

J. R. LOMAS.
Reed-Organ Attachment.

No. 160,448.

Patented March 2, 1875.

fig. 1

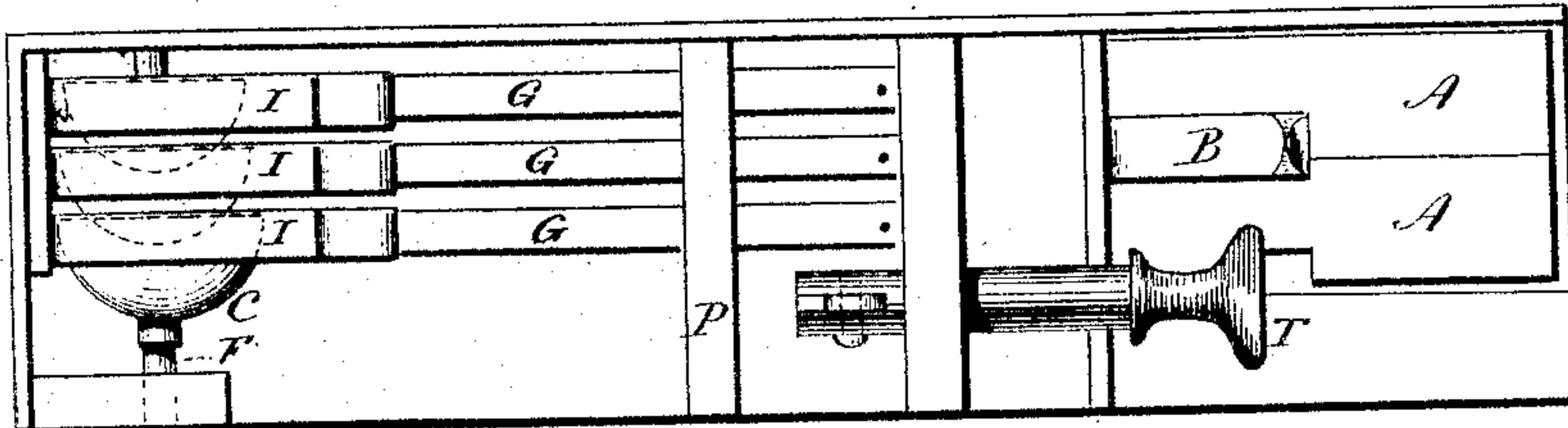


fig. 2

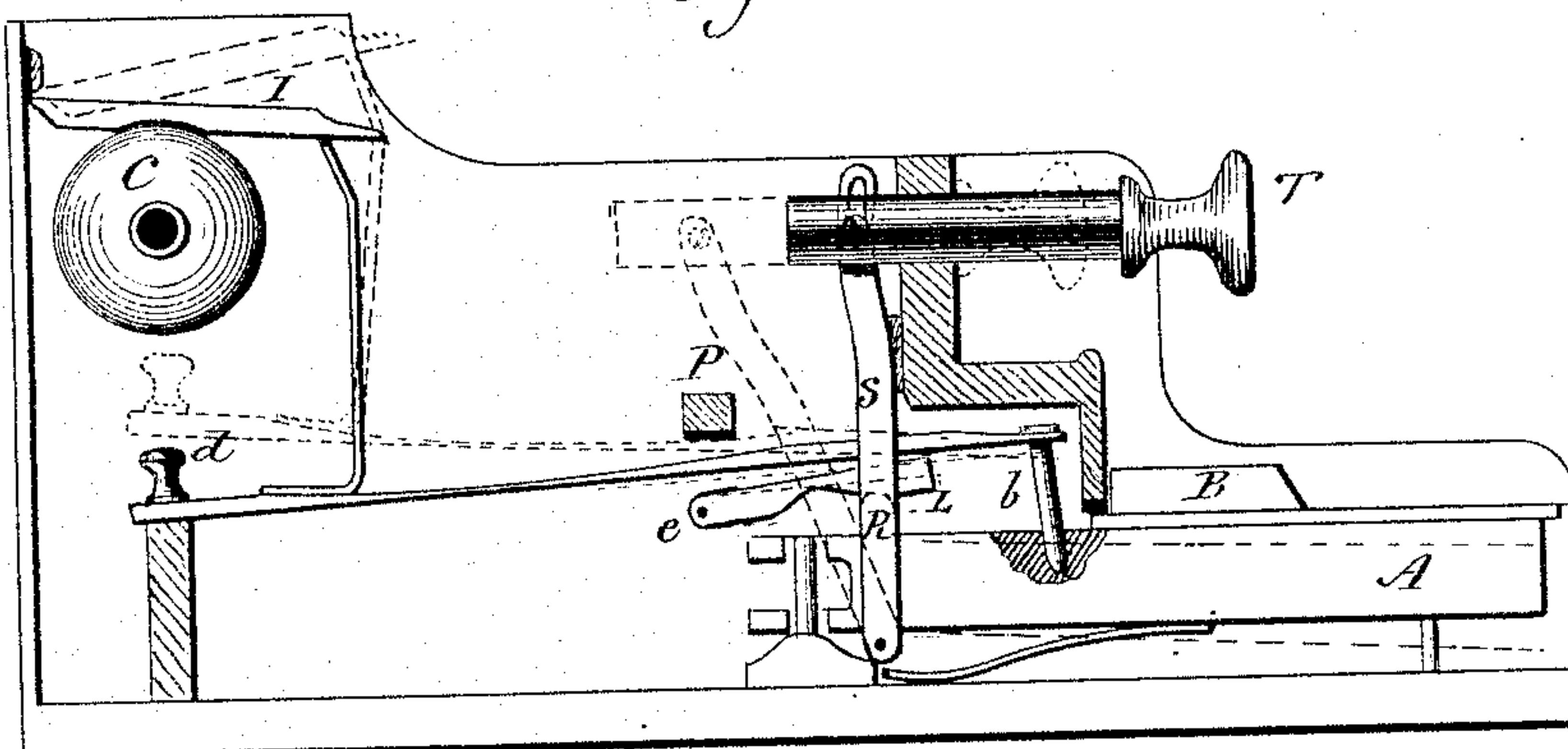
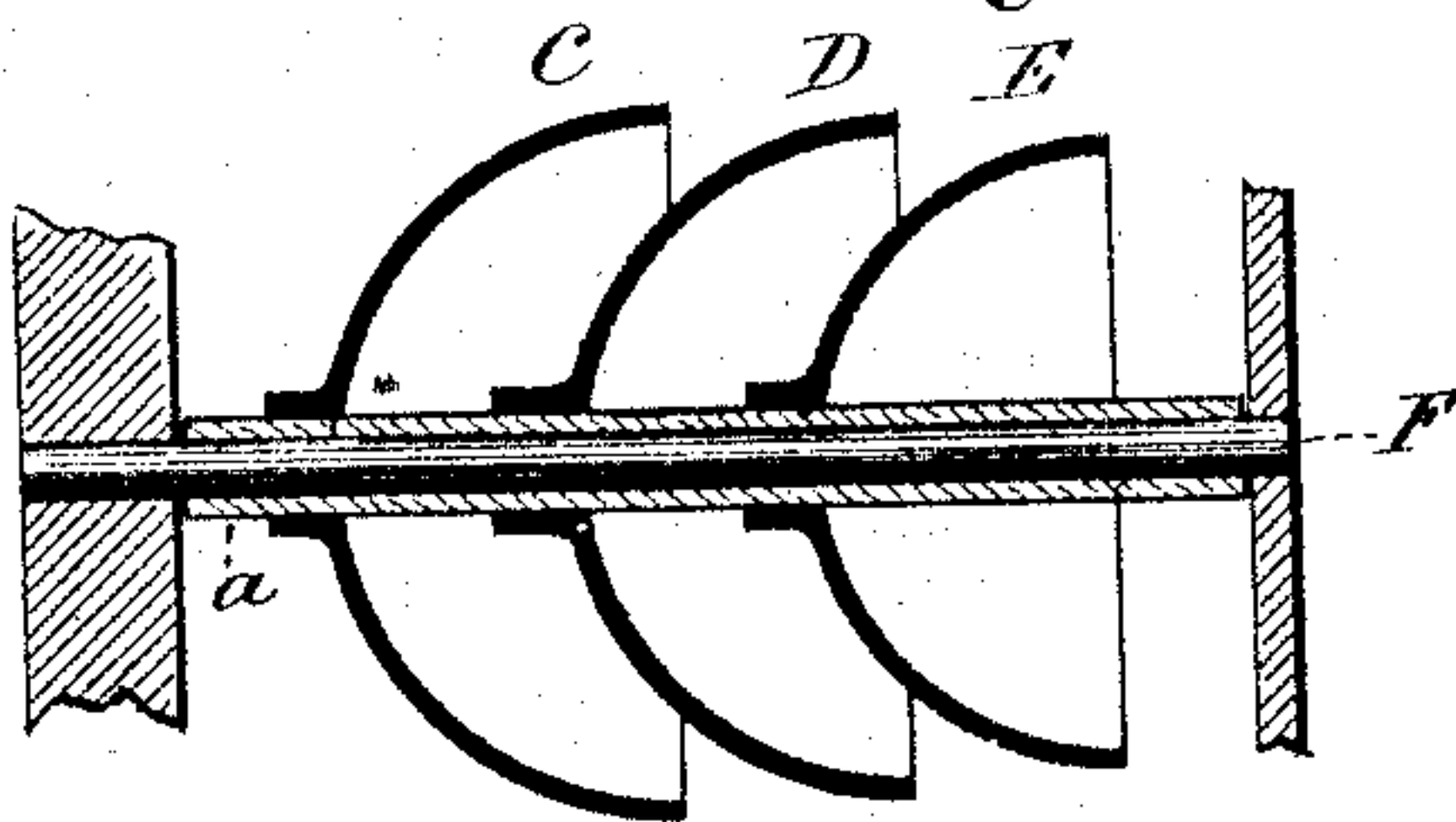


fig. 3



Witnesses:

J. H. Shumway
E. W. Forbes

John R. Lomas
Inventor.

By Atty.

John S. East

UNITED STATES PATENT OFFICE.

JOHN R. LOMAS, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO
B. SHONINGER, OF SAME PLACE.

IMPROVEMENT IN REED-ORGAN ATTACHMENTS.

Specification forming part of Letters Patent No. **160,448**, dated March 2, 1875; application filed
January 18, 1875.

To all whom it may concern:

Be it known that I, JOHN R. LOMAS, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Bell Attachment for Organs and other keyed instruments; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, plan view; Fig. 2, side view; Fig. 3, longitudinal section through the bells.

This invention relates to an arrangement of a series of bells, to be struck by keys similar to the keys of organs, pianos, and like instruments, designed for attachment to such instruments, but may be a complete instrument in itself.

The invention consists, first, in the arrangement of the bells on a common shaft running axially through the bells, and the bells isolated by a non-conducting material around the shaft, or shaft of non-conducting material, whereby the base of one bell may be set within the next, and the vibration of one not affected by another; second, in connecting the hammer-levers with the keys combined with a movable fulcrum, whereby the said connection may be made operative or not, according to the pleasure of the performer.

A A represent the natural keys, and B the flat and sharp keys, all hung, arranged, and connected to the pipes, reeds, or strings, according to the nature of the instrument, in the usual manner, too well known to require illustration or description in this specification. C D E are the bells; may be any desired number. These are arranged upon a shaft, F. This may be small in diameter and frequently supported. Around this shaft F is placed a non-conducting material, *a*, such as felt, leather, rubber, or any suitable material; or the shaft may itself be of a non-conducting substance. In such case the outer coating will be unnecessary; but I prefer a metal shaft with the coating.

The several bells are bored to closely fit the shaft, and are arranged so that each bell will

correspond to its own particular key in the key-board. This is done by setting the base of one bell within the mouth of the next. Hence the full compass of bells will be brought into about the same extent as the corresponding keys. The isolation of the bells by the non-conducting common shaft prevents the vibration of one bell being affected by that of another bell.

G are the hammer-levers, the extreme end provided with a suitable striker, *d*. These levers extend to the keys, and are connected thereto by a stud, *b*. An intermediate fulcrum, L, is arranged beneath the levers common to all, or as many as it is desired to connect with a single stop. The fulcrum is hung as at *e*, so that, when its forward edge is raised, it will raise the forward end of the levers up against the head of the stud *b*, as seen in Fig. 2. In this condition, depressing one of the keys raises the corresponding bell-lever, as denoted in broken lines, the lever bringing up against a stop, P, near the fulcrum. The levers are elastic; hence, if the key be struck, the levers will be raised with a corresponding force, imparting to the hammer or striker a momentum sufficient to carry it up and give a blow to the bell after the lever has been arrested by the stop P, and so quickly return that it will not interrupt the vibration of the bell.

To throw the levers out of connection with the keys a cam, R, is arranged beneath the fulcrum, connected, by a lever, S, to a stop, T, and when the stop is drawn out, as in Fig. 2, the cam raises the fulcrum, and brings the levers to their bearing in connection with the keys; but when the stop is forced in, as in broken lines, then the cam R is turned away, and the fulcrum and levers drop, as seen in broken lines, Fig. 3, so that the movement of the keys will have no effect upon the levers.

In order to stop the vibration so soon as the required extent has been reached, a check, I, is arranged upon each bell, which is raised by the levers before the hammer strikes the bell, and falls upon the bell so soon as the key is left free, the contact of the check with the bell instantly arresting its vibration.

I do not broadly claim the arrangement of a series of bells upon a shaft.

I claim—

1. A series of bells arranged and secured in axial line upon a shaft having a non-conducting surface, substantially as described, and combined with a corresponding series of keys, substantially as specified.

2. The combination of a series of bells and a corresponding series of elastic hammer-levers with a corresponding series of keys and the interposed stop P, substantially as described.

3. The combination of a series of bells, a corresponding series of elastic hammer-levers in

connection with a corresponding series of keys, and the interposed stop P with the hinged fulcrum L and cam R, in connection with a stop, T, substantially as described.

4. The combination of a series of bells, a corresponding series of elastic hammer-levers in connection with a corresponding series of keys, the interposed stop P, and the checks I, substantially as specified.

JOHN R. LOMAS.

Witnesses:

JOHN E. EARLE,
C. V. FORBES.