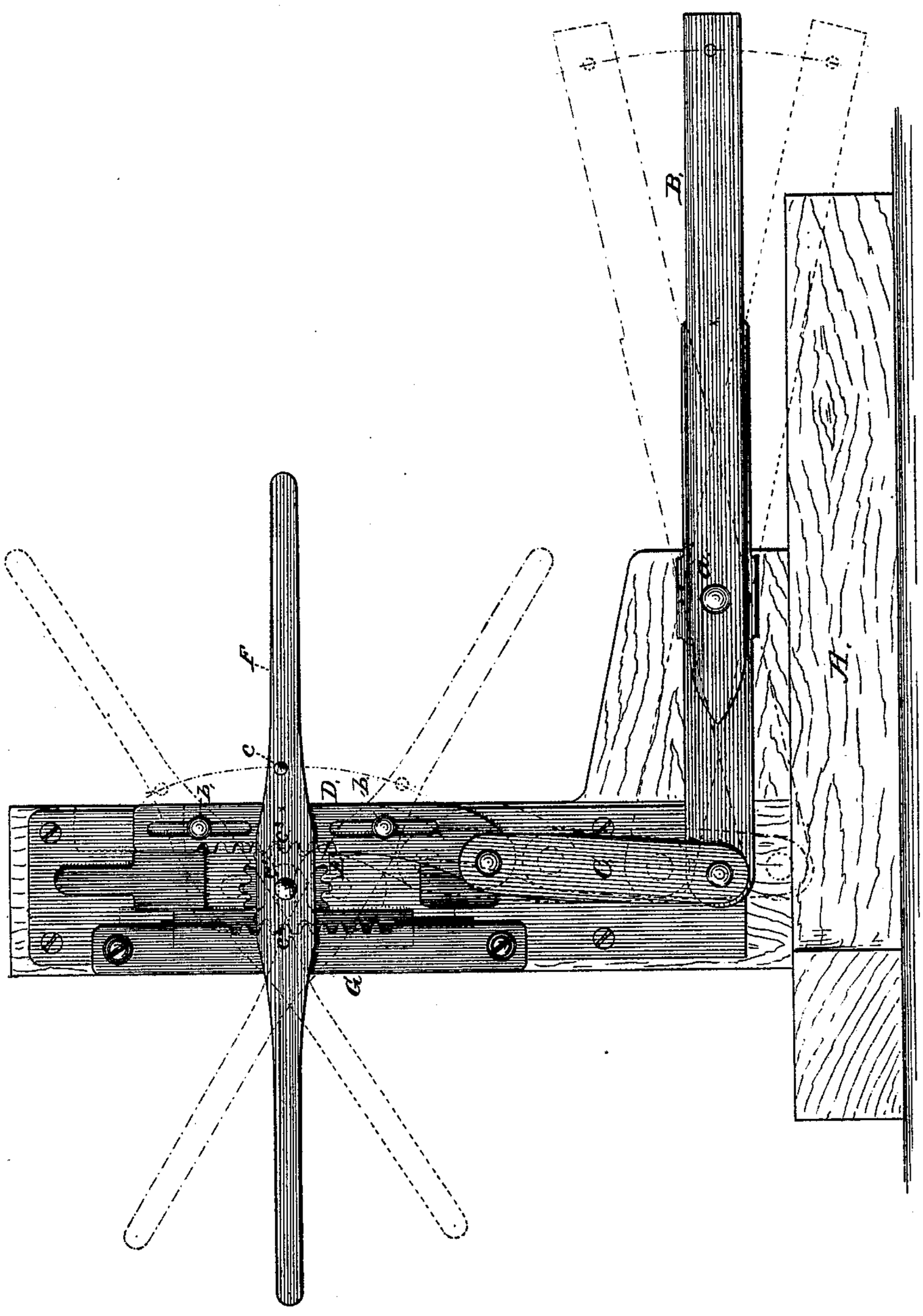
2 Sheets—Sheet 1.

T. SCHOLZE.
Mechanical-Movement.

No. 214,200. **Patented April 8, 1879.**

FIG. 1.



WITNESSES:

John F. C. Printz Curt,

Edw. W. Byrn

INVENTOR:

Theodore Scholze

BY Munn & Co

ATTORNEYS.

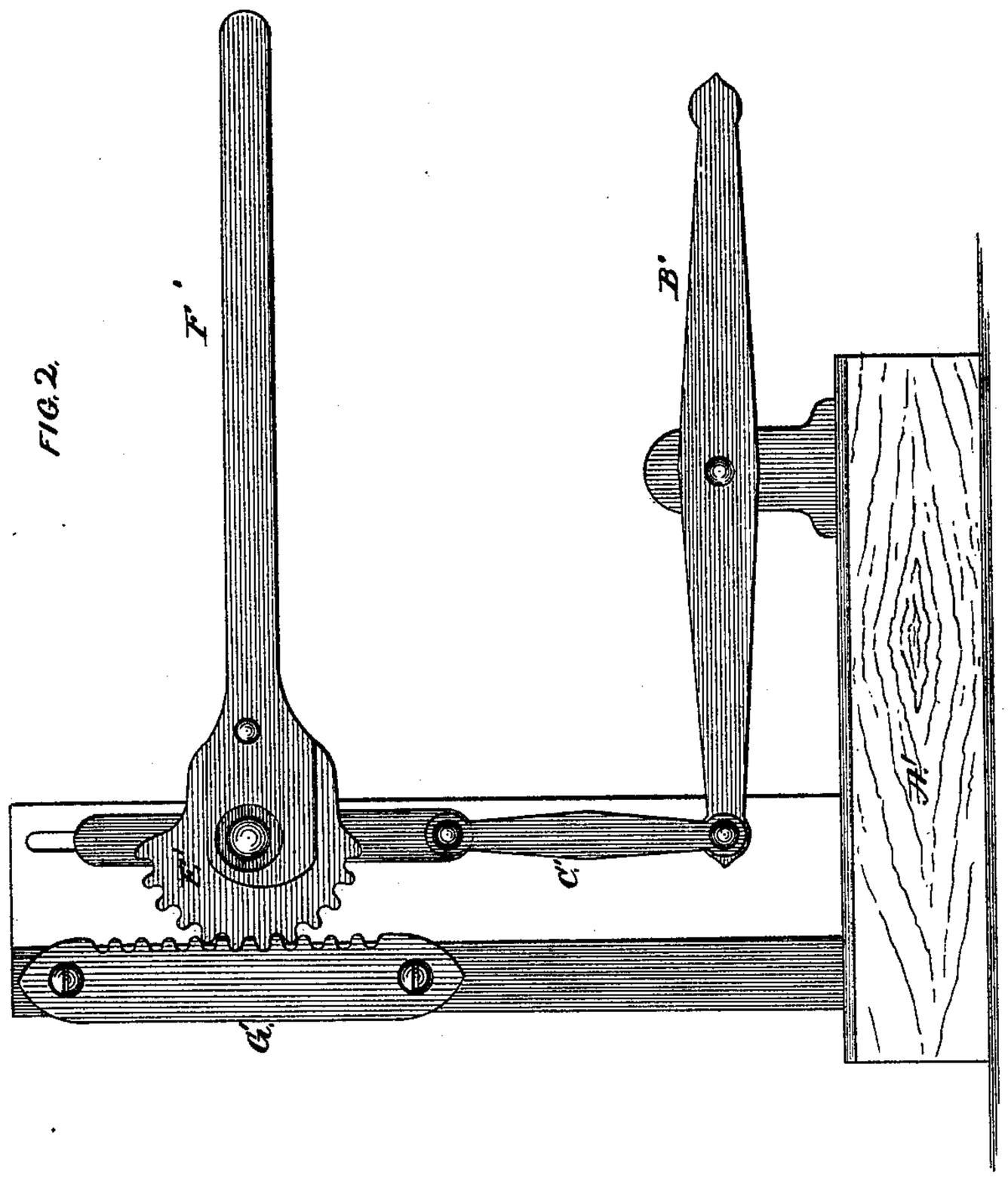
2 Sheets—Sheet 2.

T. SCHOLZE.

Mechanical-Movement.

No. 214,200. **Patented April 8, 1879.**

FIG. 2.



WITNESSES:

John F. C. Brinkerhoff,

Edw. C. Byrne

INVENTOR:

Theodore Scholze

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

THEODORE SCHOLZE, OF ANGOLA, INDIANA.

IMPROVEMENT IN MECHANICAL MOVEMENTS.

Specification forming part of Letters Patent No. **214,200**, dated April 8, 1879; application filed September 27, 1878.

To all whom it may concern:

Be it known that I, THEODORE SCHOLZE, of Angola, in the county of Steuben and State of Indiana, have invented a new and Improved Mechanical Movement; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation; Fig. 2, the same view, showing a modification.

My invention relates to a novel mechanical movement or means for converting motion, either for an increase of power or speed, as the case may be.

It consists in combining two levers by a pitman or connecting-rod, one of which levers is arranged upon a stationary fulcrum, and the other of which levers is provided with a cog-wheel or segment of a cog-wheel, which travels upon a stationary rack, so as to move laterally as a whole, as hereinafter more fully described.

In the drawings, A represents the frame-work upon which my devices are located, which frame-work may be of any suitable pattern. B is a lever, fulcrumed at *a* upon a stationary bearing, and connected at its short end to a link, C. This link is pivoted at its upper end to a sliding rack, D, which is slotted and moves upon guide-pins *b b*. Meshing with this rack is a traveling cog-wheel or pinion, E, which is rigidly attached to a lever, F, which oscillates about the center of said pinion as a fulcrum.

Upon the opposite side of the pinion from the rack D is another rack, G, which is rigid and stationary, and upon which the pinion travels as the lever oscillates.

Now, it will be seen that as the lever F oscillates, the pinion moves upon the stationary rack G, and carries the fulcrum of the said lever F with it; and as the pinion is in engagement with the movable rack D, the movement of the pinion and its axis as a whole, together with the rotary movement of the pinion about its axis, causes the sliding rack to move twice as rapidly and twice as far as the fulcrum of the lever F or axis of the pinion does. Now, if the lever B be divided into three equal parts, and the short end is exactly half of the long end, it is obvious that the long end will move through twice the space that the short end does, and hence through twice the space that the movable rack D does, because the latter is attached directly to the short end. Now, in order to secure a movement equal to the distance of movement of the long end of the lever B, it remains simply to take a point, *c*, on the lever F three times as far from the center of the pinion as the movable rack is, for the point *c* simply needs to travel twice as far as the rack D, or four times as far as the pinion, in order to travel as fast and as far as the long end of lever B; and as the point *c* has the movement of its movable fulcrum, which is one space that equals one-half that of the movable rack, it needs simply to be removed three times as far from the axis of the pinion as the rack is in order to give the other three spaces that make the said point *c* travel four times as far as its fulcrum, and twice as far as the rack. This point *c*, it will thus be seen, traverses the same distance in the oscillation of the levers that the outer end of the long arm of lever B does.

The advantage of this compound arrangement of devices is, that I am enabled to take a lever, B, for instance, moving about a fixed fulcrum, and apply power to the same with a great economy of space, either for multiplying the power or increasing the speed, the relative distance of stroke of the point where the power is applied with respect to the point where the power is utilized being made variable according to the position of the point *c* on the lever F.

As a simplification or modification of my invention I may use (see Fig. 2) a segmental pinion, E′, and dispense with the second or movable rack, which arrangement involves the same principle, and is more particularly adapted to operating deep-well pumps, the lever F′ serving as the handle, and B′ being connected with the piston-rod. These devices may be arranged in series and connected to increase the power at will.

I am aware that a movable pinion engaging upon one side with a movable rack and traveling upon the other upon a stationary rack has heretofore been employed in a pump, and

I do not claim this arrangement of devices; but,

Having thus described my invention, what I claim as new is—

1. The combination of two levers connected by a pitman or link, one of which levers is arranged upon a stationary fulcrum, and the other of which levers is provided with a cog-wheel or segment of a cog-wheel, and is arranged to travel upon a stationary rack, substantially as and for the purpose described.

2. The combination of the lever B, arranged upon a fixed fulcrum, *a*, the link C, the sliding rack D, attached to said link, the lever F, provided with a traveling cog-wheel, E, meshing with the sliding rack, and the stationary rack G, arranged upon the opposite side of the cog-wheel and engaging with the same, substantially as shown and described.

THEODORE SCHOLZE.

Witnesses:
SOLON C. KEMON,
CHAS. A. PETTIT.