

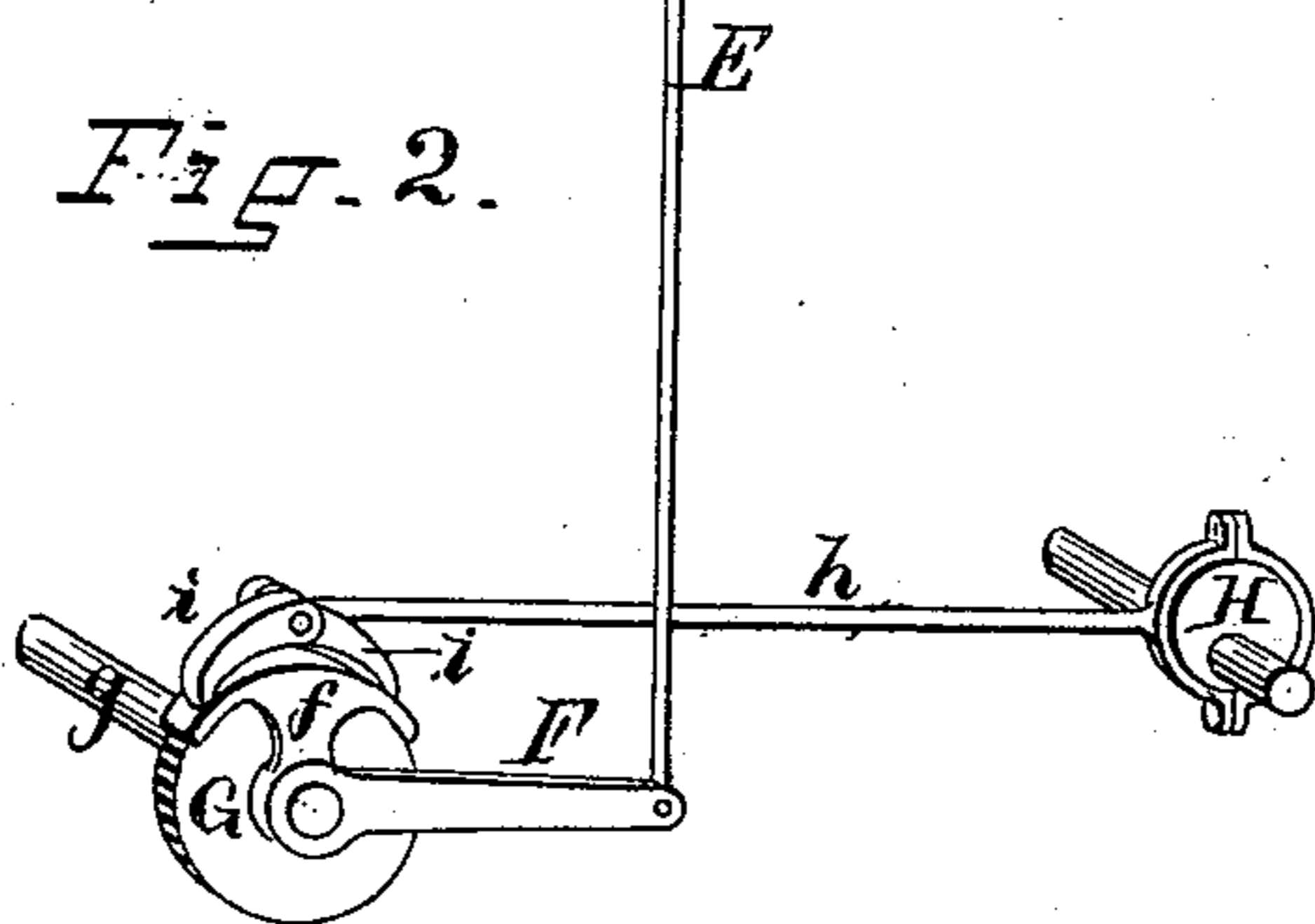
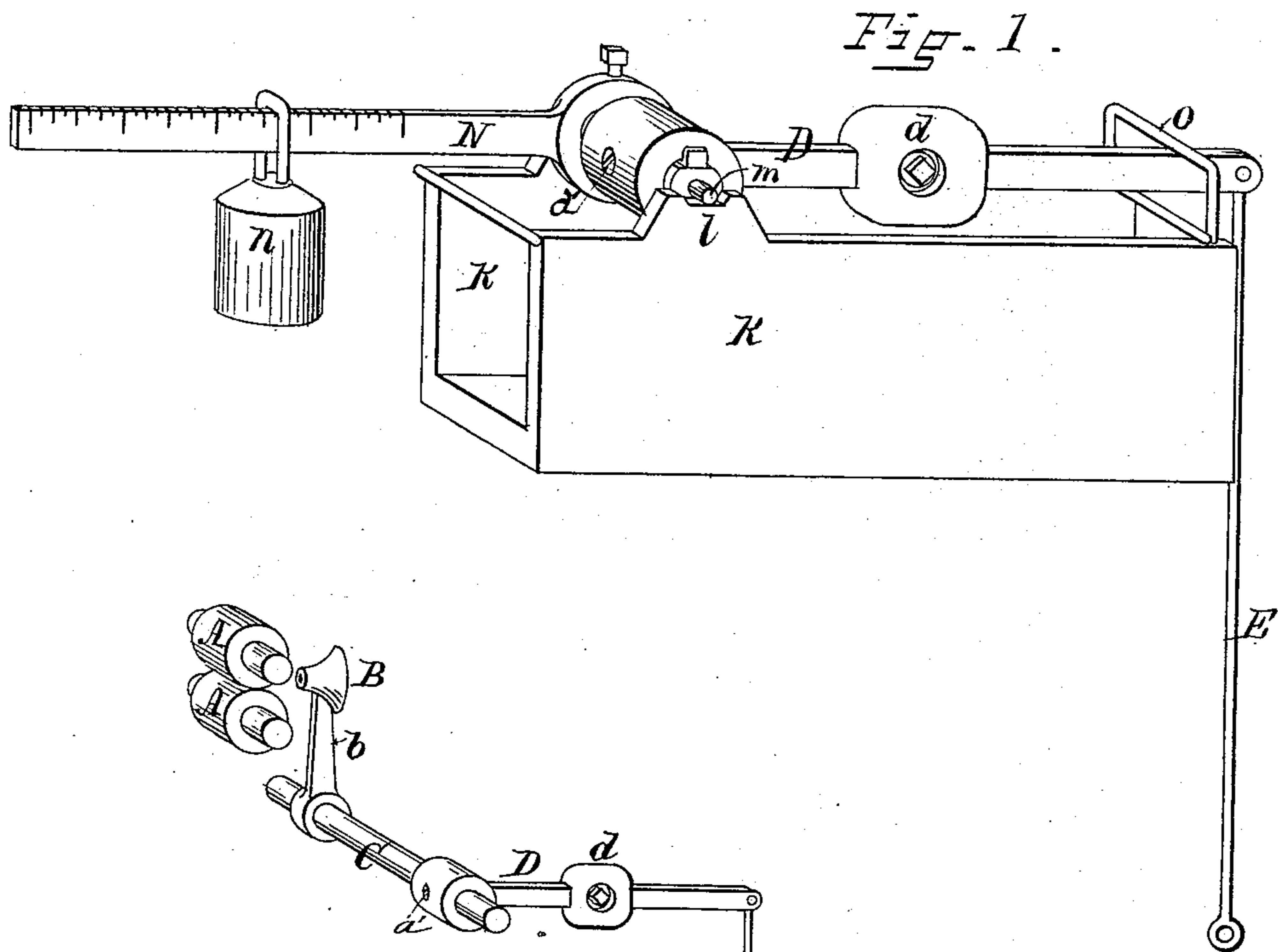
(No Model.)

E. P. PHILLIPS.

# DEVICE FOR ADJUSTING COTTON SLIVER EVENERS.

No. 330,801.

Patented Nov. 17, 1885.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

EZEKIEL P. PHILLIPS, OF BLACKSTONE, MASSACHUSETTS, ASSIGNOR TO  
HENRY C. PHILLIPS, OF SAME PLACE.

## DEVICE FOR ADJUSTING COTTON-SLIVER EVENERS.

SPECIFICATION forming part of Letters Patent No. 330,801, dated November 17, 1885.

Application filed June 9, 1883. Serial No. 97,531. (No model.)

*To all whom it may concern:*

Be it known that I, EZEKIEL P. PHILLIPS, of Blackstone, in the county of Worcester and State of Massachusetts, have invented a new and useful Device for Adjusting Cotton-Sliver Eveners, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to devices employed to aid in the adjustment of the weights upon the arms of trumpets which are used in cotton-sliver eveners to control the passage of the sliver, for the purpose of maintaining uniformity in the size or density of the sliver. In this class of machines (cotton-sliver eveners) the trumpets through which the sliver passes from the drawing to the delivery rolls are each provided with an adjustable weight, which tends to hold the trumpet in its normal position. The arrangement of the weight is such that when a sliver of a given quality of size or density passes through the trumpet the friction of the passing sliver tends to move the trumpet in one or the other direction, according as the sliver becomes greater or less in size or density. These movements of the trumpet are counterbalanced by the adjustable trumpet-weight. When the sliver increases in size or density, the trumpet is drawn by the sliver toward the delivery-rolls, and when the sliver decreases in size or density the trumpet is moved by the weight toward the drawing-rolls. When the trumpet moves toward the delivery-rolls, it acts, through suitable connecting mechanism, upon the shipper, so as to increase the speed of the drawing-rolls for the purpose of reducing the size or density of the sliver, and when the trumpet moves toward the drawing-rolls it acts, through the connecting mechanism, upon the shipper, so as to decrease the speed of the drawing-rolls. Since the resistance of the trumpet to the passing sliver is due mainly to the counterbalance-weight, it will be seen that the effective action of the trumpet depends almost entirely upon the proper adjustment of the counterbalance-weight, and as this weight has to be readjusted for each change in the number or quality

of the sliver, it will be seen that it is absolutely necessary that some means should be devised whereby the counterbalance-weight may be set quickly and accurately, and as quickly and accurately reset when the weight is to be re-adjusted.

Heretofore the various adjustments of the counterbalance-weights have been effected by a very slow, tedious, and unsatisfactory method; a length of sliver was run through the evenner and then weighed, and the counterbalance-weight was set upon the trumpet-beam so as to correspond with the weight, or size, or density of the sliver. Thus successive lengths of sliver had to be tested till an average adjustment of the weight could be ascertained. Even this average adjustment was not perfectly satisfactory, owing to the varying conditions of the sliver, consequent upon varying conditions of temperature and moisture, &c., so that the previous method has proven quite unreliable and unsatisfactory.

It is the object of my invention to produce a device by means of which the trumpet-weights may be accurately and speedily adjusted to any required quality of sliver.

To the above purpose my invention consists in the provision of a shaft mounted upon a suitable frame, and carrying a graduated arm having an adjustable weight, the said shaft being arranged to receive the weighted trumpet-beam in such manner that the graduated and weighted arm shall counterbalance the weighted trumpet-beam, as hereinafter described and claimed.

In order that my invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1 is a perspective view of my device, and a weighted trumpet arm and rod applied thereto. Fig. 2 is a skeleton view of a cotton-sliver evenner, showing the weighted trumpet and its operative connections.

In the said drawings, A A in Fig. 2 designate the ordinary calender-rolls by which the sliver is drawn through the trumpet, and B designates the trumpet, which is secured to the rock-shaft C by means of the arm b.

D designates the trumpet-beam, which is secured in any suitable or preferred manner to the shaft C.

*d* designates the balance-weight, which is adjustably secured upon the beam D.

E designates a connecting-rod, one end of which is pivotally connected to the outer end of the beam D, while the lower end of said rod is pivotally connected to the arm F, which is hinged to the shipper-shaft *g*. The arm F carries the shield *f*, which covers a portion of the periphery of a ratchet-wheel, G, which is secured to the end of the shipper-shaft *g*. The belt-shipper is operated by the shaft *g*, and serves to increase or decrease the speed of the drawing-rolls.

H designates an eccentric, which is mounted upon the driving-shaft, and by which reciprocating motion is communicated to the pawls *i i*, which latter serve to operate the shipper-shaft.

This arrangement forms no part of my invention, and is illustrated and described only for the purpose of showing the use of my invention, which is applicable to all kinds of cotton-sliver eveners, as well as to drawing-frames—such, for instance, as is shown in the patent to George Draper, No. 113,752, granted April 18, 1871.

Referring now to Fig. 1, K designates a box or frame which is provided with bearings *l*, and with a loop, *o*, placed on the end of the box, to limit the movements of the arm during the adjustment of the weight; and *m* designates the shaft of my improved device, which shaft rests in the bearings *l*. Upon one end of the shaft *m* is secured a graduated scale-beam, N, which carries a movable weight, *n*, so that the weight *n* may be moved to any desired point upon the scale-beam.

D designates the trumpet-beam, which is secured in any suitable manner upon the shaft *m*, and extends from said shaft in a direction opposite to that of the scale-beam N. That portion of the shaft *m* which receives the beam D is shaped to conform to the shape of the eye in the hub of the beam D, and the latter may be held upon the shaft by the set-screw *d'*, by which it is usually held upon the shaft *g*. The graduated beam N is marked with points corresponding to the various weights, sizes, densities, or numbers of the slivers, and this graduation of the beam N may be accomplished by securing the trumpet-beam of any evenner to the shaft *m*, and after placing the weight *n* upon the beam N, so as to counterbalance the weighted trumpet-beam, marking

the scale-beam at the point occupied by the weight *n*. The connecting-rod E should also be attached to the beam D during the operation of marking the beam N.

The operation of the device is as follows: When the eveners in a cotton-mill are to be adjusted to any required weights or numbers of slivers, the beam D and the connecting-rod E of each evenner are removed from the evenner and placed in the weighing device, the hub of the beam D being suitably secured to the shaft *m*. The weight *n* is then moved to the point on the beam N marked to correspond with the required number of sliver, and the weight *d* of the beam D is then moved till it is exactly counterbalanced by the scale-beam weight. The beam D and its weight *d*, together with the rod E, are then removed from the device and are again placed in the evenner, and will exactly counterbalance the friction of the required number of slivers so as to accurately regulate the evenner. After the above-described adjustment the evenner or drawing-frame may be started up at once and no weighing of the delivered sliver is required, while the loss in time and sliver caused by the weighing of the delivered sliver is avoided.

I am aware that a weighing-scale has been constructed with weighted beams projecting on opposite sides of a common fulcrum, and I lay no claim to such an instrument broadly.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. An improved device for adjusting the balance-weights of cotton-sliver eveners, consisting of a suitably-mounted horizontal shaft, constructed to receive and permit the removal of the end of a trumpet-beam, and having a fixed radial arm graduated, and provided with an adjustable weight in correspondence with various weights, sizes, densities, or numbers of cotton slivers, substantially as described.

2. The combination, with the box or frame K, having the bearings *l* and the loop *o*, of the shaft *m*, provided with the graduated arm N, and the weight *n* upon said arm, the said shaft being adapted to receive the hub of a weighted trumpet-beam of a cotton-sliver evenner, as and for the purposes described.

In testimony whereof I have herenuto set my hand.

EZEKIEL P. PHILLIPS.

Witnesses:

DANIEL B. POND,  
S. M. POND.