

(No Model.)

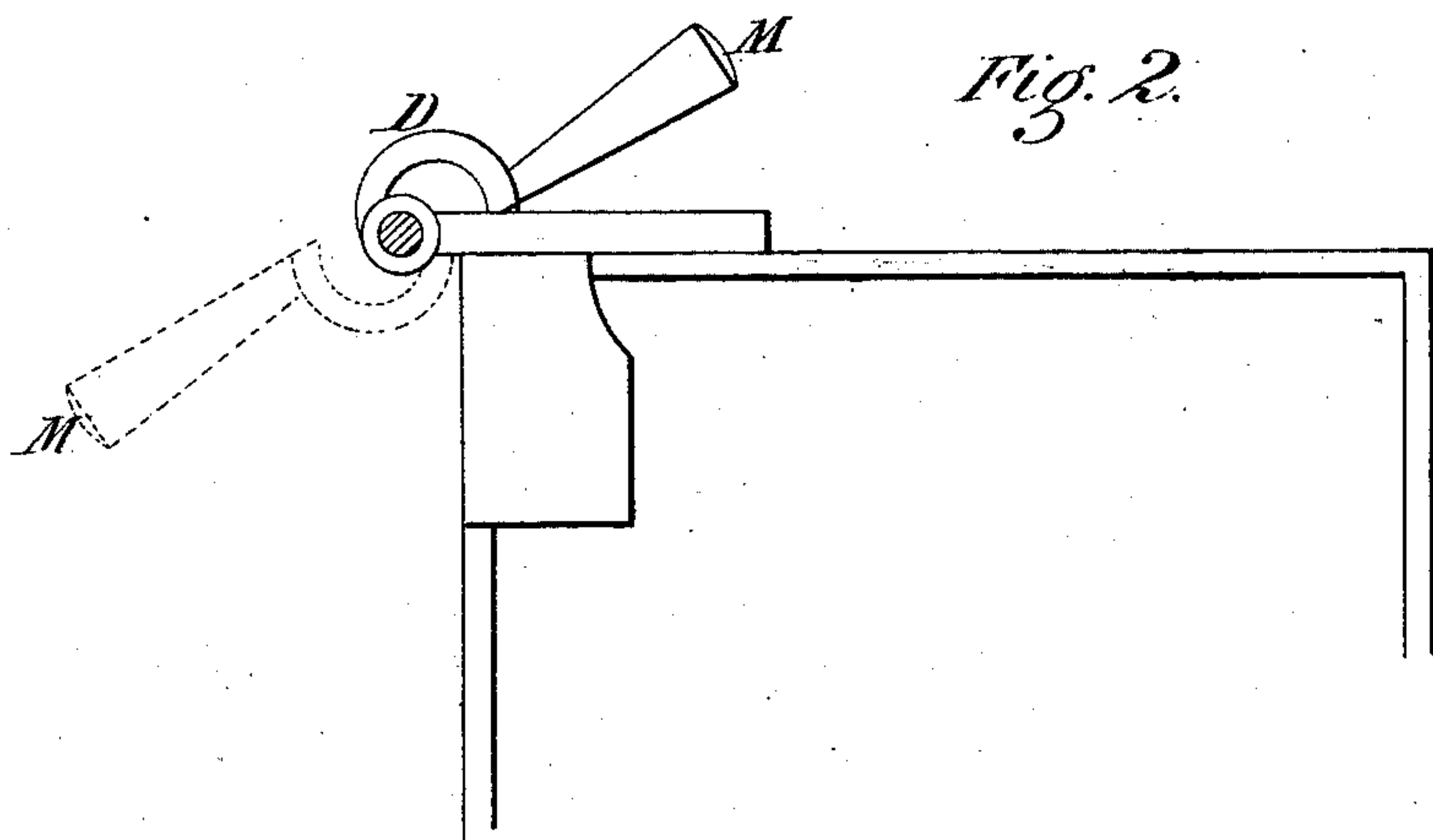
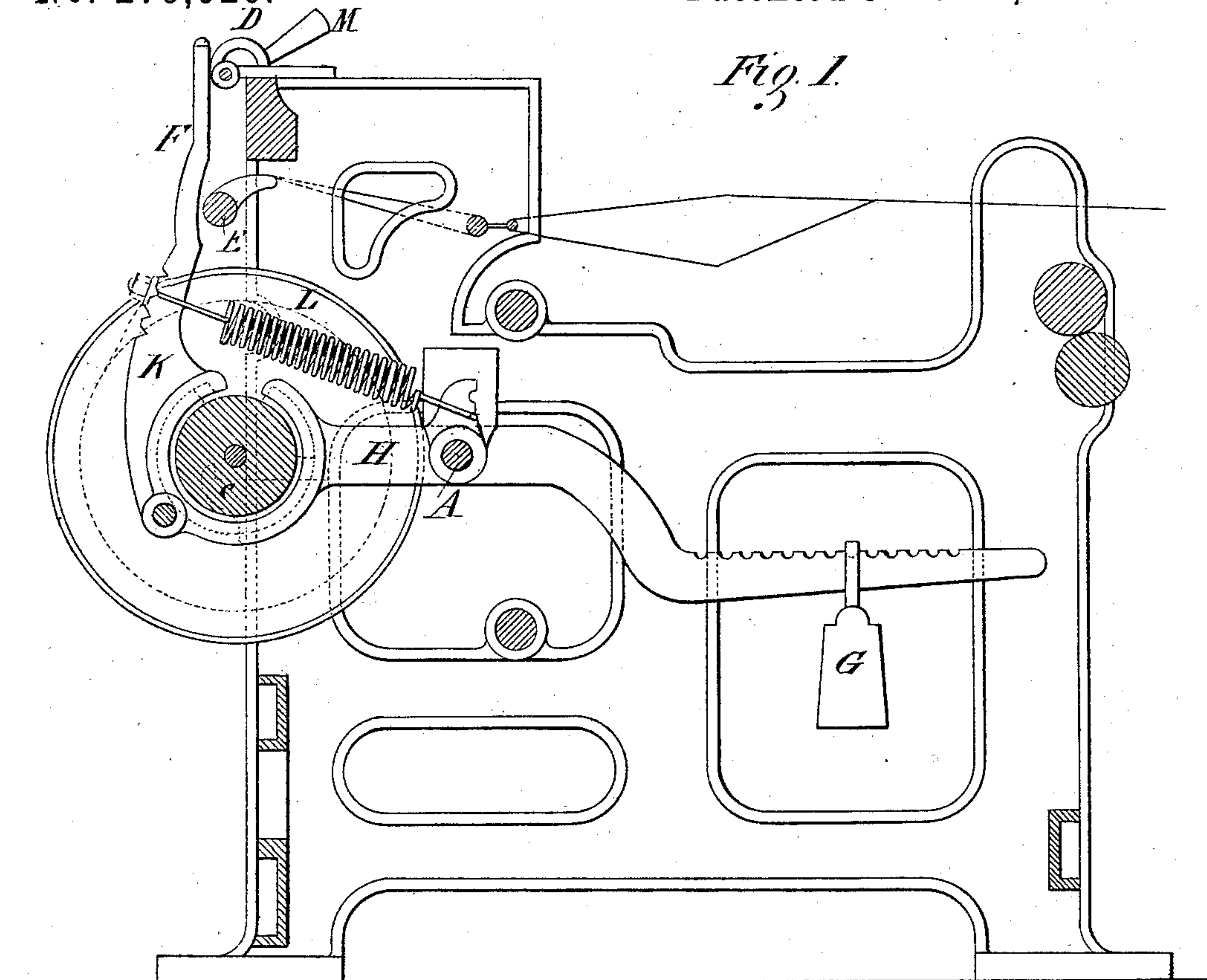
2 Sheets—Sheet 1.

J. WILLIAMSON & J. & G. SWINDELLS.

LETTING OFF MOTION FOR LOOMS.

No. 279,626.

Patented June 19, 1883.



Witnesses
J. Hume.
A. Melhuish.

Inventors
James Williamson
John Swindells
Geo. Swindells.
By A. Seymour. *Att.*

(No Model.)

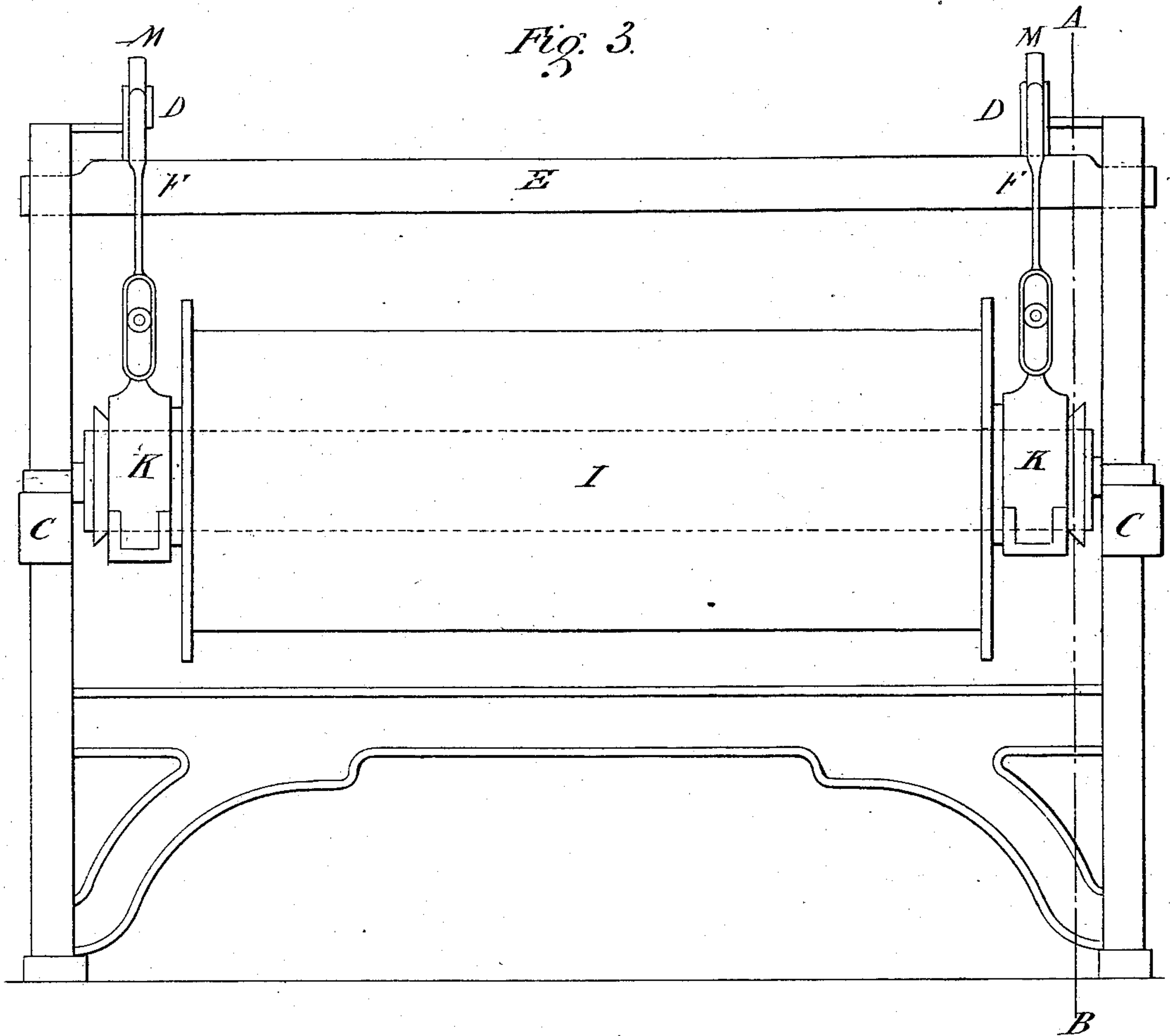
2 Sheets—Sheet 2.

J. WILLIAMSON & J. & G. SWINDELLS.

LETTING OFF MOTION FOR LOOMS.

No. 279,626.

Patented June 19, 1883.



Witnesses
J. Hume.
A. Melhuish.

Inventors.
James Williamson.
John Swindell.
Geo Swindell.
By H. A. Suprenant. atty.

UNITED STATES PATENT OFFICE.

JAMES WILLIAMSON, JOHN SWINDELLS, AND GEORGE SWINDELLS, OF
LANCASTER, ENGLAND.

LETTING-OFF MOTION FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 279,626, dated June 19, 1883.

Application filed October 22, 1881. (No model.) Patented in England December 10, 1880, No. 5,163, and in France June 13, 1881, No. 143,390.

To all whom it may concern:

Be it known that we, JAMES WILLIAMSON, JOHN SWINDELLS, and GEORGE SWINDELLS, of Lancaster, in the Kingdom of Great Britain, have invented a new and useful Improvement in Letting-Off Motions for Looms, (for which we have obtained a patent in Great Britain, bearing date December 10, A. D. 1880, No. 5,163, and a patent in France, bearing date June 13, 1881, No. 143,390,) of which the following is a specification.

This invention consists of an improved letting-off motion for looms, and has for its object to automatically weight and let off the yarn from the warp-beam, so that only as much is let off as is taken up, and to secure the maintenance of a constant and uniform tension of the warp from the beginning to the end without adjustment after the first setting.

In order that the invention may be more readily understood and carried into effect, there is hereunto annexed a sheet of drawings, in which—

Figure 1 is a transverse section, on the line A B of Fig. 3, of a loom having our improvement applied thereto. Fig. 2 is an enlarged side view of the tilting cam and its lever. Fig. 3 is a rear view of a loom showing our improvement.

In these figures, H represents a horizontal lever applied to the warp-beam, I. To this horizontal lever is jointed a vertical arm, K. The lever H is pivoted on a pin, A, secured to the loom-side. The ends of the horizontal lever H and of the vertical arm K, connected thereto, are hollowed out, so as to closely embrace the greater part of the circumference of the neck of the warp-beam. The lever H and vertical arm K are connected by a spiral or other spring, L, the tension of which causes the neck of the warp-beam to be firmly gripped, and thus prevents the revolution of the warp-beam.

The free end of the lever H is provided with a weight, G, which is so adjusted as to balance the lever. The warp passes from the beam I over a bar or rest, E, at the back of the loom.

The upper part of the vertical arm K is so arranged that it comes in proximity to the back top corner of the loom-side, upon which there is fixed a bracket or bearing carrying a movable cam or contact-piece, D.

As the taking-up motion proceeds the warp-beam is lifted and carries with it the jointed lever and arm H K, and the upper end, F, of the arm K is thus brought with a gradually-increasing pressure against the cam D. As soon as this pressure equals or exceeds the tension of the spring L the grip exerted upon the neck of the warp-beam by the clamp H K is released, and the warp-beam, actuated by that portion of its weight unbalanced by the weight G, revolves and falls, carrying with it in its descent the jointed clamp H K. The part F being thus removed from contact with the cam D, the clamp becomes free to again grip the neck of the warp-beam, the further revolution and descent of which are thus prevented. This cycle or series of movements is automatically repeated as often as may be demanded by the process of weaving and by the taking-up motion.

Two brackets, C C, may be attached to the backs of the loom-frames to form a temporary support for the warp-beam and to arrest its fall when requisite.

When it is necessary to rewind the warp-beam, the cam D, which is provided with a handle, M, is pressed against the upper end, F, of the vertical arm K, by which means the pressure of the jointed lever and arm H K upon the neck of the warp-beam is removed, and the latter may be freely rotated as desired.

We have shown in Fig. 3 a set of our improved letting-off devices arranged at each end of the loom. The advantage of thus duplicating the parts is that in case of an accident to one set of the devices the loom need not be stopped. However, it is not necessary to employ more than a single set of the devices.

We claim—

1. The combination, with the warp-beam of a loom, of the arm K and weighted lever H,

the spring L, and the cam and its handle, substantially as set forth.

2. The combination, with the warp-beam of a loom, of the arm K, having an end, F, and the lever H, said arm and lever being curved
5 or hollowed out to adapt them to surround the neck of said beam, the spring L, and cam D, having the handle M, substantially as set forth.

In testimony whereof we have signed this

specification in the presence of two subscribing witnesses.

JAMES WILLIAMSON.
JOHN SWINDELLS.
GEORGE SWINDELLS.

Witnesses:

WILLIAM JOHNSON,
FREDERICK SMALLMAN.