

(No Model.)

G. L. CUMMINGS.
CLOCK CHIME.

No. 474,371.

Patented May 10, 1892.

Fig. 1.

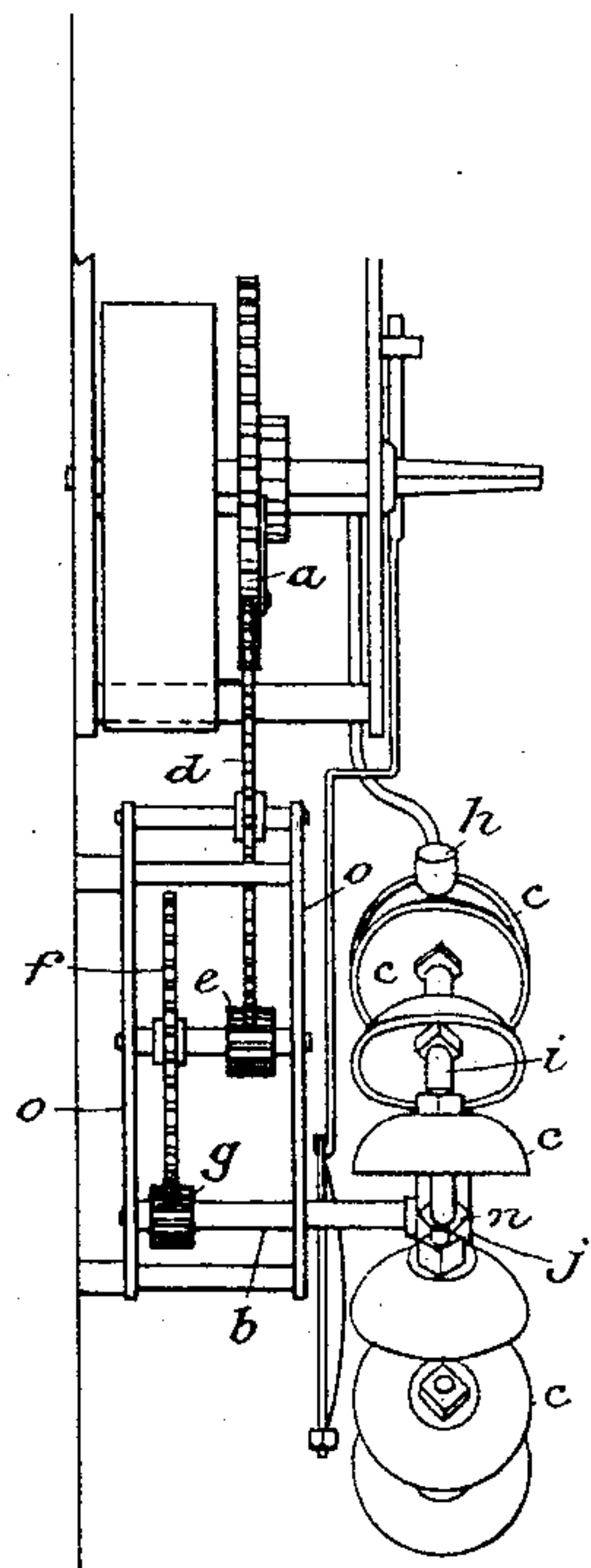


Fig. 2.

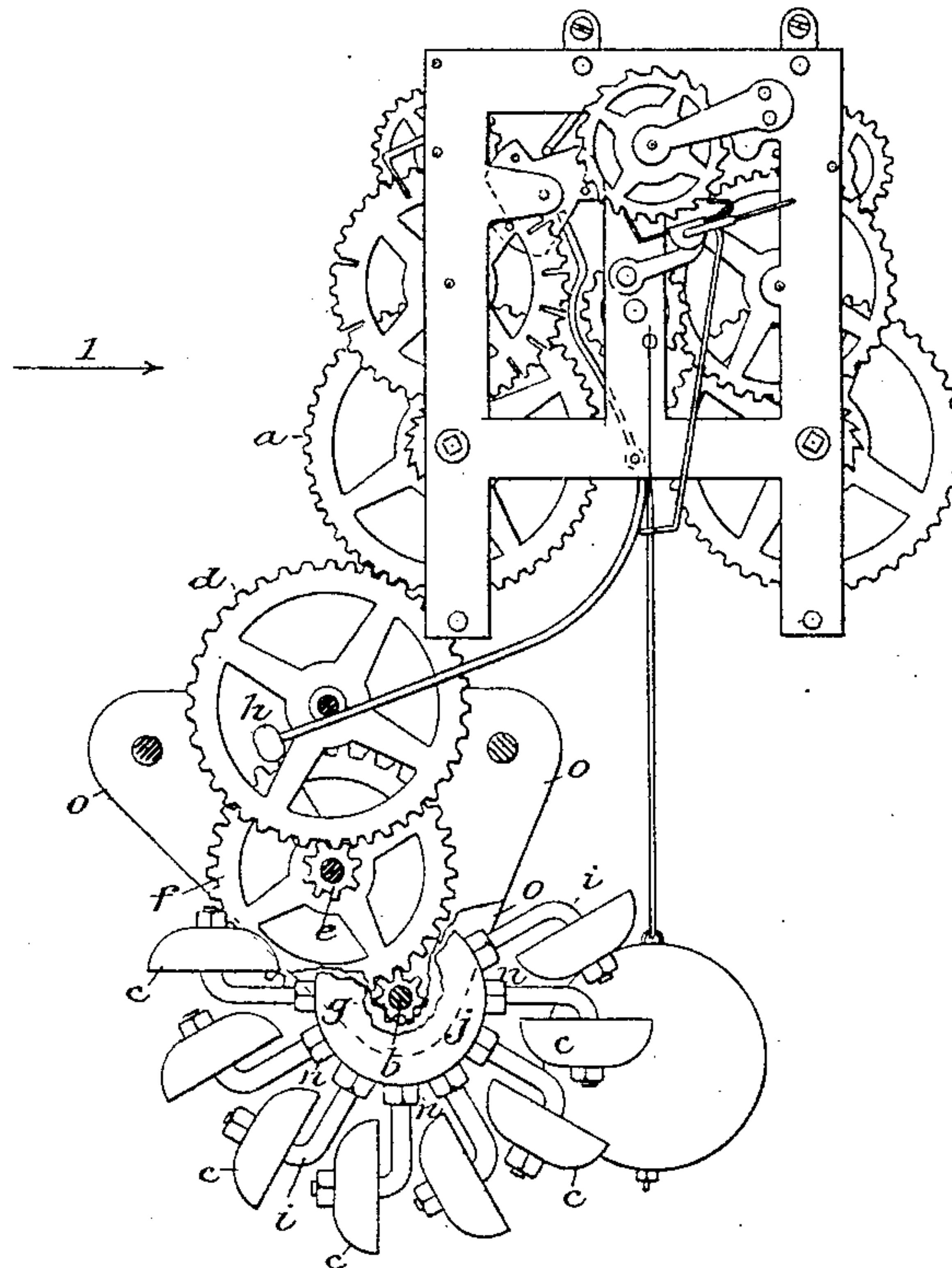


Fig. 4.

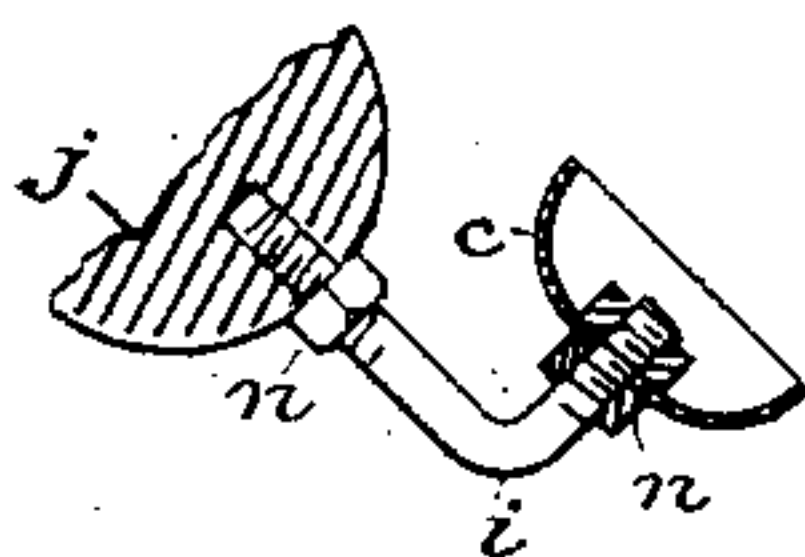


Fig. 5.

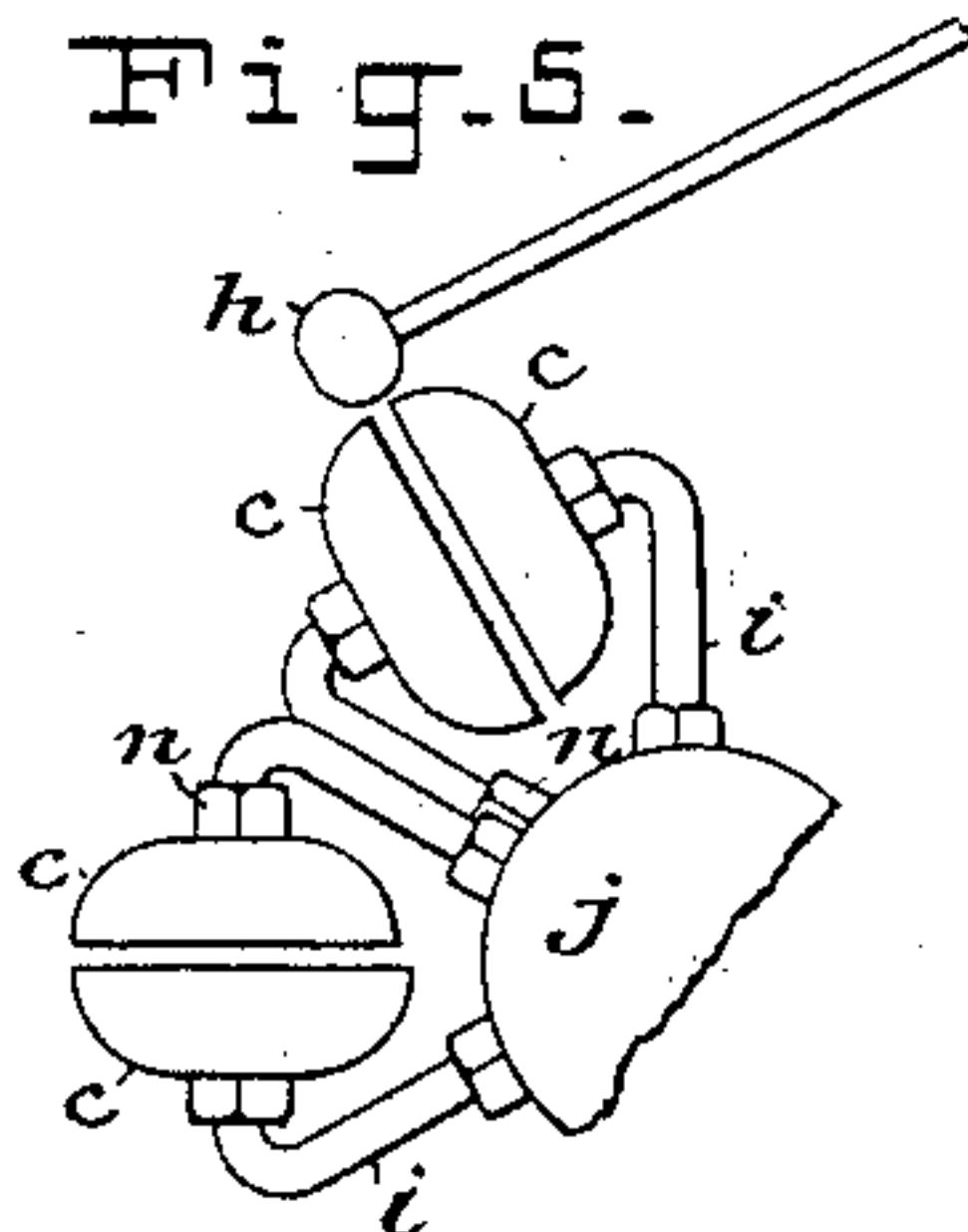
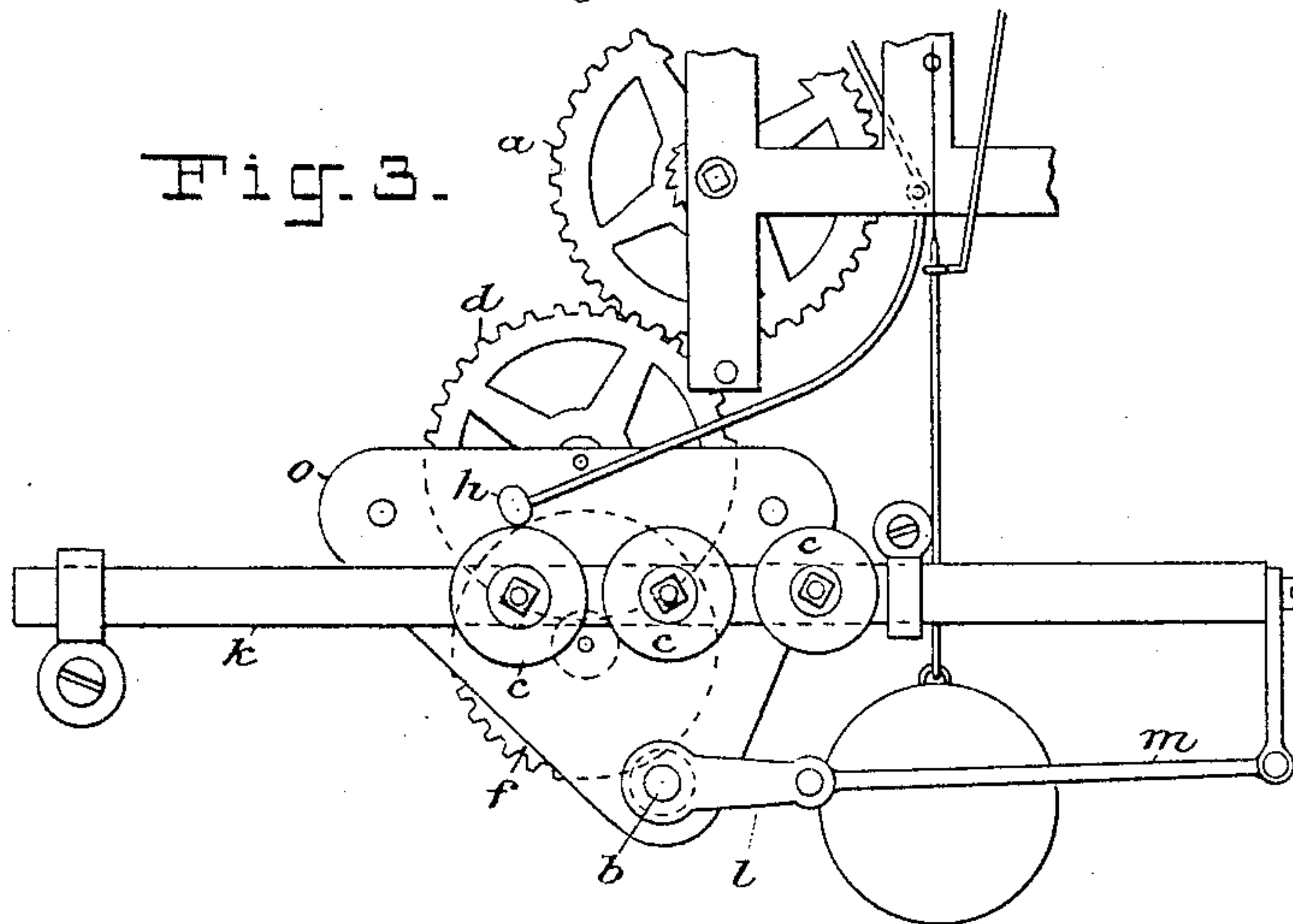


Fig. 3.



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CLOCK-CHIME.

SPECIFICATION forming part of Letters Patent No. 474,371, dated May 10, 1892.

Application filed January 24, 1889. Renewed March 14, 1891. Serial No. 384,990. (No model.)

To all whom it may concern:

Be it known that I, GEORGE L. CUMMINGS, a citizen of the United States, residing at New York city, in the county and State of New York, have invented certain new and useful Improvements in Chime-Clocks; 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 appertains to make and use the same.

My invention is a contrivance of clock-chimes for being moved along the hammer, so that all the bells of the chimes may be struck successively by one hammer, which is a much simpler and cheaper construction and arrangement of mechanism than the common arrangement of a hammer to each bell, all as hereinafter fully described, reference being made to the accompanying drawings, in which—

Figure 1 is a side elevation of the works of a chime-clock of my invention with the chime arranged for rotatory movement for bringing the bells to the hammer successively. Fig. 2 is a front elevation of the same with a part in section. Fig. 3 is a front elevation of part of the clock-works, showing the chime arranged for reciprocatory movement of the chime in which the invention may be carried out, although the rotatory movement is the best. Fig. 4 is a detail of the contrivance for mounting the bells as in Figs. 1 and 2; and Fig. 5 represents an arrangement of the bells so that two may be struck at once by the hammer.

With any part of the striking-train of a clock, but preferably with the prime moving wheel *a*, I gear a driving-shaft *b* for working the chime of bells *c* by a suitably-timed or graduated train *d e f g* for the motion I want, according to the number of bells to be employed in the chime, and connect the bells with said shaft in any approved way, so that they will be moved successively along past the hammer *h* when it is working and be thereby struck in succession, preferring to connect them by radial arms *i* of a hub *j*, carried by said wheel for rotatory motion, as in Figs. 1 and 2; but they may be mounted on a reciprocatory mover *k*, having suitable crank-and-rod connection *l m* with said shaft, as in

Fig. 3, or otherwise, as desired. The rotatory arrangement affords a greater range of movement and consequently enables a greater number of bells to be used in the chime with a given range of the driving-train than the reciprocatory movement and is preferred for that reason, and, besides, it is somewhat simpler to construct; but with either way of producing the movement clocks can be made with equally efficient chimes much cheaper than in the common arrangement of stationary bells and a hammer to each bell, which makes chime-clocks so expensive that they are not much used.

When I use gong-bells, I prefer to mount them in the rotatory arrangement by the bent arms *i*, edgewise parallel to the shaft *b*, by which they can be placed closer together and therefore in a smaller circle, and I mount these arms in the hub, so that they can be turned to hold the bells obliquely, with check-nuts *n* to secure them in any position; but I do not limit myself to any particular form of bell or way of mounting the same.

The driving-train for the chime is mounted in any approved frame *o* that is adapted to be applied to clocks in use by fastening it to the inside of the back of the clock-case; but in the making of new clocks it will be preferable to adapt the clock-frame for reception of the chime attachment.

If desired, the bells may be arranged in pairs with the members of each pair in such close proximity that both will be struck at the same time by the hammer, as represented in Fig. 5. This adjustment of the bells may be facilitated by the bent supporting arms.

What I claim, and desire to secure by Letters Patent, is—

1. A clock-chime consisting of moving bells passing along the hammer so as to be successively struck by a single ordinary clock-hammer, substantially as described.

2. The combination, with the bell-hammer of a clock, of a movable chime of bells, and bell-operating mechanism connected with the striking-train of the clock and moving the bells successively to the hammer when striking, substantially as described.

3. The combination, with the bell-hammer of a clock, of the rotatory chime of bells, and

bell-operating mechanism connected with the striking-train of the clock and moving the bells successively to the hammer when striking, substantially as described.

5 4. The bells connected to the carrying-hub by the bent arms adjustably fitted in the hub, and having the check-nut fastening, substantially as described.

10 5. The combination, with the bell-hammer of a clock, of a moving chime in which the

bells are placed in pairs juxtaposed so that the hammer strikes both bells of a pair together, substantially as described.

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

GEO. L. CUMMINGS.

Witnesses:

W. J. MORGAN,

W. B. EARLL.