

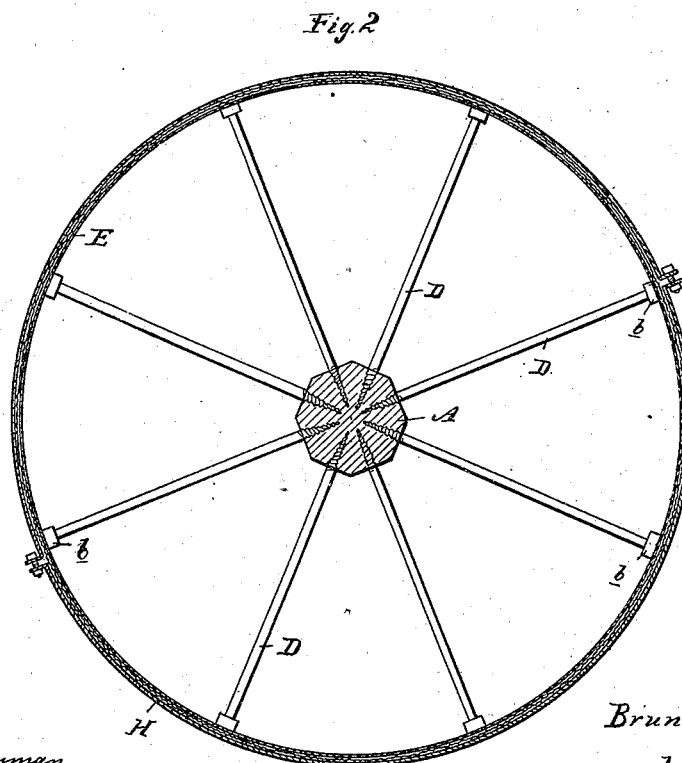
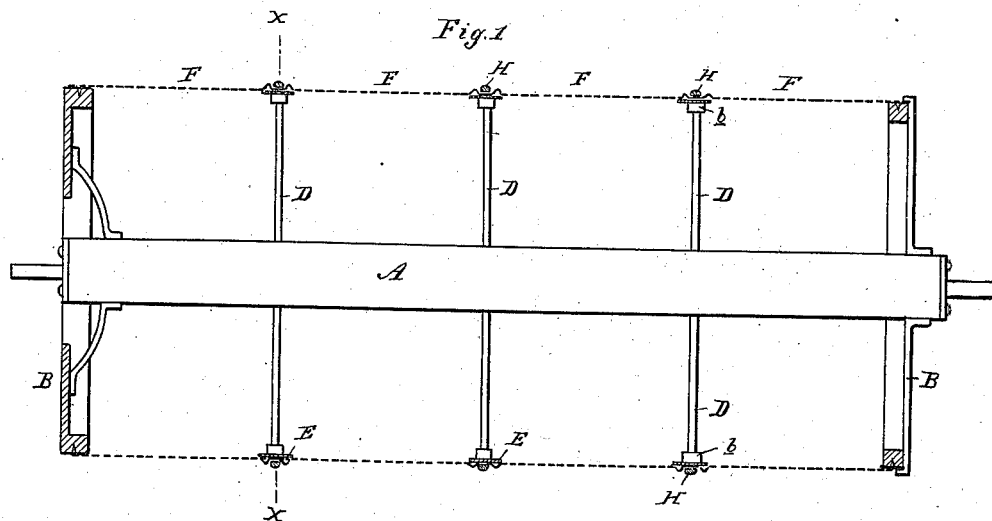
(No Model.)

2 Sheets—Sheet 1.

B. KNIFFLER.  
BOLTING REEL.

No. 382,095.

Patented May 1, 1888.



Attest:  
John Schuman.  
C. F. Scully

Inventor:  
Bruno Kniffler.  
by his Atty.  
Thos. S. Sprague.

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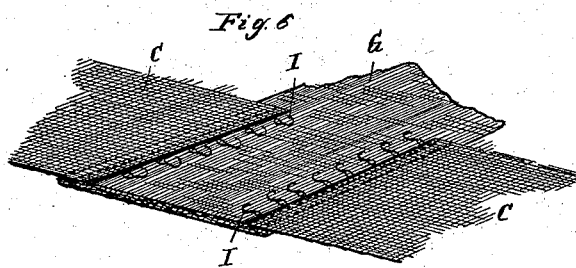
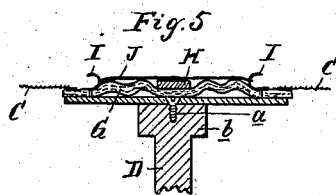
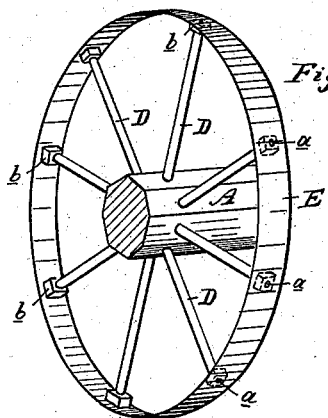
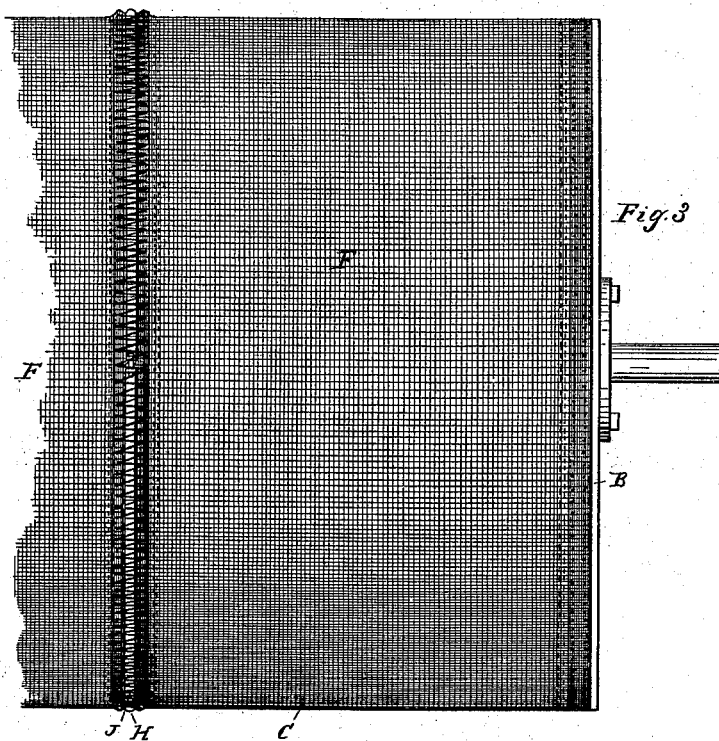
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# UNITED STATES PATENT OFFICE.

BRUNO KNIFFLER, OF CLEVELAND, OHIO.

## BOLTING-REEL.

SPECIFICATION forming part of Letters Patent No. 382,095, dated May 1, 1888.

Application filed May 12, 1887. Serial No. 237,954. (No model.)

*To all whom it may concern:*

Be it known that I, BRUNO KNIFFLER, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented new and useful Improvements in Bolting - Reels; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

10 This invention relates to new and useful improvements in bolting-reels.

The invention consists in the novel manner and the means provided therefor of securing the bolting-cloth to the frame of the reel, all as hereinafter more fully described, and shown 15 in the accompanying drawings, in which—

Figure 1 is a vertical central longitudinal section of my improved reel. Fig. 2 is an enlarged vertical central cross-section on the 20 line *xx* in Fig. 1. Fig. 3 is an elevation of a part of the reel. Fig. 4 is a perspective view of one of the intermediate supports provided for the bolting-cloth. Fig. 5 is an enlarged sectional detail of a portion of one of the intermediate supports, showing the manner of 25 securing the bolting-cloth thereon. Fig. 6 is a detail perspective showing the means provided for tightening the bolting-cloth.

A is the shaft of the reel. B B are the circular heads, and C is the bolting-cloth, all of known construction and operation, except as 30 hereinafter specified.

Between the heads I form intermediate supports for bolting the cloth by means of radial 35 arms D, secured at suitable intervals between the heads, and to the ends of the arms I secure in any suitable manner the circular hoops E.

If the shaft of the reel is made of wood, as shown in the drawings, I preferably use so-called "lag-bolts," radially screwed into the 40 shaft to form the arms D, and by means of screws *a*, as shown in Figs. 4 and 5, I secure the hoops E to the heads *b* of such lag-bolts.

The bolting-cloth is made in sections F, there 45 being as many sections as there are divisions formed by the intermediate supports. The end sections are tacked or otherwise firmly secured to the heads of the reel, and the adjoining ends of the inner sections are sewed or 50 otherwise secured to a strong band of fabric, G, preferably of ticking. The lengths of the sections of the bolting-reel are so adjusted that

the fabric between each section is brought directly over the face of the hoops. The bolting-cloth being thus adjusted, a clamping hoop 55 or ring, H, is tightly secured around between each section of the cloth, so as to bear in the center of the fabric and the hoop E underneath, so as to prevent any displacement of the former. 60

Each of the bands of fabric G is provided along its outer edges with lacing-hooks I, closely spaced together, and by means of lacings J between such hooks the sections of the 65 bolting-cloth are tightly drawn together, so as to produce the required stretching of the whole.

Having thus described the construction of my improved reel, I will now proceed to explain the object and the advantages derived 70 therefrom.

It will be seen that with my improved reel the tendency to twist is effectually counteracted by the clamping-hoops in connection with the band of fabric and the intermediate 75 supports. The cloth can also be stretched very evenly, as it is in relatively short sections. At the same time the strain has a chance to equalize itself over the whole length if the lacing is properly done. A further advantage 80 is that if a section wears out it can be easily replaced by a new section, and as the sections of the cloth naturally are subjected to different wear, according to their relative distances from the head or tail end of the reel, 85 my sectional arrangement is decidedly more economical than the old way of clothing the reel.

What I claim as my invention is—

The combination, with the shaft, the arms D, 90 and the heads, of the hoops E on the outer ends of said arms, the flexible strip G over said hoops, the bolting-cloth made in sections, the adjacent ends of which are secured to said strip, the lacing-hooks I on the outer edges of 95 the strip G, and the clamping-hoops secured around the hoops E between the sections of cloth and over the strip G, and lacings J between the hooks, substantially as and for the purpose specified.

BRUNO KNIFFLER.

Witnesses:

WALTER A. BIDDLE,  
H. CLARK FORD.