

(No Model.)

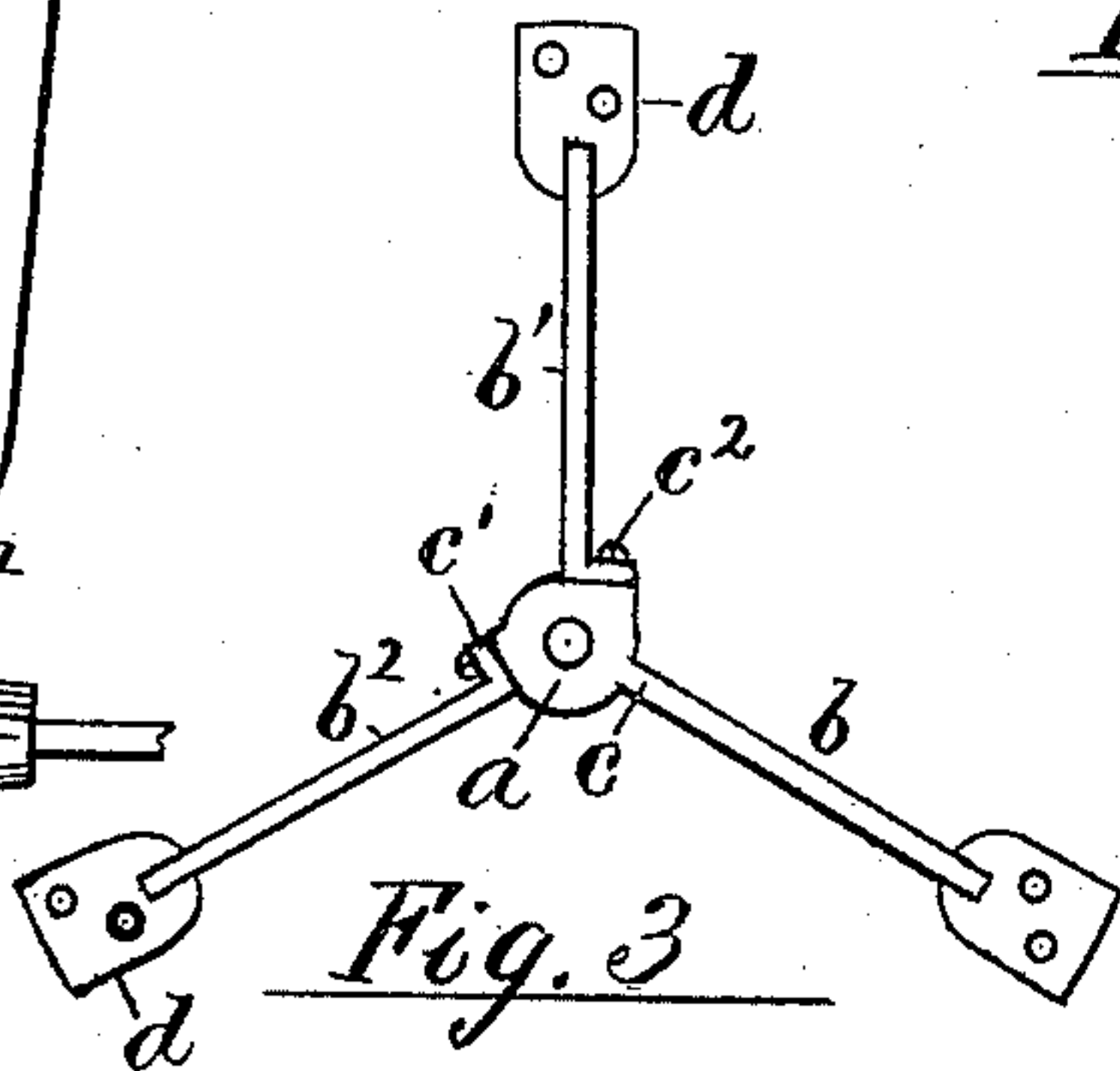
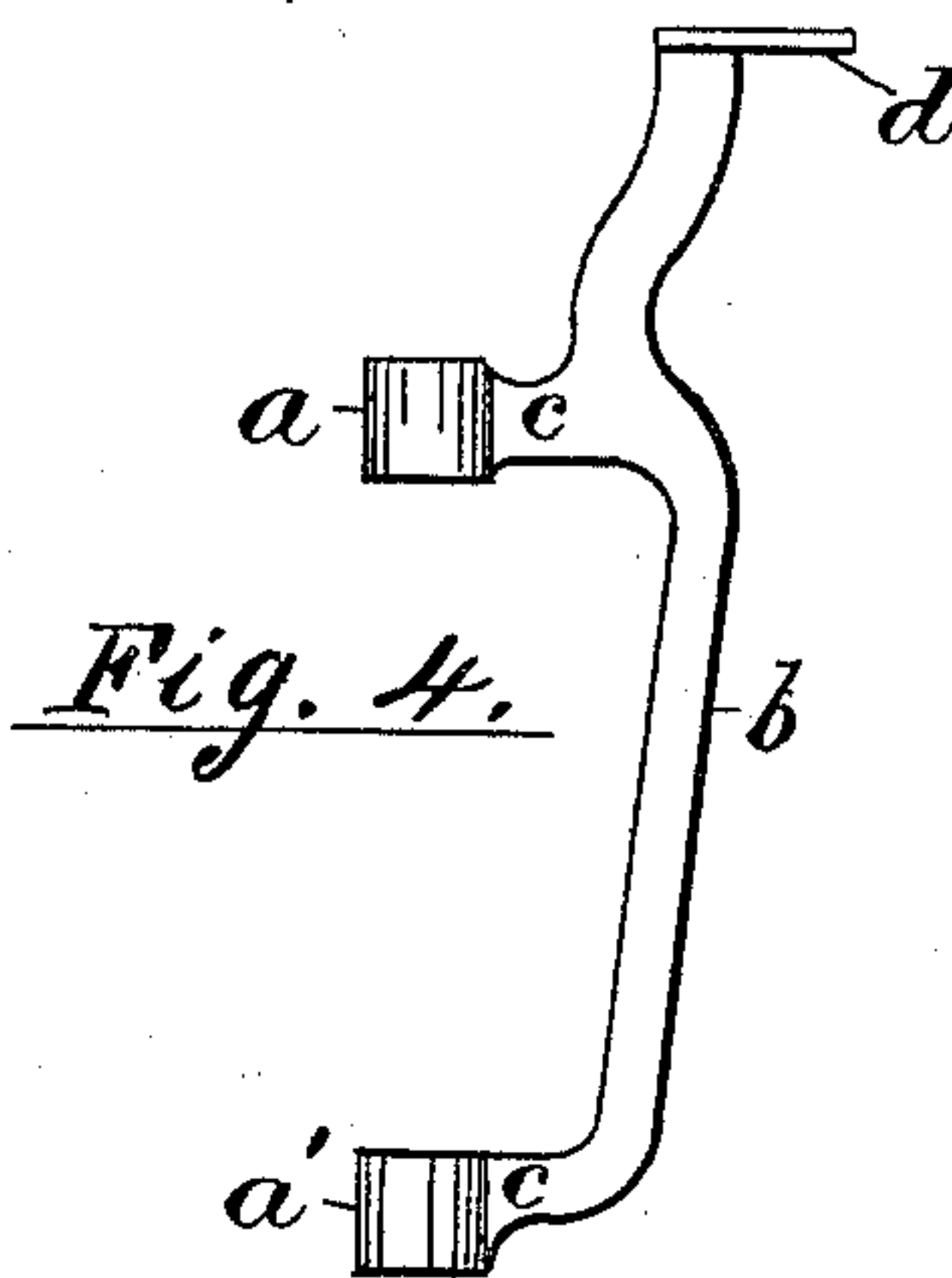
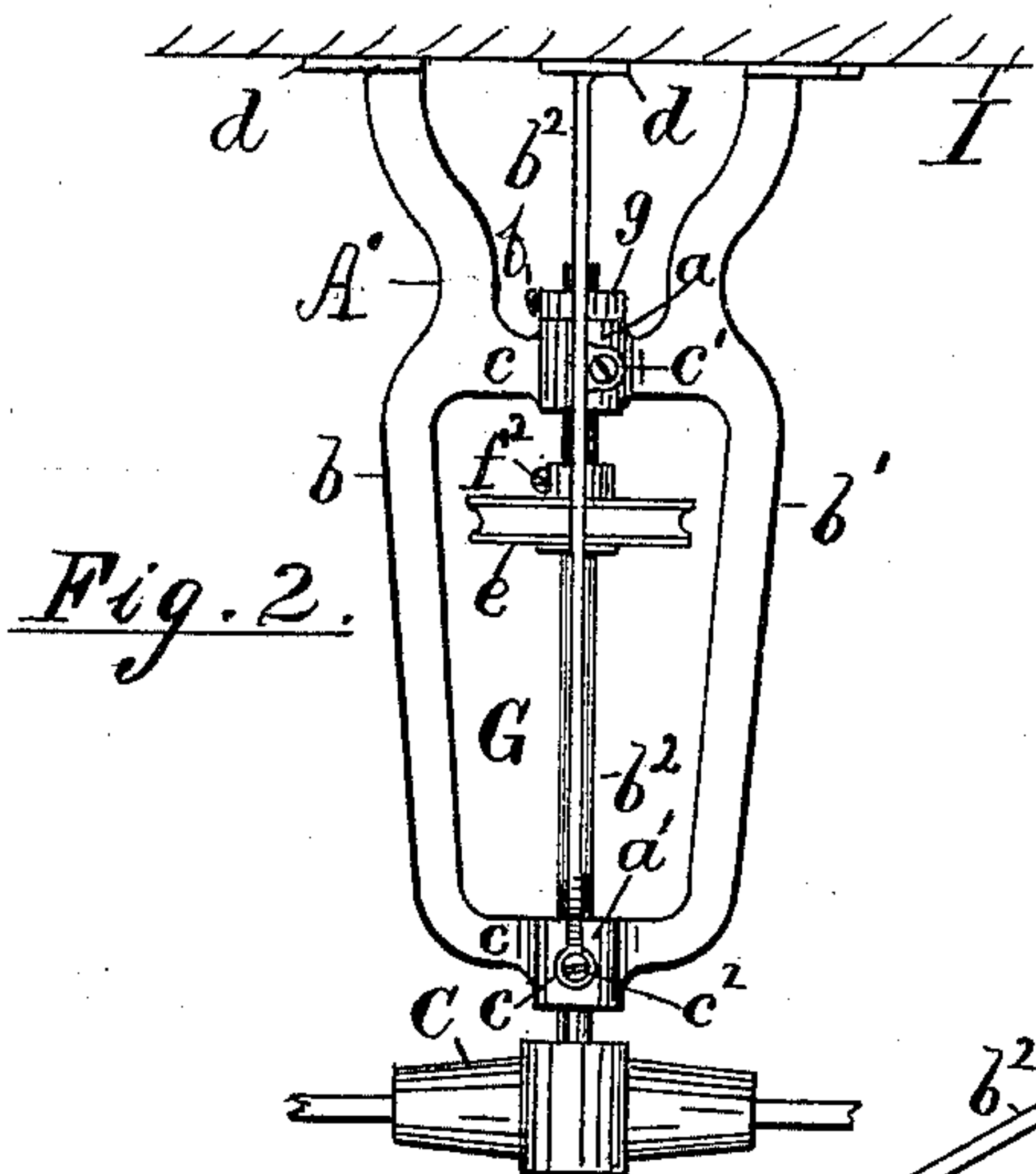
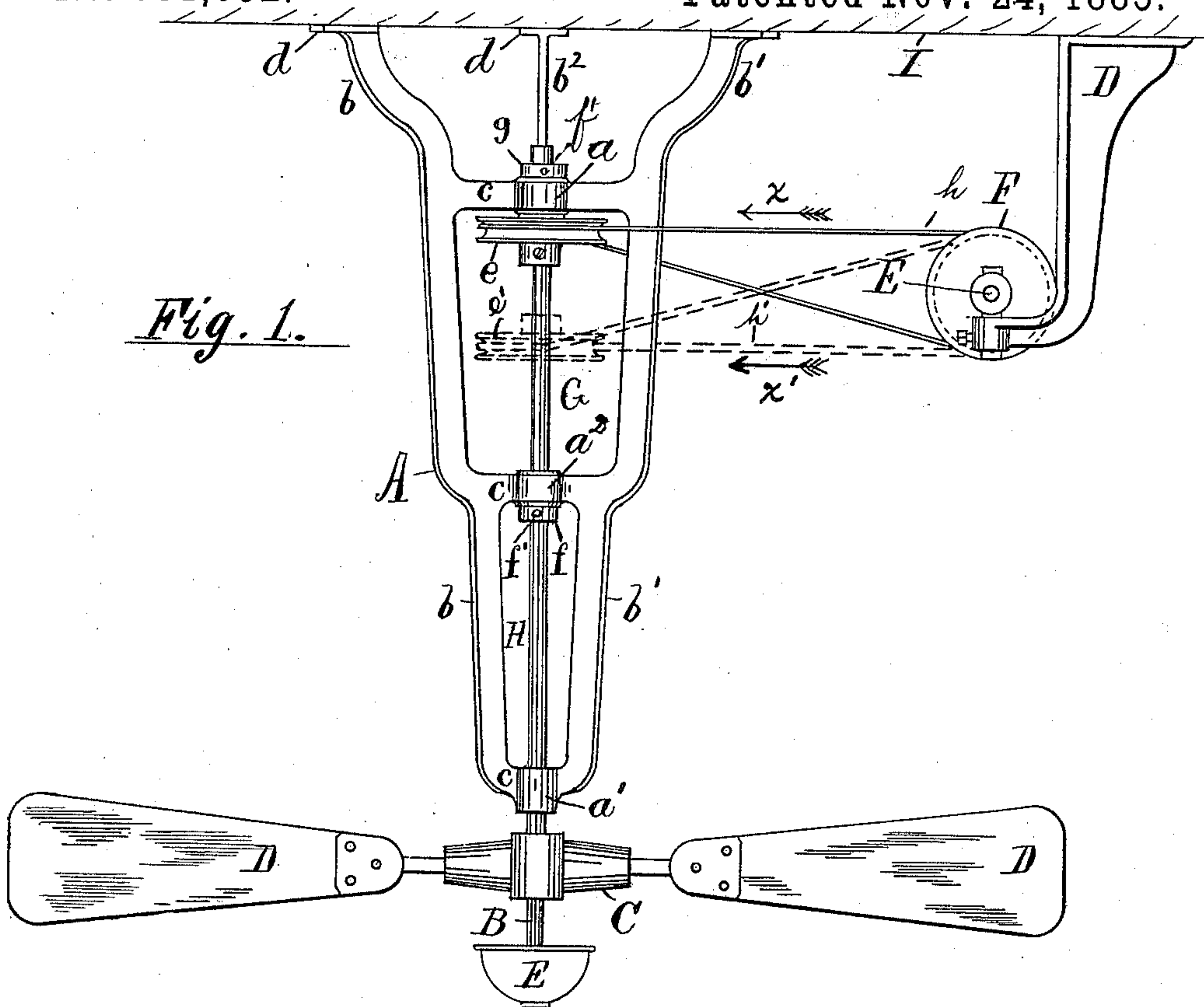
2 Sheets—Sheet 1.

J. M. SEYMOUR.

SUSPENDED FAN.

No. 331,092.

Patented Nov. 24, 1885.



Attest:

L. Lee.
Henry J. Thierath

Inventor.

Jas. M. Seymour, for
Crane & Miller, Atty.

(No Model.)

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2 Sheets—Sheet 2.

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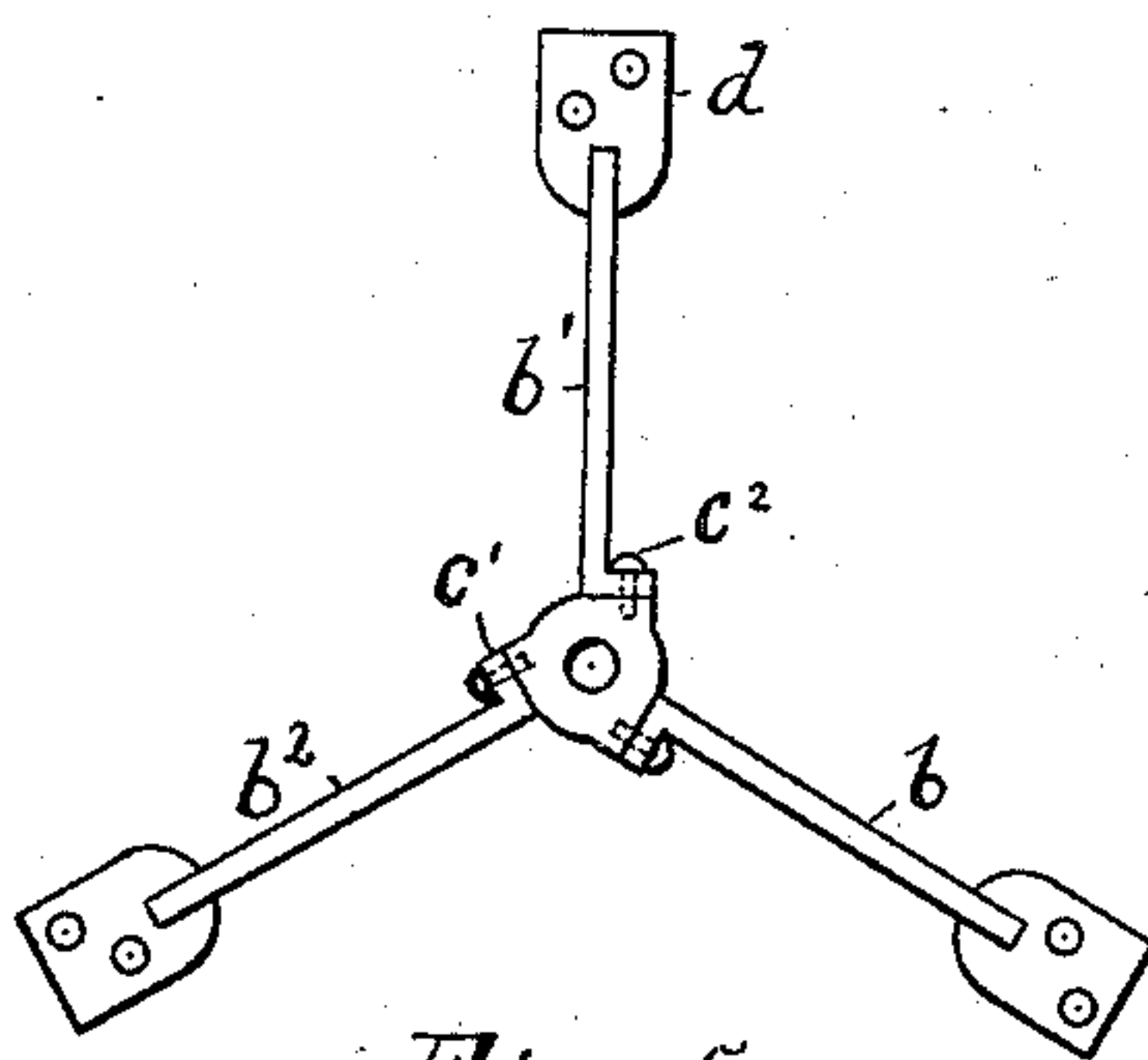


Fig. 5.

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UNITED STATES PATENT OFFICE.

JAMES M. SEYMOUR, OF NEWARK, NEW JERSEY.

SUSPENDED FAN.

SPECIFICATION forming part of Letters Patent No. 331,092, dated November 24, 1885.

Application filed May 23, 1885. Serial No. 166,491. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. SEYMOUR, a citizen of the United States, residing in Newark, Essex county, New Jersey, have invented certain new and useful Improvements in Suspended Fans, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to a hanger for the vertical shaft employed in supporting a rotary fan when suspended from a ceiling; and it consists in a particular construction hereinafter set forth.

In the drawings, Figure 1 is a side elevation of a hanger and fan suspended from the ceiling and operated by a belt from an adjacent driving-shaft. Fig. 2 is a detached elevation of a shorter hanger, the front spindle being shown with merely the pulley and fan-hub attached. Fig. 3 is a plan of a hanger, showing the construction in detachable parts; and Fig. 4 is a detached elevation of one of the legs with bearings attached. Fig. 5 is a plan of the hanger with all the legs attached separately.

The primary object of this invention is to furnish one or more bearings for the vertical fan-shaft at a considerable distance from the ceiling without the employment of a heavy casting or wire braces to stiffen a light frame; and this object is attained by forming the hanger with several vertical bearings and three or more legs attached to and connected by such bearings, and constructed to brace the hanger upon different sides, and to thus stiffen it in every direction. By this construction I am enabled to project the hanger six, seven, or eight feet below the ceiling—as in cases where the fan is suspended in lofty apartments—and to preserve a light and elegant appearance in the structure.

In the drawings two different patterns of hangers are shown, adapted for a "drop" or projection of different extent from the ceiling; and in Fig. 1 a horizontal shaft is shown, supported adjacent to the longer hanger to indicate the application of the power to the vertical shaft.

A is the long hanger shown in Fig. 1. a a' are the upper and lower bearings for the vertical shaft. a^2 is an intermediate bearing to stiffen the shaft. b , b' , and b^2 are the three

legs of the hanger; c , their points of attachment with the bearings; d , the feet at the upper ends of such legs to secure them to the ceiling I.

B is the spindle; C, the fan-hub affixed to the same below the hanger; and D, the blades of the fan, adapted to agitate the air for ventilating and cooling purposes. e is a pulley, attached to the spindle to receive a driving-cord, h .

E is a horizontal line-shaft suspended from a line-hanger, D', and adapted to drive a series of such suspended fans by means of pulleys F, affixed to the shaft E at suitable intervals, the cord h necessarily making a half-turn in passing from the pulley F to the pulley e , and the latter requiring, therefore, to be adjusted upon the spindle B at a level with the driving edge of the pulley F, as shown in Fig. 1, where the arrow x indicates the motion of the cord toward the fan-pulley e . This cord (shown in Fig. 1 in black lines) necessarily leaves the pulley e at an angle to return to the lower edge of the pulley F. Should the shaft E rotate by reason of its prime mover in an opposite direction to that shown in the drawings, it is obvious that the cord would leave it upon its lower edge, as shown in dotted lines at h' in Fig. 1, and in order to make the cord run properly upon the fan-pulley the same would require to be adjusted lower down upon the spindle, as shown in dotted lines at e' . It is obvious that variations in the size of the pulley F and in the drop of the hanger D would also necessitate different adjustments of the fan-pulley between the bearings a a' .

The spindle B is provided with a collar or collars, f and g , held by set-screws f' , to retain it in its bearings, and the pulley e is provided with a set-screw, f^2 , to secure it movably upon the spindle. To adapt the hanger to properly support the shaft, and to accommodate the pulley in such different positions, the legs of the hanger are constructed to form (independent of their function as braces for the spindle-bearings) a space, G, intermediate to the bearing a a' , and in which the pulley e can be adjusted at any point, as required. The spindle is by this construction supported above and below the space G, and the construction of the hanger-frame with three or more legs serves wherever the pulley may be

adjusted to brace the two bearings effectually against the vibrations caused by the resistance of the air to the fan-blades D.

The hanger A is shown provided with a space, H, below the space G, by which construction the hanger is projected from the ceiling to a greater extent, with extreme lightness of construction. This space is formed by uniting the legs of the hanger at a point, a^2 , intermediate to the bearings $a a'$, so as to stiffen the same in proportion to their increased projection from the ceiling, and although such union of the legs is represented in Fig. 1 as formed by a bearing, a^2 , I do not always find it necessary in practice to form a spindle-bearing at the point a^2 , but may merely unite the legs, for the purpose of stiffening the same, to a ring of metal surrounding the spindle and joined to each leg at such point.

In the hanger shown at A' in Fig. 3, which is intended for a shorter drop—say one and one-half to two feet from the ceiling—the hanger is terminated just below the space G at the bearing a' .

It is obvious that it would be very difficult to cast a hanger having three radially-disposed legs in a single piece; and my invention consists, partly, in a means of forming such a hanger easily and cheaply.

In Fig. 1 the legs b and b' are shown formed integral with the spindle-bearings, and the leg b^2 is represented in the rear of the spindle, so that its mode of attachment to the bearings is not apparent. In Figs. 2 to 4, however, is shown the means of casting such a three-legged hanger cheaply and conveniently.

In Figs. 2 and 3 the bearings a and a' are shown formed integral with only the leg b , so as to be readily molded in a two-part flask in the ordinary way, and the legs b' and b^2 are represented each as formed with ears c' and bolted to suitable flat places or seats upon the spindle-bearings by means of screws c^2 . By this construction the detachable legs b' and b^2 are of the same shape as the leg b , and may be formed with slight alterations (as by removing the bearings $a a'$ and substituting the ears c') from the same initial pattern. By such construction the patterns required for the entire hanger are extremely simple and cheap to produce, and the several parts are secured together with very little expense by means of screws c^2 .

A still simpler mode of construction is secured when all the legs are made separate from the bearings, as they may all be made of uniform size and shape and secured to the bearings by the same means. Thus in the plan in Fig. 5 the bearing is shown separated from the legs, all of which are separately secured thereto.

In Fig. 1 the legs b and b' are shown integral with the bearings $a a'$ and the intermediate tie or joint, a^2 . With such construction the two legs and bearings may still be readily molded in a two-part flask, as is apparent

from the angle of the legs $b b'$ (one hundred and twenty degrees) in the plan shown in Fig. 2, and the third leg, b^2 , is then readily attached by screws c^2 to the bearings $a a'$ and at the intermediate point, a^2 .

In Figs. 2 and 3 the ears c' are shown at right angles with the plane of the detachable legs; but it is obviously immaterial how such legs are shaped and fitted to the spindle-bearings, as their attachment to and union by the central bearings is the essential part of my invention.

I am aware that a three-legged stand having a hinged and bisected top has been described in United States Patent No. 138,687, and I therefore disclaim the formation of a hanger with three legs; but I am not aware that any hanger has ever been made with three or more legs united by central bearings and partly detachable, as described. I have also made hangers of great drop by bolting all of the legs separately to the bearings $a a'$.

It is obvious that the hanger would be still further braced by the use of four legs instead of three; but such a construction would with the light strain upon a rotary fan offer no advantages which would not be counterbalanced by the increased clumsiness of the design.

I am fully aware that it is common to construct frames of various kinds with separate legs, as in United States Patent No. 138,687, dated May 6, 1873; and I do not therefore claim the mere formation of a hanger in different parts; but,

Having shown the particular construction which I have devised to produce a three-legged hanger with vertical bearings adapted to sustain a rotary fan-spindle, I claim the same as follows:

1. The combination, with the vertical spindle B and the fan suspended thereby, of the hanger provided with vertical bearings $a a'$, and having three legs, $b b' b^2$, one or more of which are formed separately, and secured to both the bearings $a a'$, substantially as herein shown and described.

2. The combination, with the vertical spindle B and the fan suspended thereby, of the hanger provided with vertical bearings $a a'$, the hanger having one or more legs cast integral with the bearings, and the remainder of the legs being cast separate from the bearings and secured thereto, substantially as and for the purpose set forth.

3. The combination, with a rotary fan, D, and a vertical spindle, B, to operate the same, of the hanger constructed with three legs united at the vertical bearings $a a'$ and at an intermediate point, a^2 , substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JAMES M. SEYMOUR.

Witnesses:

THOS. S. CRANE,
L. LEE.