

(No Model.)

F. X. BLACK & G. KAFFENBERGER.

SHIFTING ECCENTRIC.

No. 321,001.

Patented June 30, 1885.

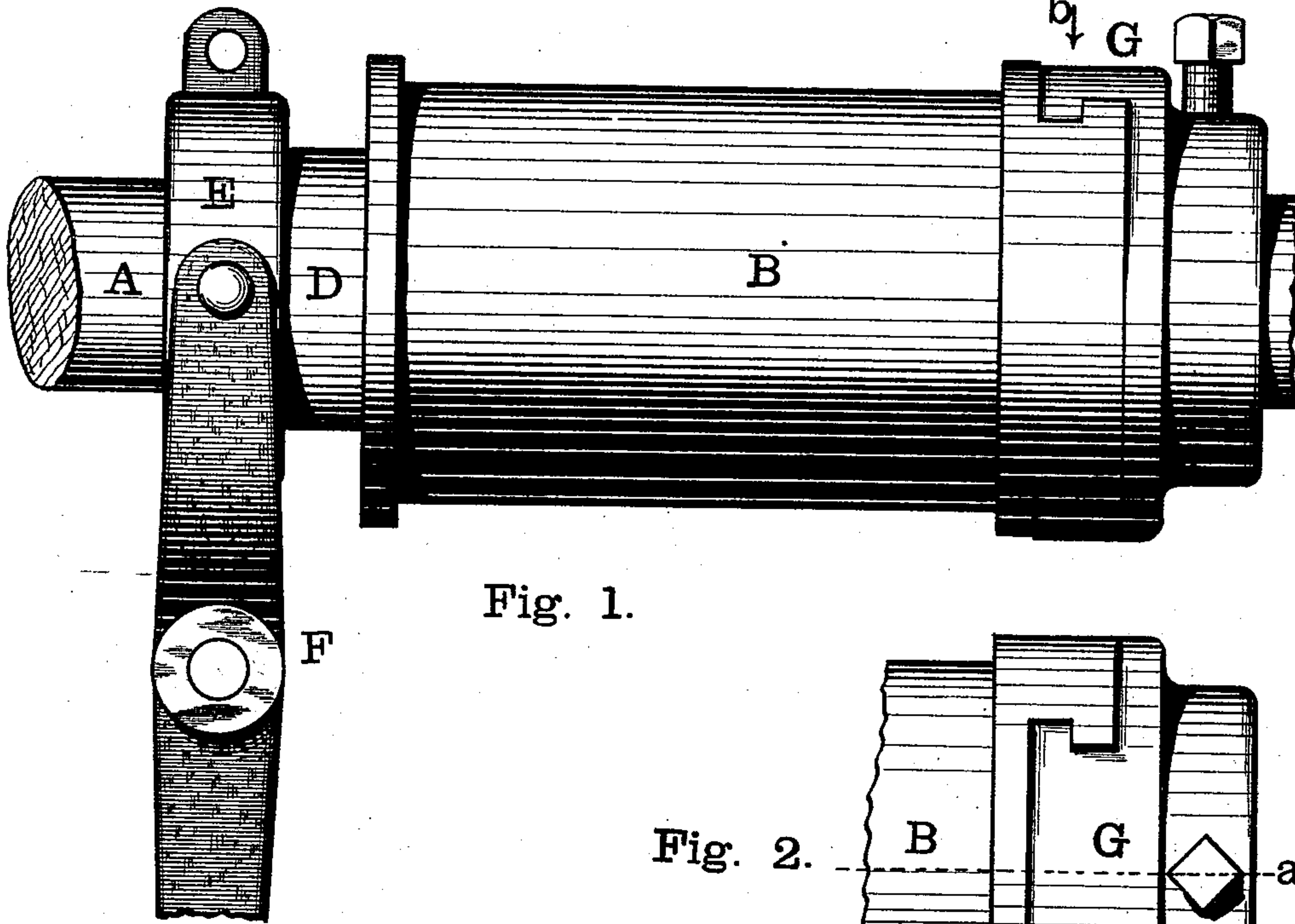


Fig. 1.

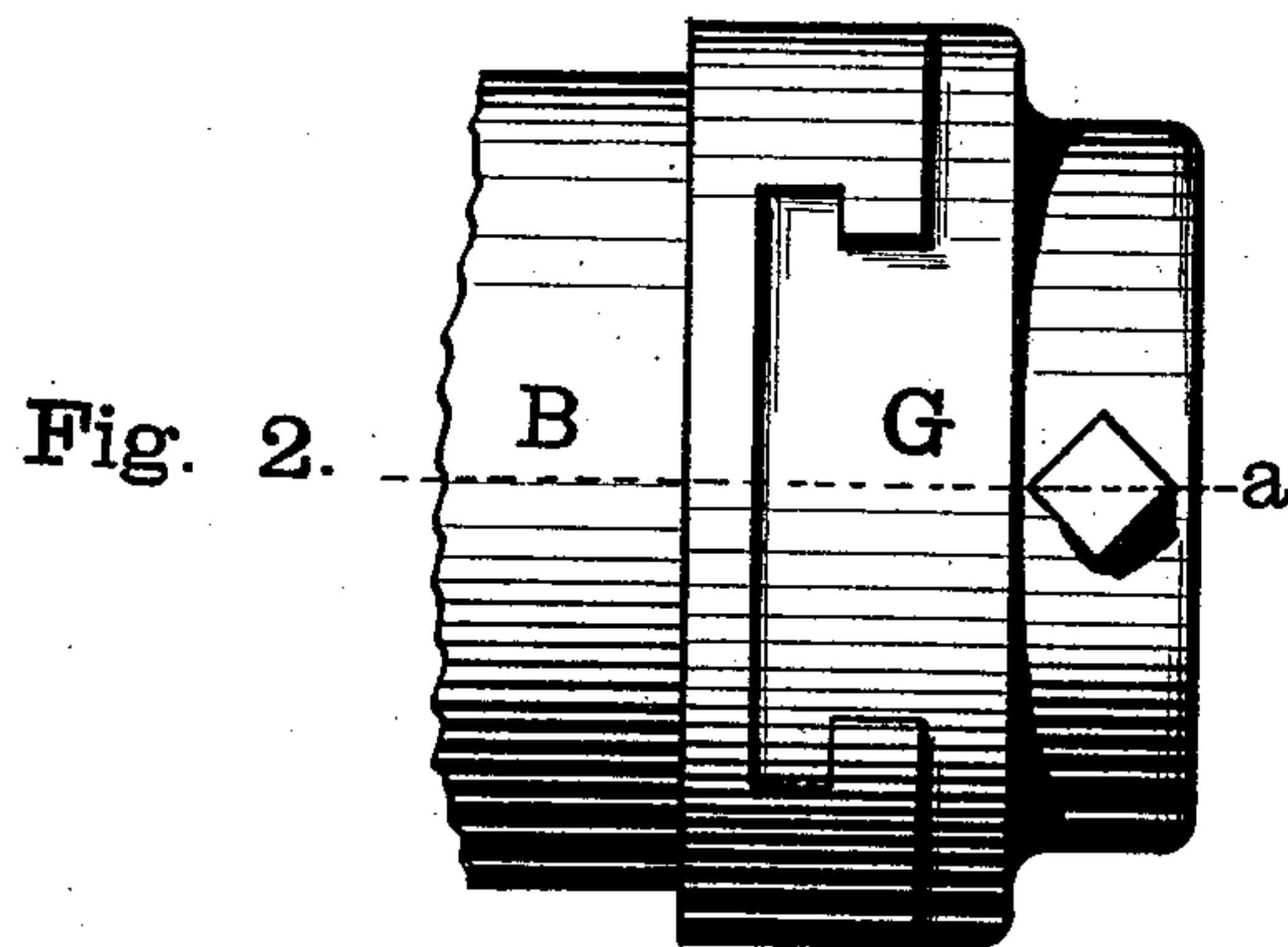


Fig. 2.

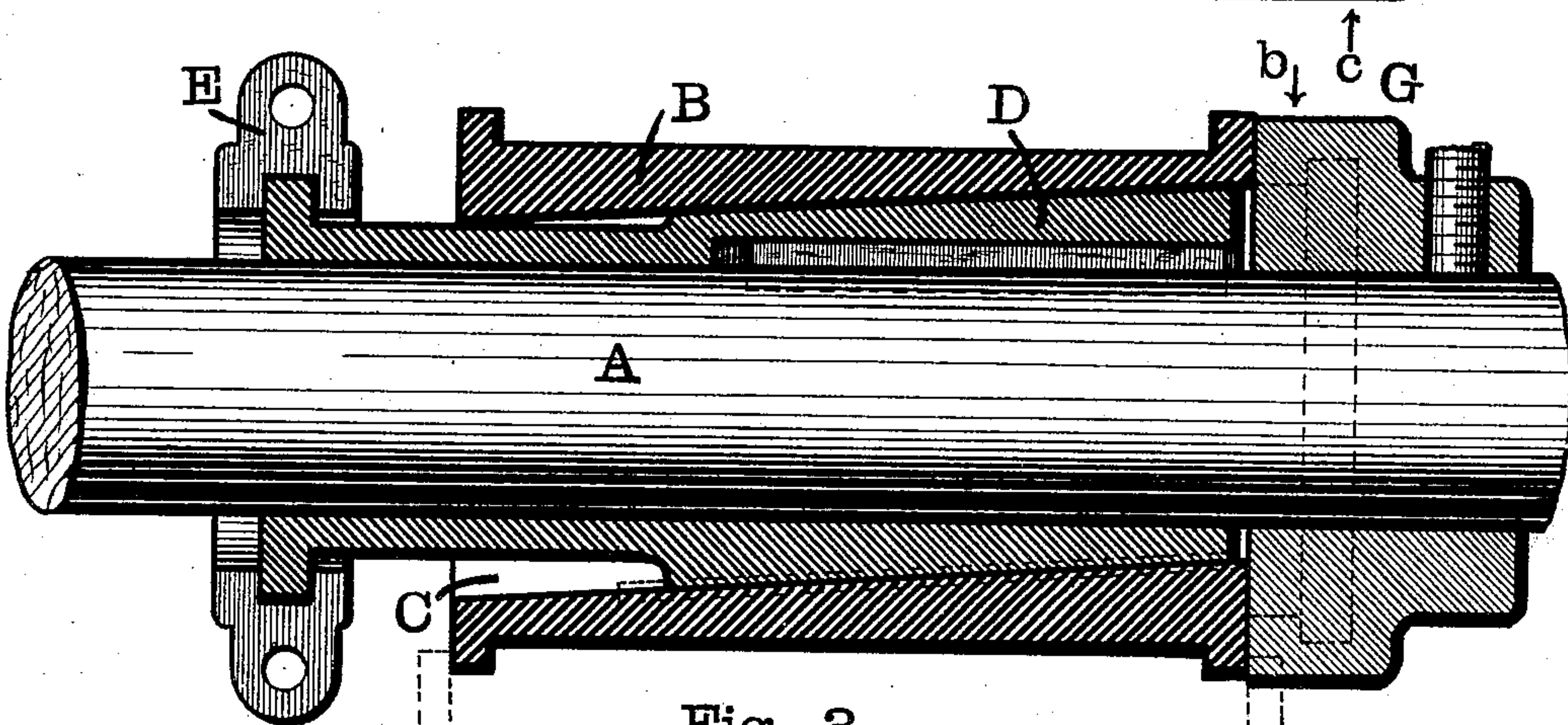


Fig. 3.

Witnesses:
W. A. Seward
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UNITED STATES PATENT OFFICE.

FRANK X. BLACK, AND GUSTAV KAFFENBERGER, OF HAMILTON, OHIO,
ASSIGNORS TO THE BLACK & CLAWSON COMPANY, OF SAME PLACE.

SHIFTING-ECCENTRIC.

SPECIFICATION forming part of Letters Patent No. 321,001, dated June 30, 1885.

Application filed April 17, 1885. (No model.)

To all whom it may concern:

Be it known that we, FRANK X. BLACK and GUSTAV KAFFENBERGER, both of Hamilton, Butler county, Ohio, have invented certain new and useful Improvements in Shifting-Eccentrics, of which the following is a specification.

This invention pertains to eccentrics for converting rotary motion into reciprocating motion; and it relates particularly to a plan of construction having for its object to enable the throw of the eccentric to be readily altered while the eccentric is in motion, and to secure in the structure a peculiar rigidity notwithstanding the eccentric proper is a loose and shiftable element.

The device, while of general applicability, is peculiarly adapted for giving the shake to parts of mechanism reciprocating at high speed through short paths, as illustrated in shaking screens and the like.

Our invention will be readily understood from the following description, taken in connection with the accompanying drawings, in which—

Figure 1 is a side elevation of a structure embodying our improvements, the relative direction of view being indicated by the arrow *c* of Fig. 2; Fig. 2, a plan of a portion of the same, the direction of view being indicated by the arrows *b* of the other figures; and Fig. 3, a vertical section on line *a* of Fig. 2, the direction of view being the same as that of Fig. 1.

In the drawings, A indicates a shaft; B, the eccentric proper; C, the cylindrical bore of the eccentric, the same being much larger than the shaft, and having its axis oblique to the axis of the shaft of the eccentric; D, an oblique cylindrical core fitting snugly the oblique bore of the eccentric, and itself bored to fit snugly, but slide longitudinally upon, the shaft, to which latter it is splined; E, a strap encircling a flange upon the hub of the sliding core; F, a lever engaging the strap E, and serving as a means for shifting the core endwise, and G a collar fixed to the shaft and provided with guideways transverse to the

shaft, engaged by jaws at the end of the eccentric.

The engagement of the eccentric proper with the guide-collar G serves to prevent end motion of the eccentric, and serves to cause the eccentric to rotate with the shaft, and at the same time permits the eccentric to move transversely when its throw is to be altered. The longitudinal adjustment of the oblique core serves, in an obvious manner, to move the eccentric transversely, and thus alter its throw. The lever and strap device E F is exhibited simply as an example of devices for shifting the core endwise. The collar G may be dispensed with, providing other means are furnished for preventing the end movement of the eccentric as the core is shifted, and for causing the eccentric to rotate with the shaft. The eccentric may be splined to the core, and thus be caused to rotate with the shaft, and fixed end-stops may be employed to prevent the end motion of the eccentric. In the lower portion of Fig. 3 will be found (represented by dotted lines) such spline and such end-stops. In some applications of this device it may be found desirable to have the core remain in a fixed longitudinal position, and to effect the adjustment of the throw of the eccentric by adjusting the eccentric endwise upon the core. In such case the end stops alluded to will be made to shift, and thus adjust the eccentric endwise.

We claim as our invention—

In an adjustable eccentric, the combination of a shaft, a collar rigidly secured to the shaft and provided with guideways transverse to the shaft, an eccentric having a cylindrical bore oblique to the axis of the eccentric, and having jaws engaging the guideways of said collar, and an oblique core fitting the shaft and the eccentric and fitted to slide thereon and therein, substantially as and for the purpose set forth.

FRANK X. BLACK.

GUSTAV KAFFENBERGER.

Witnesses:

W. A. SEWARD,

J. W. SEE.