

No. 687,007.

Patented Nov. 19, 1901.

W. A. FOSS.
REGISTER.

(Application filed Feb. 18, 1901.)

(No Model.)

FIG. I

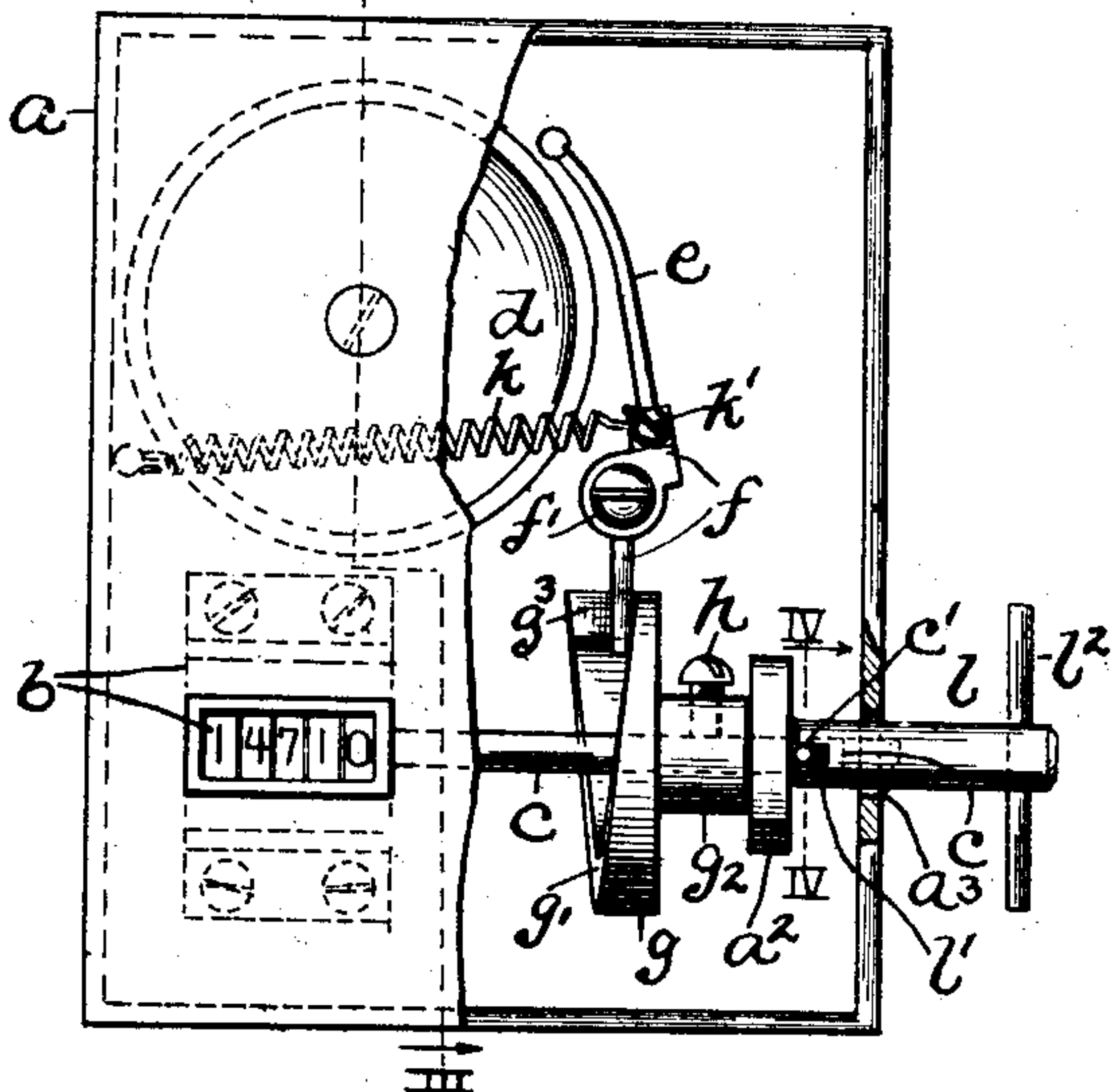


FIG. III

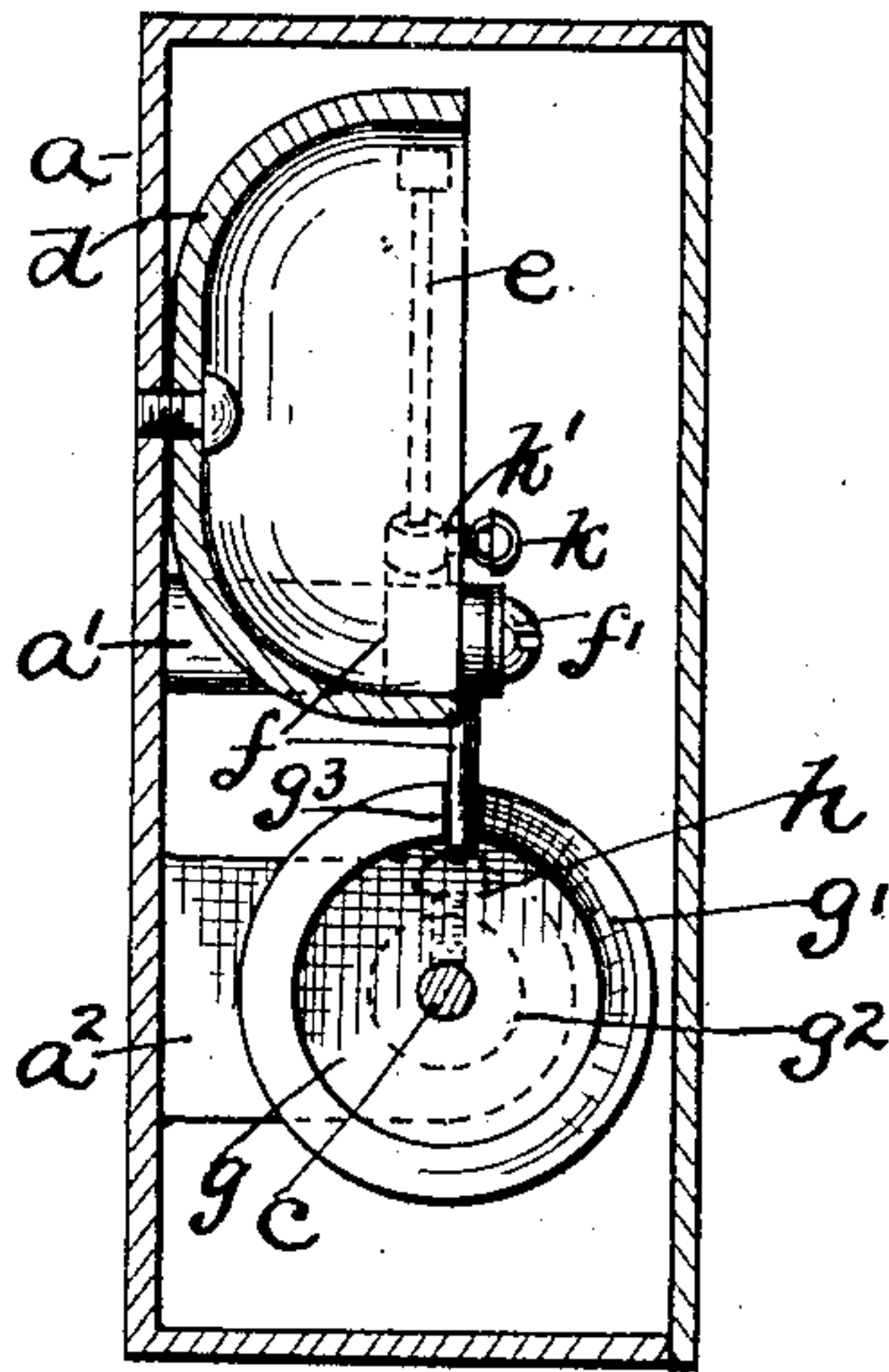


FIG. II

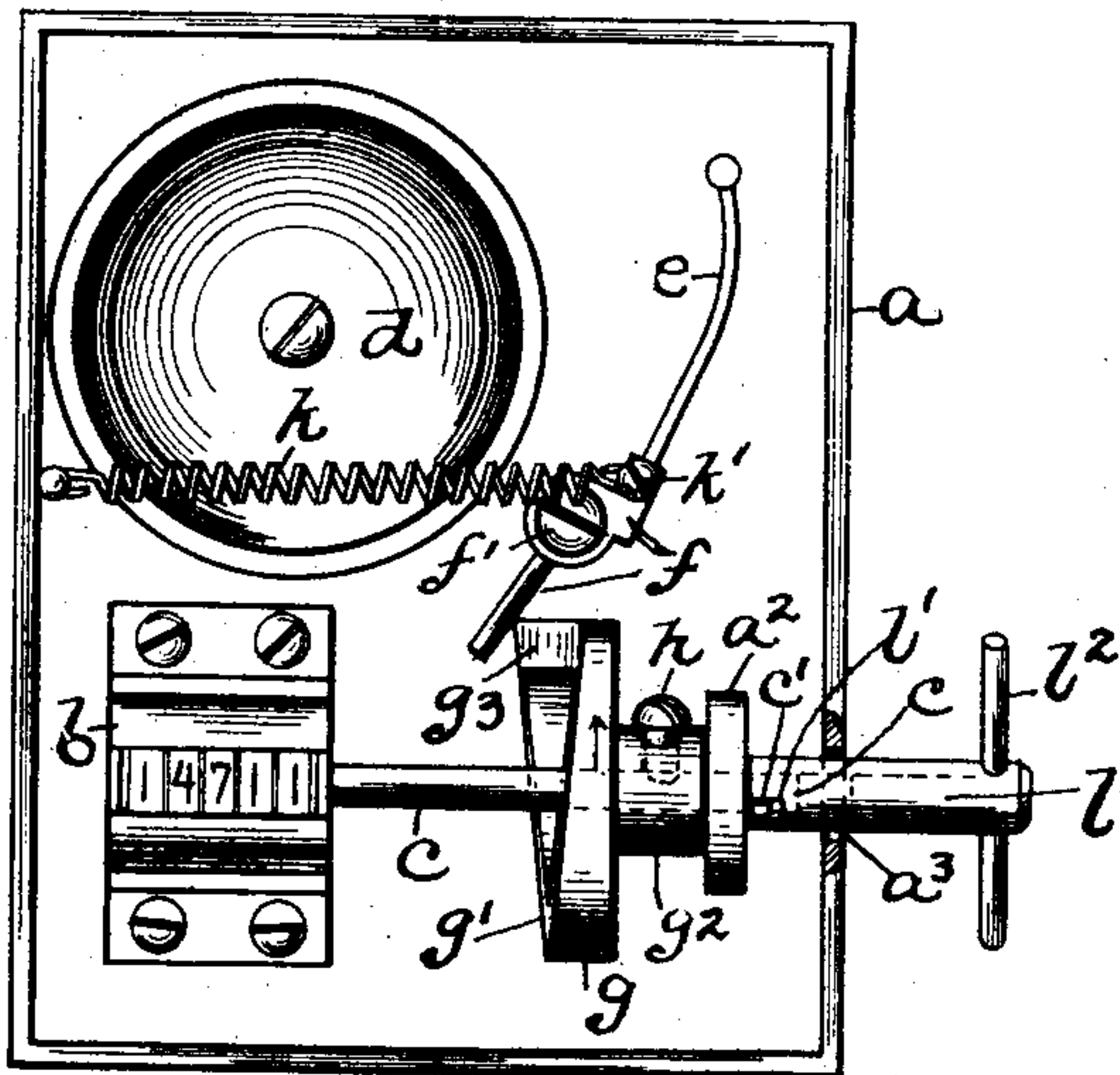
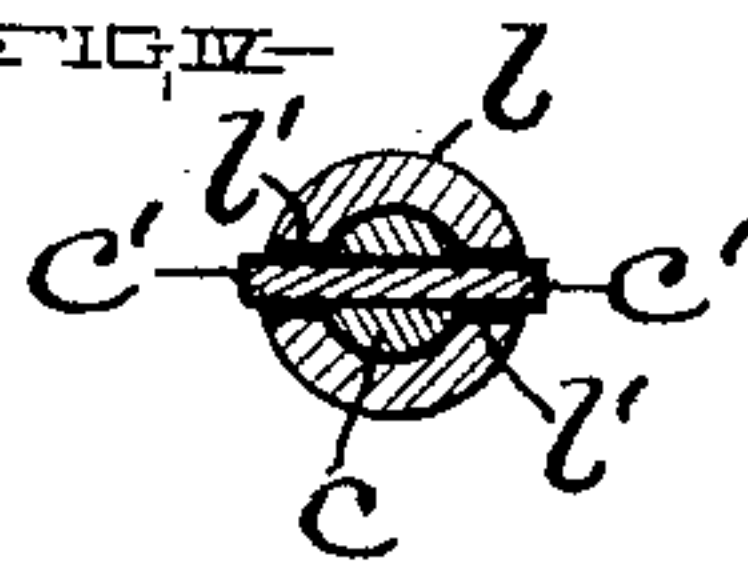


FIG. IV



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM A. FOSS, OF CLEVELAND, OHIO, ASSIGNOR TO THE AMERICAN TOLL TELEPHONE COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

REGISTER.

SPECIFICATION forming part of Letters Patent No. 687,007, dated November 19, 1901.

Application filed February 18, 1901. Serial No. 47,828. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. FOSS, a resident of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Telephone-Call Registers; 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 the same.

My invention relates to improvements in telephone-call-registering machines, and pertains more especially to a machine of the character indicated that is provided with a device or mechanism for signaling to the central station or telephone-exchange upon the operation of the register.

The object of this invention is to provide a construction that is simple and reliable in its operation and not liable to get out of order.

With this object in view the invention consists in certain features of construction and combinations of parts hereinafter described, and pointed out in the claim.

In the accompanying drawings, Figure I is a front side elevation of a telephone-call register embodying my invention, and portions of the inclosing case of the machine are broken away and in section to more clearly show the construction. Fig. II is a front side elevation corresponding with Fig. I, except that in Fig. II the front wall of the case is entirely removed and the operating parts of the signal-producing mechanism are shown in a different position. Fig. III is a left-hand side elevation in section on line III III, Fig. I. Fig. IV is a vertical section on line IV IV, Fig. I, showing the operating-shaft of the register and the shaft-turning sleeve.

Referring to the drawings, *a* designates the inclosing case of the machine. A register *b*, which may be of any approved construction, is arranged within and suitably secured to the case *a*, and *c* designates the operating-shaft of the register. In the machine illustrated the register is contained within the lower portion of the case *a*, near the left-hand side wall of the case, and has its operating-shaft *c* arranged horizontally and extending into close proximity to the inner side of the right-hand side wall of the case. Within the

upper portion of the case, above the register *b*, is provided a gong *d*, which is secured to the case in any approved manner, and *e* represents an upright gong-sounding hammer which is located at the right-hand side of the gong and normally arranged in close proximity but out of contact with the gong and is rigidly secured at its lower end to the upper arm or portion of an upright lever *f*, which is fulcrumed, as at *f'*, at or near its central portion and horizontally forwardly and rearwardly of the machine to a lug or arm *a'*, projecting forwardly from and formed upon or rigid with the rear wall of the case *a* at the right-hand side of and below the central portion of the gong. The lower or depending arm or portion of the lever *f* normally engages the cam-forming surface *g'* of a cam-wheel *g*, which has a hub *g²* rigidly secured to the shaft *c* by means of a set-screw *h*, and consequently the cam-wheel is operatively connected with the shaft. The hammer-bearing lever is arranged therefore, above the shaft *c*, with its axis arranged at right angles to the axial line of the shaft, and the cam-wheel is arranged below the axis of the lever between the register and the forward or outer portion of an arm or bracket *a²*, provided within the case *a*, and affording bearing for the shaft and formed upon or rigid with and projecting forwardly from the rear wall of the said case. The cam-forming surface *g'* of the cam-wheel is arranged concentrically of the shaft and faces the register. The said cam-forming surface extends spirally around the shaft in the direction of the register, and in the normal position of the parts the lower or depending arm or portion of the lever *f* engages that end of the spirally-arranged cam-forming surface which is farthest from the register and extends in front of a shoulder *g³*, which is formed upon the cam-wheel between the ends of the spirally-arranged cam-forming surface and faces in a direction opposite to the direction in which the shaft is turned during the operation of the register. The register and the cam-wheel are simultaneously operated, and the shaft is turned in the direction indicated by the arrow in operating the said wheel and register. A suitably-applied spiral spring *k*

is arranged forward of and extends transversely of the lower portion of the gong and acts to retain the lever f , and consequently the gong-sounding hammer, in their normal position. The spring is attached at one end, as at k' , to the upper arm or portion of the lever f and has its opposite end attached to the case a .

By the construction hereinbefore described it will be observed that upon turning the shaft in the direction indicated by the arrow as required to operate the register, as already indicated, the cam-wheel g is turned in the direction required to tilt or oscillate the lever f in the direction required to move the gong-sounding hammer farther from the gong against the action of the spring k , and the said hammer is arranged farthest from the gong when that end of the spirally-arranged cam-forming surface g' of the cam-wheel that is nearest to the register engages the lower or depending arm or portion of the lever, as shown in Fig. II, just preparatory to a complete rotation of the shaft c , and obviously the said last-mentioned arm or portion of the lever upon a farther rotation of the shaft in the same direction will be released from the last-mentioned end of the aforesaid cam-forming surface subject to the action of the spring when the spring will actuate the said lever to effect the striking of the gong by the hammer borne by the lever. The cam-forming surface g' forms a stop to limit the tilting or oscillation of the lever during the gong-operating actuation of the lever, and the aforesaid shoulder g^3 of the cam-wheel and the depending arm or lower portion of the lever f form a stop for preventing or limiting a return movement of the shaft upon the completion of the operation of the lever by the cam-wheel upon the operation of the register.

The means for operating the shaft c comprises, preferably, two arms c' and c'' , with which the said shaft is provided at opposite sides, respectively, of the shaft between the arm or bracket a^2 and the inner side of the right-hand side wall of the case a . A sleeve l is introduced through a corresponding hole a^3 , formed in the said last-mentioned wall of the case in line with the shaft. The sleeve l is large enough, diametrically, to render it capable of being slid onto the arm-bearing portion of the shaft and has two diametrically

oppositely located slots l' and l'' , arranged to register with the different arms c' and c'' , respectively, of the shaft upon the application of the sleeve, and the engagement of the said arms of the shaft with the slots in the sleeve forms such an operative connection between the sleeve and the shaft as will render the shaft capable of being turned by the sleeve. The shaft-turning sleeve is long enough to extend when applied outside of the case a a suitable distance and has its outer end provided with a crank or handle l^2 for turning the same. The arms c' of the shaft are formed, preferably, by a pin extending centrally through and transversely of the shaft and projecting beyond opposite sides of the shaft the distance required to form the said arms, as shown in Fig. IV.

My improved machine is attached or placed in close proximity to the transmitter-case or transmitter-bearing board of a telephone in any approved manner; but as the application of telephone-call registers is well understood by those skilled in the art illustration or further description of the application of my improved machine is not considered necessary in this specification.

What I claim is—

In a telephone-call register, the combination, with a register, a shaft instrumental in the operation of the register, a gong or sound-yielding body, a lever provided with a hammer for striking the sound-yielding body, and a suitably-applied spring acting to retain the hammer in close proximity or next to the gong or sound-yielding body, of a cam-wheel operatively connected with the shaft and having a cam-forming surface extending spirally around and arranged concentrically of the axis of the wheel and engaging the aforesaid lever, and means for turning the shaft, and the arrangement of parts being such that the cam-wheel shall, during the rotation of the aforesaid shaft in the direction required to operate the register, actuate the aforesaid lever against the action of the aforesaid spring, substantially as and for the purpose set forth.

Signed by me at Cleveland, Ohio, this 15th day of February, 1901.

WILLIAM A. FOSS.

Witnesses:

C. H. DORER,
A. H. PARRATT.