

No. 654,827.

Patented July 31, 1900.

J. S. CUMMINGS.

PHOTOGRAPHIC PRINTING FRAME SUPPORT.

(Application filed Mar. 7, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

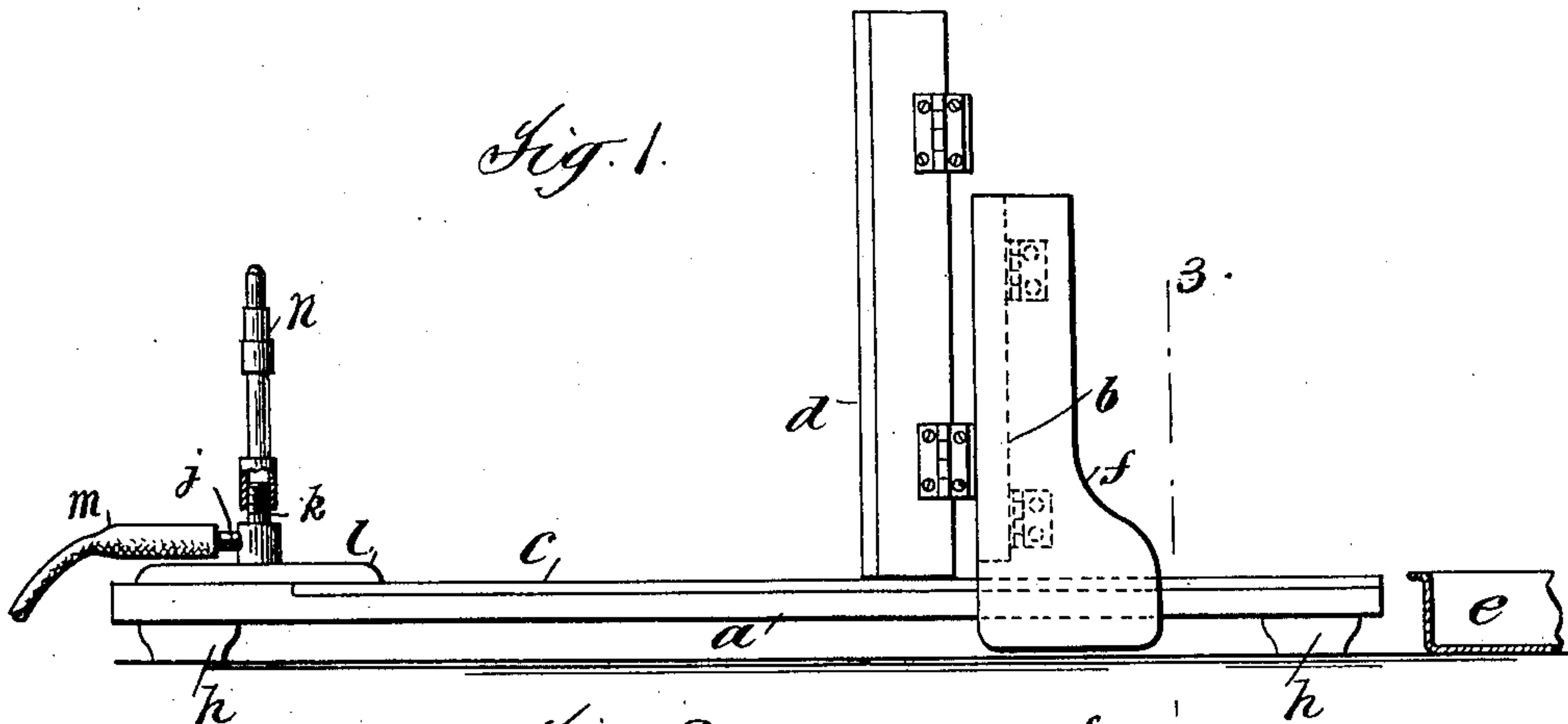


Fig. 2.

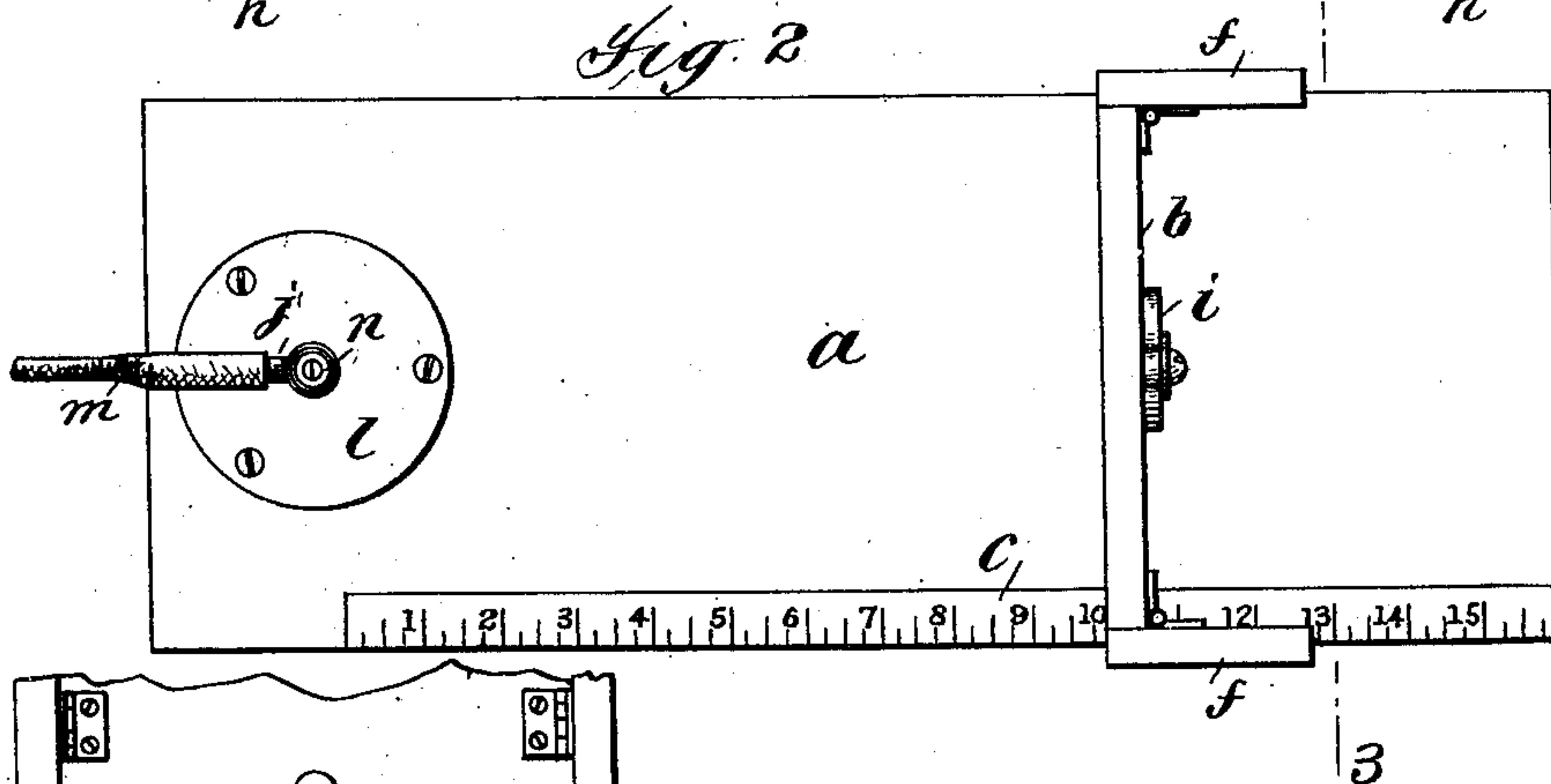


Fig. 3.

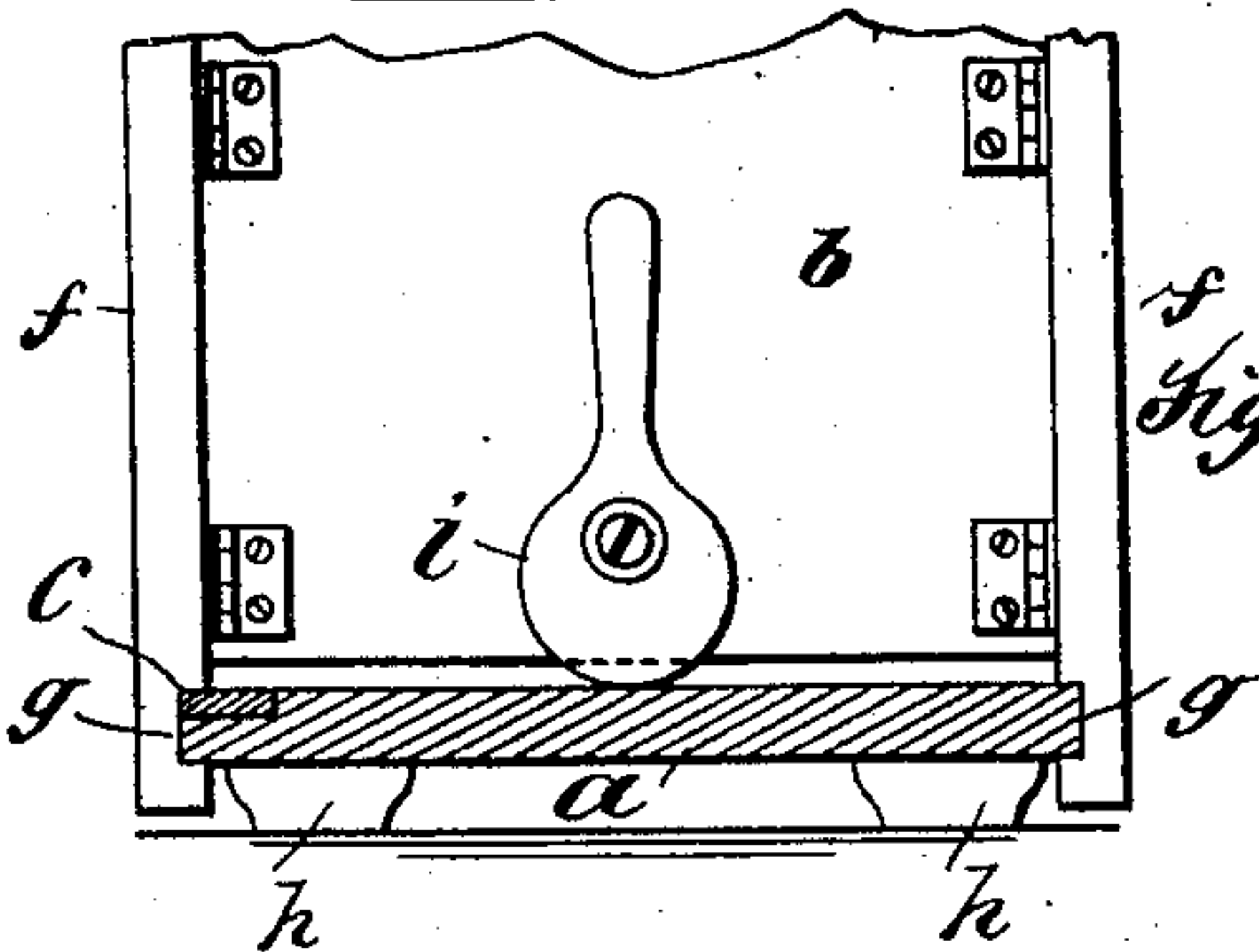
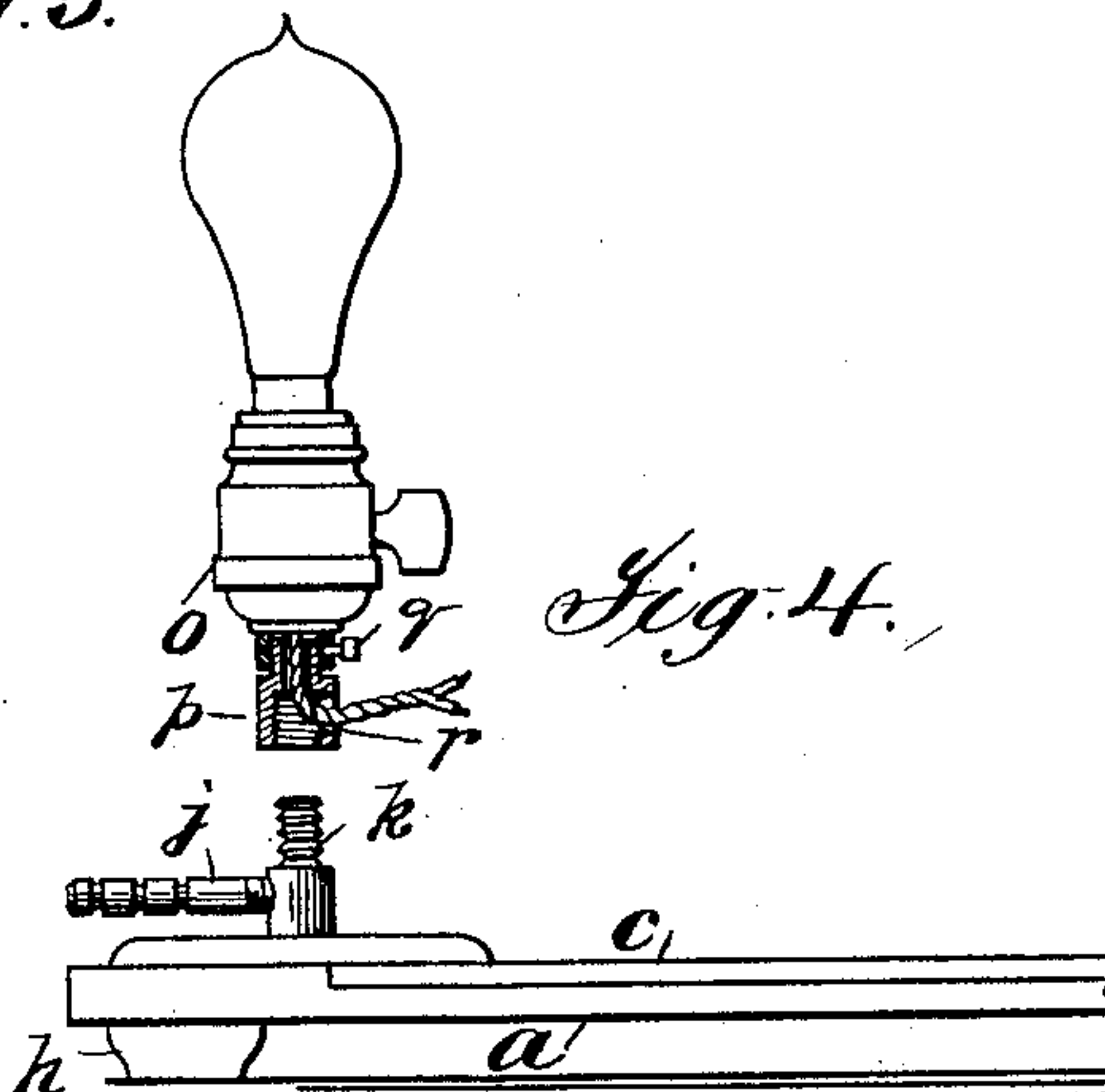


Fig. 4.



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No. 654,827.

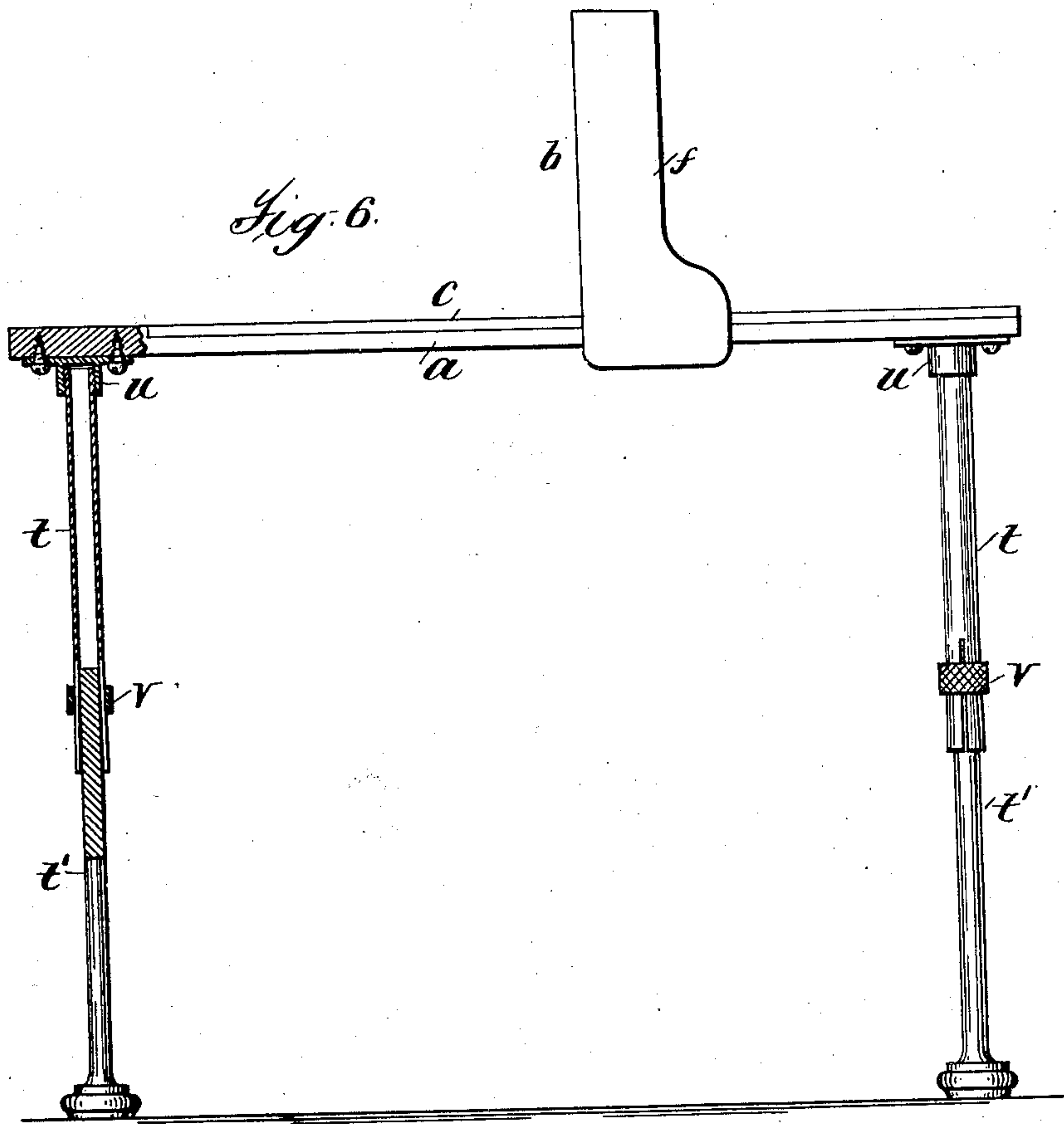
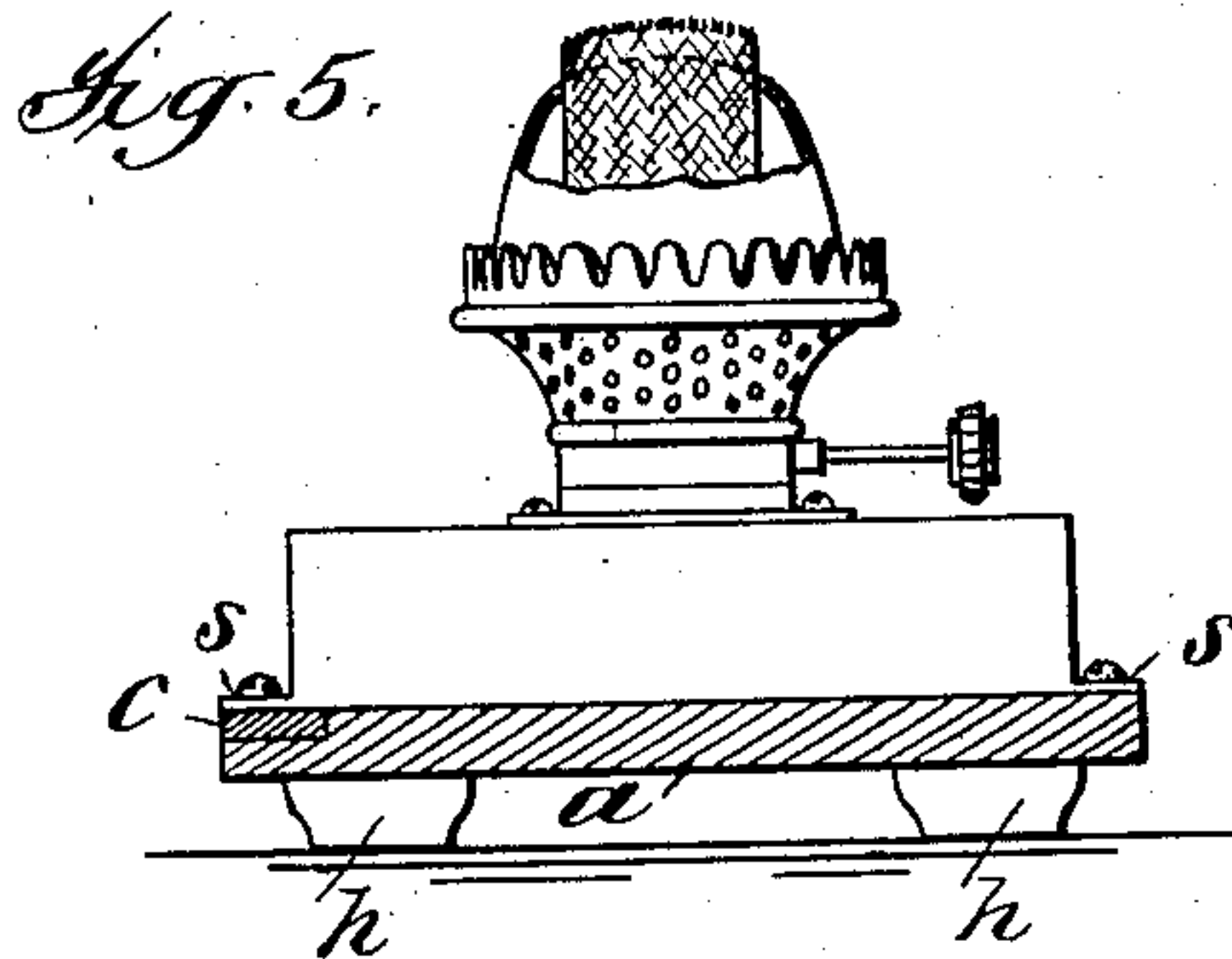
Patented July 31, 1900.

J. S. CUMMINGS.
PHOTOGRAPHIC PRINTING FRAME SUPPORT.

(Application filed Mar. 7, 1900.)

2 Sheets—Sheet 2.

(No Model.)



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UNITED STATES PATENT OFFICE.

JOHN S. CUMMINGS, OF NEW YORK, N. Y., ASSIGNOR TO THE GENERAL ARISTO COMPANY, OF ROCHESTER, NEW YORK.

PHOTOGRAPHIC-PRINTING-FRAME SUPPORT.

SPECIFICATION forming part of Letters Patent No. 654,827, dated July 31, 1900.

Application filed March 7, 1900. Serial No. 7,683. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. CUMMINGS, a citizen of the United States, residing at New York city, county of Kings, and State of New York, have invented certain new and useful Improvements in Photographic-Printing-Frame Supports, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to means for supporting photographic-printing frames during the operation of printing by artificial light.

In this method of photographic printing negatives of different sizes are supported at different distances from the light and exposed for different periods of time at these different distances, the distance from the light increasing as the size of the negative increases and the length of exposure also increasing as such distance increases because of decrease in intensity of the light. It is very desirable that some means be provided, particularly for the use of amateurs, whereby the printing-frames may be quickly and with certainty set in their proper positions relatively to the light in accordance with the size of the negatives they contain and be securely supported in such position during the printing operation.

It is the object of the present invention to provide means for this purpose which will be simple in construction, easy of manipulation, and cheap in cost of manufacture.

To this end the invention, stated generally, consists of a printing-frame support comprising a base on which the printing-frame rests in a vertical position, a rest for engaging the rear side of the frame, said rest being adjustable longitudinally of the base, and a scale extending longitudinally of the base by which the position of the said rest relatively to the light may be accurately determined in inches or fractions thereof.

This printing-frame support, which embodies other features than those just referred to, may be used in connection with any form of illuminating device—as, for example, a gas-fixture, an oil-lamp, or an electric light—and such illuminating device may and preferably will be secured to one end of the support,

although this is not essential, as such illuminating device may be omitted from the support and the latter then used with an ordinary oil-lamp or electric-light or gas fixture. 55

As a full understanding of the invention can best be had from a detailed description of an organization embodying the same, such description will now be given in connection with the accompanying drawings, in which— 60

Figure 1 is a side elevation of a photographic-printing-frame support embodying the present invention, the base of said support being provided with a fixture adapted for the attachment of a gas-burner or an electric lamp. Fig. 2 is a plan view of the same. Fig. 3 is a cross-section on the line 3 3 of Figs. 1 and 2 looking toward the left. Fig. 4 is a view similar to Fig. 1 of a portion of the base of the support with the gas-burner of Fig. 1 removed and an electric-light lamp substituted therefor. Fig. 5 is a cross-section of the base-plate with an oil-lamp substituted for the gas and electric-light fixtures of the preceding figures, and Fig. 6 is a side elevation of another form of photographic-printing-frame support which is unprovided with an illuminating device and which is designed for use with an ordinary house oil-lamp or electric-light or gas fixture. 80

Referring to said drawings, and particularly to Figs. 1, 2, and 3, the photographic-printing-frame support thereof consists of a horizontal base or base-plate *a*, of wood or other suitable material, and a vertical rest *b*, 85 having a sliding connection with the base, so as to be adjustable longitudinally thereof, and adapted to engage the rear side of the printing-frame, as shown in Fig. 1. The base-plate *a* is provided on its upper face, and preferably at or near the edge thereof which is next the operator in printing, with a scale *c*, graduated in inches, whereby the rest *b*, which slides over the scale, may be accurately positioned with reference to the light used in the printing operation. The rest *b* consists, preferably, of wood and is also of such a height as to not only act as a rest for the printing-frame *d*, but also as a screen to protect the developing-bath (the tray *e* containing which will be located in about the position shown in Fig. 1) from the rays of light of the illumi- 95 100

nating device used at the opposite end of the base *a*. The sliding connection between the rest *b* and base *a* is preferably secured by providing said rest with rearwardly-projecting wings *f*, which are in turn provided on their adjacent faces with grooves *g*, adapted to embrace the edges of the base *a*, this method of connecting the rest *b* and base *a* providing a long bearing for the former, which firmly supports it in a true vertical position. As the lower ends of the wings *f* extend below the base *a*, the latter, in order to provide for freedom of movement of the wings *f* when the support is mounted upon a table or the like, is provided with legs *h*, extending below the lower ends of the wings. The wings *f* are preferably hinged to the rest *b*, as shown, so that when the support is not in use or is to be shipped the rest may be removed from the base *a* and its wings *f* folded inwardly toward each other against the back of the rest. The rest *b* is also provided with means whereby it may be locked or clamped to the base *a* in the position to which it is adjusted longitudinally of the base, the means shown in the present case consisting of an eccentric *i*, pivoted to the rear face of the rest and adapted to frictionally engage the upper face of the base *a* and when so engaged to securely lock the rest in its adjusted position. A frictional locking device such as this is preferred because of its simplicity and cheapness and also because it permits of fine adjustment of the rest and printing-frame relatively to the light, which is necessary in order to compensate for variations in the thickness of the printing-frames used.

The support of Figs. 1, 2, and 3 is provided at one end with a fitting adapted for connection to a gas or electric-light fixture, said fitting consisting of tubes *j* *k*, borne by a plate *l*, secured to the base-plate *a*, the tube *j* being adapted for connection by flexible tubing *m* with the gas-lighting apparatus of a room and the tube *k*, which is screw-threaded exteriorly, adapted for the reception of a gas-burner *n* or an electric lamp.

The manner of using the printing-frame support as thus far described is as follows: The negatives of the smallest size will be exposed, say, at four inches from the illuminating device, the rest *b* being moved toward that end of the base *a* into contact with the rear face of the printing-frame and locked in that position, the front edge of the frame being in line with the graduation 4" on the scale *c*. Larger negatives will be exposed farther away from the light—for example, negatives four and one-fourth by six and one-half inches at five inches, negatives five by eight inches at six to seven inches, negatives six and one-half by eight and one-half inches at nine inches, and so on. The length of the exposure at these different points is determined by first ascertaining the exposure necessary at four inches and proportionately increasing the exposure as the distance from the light

is increased. Thus if *y* represents the exposure at four inches the exposure for negatives of the same density at other points along the base *a*, taking into consideration reflection of light from the base, will be substantially as follows:

Exposure at	5" = $y \times 1\frac{1}{4}$	
"	" 6 = $y \times 4\frac{3}{4}$	75
"	" 7 = $y \times 2$	
"	" 8 = $y \times 3$	
"	" 9 = $y \times 3\frac{1}{2}$	
"	" 10 = $y \times 4$	80
"	" 11 = $y \times 4\frac{1}{2}$	
"	" 12 = $y \times 5$	
"	" 13 = $y \times 5\frac{1}{2}$	
"	" 14 = $y \times 6$	

Of course if the density of the negatives varies corresponding variations must be made in the length of the exposure.

The printing-frame support of Fig. 4 is the same as that of Figs. 1 to 3, except that the gas-burner *n* of said figures is removed and an electric-light lamp *o* shown in position for attachment to the tube *k*, this lamp being of usual construction except for the addition of a tubular section *p*, secured to the lamp by a set-screw *q* and threaded interiorly for attachment to the tube *k*, carried by the base *a*, said tubular section *p* being provided with an opening *r* at its side for the passage of the wires of the lamp-circuit, so that in attaching the lamp to the tube *k* it will not be necessary to run said circuit-wires through said tube or the tube *j*.

The printing-frame support of Fig. 5 differs from those of Figs. 1 to 4 in that the combined electric-light and gas fixture of those figures is removed from the base-plate and an oil-lamp substituted therefor, which is secured to the base-plate by means of screws passing through flanges *s*, projecting from the bottom of the oil-reservoir.

The printing-frame support of Fig. 6 differs from those of the preceding figures in that the base-plate *a* thereof is unprovided with an illuminating device, the support of this figure being designed for use with an ordinary house oil-lamp or gas or electric-light fixture. Where the support is unprovided with an illuminating device, as in this figure, it is desirable that the support should be adjustable vertically with reference to the lamp or the gas or electric-light fixture employed, and for this reason the base *a* is provided with adjustable legs consisting of two telescopic sections *t* *t'*, the upper or tubular section of each leg being screwed into a threaded socket *u*, secured to the under face of the base *a*, and the lower or rod-like section thereof fitting into the upper section, the latter being split at its lower end and provided with a clamping-ring *v* for locking together the two members of the legs in the position in which they are adjusted. These sections of the legs may, as will be observed, be detached from each other and from the base *a*

for shipment or when the support is not in use or if it be desired to use the support without such legs, as in Figs. 1 to 5.

What I claim is—

5 1. A photographic-printing-frame support comprising a base, a rest for the frame having a sliding connection with and adjustable longitudinally of the base, a scale by which to determine the position of the rest, and a
10 frictional locking device carried by the rest and adapted to engage the base for retaining the rest in its adjusted position, substantially as described.

2. A photographic-printing-frame support
15 comprising a base, an illuminating-fixture at one end of the base, a rest for the frame at the opposite end of the base having a sliding connection with and adjustable longitudinally of the base, and a scale by which to de-
20 termine the position of the rest, substantially as described.

3. A photographic-printing-frame support comprising a base, a combined gas and electric-light fitting at one end of the base, a rest
25 for the frame at the opposite end of the base having a sliding connection with and adjustable longitudinally of the base, and a scale by which to determine the position of the rest, substantially as described.

30 4. A photographic-printing-frame support comprising base *a*, adjustable rest *b* for the frame provided with wings *f* having grooves *g*, and scale *c*, substantially as described.

5. A photographic-printing-frame support
35 comprising base *a*, rest *b* for the frame pro-

vided with hinged wings *f* having a sliding connection with the base, and scale *c*, substantially as described.

6. A photographic-printing-frame support comprising a base, and a rest for the frame
40 having a sliding connection with the base and adjustable longitudinally thereof, said base being provided with adjustable legs, substantially as described.

7. A photographic-printing-frame support
45 comprising a base, and a rest for the frame having a sliding connection with the base and adjustable longitudinally thereof, said base being provided with adjustable legs consist-
50 ing of telescopic sections *t, t'* provided with a clamping device, substantially as described.

8. A photographic-printing-frame support comprising a base provided at one end with a combined gas and electric-light fitting com-
55 prising tubes *j k*, and an adjustable printing-frame rest mounted on the base, substantially as described.

9. A photographic-printing-frame support comprising base *a* having an illuminating-
60 fixture at one end, printing-frame rest *b* provided with hinged wings *f* having grooves *g*, and a scale *c* on the base, substantially as described.

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

JOHN S. CUMMINGS.

Witnesses:

J. A. GRAVES,

A. A. V. BOURKE.

It is hereby certified that in Letters Patent No. 654,827, granted July 31, 1900, upon the application of John S. Cummings, of New York, N. Y., for an improvement in "Photographic-Printing-Frame Supports," an error appears in the printed specification requiring the following correction: In line 75, page 2, the formula printed "Exposure at $6 = y \times 4\frac{3}{4}$ " should read *Exposure at $6 = \frac{3}{4}$* ; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 6th day of November, A. D., 1900.

[SEAL.]

F. L. CAMPBELL,
Assistant Secretary of the Interior.

Countersigned:

C. H. DUELL,
Commissioner of Patents.