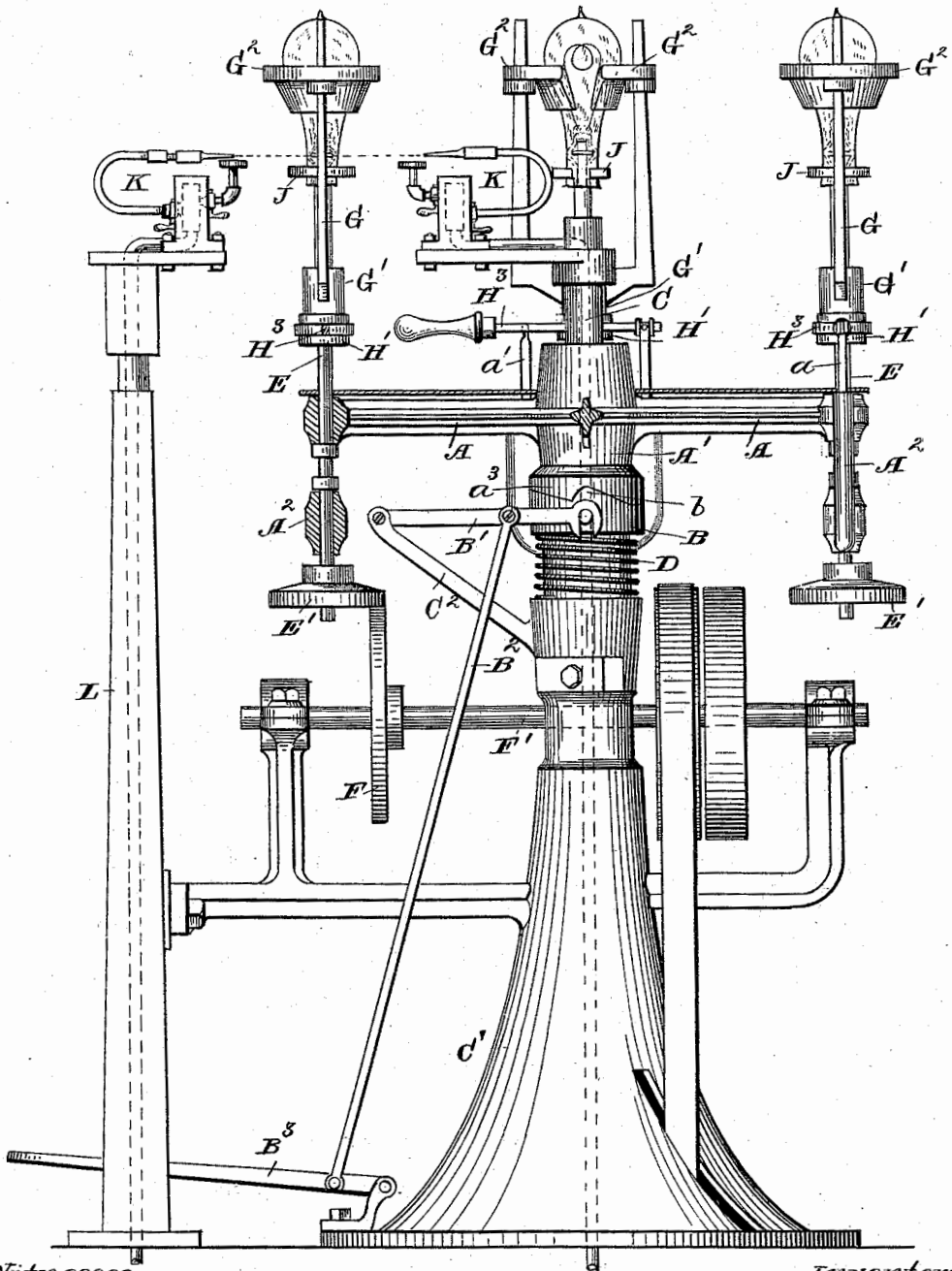
(No Model.) 3 Sheets—Sheet 1.

A. J. SPILLER & J. R. MASSEY.

MACHINE FOR SECURING FILAMENT HOLDERS INTO GLOBES OF INCANDESCENT LAMPS.

No. 537,493. Patented Apr. 16, 1895.

-FIG. I-



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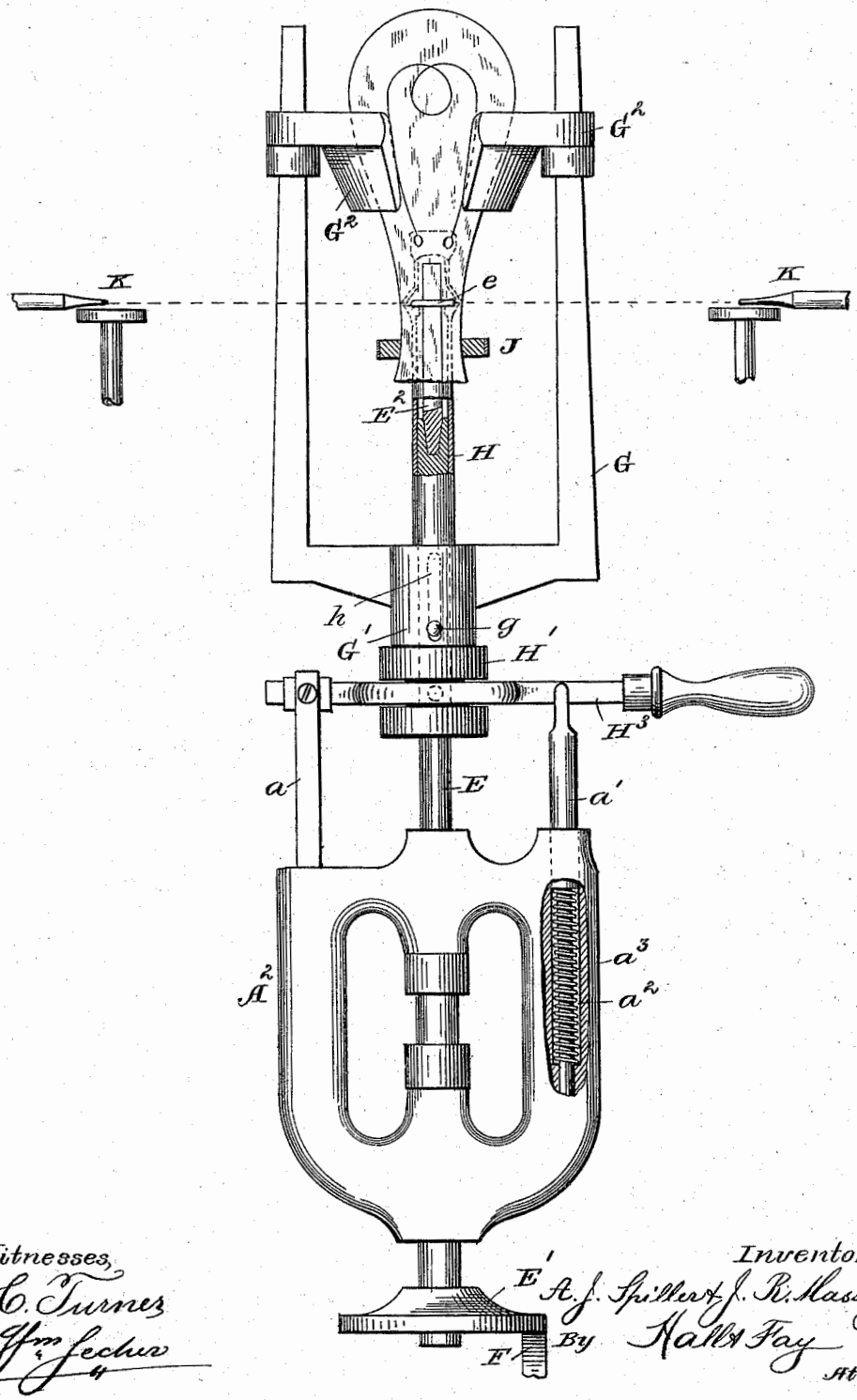
MACHINE FOR SECURING FILAMENT HOLDERS INTO GLOBES OF INCANDESCENT LAMPS.

No. 537,493. Patented Apr. 16, 1895.

-FIG. II-



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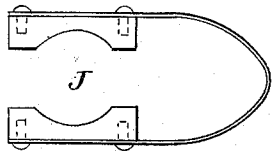
(No Model.) 3 Sheets—Sheet 3.

A. J. SPILLER & J. R. MASSEY.

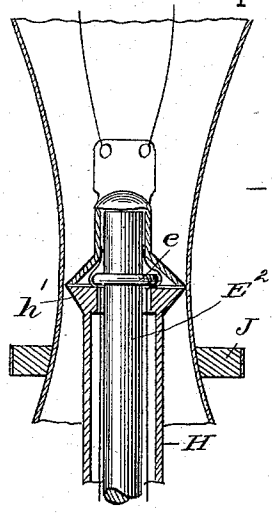
MACHINE FOR SECURING FILAMENT HOLDERS INTO GLOBES OF INCANDESCENT LAMPS.

No. 537,493. Patented Apr. 16, 1895.

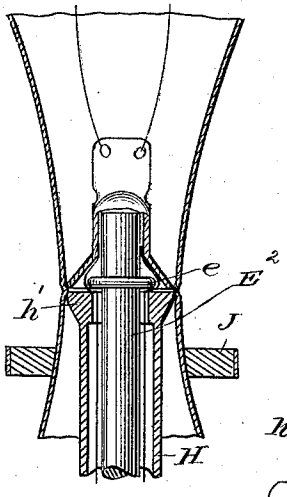
— FIG. VII —



— FIG. IV —



— FIG. V —



— FIG. III —

— FIG. VI —

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UNITED STATES PATENT OFFICE.

ARNOLD J. SPILLER AND JOHN R. MASSEY, OF CLEVELAND, OHIO, ASSIGNORS TO THE BUCKEYE ELECTRIC COMPANY, OF SAME PLACE.

MACHINE FOR SECURING FILAMENT-HOLDERS INTO GLOBES OF INCANDESCENT LAMPS.

SPECIFICATION forming part of Letters Patent No. 537,493, dated April 16, 1895.

Application filed May 17, 1894. Serial No. 511,626. (No model.)

To all whom it may concern:

Be it known that we, ARNOLD J. SPILLER, a subject of the Queen of Great Britain, and JOHN R. MASSEY, a citizen of the United States, residents of Cleveland, county of Cuyahoga, and State of Ohio, have invented certain new and useful Improvements in Machines for Securing Filament-Holders into the Globes of Incandescent Lamps, of which the following is a specification, the principle of the invention being herein explained and the best mode in which we have contemplated applying that principle, so as to distinguish it from other inventions.

The annexed drawings and the following description set forth in detail, one mechanical form embodying the invention; such detail construction being but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawings—Figure I represents an elevation of our improved machine for securing the filament holders into the globes of incandescent lamps; Fig. II, an enlarged elevation of one of the devices for holding the globe and filament holder during the time of affixing the latter to the former; Fig. III, a vertical sectional detail view of the shaft and sleeve upon which the filament holder and the globe are held, and of the means for sliding the sleeve upon the shaft; Figs. IV, V, and VI, sectional views, respectively illustrating the relative positions of the filament holder and the globe, before the heat is applied to the same, while the heat is applied, and after the filament holder has been secured into the neck of the globe and the waste portion of the globe has been pulled off from the portion of the globe which remains, and Fig. VII, a plan view of the weight for removing the waste portion of the neck of the globe.

A series of radiating arms, A, project from a hub, A′, the lower end of which has clutch teeth, a^3, which engage with corresponding clutch teeth, *b*, upon a sleeve, B, which slides upon a hollow standard, C, having a suitable base, C′. A spring, D, serves to force the clutch sleeve B upward, and a lever, B′, is pivotally connected to said sleeve, and has its fulcrum upon a bracket, C^2, which projects from the base C′, of the standard. A connecting rod, B^2, is pivoted to the lever B′, and is pivoted to a treadle, B^3, by means of which the clutch sleeve may be depressed against the spring.

The number of teeth upon the hub and the clutch sleeve corresponds to the number of arms A, so that each arm may stop at the proper place after the clutch sleeve has been depressed, the arms revolved, and the clutch sleeve again released. Each arm has a vertical frame, A^2, in which a shaft, E is journaled. Said shaft has a friction disk, E′, at its lower end, which may engage,—when brought to register with the same,—with a friction disk, F, upon a horizontal shaft, F′, which receives its motion from any suitable motive power.

A forked frame, G, has a collar, G′, within which a sleeve, H, which fits upon the vertical shaft E, may vertically slide. The collar of the forked frame and the shaft E are connected by means of a key, *g*, and the sleeve H has longitudinal slots, *h*, through which the key passes, and which permits the sleeve to slide upon the shaft and within the collar, while the shaft, sleeve and forked frame may rotate together.

A circumferentially grooved collar, H′, is secured upon the lower end of the sleeve H, and a ring, H^2, fits into the groove of said collar and is pivotally connected to a hand lever, H^3, which is fulcrumed upon a bracket, *a*, projecting from the frame upon the outer end of the arm A. The free arm of the hand lever bears against a bolt, *a*′, which slides in a vertical bore, a^2, in the frame upon the outer end of the arm A, and has a spring, a^3, surrounding it and bearing against a shoulder upon the bolt and against a shoulder in the bore, so that said spring may raise the free end of the lever after the latter has been depressed.

The upper end of the sleeve H is flared, to form a flange, *h*′, upon which the flaring end of the filament holder may rest, and against the sharp cutting edge of which the contracted neck of the globe may bear. A spindle, E^2, is removably secured in the upper end of the shaft E, and projects beyond the end of the sleeve H, having a collar, *e*, against which the flaring end of the filament holder may rest,