



No. 685,045.

Patented Oct. 22, 1901.

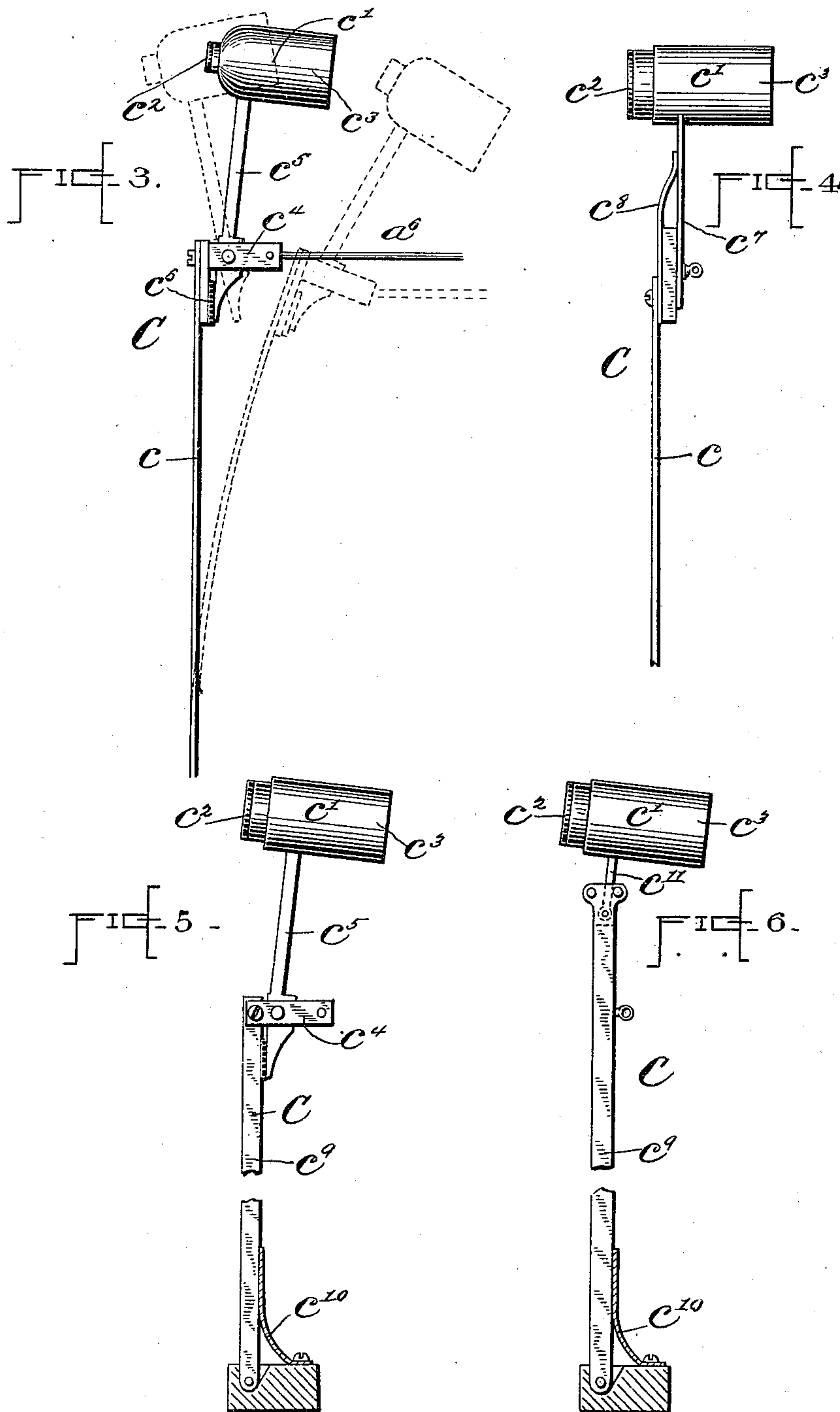
C. A. JACQUES.

CLOCK CHIME.

(Application filed Feb. 12, 1901.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses:

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# UNITED STATES PATENT OFFICE.

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## CLOCK-CHIME.

SPECIFICATION forming part of Letters Patent No. 685,045, dated October 22, 1901.

Application filed February 12, 1901. Serial No. 46,975. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES A. JACQUES, a citizen of the United States, residing in the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Hammers for Clock-Chimes, of which the following is a specification.

My invention relates to hammers for clock-chimes.

I will describe a hammer embodying my invention and then point out the novel features thereof in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a clock-chime and hammer, the latter embodying my invention. Fig. 2 is a front view thereof. Fig. 3 is a side elevation of a hammer construction embodied in my invention. Figs. 4, 5, and 6 are modified forms of hammers. Figs. 3, 4, 5, and 6 are drawn to a larger scale than Figs. 1 and 2.

Similar letters of reference designate corresponding parts in all of the figures.

A A' represent a pair of uprights, each having a laterally-extending arm  $a$ , and  $A^2$  a cross-bar connecting them. This cross-bar is provided with a number of projections  $a'$ , from which are suspended tubular bells B. I do not make any claim to the form of bell herein shown, as the same constitutes the subject-matter of a copending application filed June 12, 1901, Serial No. 64,269. This suspension is accomplished by means of separate cords  $a^3$ , which engage said projections and pass through the tubes.

$A^3$  represents a support for a clock mechanism  $A^4$ , which clock mechanism operates at intervals a pin-cylinder  $A^5$ .

$a^4$  represents a number of levers pivoted intermediate their ends on a cross-bar  $a^5$ , the lower ends of which levers are engaged by the pins on the cylinder  $A^5$  to move them on their pivots. The upper ends of the levers are connected through cords  $a^6$  to hammers C, which are supported by a cross-bar  $a^7$ , secured to the uprights A A'. A hammer C is provided for each bell B.

Each hammer C is provided with a supporting-arm  $c$ , a head  $c'$ , having a striking-face  $c^2$ , and a weighted end  $c^3$ . In practice the ham-

mer is so supported as to have its head  $c'$  in balance above the hammer-support. When the pin-cylinder  $A^5$  is operated to move the levers  $a^4$ , the heads  $c'$  are drawn back, and as the heads move out of the vertical plane of their supports the weight  $c^3$  of each hammer assists in moving it backward. The advantage of this is that a much lighter weight  $A^6$  for the clock mechanism may be employed in starting the mechanism which rotates the pin-cylinder.

The preferred form of hammer is shown in Fig. 3. Referring to this figure, the arm  $c$  is a flexible one and consists of spring metal. At the upper end of the arm two plates  $c^4$  are secured to it, and pivoted between these plates is the lower end of a rigid stem  $c^5$ , to which the head is secured. The stem  $c^5$  is movable upon its pivot, and its movement forward or toward the bell is limited by the stem  $c^5$  engaging with the end of the arm  $c$ , and in its backward movement it is limited by its end engaging a pad  $c^6$ , fixed to the arm  $c$ . In the operation of this hammer as it is drawn back the arm  $c$  is bowed or flexed, and as the lever is disengaged from a pin on the pin-cylinder the spring of the arm throws the head forward; but the forward movement of the arm  $c'$  is limited by the cord  $a^6$  of the hammer. The sudden stopping of the lever causes the head to move forward on the pivot of the stem  $c^5$  and to strike the bell. After the bell has been struck the head is thrown back, by reason of the stem  $c^5$  engaging the end of the arm  $c$ , to its original position. The various positions are illustrated in Fig. 3. The cord  $a^6$  is secured to the two plates  $c^4$ .

In Fig. 4 instead of a rigid and pivoted stem  $c^5$  I substitute a flexible stem, and abutting against the flexible stem (designated by  $c^7$ ) is a spring  $c^8$ . This spring  $c^8$  serves to return the head to its normal position.

In Fig. 5 instead of a flexible arm  $c$  I employ a rigid arm  $c^9$ . The rigid arm  $c^9$  is impelled forward and toward the tubular bell by means of a spring  $c^{10}$ , which is secured to the support of the hammers.

In Fig. 6 I also employ a rigid arm  $c^9$ , which is impelled toward the tubular bell by a spring  $c^{10}$ . I also bifurcate the rigid arm and pivot



the stem  $c^{11}$  of the head in the bifurcation. The movement of the head on its pivot may be limited in any desired way.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A hammer for striking bells consisting of a supporting-arm supported at one of its ends and adapted to have movement at its free end, a stem connected with the free end of said supporting-arm and adapted to have movement at its free end, and a counterbalanced head carried by the free end of said stem.
2. A hammer for striking bells consisting of a supporting-arm supported at one of its ends and adapted to have movement at its free end, a stem pivoted at one of its ends to the free end of said supporting-arm, and a counterbalanced head carried by the free end of said stem.
3. A hammer for striking bells, consisting

of an arm, a weighted head pivoted to an end of said arm, means for limiting the movement of said head on its pivot, and means for moving the arm to cause the head to strike.

4. A hammer for striking bells, consisting of a flexible arm, a weighted head having a rigid stem pivoted through said stem to said arm, and means for limiting the movement of said stem on its pivot.

5. A hammer for striking bells, consisting of a flexible arm, a weighted head having a rigid stem by which it is pivoted to said arm, means for limiting the movement of said stem on its pivot, and means for moving said arm to cause the said head to move on its pivot.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES A. JACQUES.

Witnesses:

GEORGE H. BIRCH,  
GEO. E. CRUSE.