

M. CAMPBELL.
SIGNAL APPARATUS.

Patented Feb. 3, 1891.

FIG. 1.

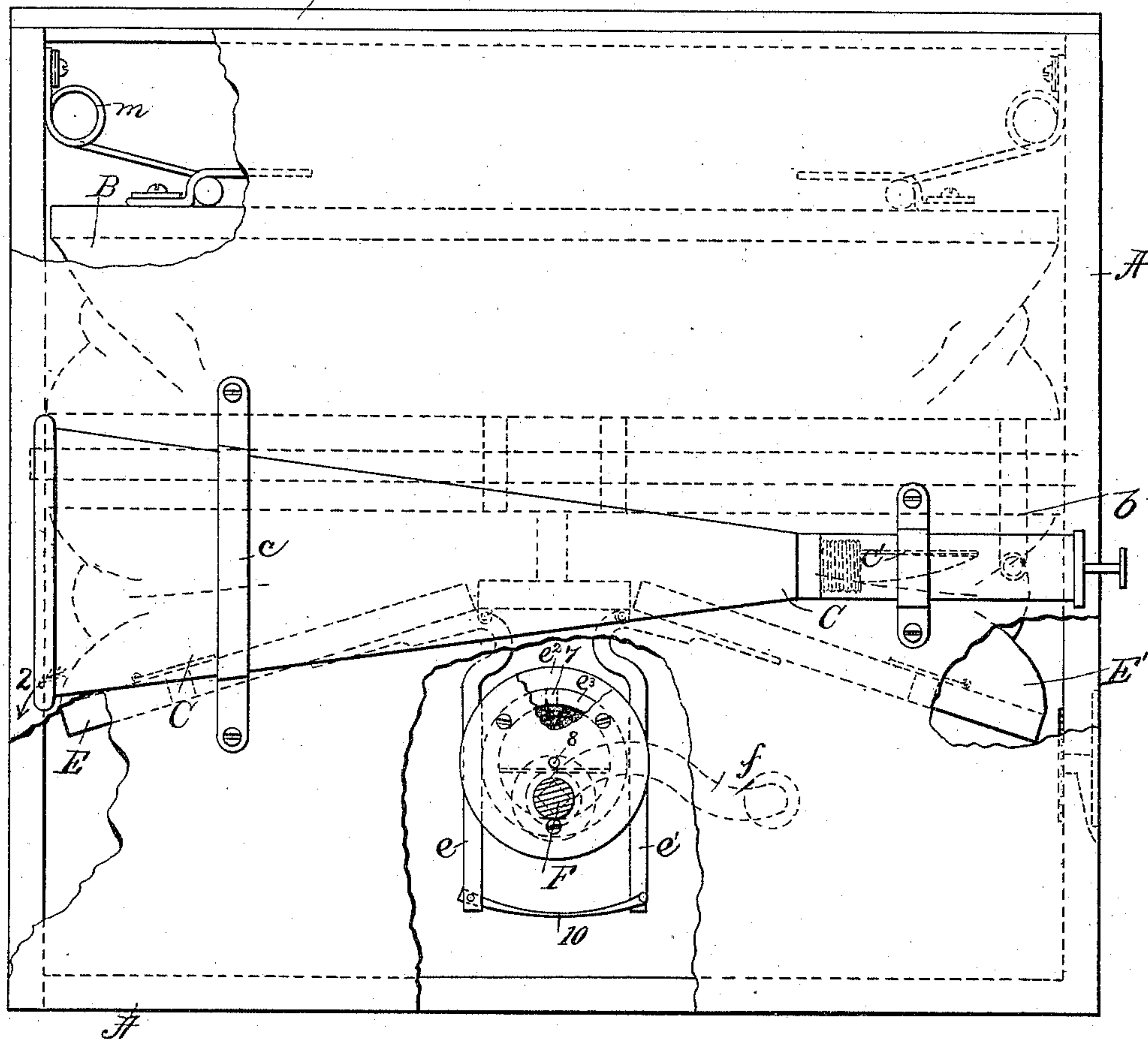


FIG. 2.

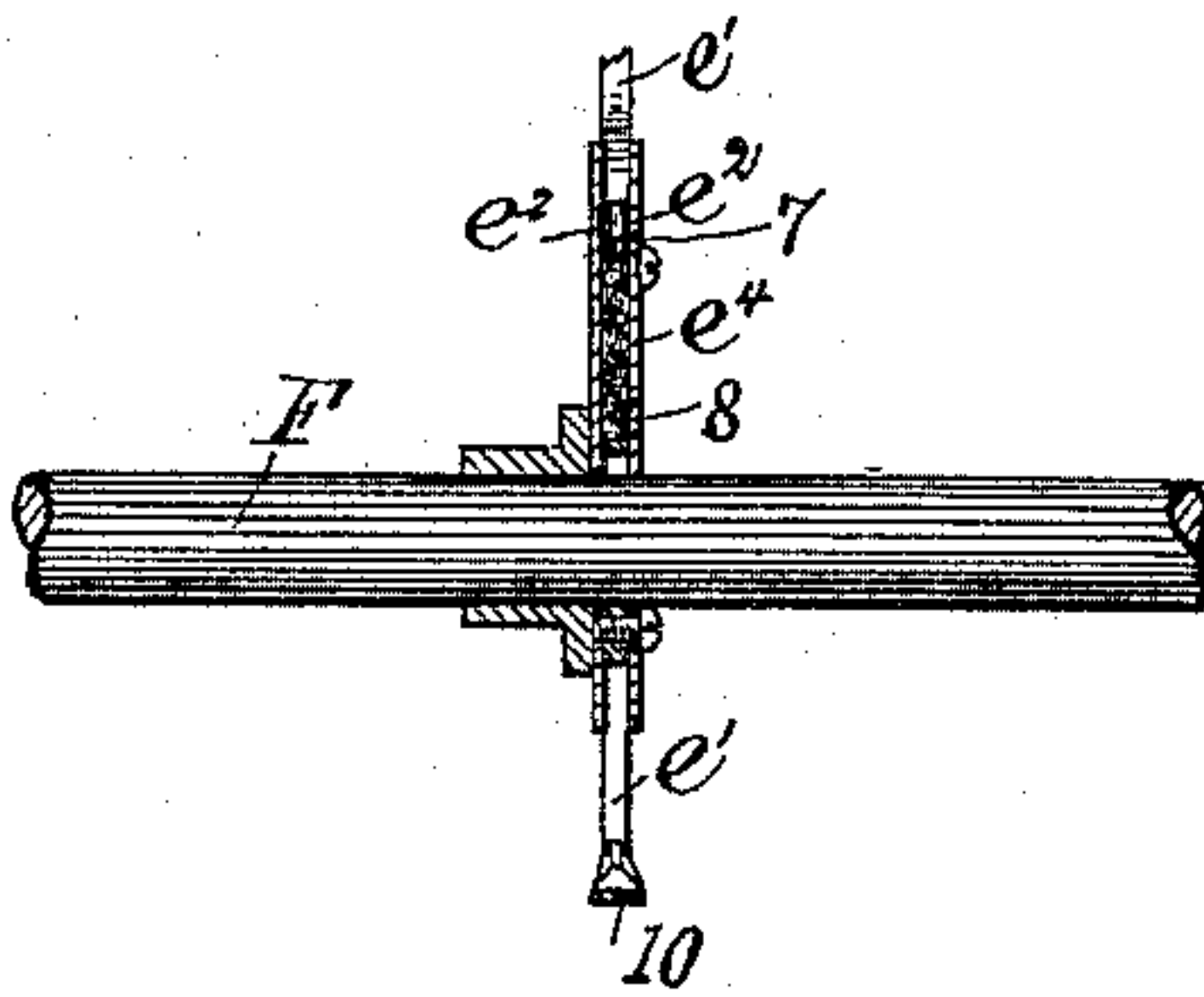
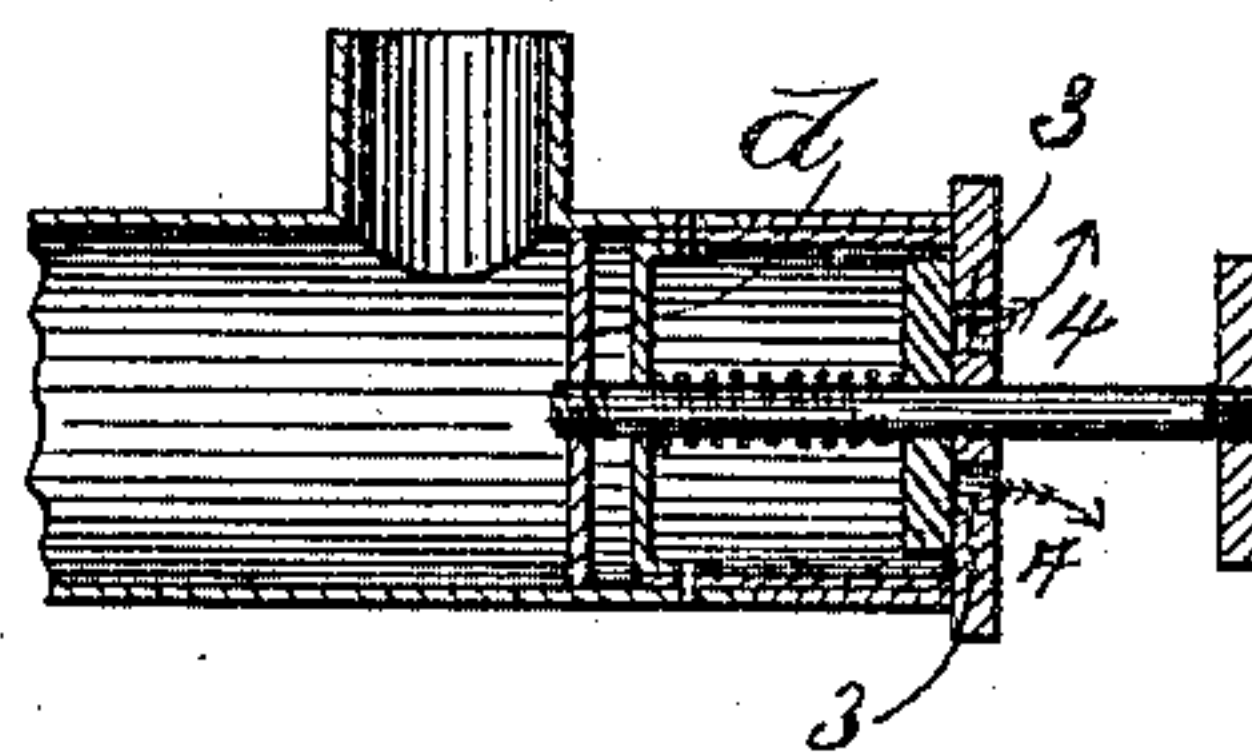


FIG. 3.



WITNESSES,
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UNITED STATES PATENT OFFICE.

MICHAEL CAMPBELL, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF ONE-HALF
TO AUGUST H. WELLBROCK, OF SAME PLACE.

SIGNAL APPARATUS.

SPECIFICATION forming part of Letters Patent No. 445,794, dated February 3, 1891.

Application filed July 19, 1890. Serial No. 359,286. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL CAMPBELL, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Signal Apparatus, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

10 This invention has for its object the production of a novel signal apparatus, more especially desirable for use on vessels.

My novel apparatus includes a bellows, actuating mechanism therefor, a storage bellows or tank, and an attached horn, as will be described.

Figure 1, in elevation with one side of the case partially broken out, shows a signal apparatus embodying my invention. Fig. 2 shows part of the shaft and its eccentric; Fig. 3, a sectional detail of the valve at one end of the horn.

The case A, constituting the body of the apparatus, has mounted on it a storage bellows or tank B, with which is connected by pipe *b* a fog or signal horn C, the said horn, provided with any usual reed or reeds selected according to the sound to be made, being supported in bearings *c c'*, attached to the case. The horn has at one end a cut-off valve *d*, (shown detached in Fig. 3,) which when drawn out, as in Fig. 3, causes the air from the storage-bellows to pass the reeds and out through the horn in the direction of arrow 2, but when the valve is pushed in closes the pipe *b*, and the air then passes out through the holes 3 in the valve in the direction of arrow 4, and the horn is silent. The storage-bellows is shown as acted upon at its top by springs *m m'*; but instead I may use weights or equivalents. The actuating-bellows is made in two parts *E E'*, and these parts derive their movement from elbow-levers *e e'*, each joined at one end to one part of the said bellows, the arms being caught together at their lower ends by a catch 10 and receiving between them an eccentric fast on shaft F, the said eccentric, as herein shown, being composed of two disks *e² e²* and a ring *e³* between them, the said ring inclosing an absorbent of oil, such as felt or some other fibrous material, as *e⁴*. The ring has one or more

oil-delivery holes 7, and one of the disks *e²* has an oil-receiving hole 8. In its rotation oil exuding from the hole 7 keeps the eccentric properly oiled, thus making a self-oiling eccentric. The shaft F has an actuating-handle *f*. (Shown by dotted lines.)

This apparatus may be used on vessels, yachts, &c., and the horn will keep up a steady blast or a blast of any desired length or duration, and by moving the valve to close and open it while the eccentric is rotating the horn will sound or be silent at intervals. This valve might be controlled as to its time of opening and closing by a cam or other device.

The double bellows keeps up a constant current of air.

I claim—

1. The case, the double bellows *E E'*, the elbow-levers attached thereto and connected at their lower ends, the eccentric intermediate said levers to actuate them alternately, the shaft F, and the storage-bellows, combined with the horn, substantially as described.

2. The case, the bellows *E E'*, its actuating devices, and the storage-bellows B, combined with the fog-horn having one end perforated, an air-inlet and a cut-off valve in said horn adjacent to the air-inlet and perforated end, movement of the valve beyond the inlet allowing the air to escape through the perforations, and opposite movement of said valve permitting the horn to emit sound, substantially as described.

3. The case, the double bellows *E E'* and actuating devices, the elbow-levers *e e'*, pivotally attached to said bellows at one end and connected at their lower ends, the actuating-shaft, the self-oiling eccentric fast thereon, composed of the disks, and the ring held between and of less diameter than the disks, the levers *e e'* being extended between said disks on opposite sides of and bearing against the ring, combined with the storage-bellows and the attached horn, substantially as described.

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

MICHAEL CAMPBELL.

Witnesses:

JAS. H. CHURCHILL,
EMMA J. BENNETT.