L. V. RATHBUN.

BOLTING-REELS.

No. 194,533. Patented Aug. 28, 1877.

Fig. 1.

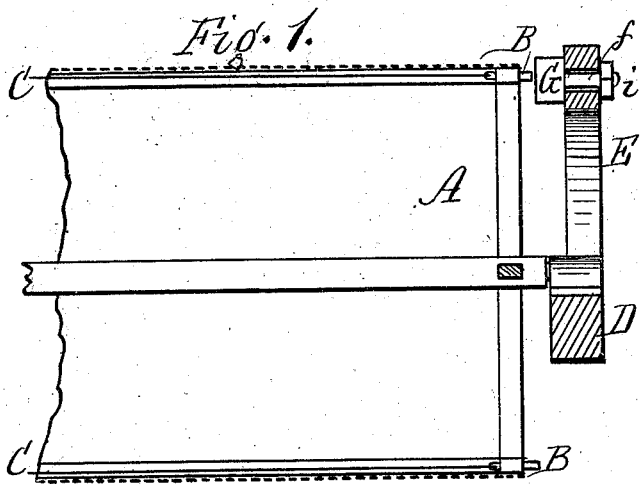


Fig. 2.

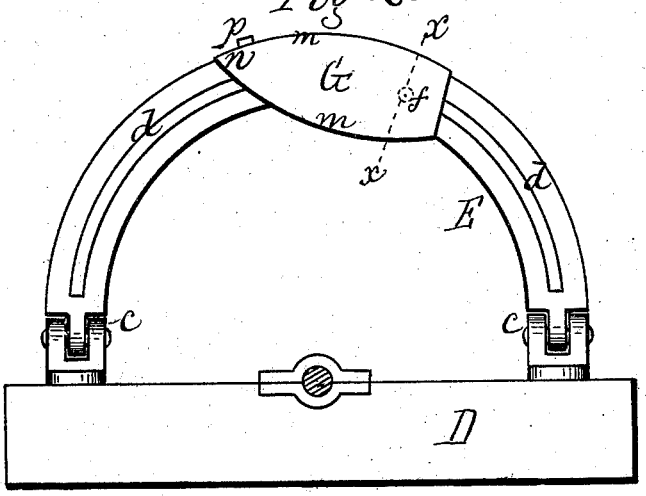


Fig. 3.

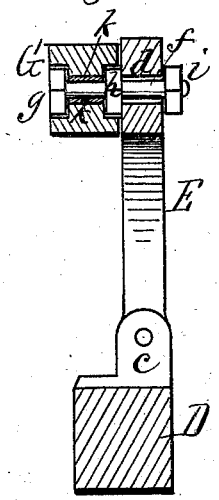


Fig. 4.

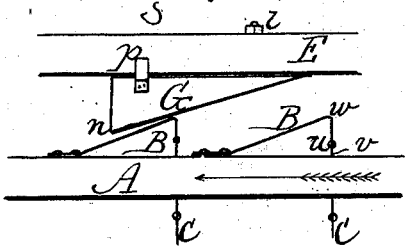
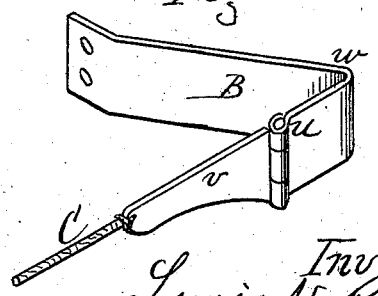


Fig. 5.



Witnesses.
Edwin. Scott
Jacob Graham

Inventor:
Lewis V. Rathbun,
per R. F. Osgood, Atty.

UNITED STATES PATENT OFFICE.

LEWIS V. RATHBUN, OF EAST PEMBROKE, NEW YORK.

IMPROVEMENT IN BOLTING-REELS.

Specification forming part of Letters Patent No. **194,533**, dated August 28, 1877; application filed June 6, 1876.

To all whom it may concern:

Be it known that I, LEWIS V. RATHBUN, of East Pembroke, in the county of Genesee and State of New York, have invented a certain new and useful Improvement in Attachments for Bolting-Reels; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a sectional elevation of one end of a reel and my attachment connected therewith. Fig. 2 is a front elevation of the attachment. Fig. 3 is a section in line *x x* of Fig. 2. Fig. 4 is a plan of Fig. 2. Fig. 5 is a perspective view of one of the springs.

My improvement relates to bolting-reels having snapping-cords for clearing the meshes of the cloth, such as are shown in my patent of January 5, 1875.

The invention consists of a segment and cam of peculiar construction, and also of a spring operating in connection therewith, as hereinafter more fully described.

A represents one end of the bolting-reel. B B are the springs. C C are the snapping-cords. These are arranged within the reel, as shown and described in my aforesaid patent.

D is the bridge-tree, in which the journal of the reel rests. E is a segment resting upon the bridge-tree and at some little distance from the end of the reel. It is jointed at its lower end to feet or bearings *c c*, so that it can be turned toward or from the end of the reel, being held at any desired position by suitable means. This segment is provided with a concentric slot, *d*, which extends nearly from end to end.

G is the cam. It is a block forming an inclined plane, thin at the end where the springs first strike by the revolving of the reel, and thick at the opposite end, leaving an abrupt shoulder or drop, as shown in Fig. 4. This is to enable the springs to fall off so suddenly as to snap the cords.

The cam is attached to the segment by a bolt, *f*. This bolt has two heads or nuts, *g h*, which embrace the cam, and a third nut, *i*, which clamps it to the segment. Between the nuts *g h* is a metallic tube, *k*, which rests around the bolt. The whole is so arranged that while the cam is held fast to the segment it turns freely on its own axis.

The adjustment may be changed by simply loosening the nut *i*, moving the cam along in the groove *d*, and then fastening it again. This adjustment is desirable to vary the strokes of the whipping-cords upon their sections of the bolting-cloth. When the cam is in one position the cords will strike at right angles on the cloth. As the adjustment is varied more or less to the right or left, the cords will strike more or less angular on the cloth. By thus changing the angle of the stroke at times the wear of the cords upon the cloth, if there be any, will be divided more equally over the whole surface, instead of coming in one place.

The upper and lower edges of the cam are made wedging or convex, as shown at *m m*, Fig. 2, and at the inner or abrupt end they are brought to a point, *n*. This point, when the cam falls to its lowest position, rests just above the circle of the segment. This is gaged in its fall by a suitable stop, *p*.

The object of the arrangement above described is to enable the reel to move backward when necessary. In such case the projecting ends of the springs which have passed the abrupt end of the cam strike under the pointed end of the cam and raise the cam as they pass back, which they could not do if the cam were square-ended, or so located as to act as a stop to the springs. This forms an important feature of my invention.

The double-wedging sides of the cam enable the cam to be used right or left, which is essential, as, owing to location and other circumstances, some bolting-reels turn to the the right and some to the left. To make the cam right or left it is simply turned over, so as to point the other way.

The cam and segment above described may be used with the spring-bolts described in my patent of April 11, 1876, or with any other style of springs adapted to the purpose.

The springs B B shown in the drawing are flat metallic springs. One end is attached to the head lining of the reel, the elbow *w* standing outward so as to strike the cam. The other end of the spring is a straight section, *v*, pass-

ing inward through the head lining. This section is jointed at *u* to the outer one, and to its inner end is attached the snapping-cord. The joint in the spring will prevent the latter from binding as it is pressed in and drawn out, and will also preserve the proper position of the cord.

A simple flat spring might be used, bent downward on the outer side and upward on the inner side, so as to embrace the head-lining and bring the attachment of the cord close up under the cloth.

What I claim herein as new is—

1. The combination, with a bolting-reel, of the slotted segment E, pivoted at the bottom, so as to be adjustable toward or from the reel, and the cam G, made adjustable forward and back on the segment, to vary the angle at which the snapping-cord strikes the cloth, as herein shown and described.

2. The combination, with the rotating reel, provided with springs, of the cam G, constructed with the wedging sides *m m* and pointed end *n*, and pivoted to its support so as to rise under the back-action of the springs, as shown and described, and for the purpose specified.

3. In a bolting-reel, the flat spring B, attached to the head lining of the reel, and constructed and arranged to operate in connection with the adjustable cam, as and for the purpose specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

LEWIS V. RATHBUN.

Witnesses:
R. F. OSGOOD,
EDWIN SCOTT.