

(No Model.)

W. E. HAMMOND & J. G. MERRIAM.

LAMP STANDARD.

No. 388,195.

Patented Aug. 21, 1888.

Fig. 1

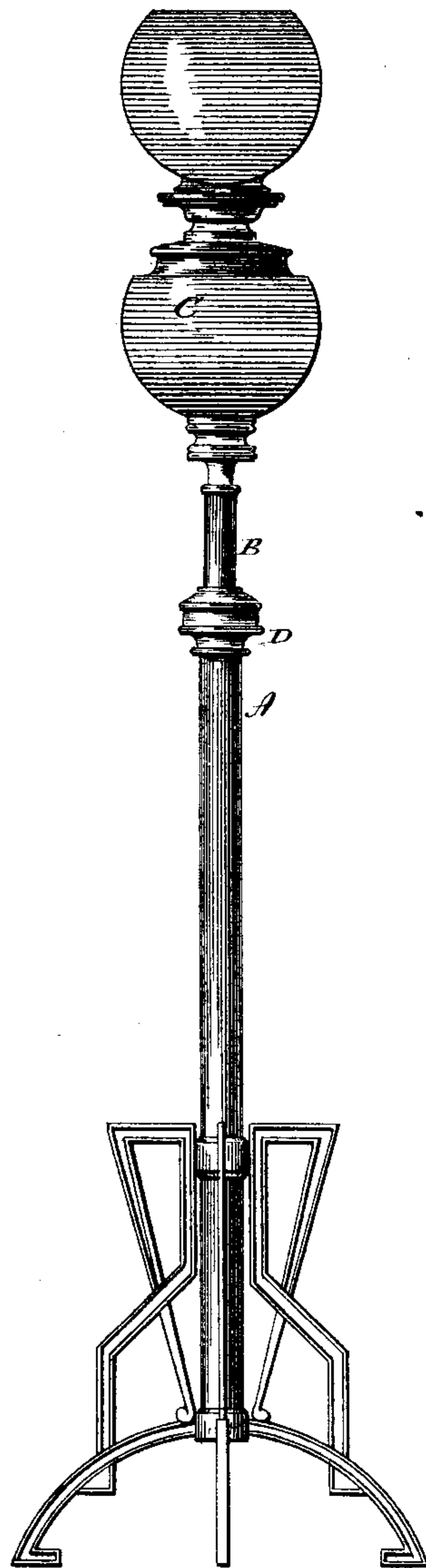


Fig. 2

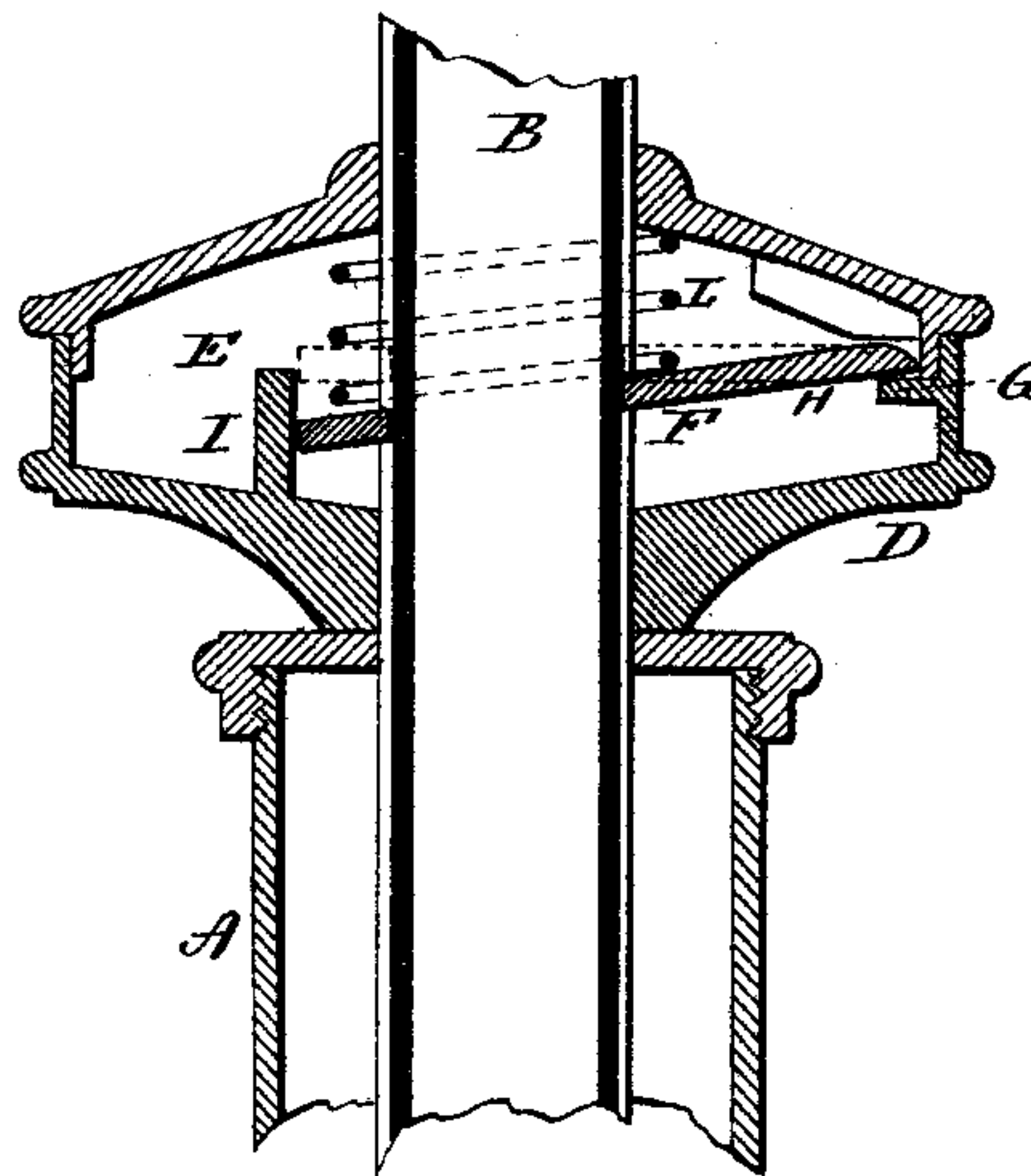


Fig. 4

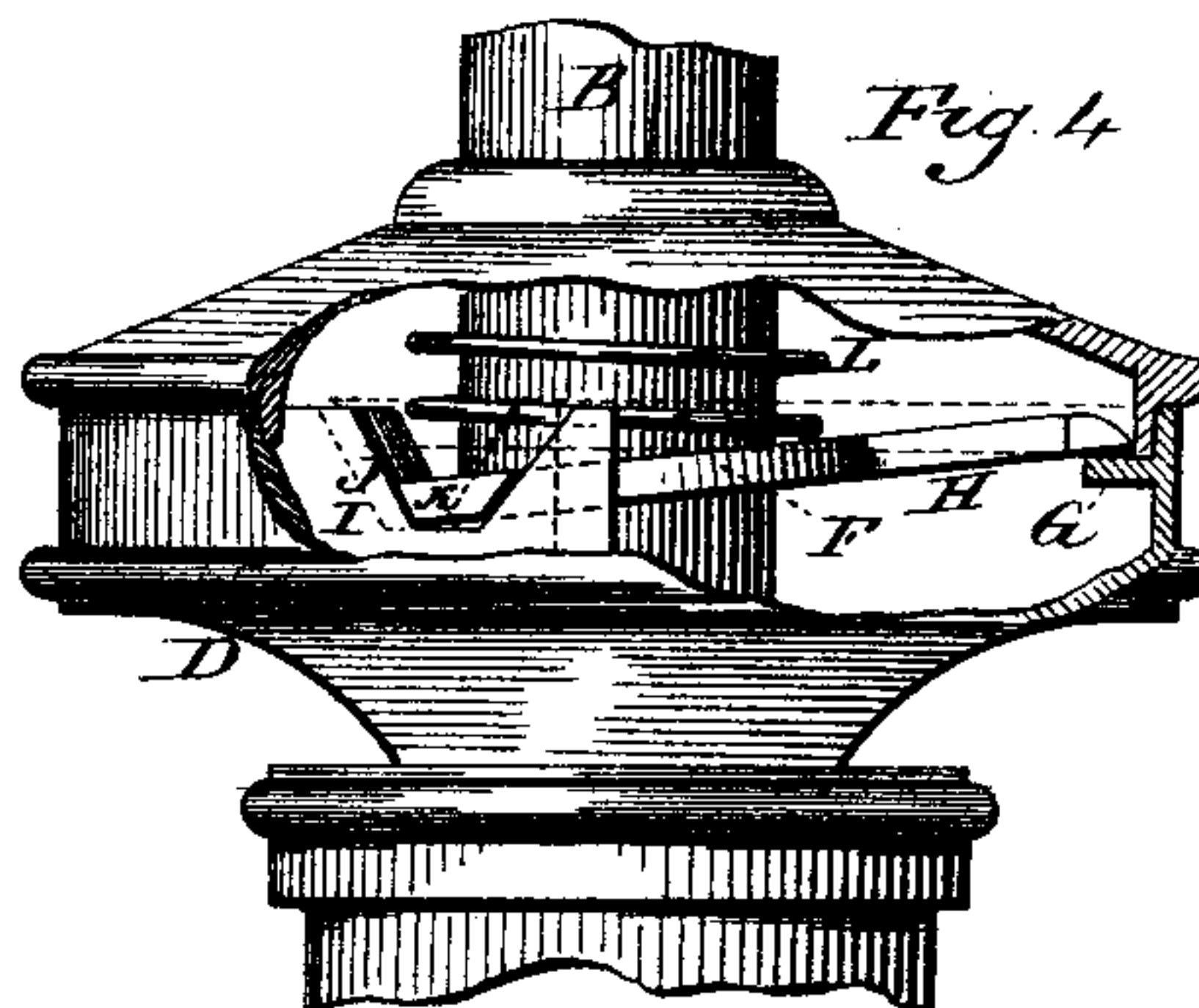
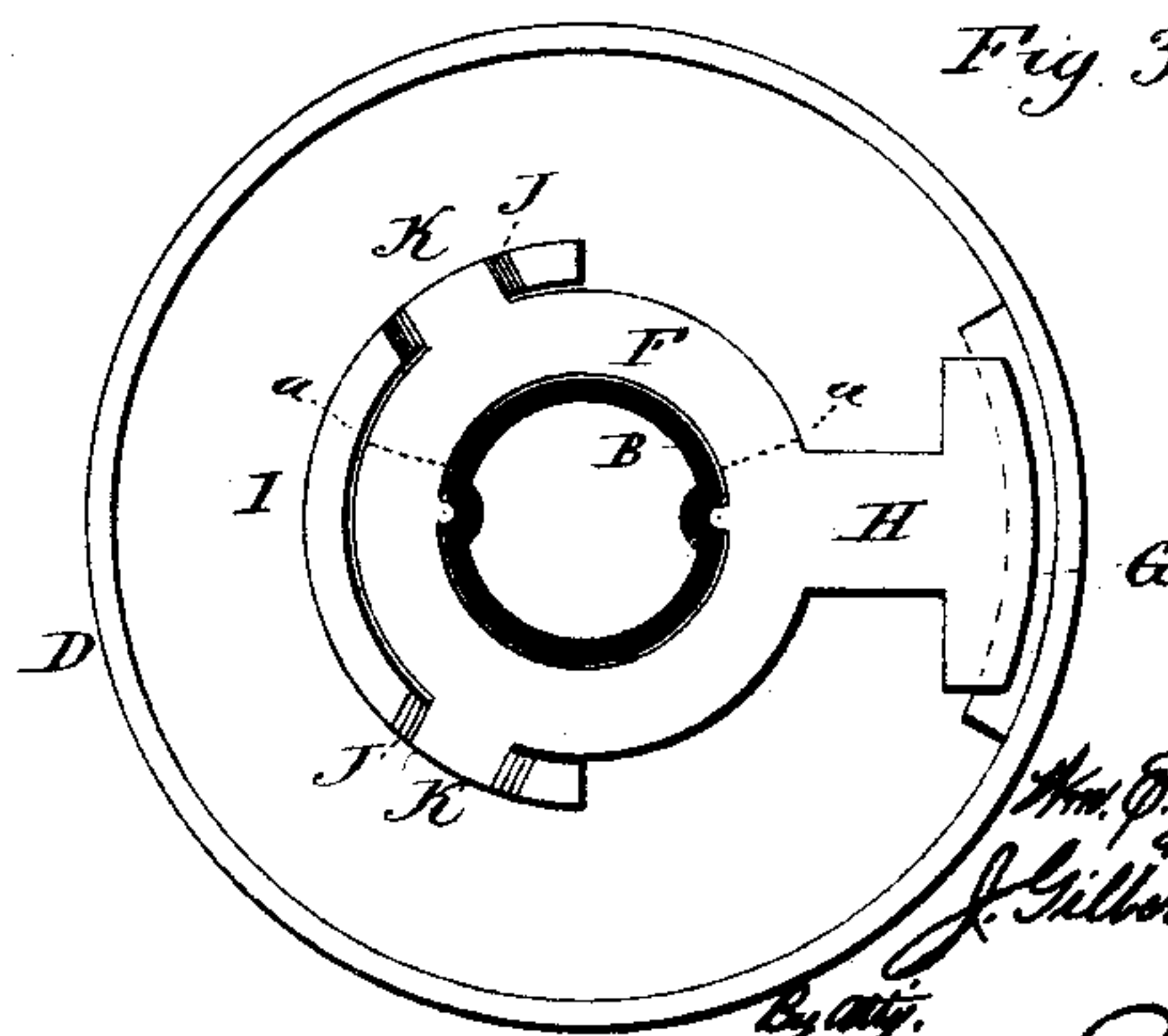


Fig. 3



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UNITED STATES PATENT OFFICE.

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LAMP-STANDARD.

SPECIFICATION forming part of Letters Patent No. 383,195, dated August 21, 1888.

Application filed March 8, 1888. Serial No. 266,545. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM E. HAMMOND and J. GILBERT MERRIAM, of Meriden, in the county of New Haven and State of Connecticut, have invented a new Improvement in Lamp-Standards; and we do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a side view of standard and lamp complete; Fig. 2, a vertical central section through the head and adjacent portions of the tubes; Fig. 3, a horizontal section through the head above the cramp; Fig. 4, a side view of the head, a portion broken away to show the cam, ledge, and cramp.

This invention relates to an improvement in that class of standards for supporting lamps which are designed to rest upon the floor, and so that the lamp is adjustable, that the lamp may be set to various elevations; and the invention is an improvement upon the standard for which Letters Patent No. 366,014, issued to the assignees herein, under date of July 5, 1887, were granted. These standards are usually composed of two tubes telescopically arranged, one of which is stationary in a base at its lower end, and the other tube adjustable within the stationary tube and carrying the lamp upon its upper end, and so that the innertube, with the lamp, may be raised to any desired elevation. Some device is necessary to secure the lamp in its elevated position or to any point to which it may be adjusted, yet such holding device must necessarily be of a simple character and should be of such a nature that, while the lamp may be raised without any mechanical manipulation and under little, if any, more resistance than the weight of the inner tube and lamp, such a resistance should be offered to the descent of the lamp that it will be certainly maintained at any position to which it may be adjusted, and so that it cannot readily drop to a lower position or without considerable applied force.

In many cases the engaging device between the adjustable and stationary portion of the

standard is such that friction is applied to resist the descent of the movable portion, but which friction will be relieved on lifting the adjustable portion, so that in the ascent the movement will be free; but against the descent sufficient friction will be applied to resist the descent of the movable portion to such an extent that a considerably greater force than the weight of the movable portion will be required to be applied. In other cases a special attachment is made with the engaging device, so that it may be mechanically disengaged for the descent of the movable portion and yet allow the free ascent of the same movable portion. It is to this latter class that our invention particularly relates.

In the patent to which we have referred the engaging device consists of a cramp of ring shape, which surrounds the movable portion and is hung in the stationary portion upon a pivot at right angles to the axis of the standard, and so as to swing up and down. The interior of the ring is of greater diameter than the diameter of the inner tube, and so that the inner tube works through it. The ring operates as a cramp upon the inner tube, and so that when the said cramp stands in an inclined position it will engage the inner tube at diametrically-opposite points, so as to prevent its descent; but as the inner tube is raised it brings the cramp into nearly a horizontal position, and, when so raised, presents a space within it greater than the inner tube, and through which the inner tube will freely move. Below the cramp a collar surrounds the inner tube, which is revoluble with the inner tube, but yet is permitted an up-and-down movement independent of the inner tube, and this collar, under a rotation of the inner tube, is given a vertical movement which raises the cramp into its horizontal or free position. This construction therefore necessitated the presence of the said collar with a support for it and a cam by which it is raised.

The object of our present invention is to retain the cramp as a means for holding the adjustable tube, but dispense with the said movable collar below the cramp; and it consists in a chambered head supported by the stationary tube and concentrically through which the in-

ner tube works, combined with a cramp arranged within the said head and surrounding said inner tube, or substantially so, the said cramp engaged with the inner tube, so as to be revoluble with it, with a cam stationary in said head, upon which said cramp under rotation will operate to give said cramp a vertical swinging movement, and as more fully hereinafter described.

10 A represents the outer tube, and B the inner tube, the outer tube being supported by a suitable base. The inner tube carries the lamp C in the usual manner, the said tubes being telescopically arranged, so that the said tube B may be vertically adjusted to move the lamp to various elevations. At the upper end of the outer tube, and made fast thereto, is a head, D, forming a chamber, E, around the inner tube. Within this chamber a cramp, 20 F, is arranged, and is best made ring shape, so as to surround the inner tube. Upon the inside of the chamber E a flange or ledge, G, is formed in a horizontal plane, upon which an extension, H, from the cramp F rests, and 25 so as to form a point upon which the cramp F may swing up and down, but so that the cramp may slide thereon in its rotative movement.

The opening through the cramp F is somewhat larger than the diameter of the inner tube, and so that when standing in the inclined position, as represented in Fig. 2, the cramp will come to a bearing upon the inner tube, as in the patent before referred to, and 35 so as to engage the inner tube with the cramp, and thereby prevent the descent of the tube; but when the cramp is raised, as indicated in broken lines, Fig. 2, in substantially horizontal plane, then the larger opening through the 40 cramp will permit the inner tube to be raised or lowered through the cramp without substantial contact therewith, and as in the patent before referred to. The inner tube is of non-cylindrical shape, as seen in Fig. 3, and 45 the inside of the cramp is of corresponding shape, so that the cramp is engaged with the inner tube that the said cramp may partake of the rotative movement imparted to the inner tube.

50 Within the chamber E, and substantially opposite the ledge G, a stationary cam, I, is formed, which presents one or more V-shaped cavities, J, (see Fig. 4,) and from the cramp corresponding projections, K, are made to work 55 in the said cavities J. These cavities correspond to the said projections K when in the normal position, or position of rest, and so that in such position the projections drop into the said cavities to bring the cramp into the 60 engaging position.

To adjust the movable portion of the standard, a partial rotation is imparted to the inner tube, which is communicated to the cramp, and under such rotation the projections K ride 65 up the corresponding inclines in the cam until substantially the horizontal position is attained, as represented in broken lines, Fig.

2. Then the inner tube is free to be moved up or down, and when the desired position is attained the return rotation of the tube will 70 permit the cramp to fall again into the cavities and engage in the tube. The cramp is free to rise, so that if the inner tube be simply lifted without rotation it will itself raise the cramp so far as to permit the inner tube to 75 rise without imparting rotation to the cramp, so that the rotative movement of the tube and cramp is only necessary when descent of the inner tube is required.

The inclined surfaces in the cam should be 80 so steep that the weight of the inner tube and the lamp it carries will be sufficient to force the cramp downward, such downward movement of the cramp over the incline giving to the inner tube the rotation necessary for the 85 descent of the cramp. This is desirable in order that the engagement of the inner tube may be made automatically whenever that tube is left free, the cramp being always in such frictional engagement that the tendency of the 90 tube B to descend will impart that tendency to the cramp. To insure such engagement between the inner tube and the cramp, a spring, L, is applied upon the cramp around the tube, the tendency of which is to force the 95 cramp downward and into its engagement with the tube; but this spring is not essential to the invention.

By making the cavity J in the cam inclined in opposite directions the rotation may be im- 100 parted to the inner tube and cramp in either direction.

We have represented the arrangement between the cramp and inner tube to produce the rotation of the cramp with the inner tube 105 as by means of vertical grooves in the inner tube and corresponding projections in the cramp. This will be sufficient to illustrate that any suitable non-cylindrical shape may be applied to the tube with corresponding 110 shape of the cramp. It will also be understood that what we call the "inner tube," B, may be a solid rod, as the only object of making this adjustable portion of the standard a tube is to reduce its weight. By the term "tube," there- 115 fore, we wish to be understood as including a solid rod.

We prefer to make the cramp of complete ring shape or so as to entirely surround the inner tube; but it will be understood that a 120 portion of this cramp may be omitted—say, as indicated by broken lines at *a a*, Fig. 3—that is, make the cramp substantially a segment instead of a full ring, which for all practical purposes is substantially ring shape. 125

We do not wish to be understood as claiming anything shown or described in the before-mentioned patent, No. 366,014, except as in the combination hereinafter described.

We are aware that an adjustable stand for 130 lamps and other articles, composed of a foot or base, a stationary tube secured thereto, a movable telescopic tube within said stationary tube, combined with a clutch mechanism con-

cealed within said stationary tube, and a spring interposed between the clutch and movable tube, the said clutch being in some cases outside and in some cases within the stationary tube, the said movable tube carrying a head or its equivalent, were structures well known long prior to our invention. We therefore do not wish to be understood as claiming such elements, except in the combination as hereinafter particularly recited.

We claim—

1. In a lamp standard, the combination of the outer tube and an inner tube or rod arranged vertically within said outer tube, the one fixed, the other adjustable, a cramp substantially of ring shape arranged in a chamber in the stationary tube and supported therein upon a bearing, so as to be free to swing up and down, and also free for a certain amount of rotation, the said cramp surrounding the inner tube and adapted to engage therewith, so as to partake of the rotation which may be imparted to said tube, and a cam stationary in said cramp-chamber, upon which the free side of said cramp is adapted to ride under rotation imparted to it,

substantially as described, and whereby such rotation of the inner tube and cramp will impart corresponding rise or fall to the cramp.

2. The combination of the outer tube, A, a concentric chamber, E, forming substantially a part of said outer tube, the inner tube, B, vertically adjustable within said outer tube and through said chamber, the said chamber constructed with the horizontal ledge G upon one side and with a stationary cam, I, presenting inclined surfaces J upon the side of the inner tube substantially opposite the said ledge G, with the ring-shaped cramp F around said inner tube, constructed with a projection from one side to rest upon said ledge, and upon its opposite side with the projection K, adapted to engage said cam, the said inner tube constructed of non-cylindrical shape, and the inside of the cramp of corresponding shape, substantially as described.

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