

(No Model.)

F. N. KIMBALL.
SASH BALANCE.

No. 494,959.

Patented Apr. 4, 1893.

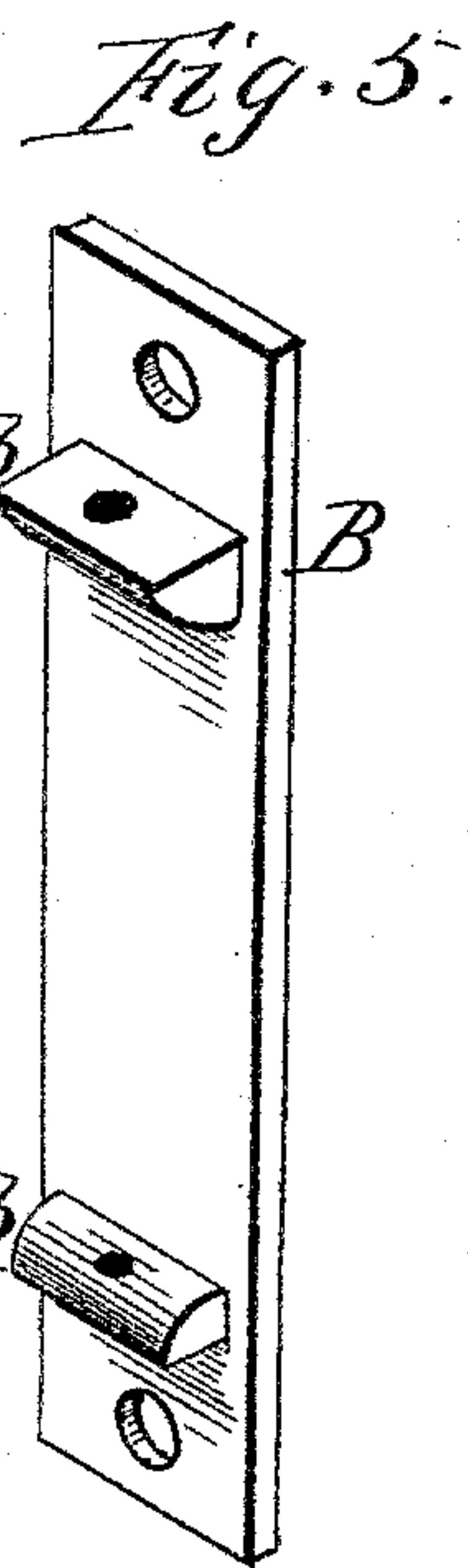
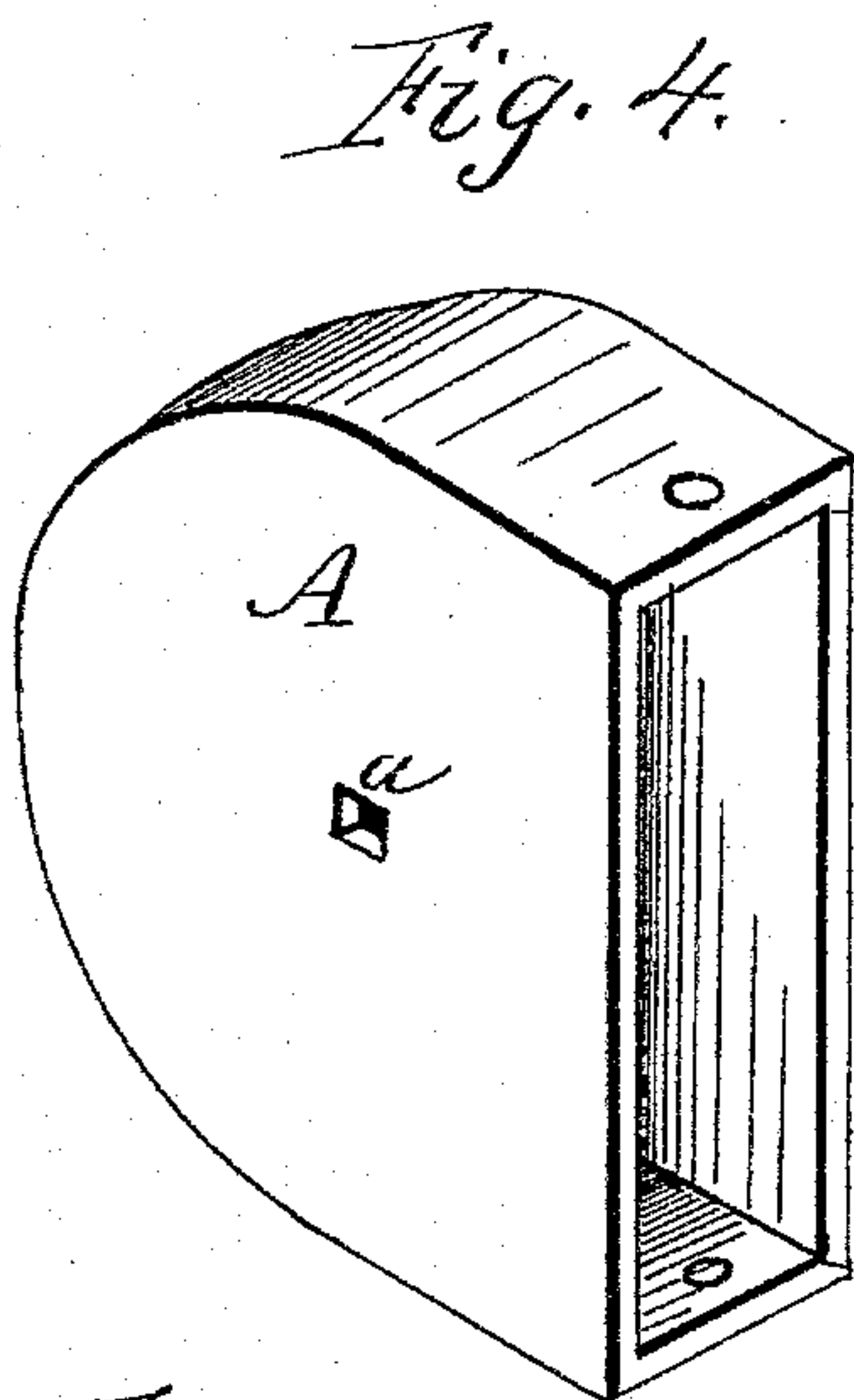
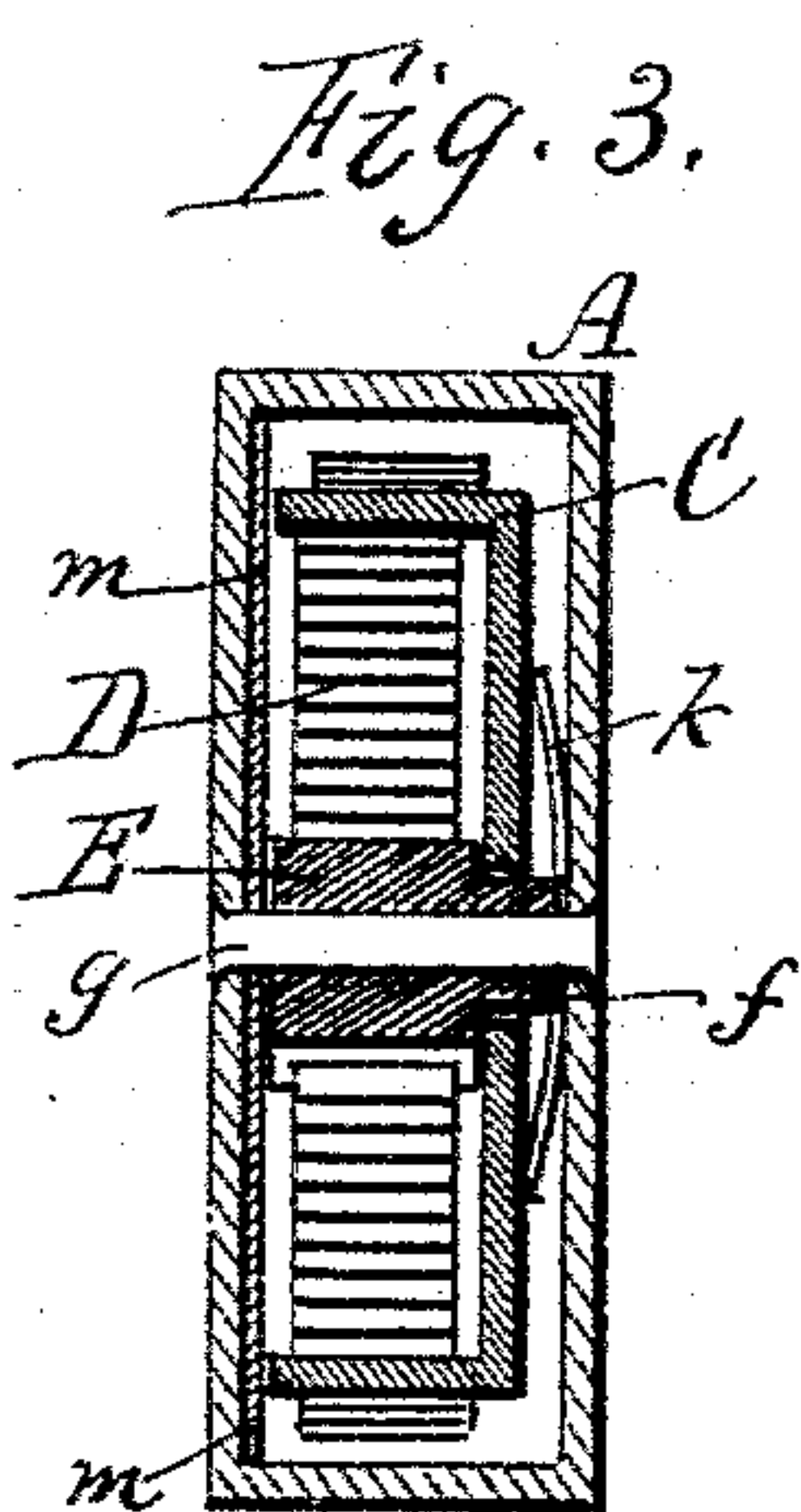
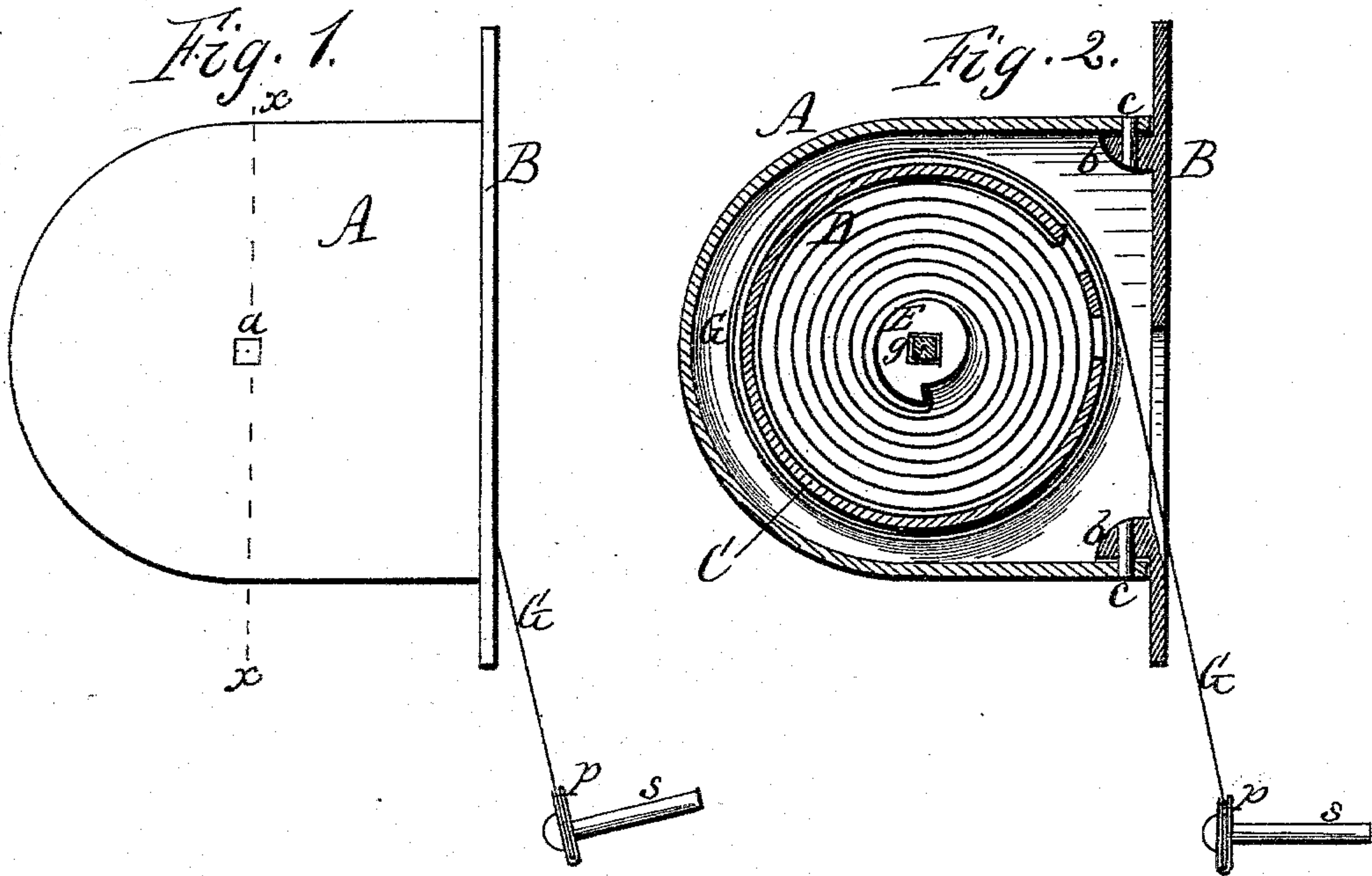
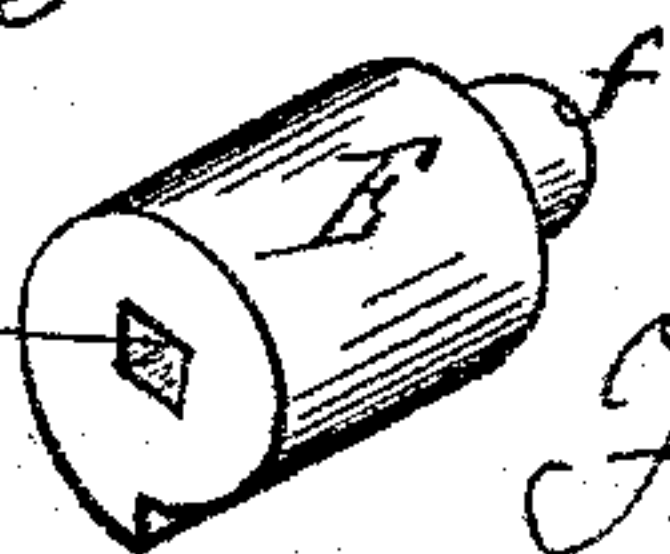


Fig. 6.



Witnesses.
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UNITED STATES PATENT OFFICE.

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SASH-BALANCE.

SPECIFICATION forming part of Letters Patent No. 494,959, dated April 4, 1893.

Application filed November 28, 1892. Serial No. 453,432. (No model.)

To all whom it may concern:

Be it known that I, FREDERIC N. KIMBALL, of Rochester, in the county of Monroe and State of New York, have invented a certain new and useful Improvement in Sash-Balances; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the drawings accompanying this specification.

My improvement relates to that class in which a case with a spring drum is attached to the window jamb, and a tape connected with the drum is extended down and attached to the sash.

In ordinary devices of the kind the inclosing case is made of two or more parts attached together by screws, which is objectionable in many respects. It is the object of my improvement to make the case in one integral body, with closed back and sides but an open front, and to fit the spring drum and its connecting parts through said open front and to attach them in place by a square pin or shaft, and furthermore to close the open front of the case by a removable face plate.

The invention consists in the construction and arrangement of parts hereinafter described and claimed.

In the drawings—Figure 1 is a side elevation of the device. Fig. 2 is a longitudinal, vertical section of the same. Fig. 3 is a vertical, cross section in line *x x* of Fig. 1. Fig. 4 is a perspective view of the case. Fig. 5 is a corresponding perspective view of the face plate of the case. Fig. 6 is a perspective view of the removable hub.

A indicates the case, which differs from ordinary cases of the kind by being made in a single integral body, with a closed back and sides but with an open front, as shown particularly in Fig. 4. It is also formed with square openings *a a* in the sides for the reception of the square shaft hereinafter described.

B is the face plate, which is also cast separately, and provided with lugs *b b* which fit within the open mouth of the case, and are attached to the top and bottom of the case by pins or screws *c c*, which rest in holes pre-

pared for them. When the parts are attached together the whole device presents the ordinary appearance.

C is the spring drum and D the spring, which, in themselves, are of ordinary construction.

E is a hub or center piece, which differs from those ordinarily employed in as much as it is cast in a separate piece adapted to be passed through the open mouth of the case, while the ordinary hub is cast solid with one side of the separable case and forms a projection to same.

To fit the parts in place in the case the hub E is placed in the center of the drum, with its journal *f* resting in the center hole in the back of the drum, and the operating spring, which lies inside the drum, is connected at one end with the drum and at the other with the hub, and the parts are then all slid into the open mouth of the case till centered, when a square shaft or pin *g* is passed through the square holes of the case and a corresponding square hole *h* in the hub. This holds the hub from turning and causes the spring to wind up and increase its tension when the drum is turned.

k is a spring resting between the back of the drum and one side of the case, and *m* is a pad of raw hide or other suitable material on the opposite side resting between the opposite edge of the drum and case. The tendency of the spring is to press the drum against the raw hide and thus produce a brake action.

G is the metallic tape or band which winds on the spring drum. At its lower end the extremity of the band is double-folded or bent upon itself, forming a thickness *p*, through which is passed a headed pin *s*, that enters a hole in the edge of the sash. This forms a simple and effective connection with the sash and secures great strength.

By the construction before described the case is cast whole and the parts fitted therein with great facility, and all looseness of the parts avoided, thus obviating the objections which apply to a case made of two parts and secured together by screws, which parts are liable to get loose or otherwise disarranged.

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

In a sash balance, the combination, with
5 the hollow case A, made in one integral body,
of the independent center hub E, provided
with the projecting journal *f*, the drum C
resting and turning on said journal, the square
pin *g* passing through the case and through
10 the hub, holding the latter against rotation,

the spring D connecting the hub and drum,
and the tape G winding on the drum, as here-
in shown and described.

In witness whereof I have hereunto signed
my name in the presence of two subscribing 15
witnesses.

FREDERIC N. KIMBALL.

Witnesses:

R. F. OSGOOD,

WM. J. MCPHERSON.