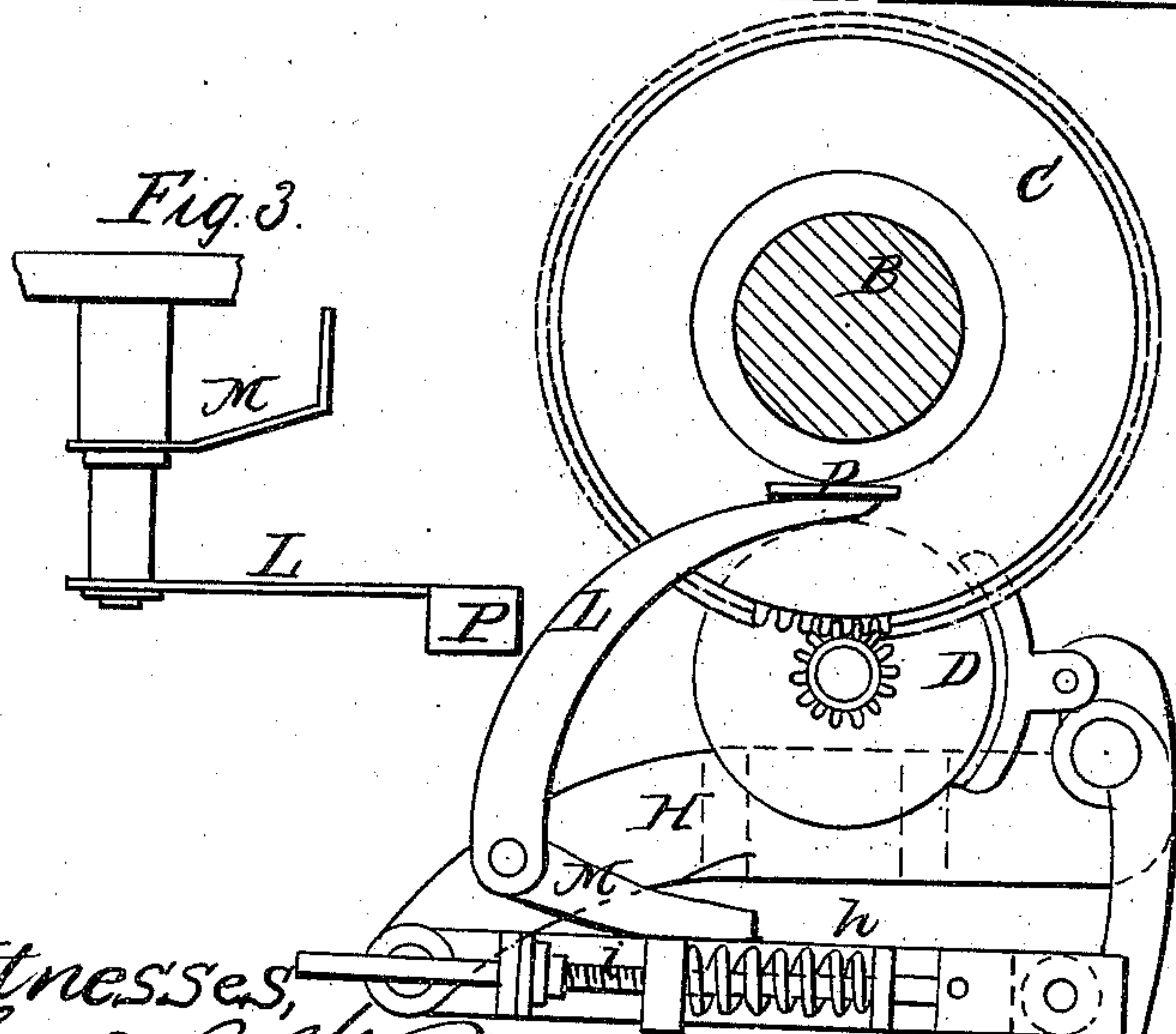
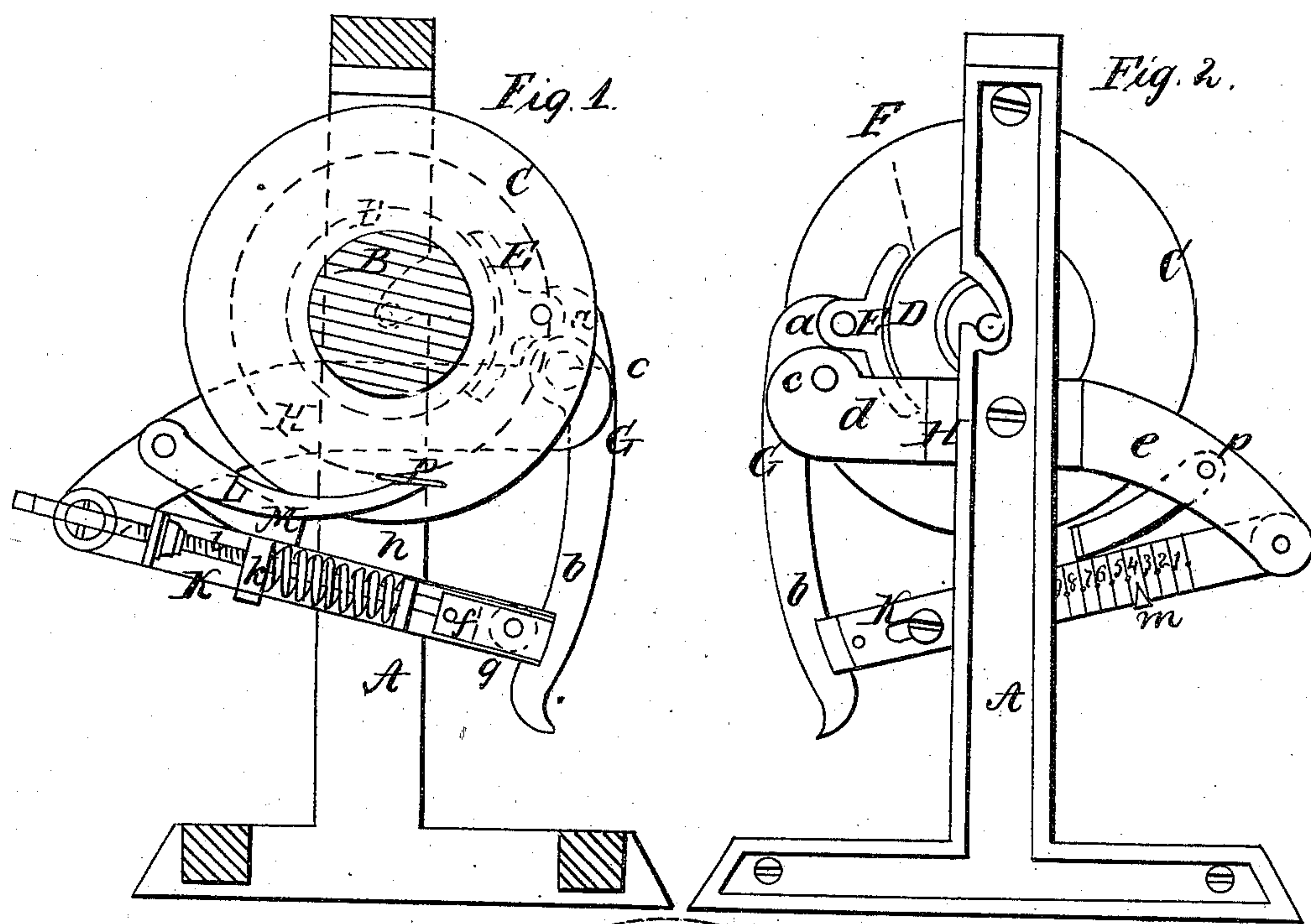


R. Walker *Let-Off Motion.*

N^o 70,297.

Patented Oct. 29, 1867.



Witnesses,
H. S. G. Wilde
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Inventor,
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United States Patent Office.

RICHARD WALKER, OF MILFORD, MASSACHUSETTS.

Letters Patent No. 70,297, dated October 29, 1867.

IMPROVEMENT IN LET-OFF MOTION FOR LOOMS.

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, RICHARD WALKER, of Milford, in the county of Worcester, and State of Massachusetts, have invented a new and useful Improvement in a "Self-Adjusting Yarn-Beam Brake," of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents a vertical transverse section of a dresser-frame, beam, &c.

Figure 2 represents an end elevation of the same.

Figure 3 represents a detail of the pad and its attachment.

Figure 4 represents a modification of my invention, showing a different arrangement of the parts.

The object of my invention is to provide a self-adjusting friction-brake that may be applied to any yarn or dresser-beam, &c., where a regular and uniform amount of tension is desired from a full to an empty beam, and to measure and adjust the amount of power applied, thus securing an equal tension to all the beams, and increasing or diminishing the friction to any amount.

My invention consists in placing a friction-wheel on the end of the beam, or connecting it by gears or other mechanical device with one of the heads of the beam. The brake, which acts against this friction-wheel, may be lined with rubber, and is hinged to the short arm of the brake-lever. The longer and curved arm of said brake-lever extends downwards to a distance corresponding to the difference of the radius of the beam-head and that of the yarn-beam. It also consists in a bar bearing against the inner curve of the brake-lever, in combination with a spiral spring and adjusting-screw, and, being supplied with a scale and index, is acted upon by a lever or levers, which operate against the yarn on the yarn-beam, thus producing the required friction. In order to reduce the friction gradually as the yarn leaves the beam, the said bar must move up toward the fulcrum of the brake-lever the same distance and in the same ratio as the yarn is unwound from the beam. This is effected by setting the lower end of the brake-lever a little forward and nearer to the pivot of the bar than its fulcrum, when the bar will run up by means of the pressure of the spiral spring. This upward motion of the bar is counterbalanced by a double lever, one arm of which rests upon said bar, while the other arm, reaching inside of the beam-head, is resting with the pad at its end on the yarn at the under side of the beam, so that when the beam is full the said pad will bear on the surface of the yarn and keep the bar down, thus exerting the greatest amount of friction, and, as the yarn winds off, the pad and bar will rise together, and thus reduce the friction. An index-point, attached to the nut of the adjusting-screw, will indicate on a graduated scale, engraved upon the bar, the degree of pressure on the brake-lever.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

In figs. 1 and 2, A represents the dresser-frame; B the yarn-beam, with a head, C, and the friction-wheel, D, attached to it. The brake E, provided with the rubber F pressing against the friction-wheel D, is pivoted to a short arm, *a*, of the brake-lever G, the longer arm, *b*, of which is curved, and of a length equal to the distance of the axis of the yarn-beam from the periphery of the yarn-beam head C. The fulcrum *c* of the brake-lever G is attached to the arm *d* of the bracket or plate H, while to the other arm, *e*, is pivoted a bar, K. The bar K carries, at the end nearest the brake-lever G, a short slide, *f*, containing the small friction-roller *g*, which rolls up and down on the inner edge of the curved lever G, said edge corresponding to the sweep of the bar K, and between said slide *f* and the pivoted end of bar K is arranged a spiral spring, *h*, which operates the brake-lever G, and is placed around an adjusting-screw, *i*. The spring *h* is confined between the slide *f* and the nut *k*, and thus operates against the brake-lever G, and produces the required friction. The tension of the spring *h* is adjusted by the nut *k*. The pointer *m* is attached to the nut *k*, and indicates on a graduated scale of the bar K the degree of pressure in pounds on the brake-lever G. The two levers L and M are secured to a common sleeve, and oscillate on a stud, *p*. The lever M rests on the bar K, and the lever L, being provided at the end with a pad, P, presses against the yarn on the yarn-beam B.

For convenience, or to increase the power on the beam, the friction-wheel may be made detachable from the yarn-beam, and revolve on a stud on bracket H'. A pinion may be firmly secured to the friction-wheel, which works in teeth on the beam-head, as shown in fig. 4. When it is required to remove the yarn-beam the

bar K is dropped off the lower end of brake-lever G, which admits of the journals of the yarn-beam B being slipped out from their bearings.

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

1. The combination, with a yarn or dresser-beam, of a brake, E, attached to a curved lever, G, the bar K, provided with a slide, *f*, and spring, *h*, and the arms or levers L M, substantially as and for the purpose set forth.

2. I claim the combination of the vibrating bar K, provided with a spring, *h*, a graduated scale and indicator, *m*, with the arms or levers L M, whereby the pressure of the pad P on the yarn of the yarn-beam may be regulated and adjusted.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

RICHARD WALKER.

Witnesses:

M. S. G. WILDE,
DAVID KELLEHER.