

J. H. GRAY.

Wick Raiser.

No. 100,285

Patented March 1, 1870.

Fig. 1

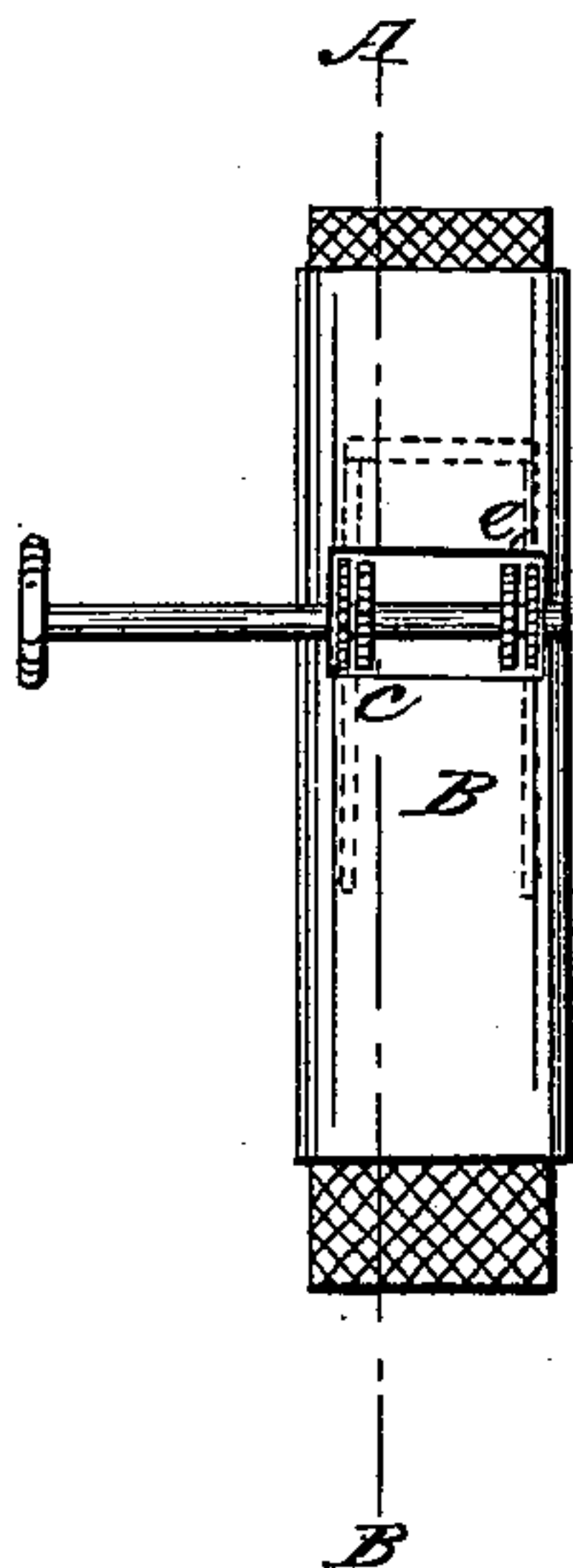


Fig. 2

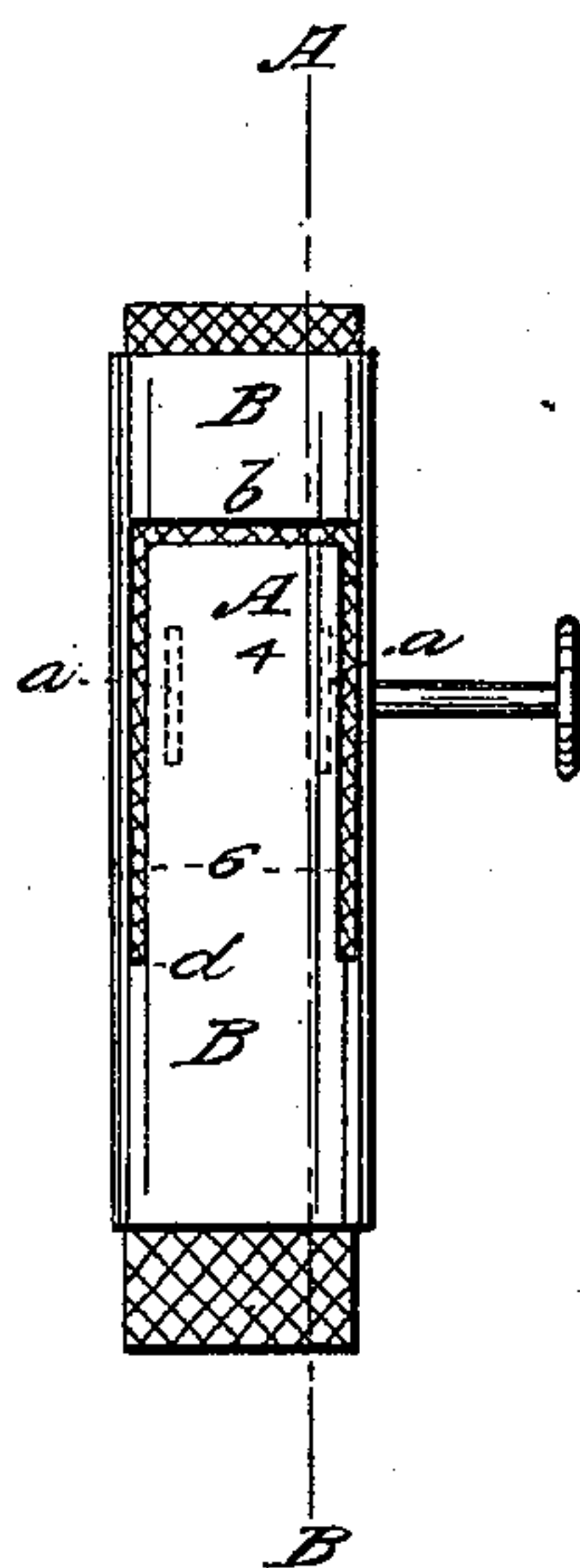


Fig. 3

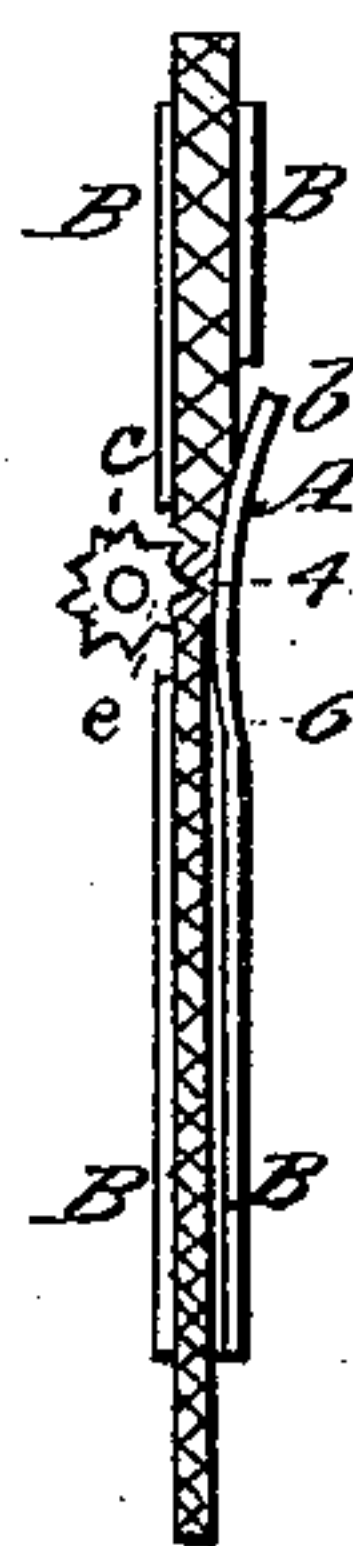


Fig. 4

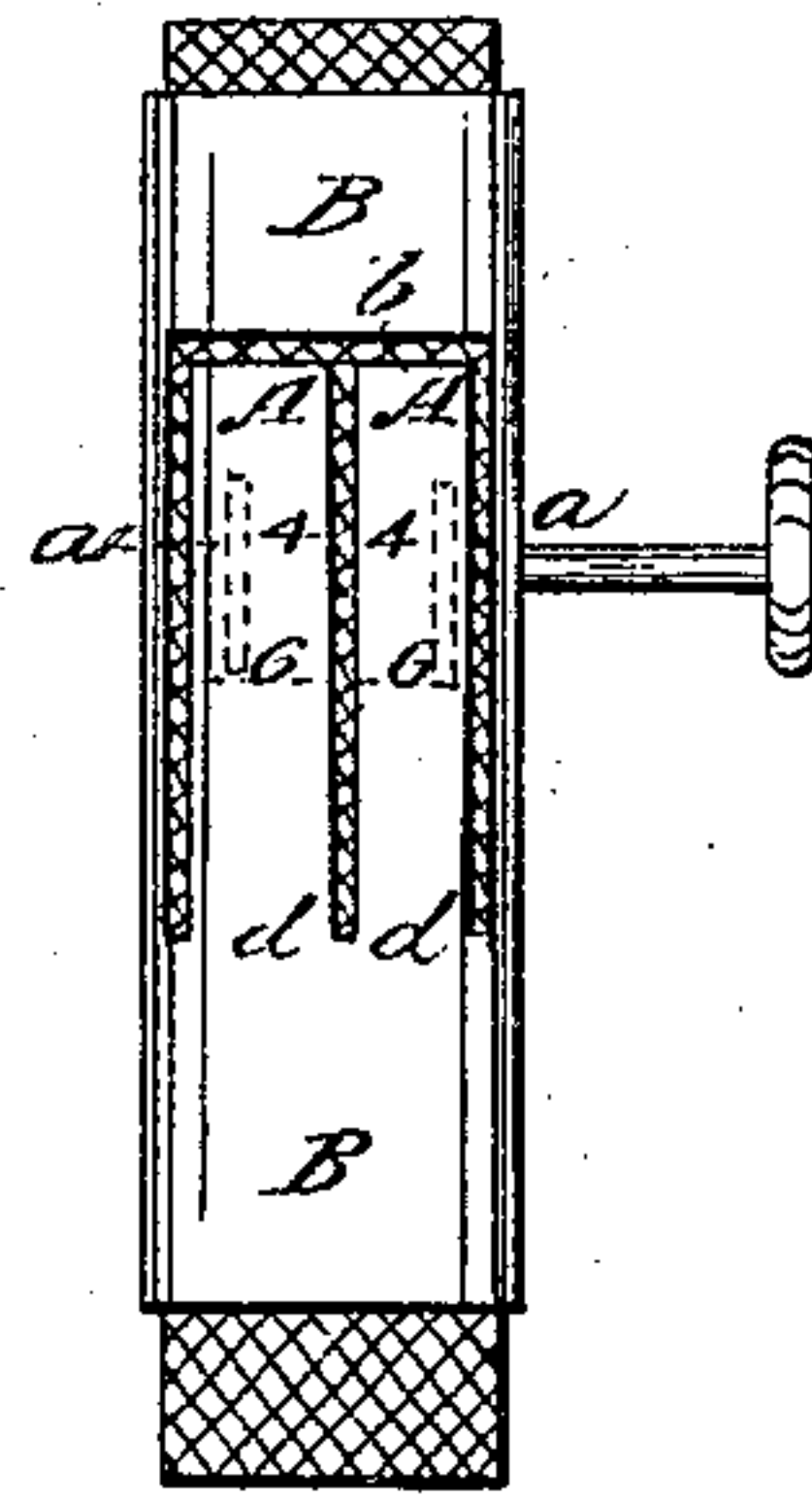
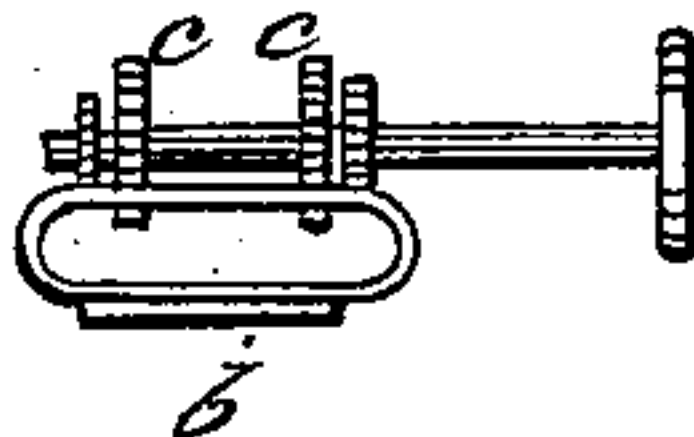


Fig. 5



Witnesses:

Wm. Brown
John E. Lane

Inventor:

James H. Gray

United States Patent Office.

JAMES H. GRAY, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 100,285, dated March 1, 1870; antedated February 21, 1870.

WICK-TUBE FOR LAMPS.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern :

Be it known that I, JAMES H. GRAY, of Boston, in the county of Suffolk, and State of Massachusetts, have invented a certain new and useful Improvement in the "Wick-Tubes" which are used in Lamps, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings making part of this specification, in which—

Figure 1 represents the back side of the ordinary wick-tube used in kerosene lamps.

Figure 2, the front side of the same.

Figure 3, a sectional elevation of figs. 1 or 2 on the line A B thereof.

Figure 4 shows the front side of a wick-tube containing my improvement, which is a separate spring, A, to act against each wheel c.

Figure 5 is a top-end view of fig. 2, but like the parts shown in figs. 1, 2, and 3, is to illustrate what is old, and which forms no part of my invention, and which may show the difference between the old and the new.

This invention relates to a new and useful improvement in the wick-tubes which are used in lamps for burning kerosene or coal oil, and has for its object to provide a simple, cheap, efficient, separate device for holding or pressing the wick against each of the operating and adjusting-wheels which raise and lower the wick.

My said invention consists of a divided spring, or a spring, A, for each wheel c, when formed in one with the tube, and as a part thereof, and not by the application of any previously detached part or piece, and these springs are formed by cutting through the substance of the metal tube B at the side opposite the adjusting wheels c, detaching and dividing the portions A A or springs from the sides a at the top b, and through the center, as shown, leaving the lower end whole with that part of the tube. These springs are then bent or curved at 4, as shown in fig. 3, to throw the end b outward, and give the curved portion an easy bearing on the wick, directly opposite or against the wheel c. The shank portion of the spring is bent or sprung inward at b, or between the curve at 4 and the lower portion d, and this bend may be varied according to the amount of pressure required in the side of the wick to hold or press it against the wheel in a manner which will insure the certain action of the latter in raising or lowering the wick.

The spring A is divided as shown in fig. 4. In this form each part of the spring will act independent of the other part, and if the wick should be thicker at one edge than at the opposite edge, there will be less liability of one edge of the wick being raised or lowered faster than the other edge, since each edge is pressed against a wheel, c, by a separate spring, and both edges

will be acted upon uniformly or with an equal amount of pressure, and both edges of the wick will be moved together, whether raised or lowered.

The length of the spring admits of its having a comparatively wide scope of action, or considerable motion from and toward the wick, so that a thick or thin wick may be used, or one varying in thickness, as is sometimes the case, and no ordinary variation or inequality of the wick-fabric can prevent the certain action of the wheel to raise or lower, or adjust the wick when acted upon by a spring or springs, as clearly shown in the drawings.

This improvement can be applied to the common round, covered, or braided wick in a cylindrical tube, by forming the spring of the substance of each tube in the same manner as in the flat tube.

The spring or springs A not only press or hold the wick up against the wheel or wheels to insure the certain action of the latter in raising or in lowering the wick, but there is a yielding action of each spring which diminishes or relieves the friction between the tube and the wick, and allows it to be easily moved up and down, and prevents it from binding or sticking in the tube, whereas, in the ordinary straight tube, the friction between the wick and the interior surface of the tube greatly retards the free action or movement of the wick, and renders its adjustment very difficult, uncertain, and at times quite impossible.

In forming the spring A by dividing or cutting it from the substance of the tube, as shown and described, it is immaterial whether the upper or lower end is detached and free for action, or which end of the tube is upward; when applied to the cap of the lamp the spring will operate as well one way as the other.

I am aware that a thin strip of metal has been riveted or otherwise fastened to a lamp-tube, against an opening made through the tube, said strip of metal being provided at its free end with a roll or revolving thimble, which is pressed against the wick by the spring action of the metal strip.

This combination of a spring and a roll with the tube of a lamp, being fastened by rivets, solder, or other similar means, is very objectionable by reason of the high cost of its construction and application to the tubes, and I disclaim having invented its equivalent in principle, construction, or the combination of parts; but a more simple, cheap, and quite as efficient a device, formed in one with the lamp-tube, and as a part thereof, and without any material addition to the cost of the tube.

I also disclaim having invented a single spring or whole spring applied to the wick of a lamp against two wheels arranged to raise and lower the wick, as patented to H. C. Hunt February 3, 1863, or as shown in the drawings of George Neilson, in a patent to him

under date of September 27, 1864; such a whole spring or single spring will not bear equally or with uniform pressure against both edges of the wick, which is thicker at one edge than the other, for the thick edge of the wick will press the whole spring outward, so that the wheel that comes in contact with the thinner edge of the wick will not actuate or move the latter, as no part of the surface of the whole spring will come in contact with the wick to bear it against the wheel, consequently one edge of the wick will be moved faster than the opposite edge, and this prevents the certain action of the wheels, and renders the operation of moving or adjusting the wick exceedingly difficult and

at times impossible, whereas, by dividing the spring, or by employing a separate spring for each wheel, both edges of the wick will be acted upon uniformly, and both edges will be moved together, whether raised or lowered.

I claim as my improvement—

A separate spring, A, for each wheel *c* of a lamp-wick tube, in the manner and for the purpose specified.

JAMES H. GRAY.

Witnesses:

WM. S. BROWN,
JOHN E. CRANE.