

No. 686,301.

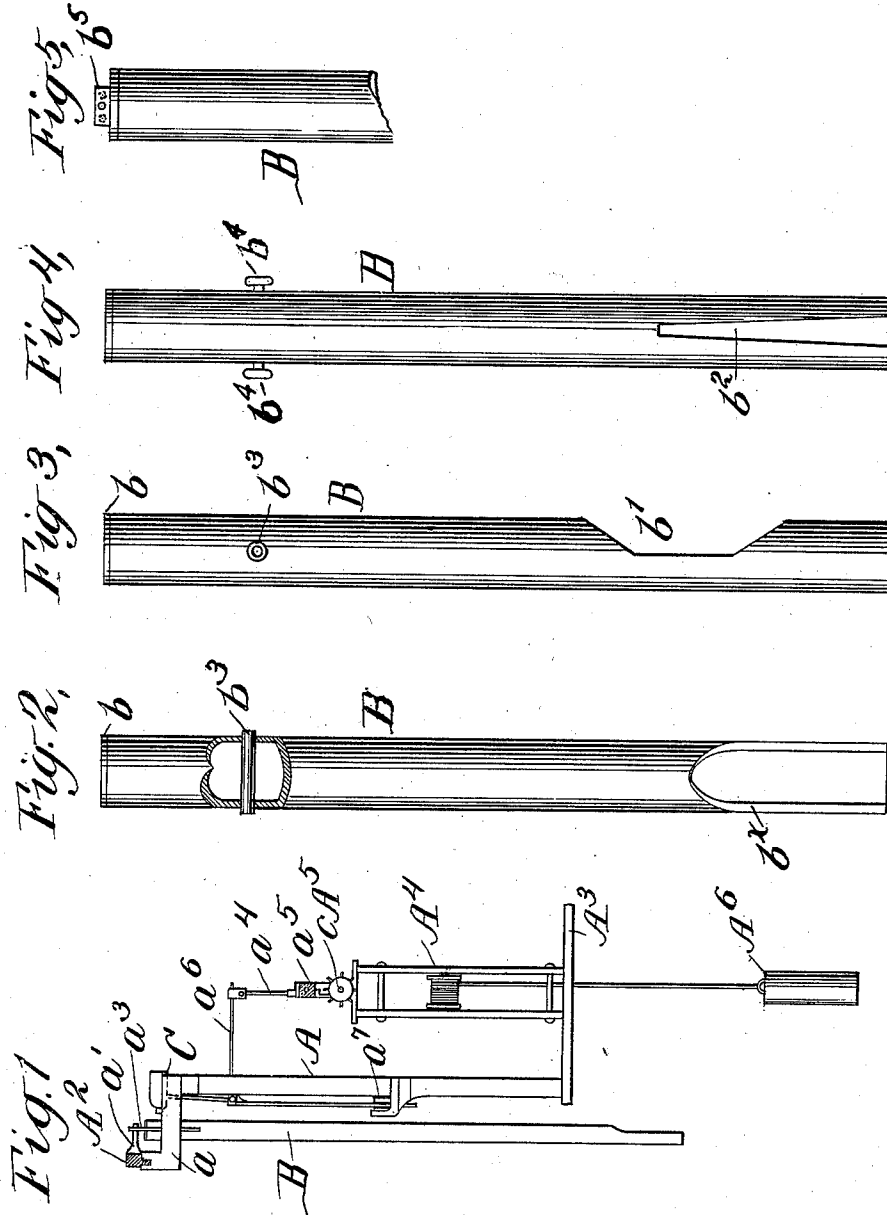
Patented Nov. 12, 1901.

C. A. JACQUES.

TUBULAR BELL.

(Application filed June 12, 1901.)

(No Model.)



WITNESSES:

Harry Goss.
Geo. C. Cruse.

INVENTOR.

Charles A. Jacques

BY

Dickerson, Brown & Wagner

HIS ATTORNEYS.

UNITED STATES PATENT OFFICE.

CHARLES A. JACQUES, OF NEW YORK, N. Y., ASSIGNOR TO BAWO & DOTTER,
OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

TUBULAR BELL.

SPECIFICATION forming part of Letters Patent No. 686,301, dated November 12, 1901.

Application filed June 12, 1901. Serial No. 64,269. (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 Tubular Bells, of which the following is a specification.

My invention relates to tubular bells, and more particularly to the class of bells employed in clocks.

I will describe a tubular bell 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 mechanism and showing supported from the framework comprised therein a tubular bell embodying my invention. Fig. 2 is a view, partly in elevation and partly in vertical section, of a tubular bell embodying my invention. Figs. 3 and 4 are side elevations of tubular bells, showing modified forms of my invention. Fig. 5 is a detail view of a portion of a tubular bell, showing a still further modification. Figs. 2, 3, 4, and 5 are drawn to a larger scale than Fig. 1.

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

A represents one of a pair of uprights, each of which has a laterally-extending arm a , and a cross-bar A' connecting them. This cross-bar is provided with a number of projections a' , from which are suspended, preferably by means of cords A^2 , tubular bells B.

A^3 represents a support for a clock mechanism A^4 , which mechanism operates at intervals a pin-cylinder A^5 , which is adjacent said mechanism. The pin-cylinder A^5 in its rotation moves on their pivots levers a^4 , supported on a cross-bar a^5 . An end of each lever is connected by a cord a^6 with a hammer C, and the hammers C are supported by a cross-bar a^7 . It will be understood, of course, that a hammer and operating parts are provided for each bell B.

The bells B are, as stated, tubular—that is, the length of each bell is considerably greater than its diameter—but of that style of bell in which the metal of the tube is tuned to accord with the confined air-column. The bell B will, to have a confined air-column, be

closed at one of its ends and its wall will be without an opening from the cap end of the tube to the end of the air-column. The closing of an end of the tube may be accomplished by means of a cap b , which may be of any desired thickness. The tuning of the metal of the tube to bring it in accord with the confined air-column may be accomplished by cutting away a portion of the tube, as indicated at b in Fig. 3.

Instead of cutting the tube in the manner shown in Fig. 2 it may be notched, as indicated at b' in Fig. 3, or split diametrically for a portion of the bell's length, as indicated at b^2 in Fig. 4. It may also be pierced with holes at one end thereof, as in a flute. The confined air-column extends from the closed end of the bell to the edge of the first cut or opening nearest the closed end of the bell. In all cases the material of the tube will be sonorous. Each bell will preferably be supported or suspended at or near the end of that portion of the tube confining the air-column, and preferably at a nodal point near the closed end of the tube. The advantage of supporting a bell of this style in this manner is that most of the weight is beneath the point of suspension and the swinging of the bell after being struck is materially lessened. To preserve the air-column and yet suspend the bell by passing a cord through it, a tube b^3 is passed through the bell and suitably secured in position. The opening between the wall of the bell and the wall of the tube is sealed. The suspension-cord A^2 for each bell is passed through the tube b^3 . Other ways of suspending a bell at or near its closed end may be by means of laterally-extending hooks or lugs b^4 or other projecting devices on the outside of the bell with which the suspension cord or cords engage. Instead the cap b of each bell may be provided with a rib b^5 , pierced with an opening or openings through which the suspension cord or cords pass.

By using a tubular bell of this nature for clocks a much shorter bell can be used, thereby saving considerable space in the clock-casing.

What I claim as my invention is—

1. A tubular bell, closed at one end to produce a confined air-column and having its

metal tuned to accord with its confined air-column, and having means connected with the wall of the tube inclosing the air-column and at or near the closed end of the tube
5 without destroying the confined air-column, by which the tube may be suspended in such manner as to have its weight beneath its point of suspension.

2. The combination with a tubular bell
10 closed at one end to have a confined air-column and having its metal tuned to accord with its confined air-column, of means passed through but not destroying the confined air-column, for permitting of a suspension of the
15 tube.

3. The combination with a tubular bell closed at one end to have a confined air-column, of a suspension-tube passed through the wall of the tube and not destroying the confined air-column of the tubular bell at
20 such a point as to have the weight of the tube beneath the point of suspension.

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

CHARLES A. JACQUES.

Witnesses:

GEO. E. CRUSE,
K. G. LE ARD.