

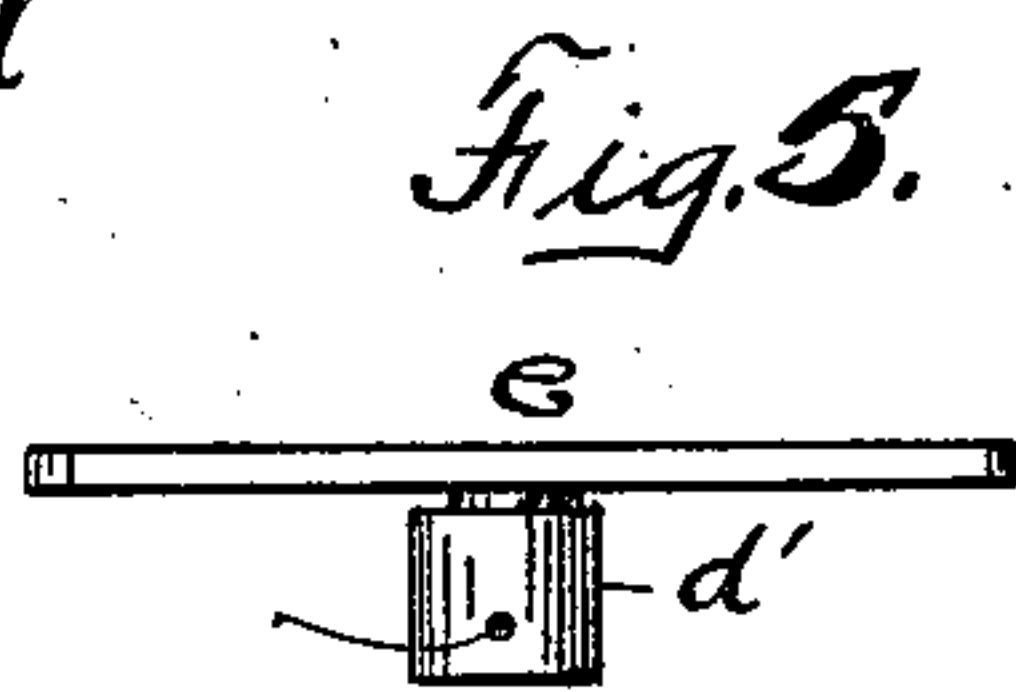
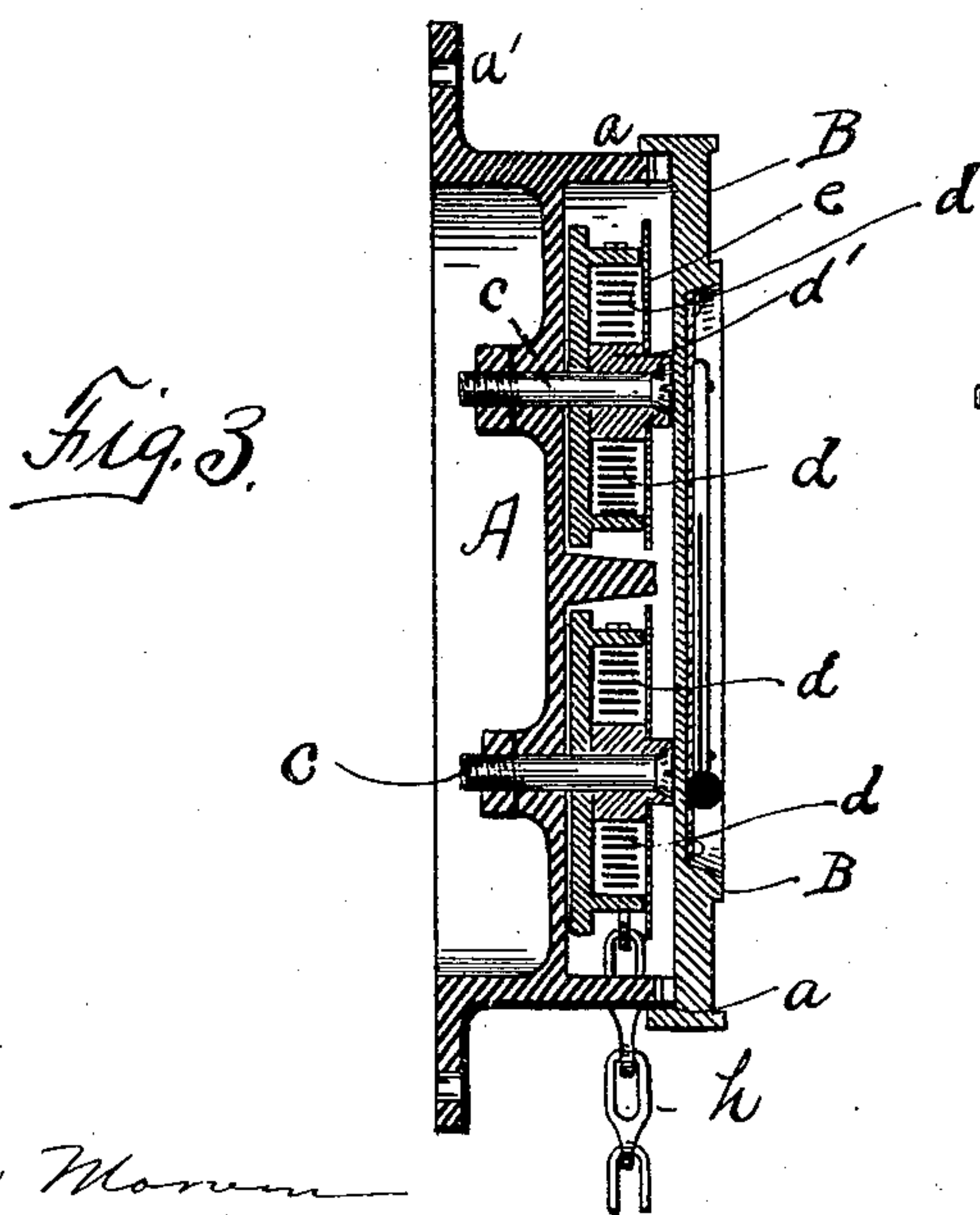
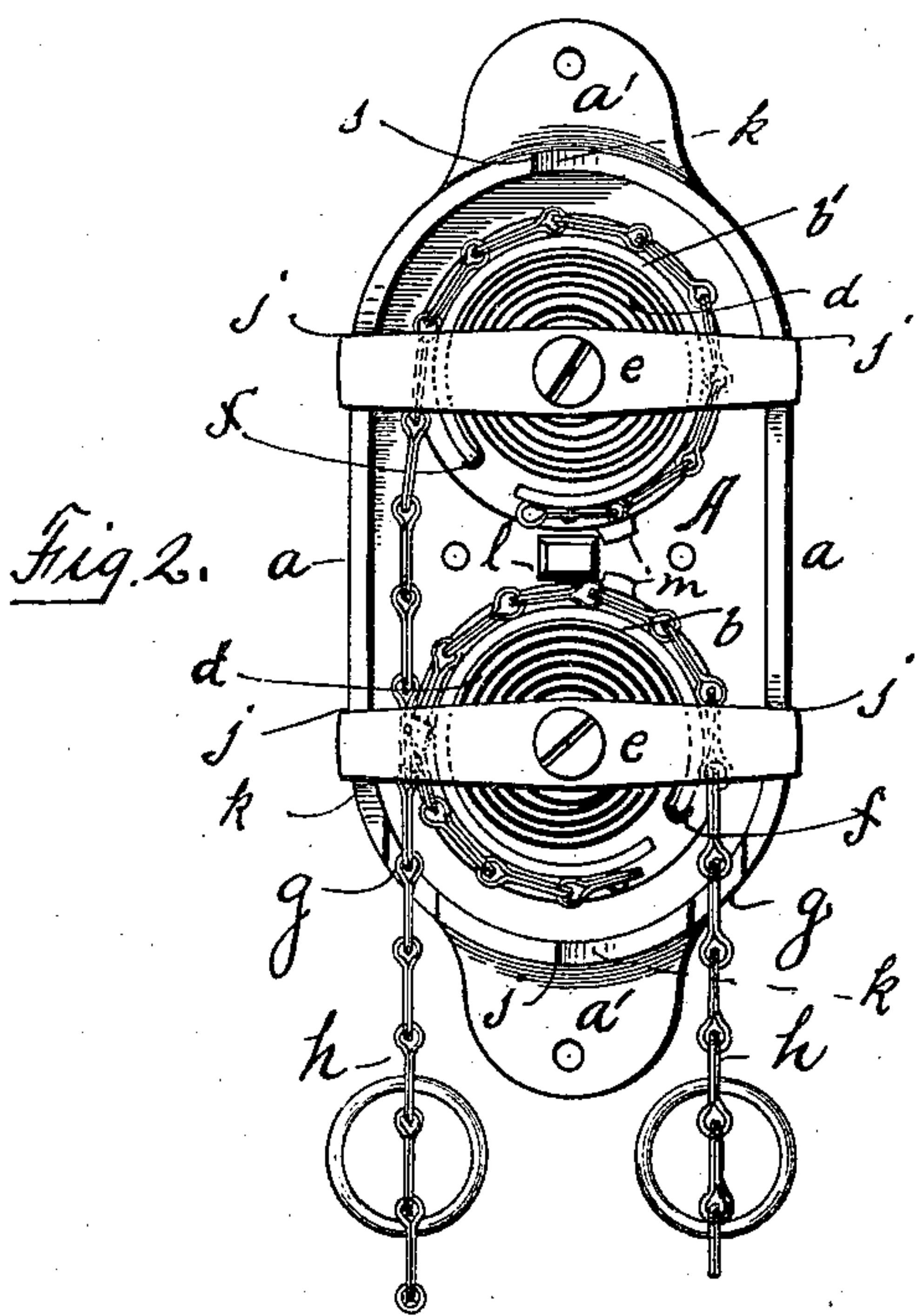
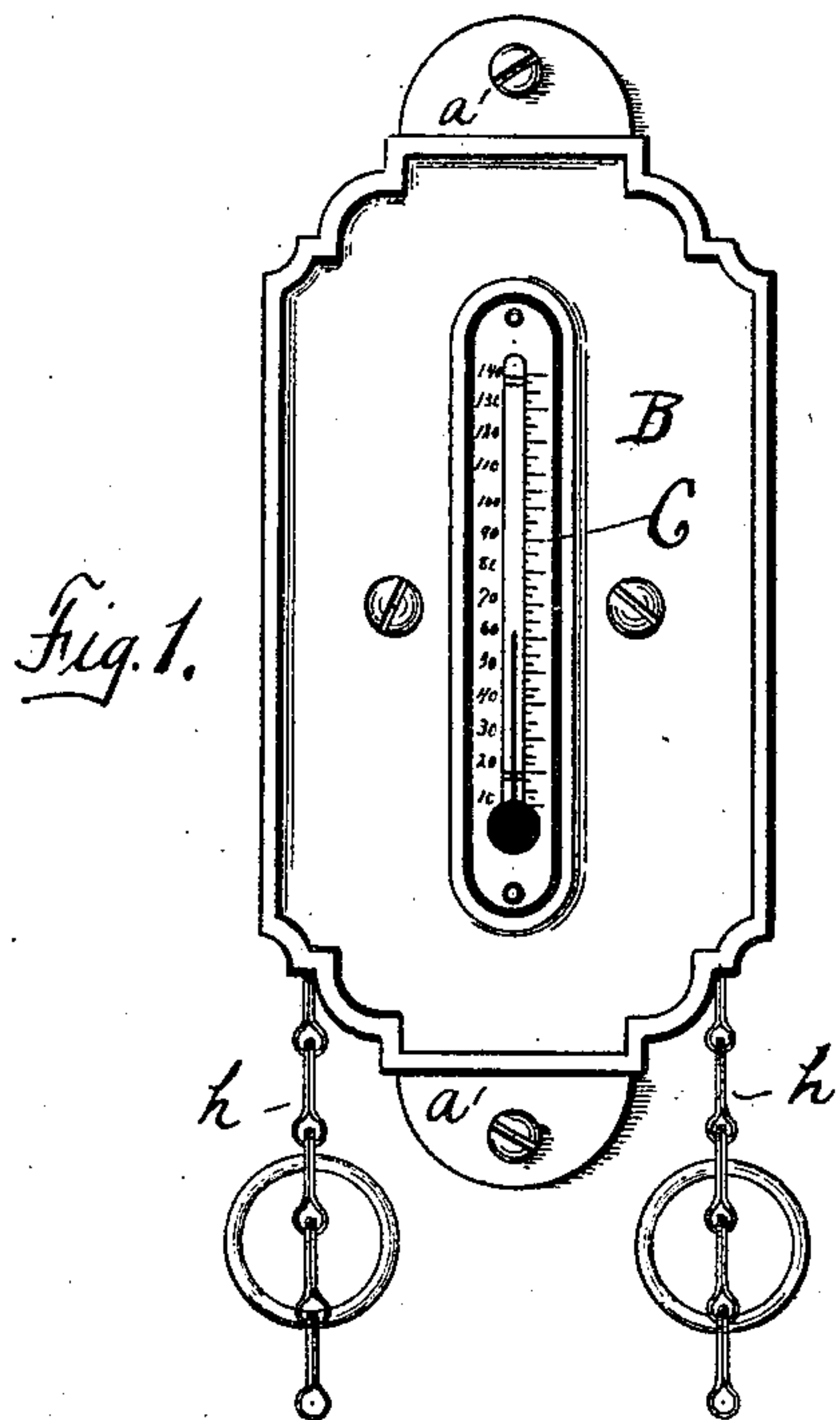
(No Model.)

2 Sheets—Sheet 1.

J. H. COX.  
COUNTERBALANCE FOR DAMPERS.

No. 587,033.

Patented July 27, 1897.



WITNESSES:

*Charles Morison*  
*E. W. Stryker*

INVENTOR  
*John H. Cox*  
BY  
*Smith & Arnison*  
ATTORNEYS.

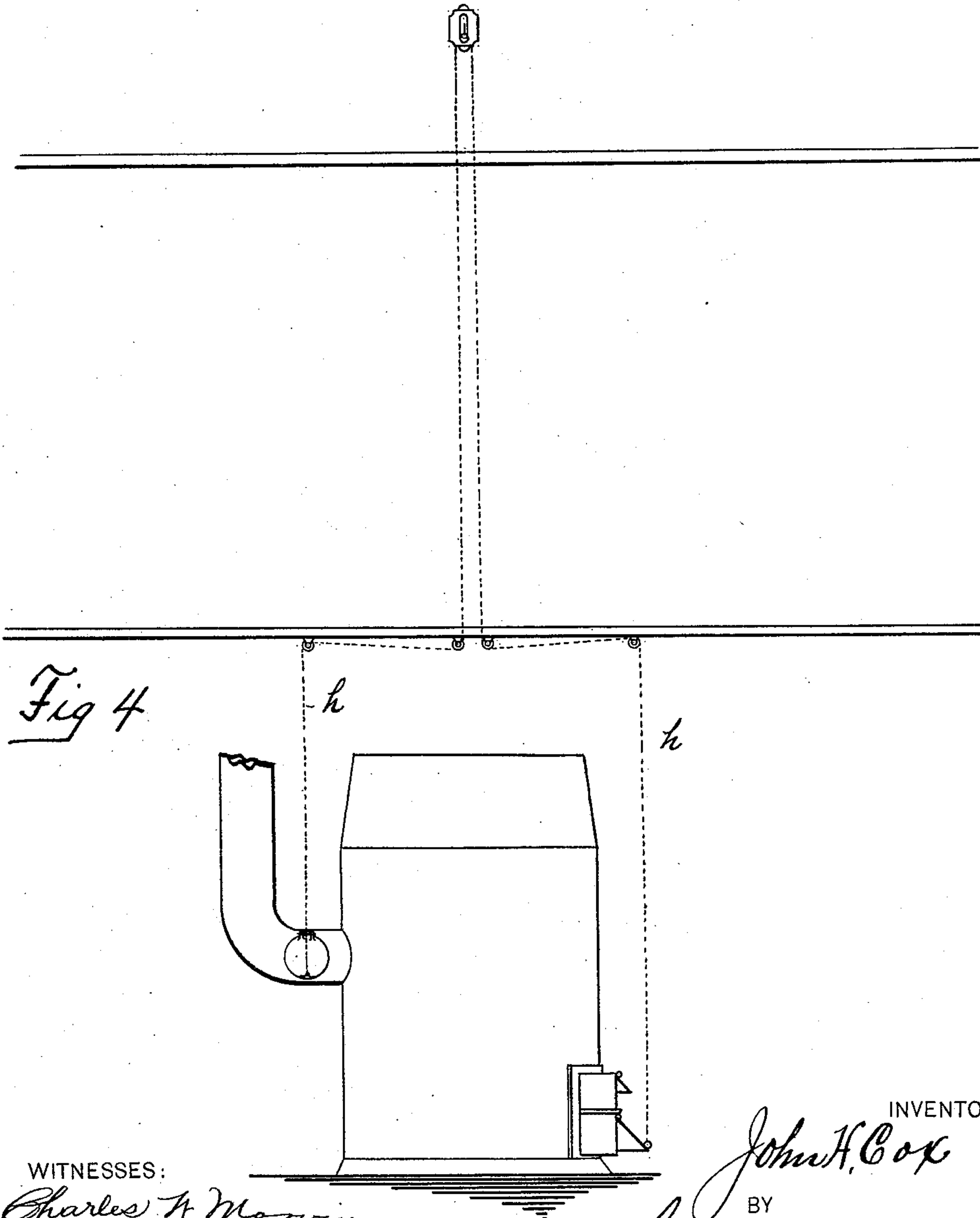
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*C. W. Stryker*

INVENTOR

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BY  
*Smith & Benson*

ATTORNEYS.



# UNITED STATES PATENT OFFICE.

JOHN H. COX, OF SYRACUSE, NEW YORK, ASSIGNOR TO THE J. F. PEASE  
FURNACE COMPANY, OF SAME PLACE.

## COUNTERBALANCE FOR DAMPERS.

SPECIFICATION forming part of Letters Patent No. 587,033, dated July 27, 1897.

Application filed June 22, 1896. Serial No. 596,386. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN H. COX, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful  
5 Improvements in Counterbalances for Dampers, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to devices for taking  
10 up the slack of chains or cords which are adapted to regulate the draft and check-dampers of a furnace or other similar apparatus.

My object is to produce such a take-up for the slack in the chain incident to the raising  
15 of a damper and at the same time allow it to play out freely when desired.

To that end my invention consists in several new and novel features of construction and operation hereinafter described, and  
20 which are specifically set forth in the claim hereunto annexed.

It is constructed as follows, reference being had to the accompanying drawings, in which—

25 Figure 1 is a front view of the device complete. Fig. 2 is a similar view with the front face removed, showing the internal construction in detail. Fig. 3 is a vertical section on the line *xx*, Fig. 1. Fig. 4 is a view of a furnace, showing drafts and dampers of a heating apparatus connected to the chain-take-up  
30 by means of a chain. Fig. 5 is an edge view of the finger-lever and sleeve.

Similar letters of reference indicate corresponding parts.  
35

A is the base or bracket in which is mounted the means for taking up the slack of the chain, preferably constructed substantially as shown, having an upturned edge *a* and the  
40 projections *a'*, by which it is secured to the wall.

Within the bracket or base are mounted two drums *b* and *b'* upon the posts *c*, but inasmuch as they are both constructed and operated  
45 exactly alike I will describe but one of them.

*d* is a spring secured at one end to a sleeve *d'* upon the finger-lever *e* and its opposite end to the drum *b*, as shown at *f*.

*g* are openings in the lower end of the

bracket in the upturned edge *a* to allow the  
50 chain *h* to pass up through it where it is secured upon the drum, as shown in Fig. 2.

*j* are notches in the upturned edge *a*, having one set of the notches inclined, as shown at *k*, so that the finger-lever *e* may be readily  
55 passed out of the notch when it is desired to tighten the tension of the spring. There are three notches *j* for each drum, two of which are just opposite each other and in which the ends of the levers *e* are shown as catching.  
60 To make a corresponding support for the inner ends of the levers when they are turned into a vertical position their outer ends are made to catch in the notches *j* at opposite ends of the frames, while their inner ones are  
65 made to catch against opposite sides of the lug *l*. This lug *l* is thus made to act in conjunction with the notches *j* in adjusting the tension of the springs and to act as a stop for limiting the turning movement of the drums  
70 after the tension of the springs in the drums has been adjusted.

Upon the base A is a lug *l*, and upon the drum is a lug *m*, adapted to engage with the lug *l*, so as to limit the rotation of the drum.  
75 The lug *l* does not alone serve to stop the rotation of the drum, as shown in Fig. 3. It protects the drums and acts in conjunction with the shoulders *k* at top and bottom of the frame to hold the arms *e* where a fine or sen-  
80 sitive adjustment is necessary.

One of the chains *h* is connected at its lower end to the draft upon the furnace and the other is connected at its lower end to the check-damper, as shown in Fig. 4 of the draw-  
85 ings.

To operate the invention, I wind the spring within the drum to such a tension that it will exactly counterbalance the damper desired to be raised, so that when I pull the chain up  
90 the slack of the chain will wind upon the drum and hold the damper open, while, on the other hand, when I desire to close it I pull down on the chain. The drum unwinding the upper end of it allows the damper to close,  
95 the weight of it being sufficient to hold it in that position.

B is a front cover for the bracket and is

provided with means for securing it thereon, as shown, and preferably upon said cover I secure a thermometer C.

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

In a draft-regulator, the bracket A, having the outturned edges or flanges *a*, which are provided within the notches *j*, having the inclined edges *k*; and the lug *l*, located between the two drums and projecting outwardly beyond their outer sides, combined with the spring-actuated drums having lugs or stops to engage the lug *l*, the bolts *c* which pass through the inner side of the bracket and

upon which the drums turn; the finger-levers *e*, connected to the inner ends of the springs placed in the drums, and which levers are adapted to have their ends to catch in either two of the notches *j*, or have one end catch in one of the notches and the other catch against the lug *l*; and a chain connected to each drum, substantially as shown.

In witness whereof I have hereunto set my hand on this 9th day of June, 1896.

JOHN H. COX.

In presence of—

J. W. SMITH,

HOWARD P. DENISON.