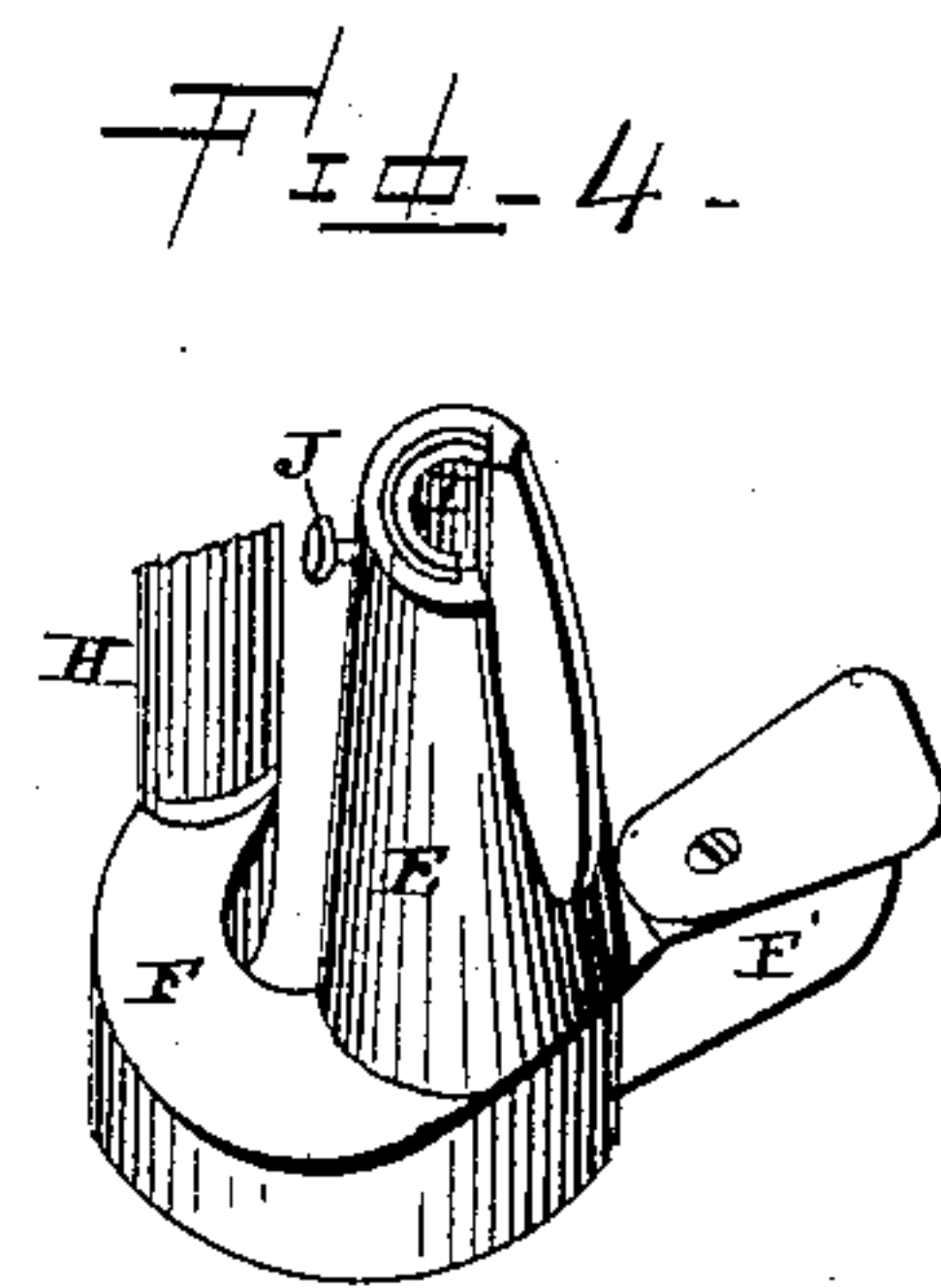
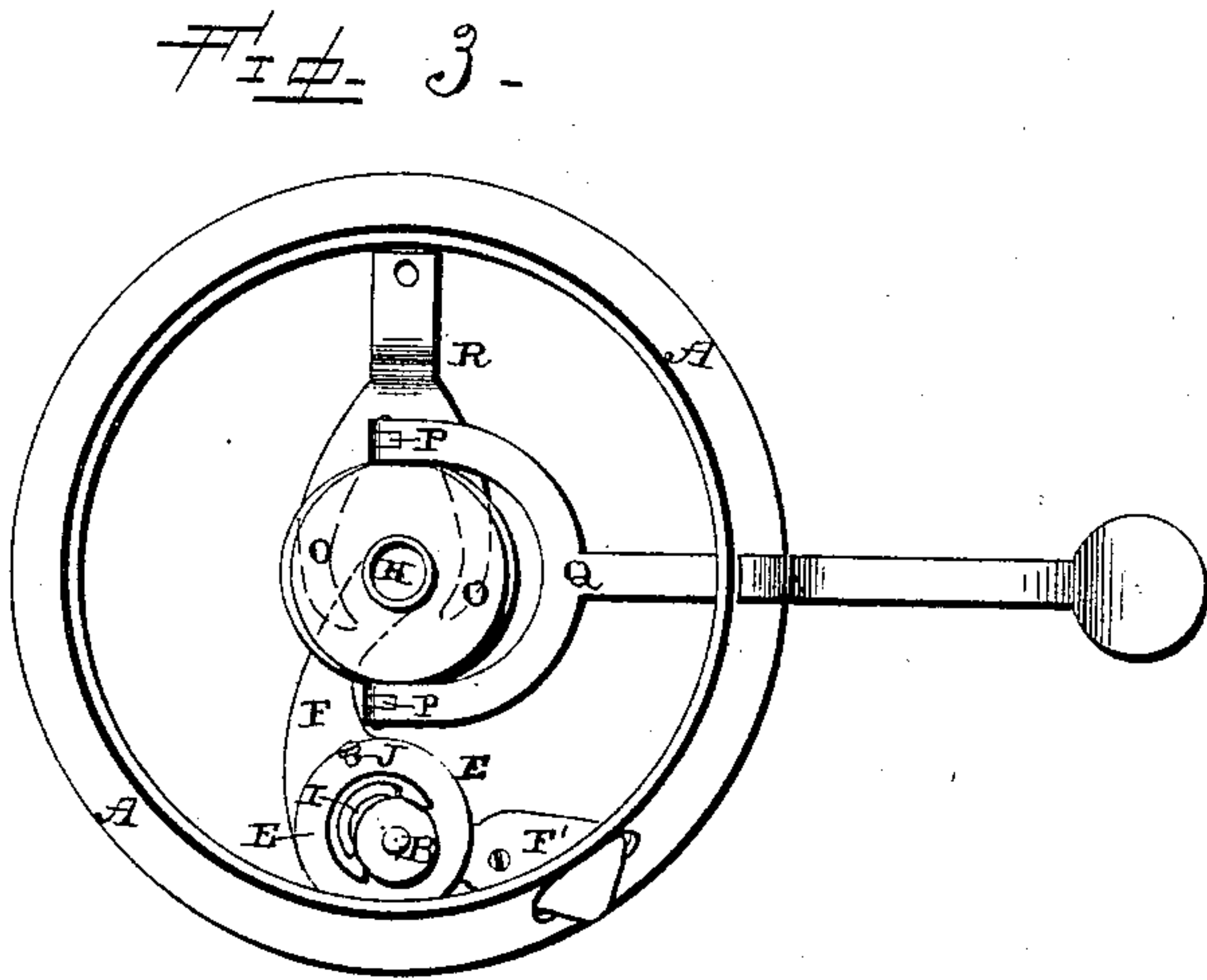
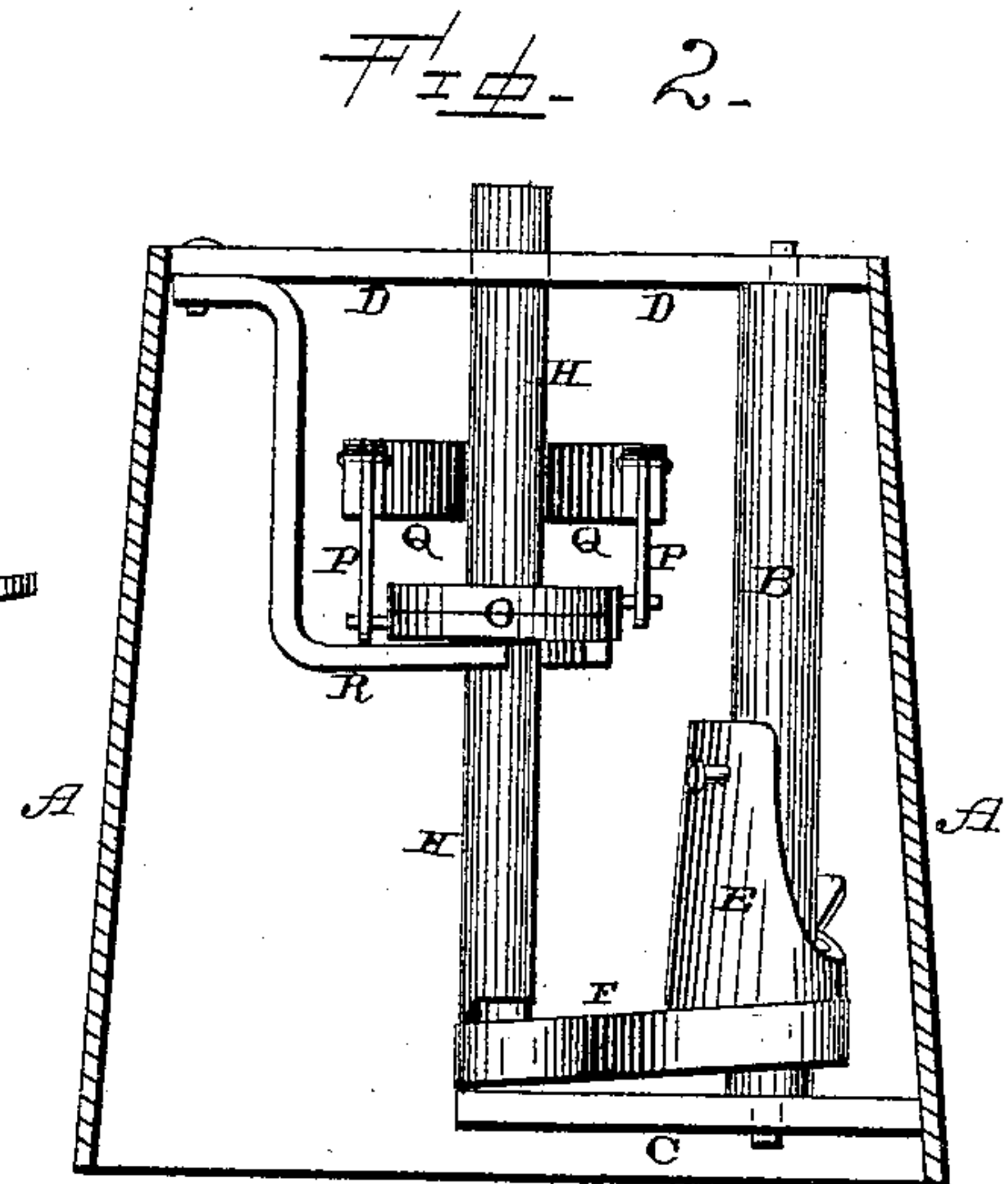
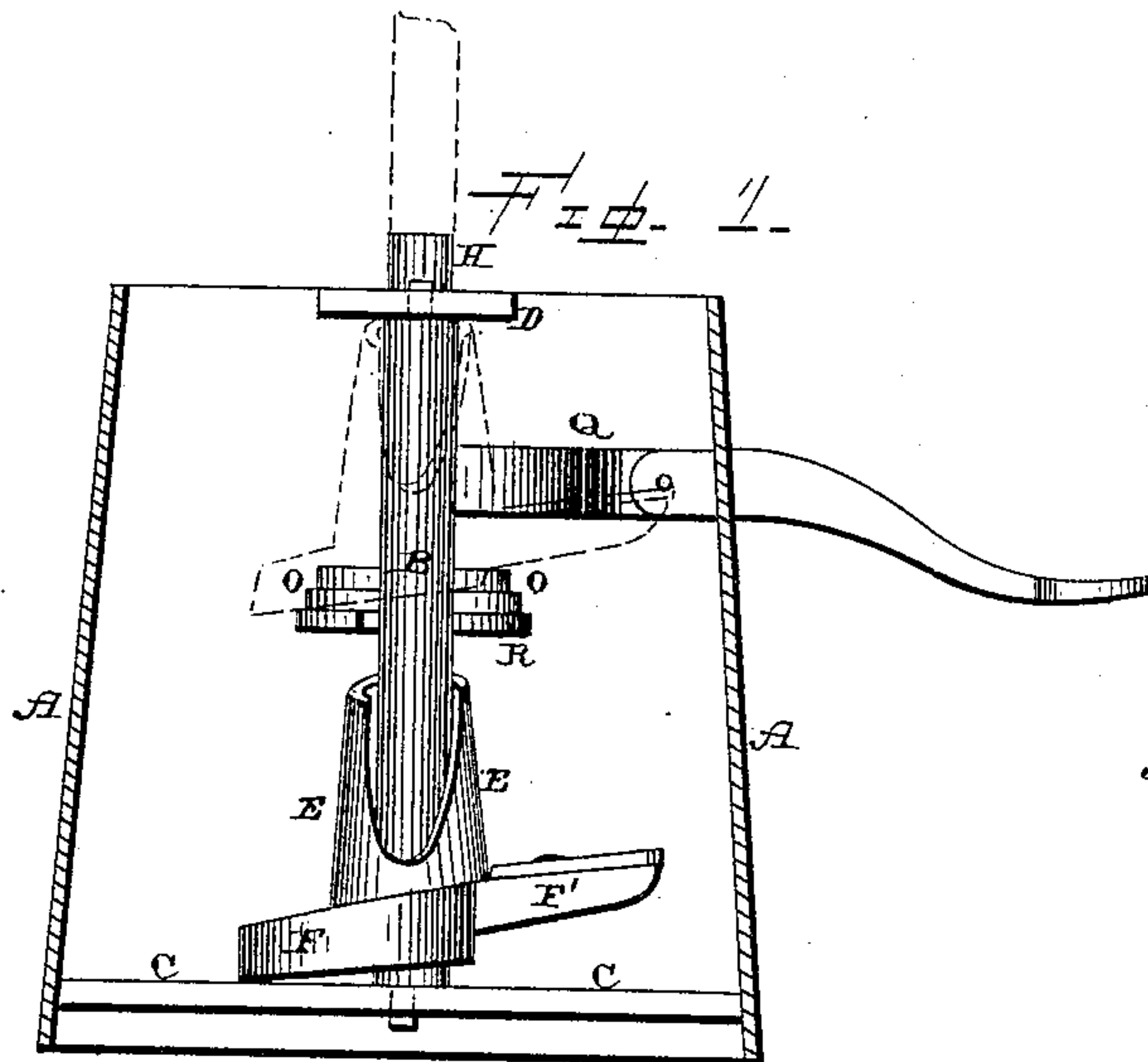
(No Model.)

L. STUCK.

MECHANISM FOR LOWERING DENTAL CHAIRS.

No. 390,816.

Patented Oct. 9, 1888.



Witnesses.
Edm. P. Ellis
Allen S. Pattison

Inventor.
L. Stuck,
per
J. W. Lehmann,
att'y.

UNITED STATES PATENT OFFICE.

LEVI STUCK, OF HART, MICHIGAN.

MECHANISM FOR LOWERING DENTAL CHAIRS.

SPECIFICATION forming part of Letters Patent No. 390,816, dated October 9, 1888.

Application filed June 21, 1888. Serial No. 277,847. (No model.)

To all whom it may concern:

Be it known that I, LEVI STUCK, of Hart, in the county of Oceana and State of Michigan, have invented certain new and useful Improvements in Lowering Mechanism for Lowering Dental Chairs; and I do 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 it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in the mechanisms for lowering dental chairs; and it consists in, first, the combination of a suitable frame-work, a stationary rod or bar which extends up through the frame-work upon one side, the clutch which is placed upon this bar, and which is cut away upon one side at its upper edge and provided with a projection upon one side, upon which the operator's foot is placed, and an arm upon the other side, the cylinder or rod connected to the outer end of the arm, and a clutch mechanism placed upon the rod or cylinder for raising the chair; second, the arrangement and combination of parts, which will be more fully described hereinafter.

The object of my invention is to provide a lowering mechanism for dental chairs whereby the descent of the chair, after it has been raised, can be most perfectly controlled and the chair can be depressed by a simple movement of the foot.

Figures 1 and 2 are side elevations of the lowering mechanism. Fig. 3 is a plan view, the cross-bar being removed. Fig. 4 is a detached view of the lowering-clutch.

A represents a suitable frame-work, which forms the lower portion of the chair. Extending vertically through this frame-work is a smooth rounded rod or bar, B, which is supported at its lower end by the support C, which is secured inside of the frame, and at its upper end by the cross-bar D, which extends across the top of the frame. Placed upon this rod or bar is the supporting or lowering clutch E, which surrounds the rod B, and which has a vertical movement thereon as the chair is raised or lowered. The lower portion of this clutch E entirely surrounds the rod or bar B; but the upper portion of the clutch at one side

is cut away, as shown, so as not to form as great a bearing-surface upon that side as upon the opposite one, and thus allowing the clutch a very slight tilting movement for the purpose of holding it by frictional contact against the rod B at any point to which it may be moved. Extending from one side of this clutch E is the projection F', upon which a downward pressure is to be exerted by the foot when the chair is to be lowered. Projecting from the opposite side of the clutch from the projection F' is an arm, F, from which the elevating rod or cylinder H extends. In the extreme upper part of this clutch E, next to the rod or bar B, is formed a suitable recess, in which a washer, I, of suitable soft material, is placed, and which washer is forced against the side of the rod or bar B by the set-screw J, which passes horizontally through the upper end of the clutch. This washer may be formed of a curved plate of metal which is softer than the metal of the rod or bar B, of paper, leather, or any other similar material, and its office is to exert a frictional contact upon the rod or bar B, not only so as to hold the clutch in any position in which it may be adjusted, but to limit the amount of rocking movement which the clutch shall have upon the bar B. Any movement which the clutch may have at its upper end will be exaggerated according to the length of the arm F, and hence any weight upon the dental chair will be communicated to the clutch through the cylinder H and the arm. The washer prevents all lost motion in the arm F and the clutch. If any play was allowed the clutch, the projecting arm F, the cylinder H, and the dental chair would drop back after each lifting movement of the elevating-lever and the clutches connected thereto. The clutch being very narrow at its lower end upon the opposite side from the arm F, any weight on the end of the arm causes the clutch to freely clamp the rod B, so that it will not slide downward after having been lifted to any desired degree.

The clutch upon the same side as the projection F' projects upward a suitable distance upon the rod B, so as to prevent the clutch from being clamped in being lifted or elevated at the outer end of the projection F'. The clutch also projects upward to its full height

on the opposite side of the rod or bar B from the projection F', which causes the clutch to freely slide, instead of locking, when forced downward by the pressure of the foot. Pressure on the projection F' counteracts the locking tendencies of any weight placed on the end of the arm F of the dental chair. The speed at which the clutch descends upon the rod B is entirely under the control of the operator.

Surrounding the cylinder H are two friction-clutches, O, which are loosely connected upon opposite sides to the suspending-straps P, which are pivoted to the inner bifurcated ends of the lever Q, which is pivoted in the frame A. Suspended from the cross-bar D in the top of the frame is the L-shaped stop or support R, against which the lower one of the clutches O strikes when the outer end of the lever is raised. As soon as the clutches are dropped upon the support or stop R, they are held in a horizontal position, and then the cylinder H can be made to pass freely through in either direction. As soon as the outer end of the lever is depressed, however, and these clutches are raised upon the support, they drop downward upon their free sides, so that they stand at reversed angles, and thus clamp the cylinder H upon opposite sides, so as to not only raise it upward, but to hold it in a raised position as long as the pressure is continued upon the outer end of the lever. The moment the outer end of the lever is released these two clutches release their hold upon the cylinder, and then the clutch upon the bar or rod B supports the chair.

No claim is made in this application for the lever and the two clutches connected thereto, for the whole of the invention which it is here sought to claim is in the bar or rod B, the clutch E, which operates in connection therewith, and the parts connected to it. This clutch, as stated above, is for the purpose of supporting the bar in a raised position until the pressure is applied to the extension F and for causing the chair to descend by the sliding

down of the clutch E upon the bar B to lower the chair.

Having thus described my invention, I claim—

1. The combination of a suitable frame-work, A, a stationary rod or bar, B, the clutch E, placed upon this bar and cut away upon one side at its upper edge, so as not to come in contact with the bar at this point, and provided with a projection, F', upon one side and an arm, F, upon the other, the cylinder or rod connected to the outer end of the arm F, and a clutch mechanism placed upon the rod or cylinder for raising the chair, substantially as shown.

2. The combination of a suitable frame-work, the rod or bar which projects vertically through it, the clutch which moves upon the bar and is provided with an extension upon one side and an arm upon the other, and having a washer placed inside of its upper end to bear against the rod or bar, and a set-screw for regulating the pressure of the washer against the rod or bar, substantially as described.

3. The combination of a suitable frame-work, a smooth rod or bar, B, which extends vertically at one side thereof, a clutch, E, which moves upon this rod or bar and is provided with an extension, F', upon one side and the arm F upon the other, the washer which is placed upon one side of the end of the clutch, the set-screw for regulating the pressure of the washer against the rod or bar, the rod or cylinder to which the dental chair is secured and which is fastened at its lower end to the arm F, the operating-lever, and frictional clutches connected to the lever, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

LEVI STUCK.

Witnesses:

GEO. A. ROOF,
LEMUEL V. WILSON.