

W. Fletcher.

Bell.

N^o 90,654.

Fig. 1.

Patented Jan. 1, 1869.

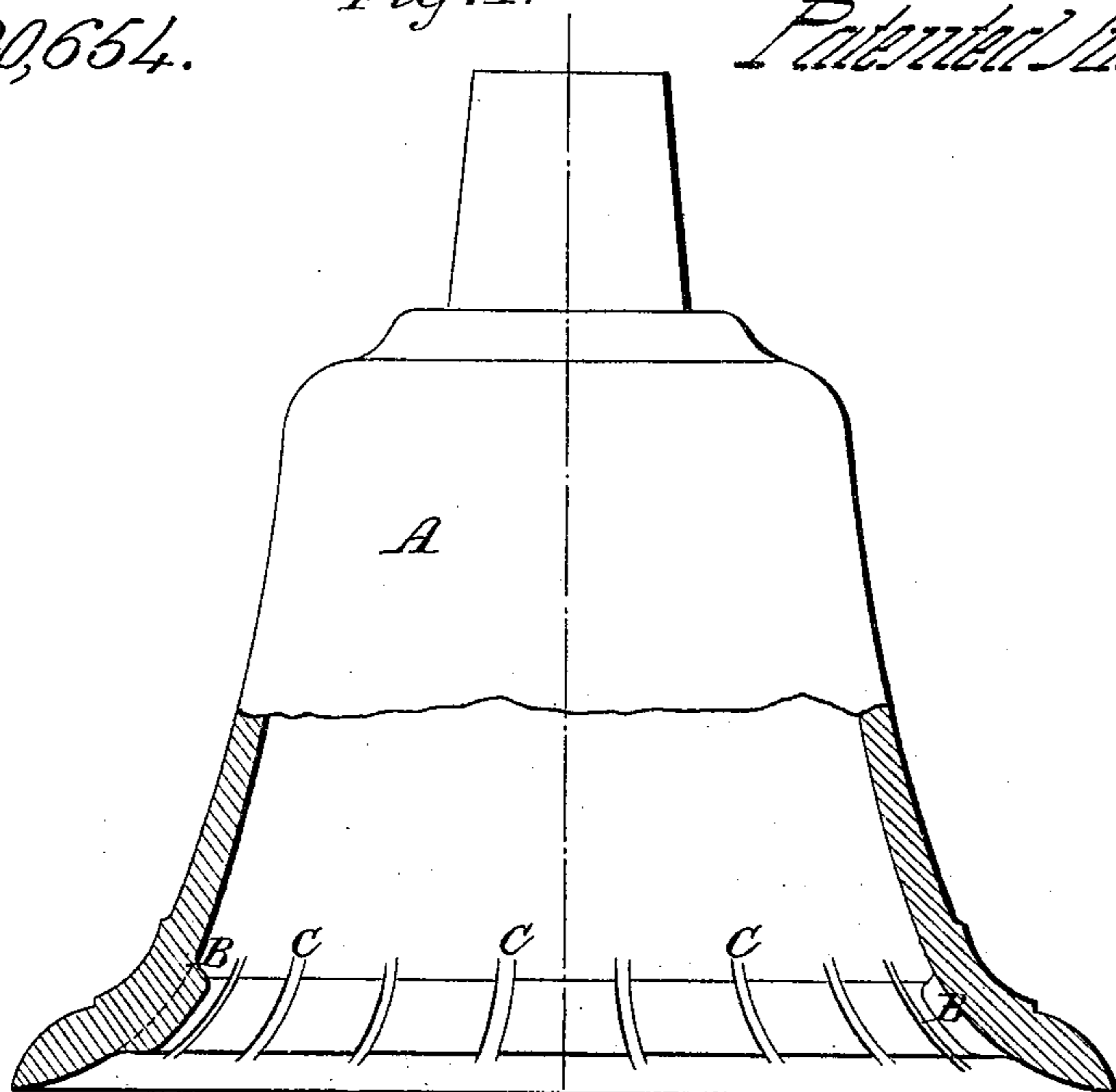
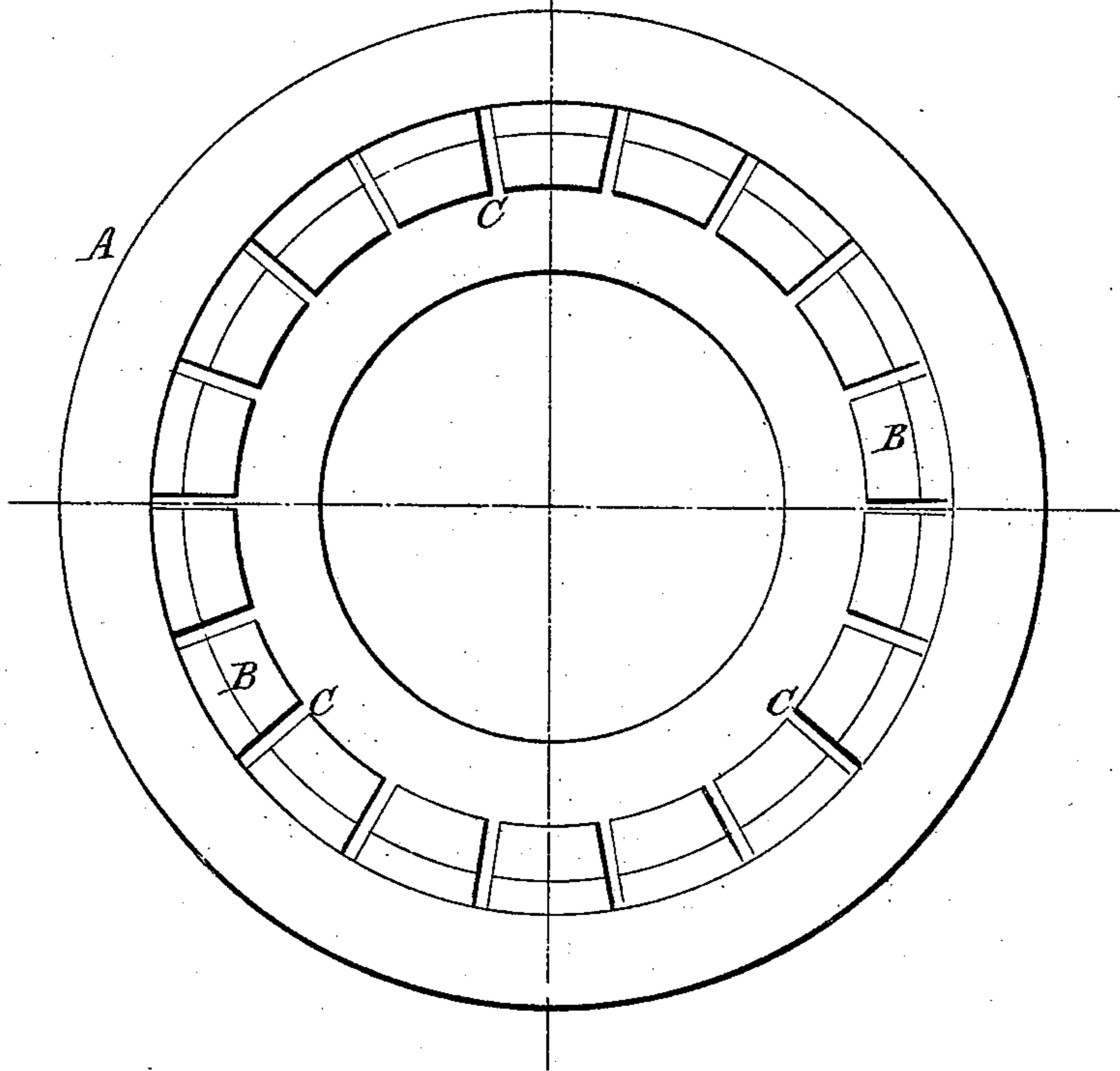


Fig. 2.



Witnesses.
Joseph G. Carson
Wm. H. Bishop

Inventor
William Fletcher

United States Patent Office.

WILLIAM FLETCHER, OF NEW YORK, N. Y.

Letters Patent No. 90,654, dated June 1, 1869.

IMPROVEMENT IN BELLS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, WILLIAM FLETCHER, of the city, county, and State of New York, have invented a new and useful Improvement in Bells; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is an elevation of a bell, on my improved plan, representing the lower part in section, and

Figure 2, an inverted view.

The same letters indicate like parts in both figures.

It is well known that bells made of cast-metal are liable to crack after having been used for some time, which cracking is due to the fact that the cast-metals of which bells are made possess very little ductility, and, as the clapper strikes the bell always at the same distance from the axis of its vibration, and near the edge or rim, the repeated strokes gradually expand the inner circumference, which expansion of the inside soon causes a strain on the outer circumference greater than the tenacity of the metal can stand, and then it gives way, and the bell, in consequence, becomes worthless.

The object of my said invention is to render bells more durable, by so constructing that part of the inner circumference which is struck by the clapper, that it shall not be expanded by the force of the hammering to which bells are subjected in use; and to this end,

My said invention consists in making that part of the inner circumference of a bell, against which the clapper or hammer strikes, with narrow grooves, to make what may be termed breaks in the inner circumference, so that the parts which are struck by the clapper may expand without exerting a straining or pulling action on the outer part.

Having thus stated the purpose and nature of my invention, I will now describe the mode of construction, which I have tried and deem to be the best.

The accompanying drawings represent a bell of the usual form, which form may be varied at pleasure.

I cast the inner periphery of the bell, A, where the clapper or hammer strikes, with an inward-projecting rib, B, and of a thickness about half the thickness of the body, and this rib is either cast with a series of cross-grooves, C, at given distances apart, or, instead of forming such grooves in casting, they may be cut into the rib by any suitable tool.

The grooves I prefer to make, in depth, about equal to the thickness of the rib B.

These grooves afford abundant space for the free expansion of the segments of the rib due to the hammering force of the clapper, thereby avoiding the strain on the outer portion of the bell.

Although, as I have above stated, I prefer to cast the bell with a grooved projecting rim, and deem that the best mode of construction, still it will be obvious that a bell may be made on the plan of my said invention without such a projecting rib, by casting that part of the inside of the bell which is struck by the clapper with cross-grooves, or by cutting in such grooves.

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

Forming that part of the inner circumference of a bell, against which the clapper strikes, with cross-grooves, substantially as and for the purpose set forth.

WILLIAM FLETCHER.

Witnesses:

JOSEPH G. HARRISON,
WM. H. BISHOP.