

(No Model.)

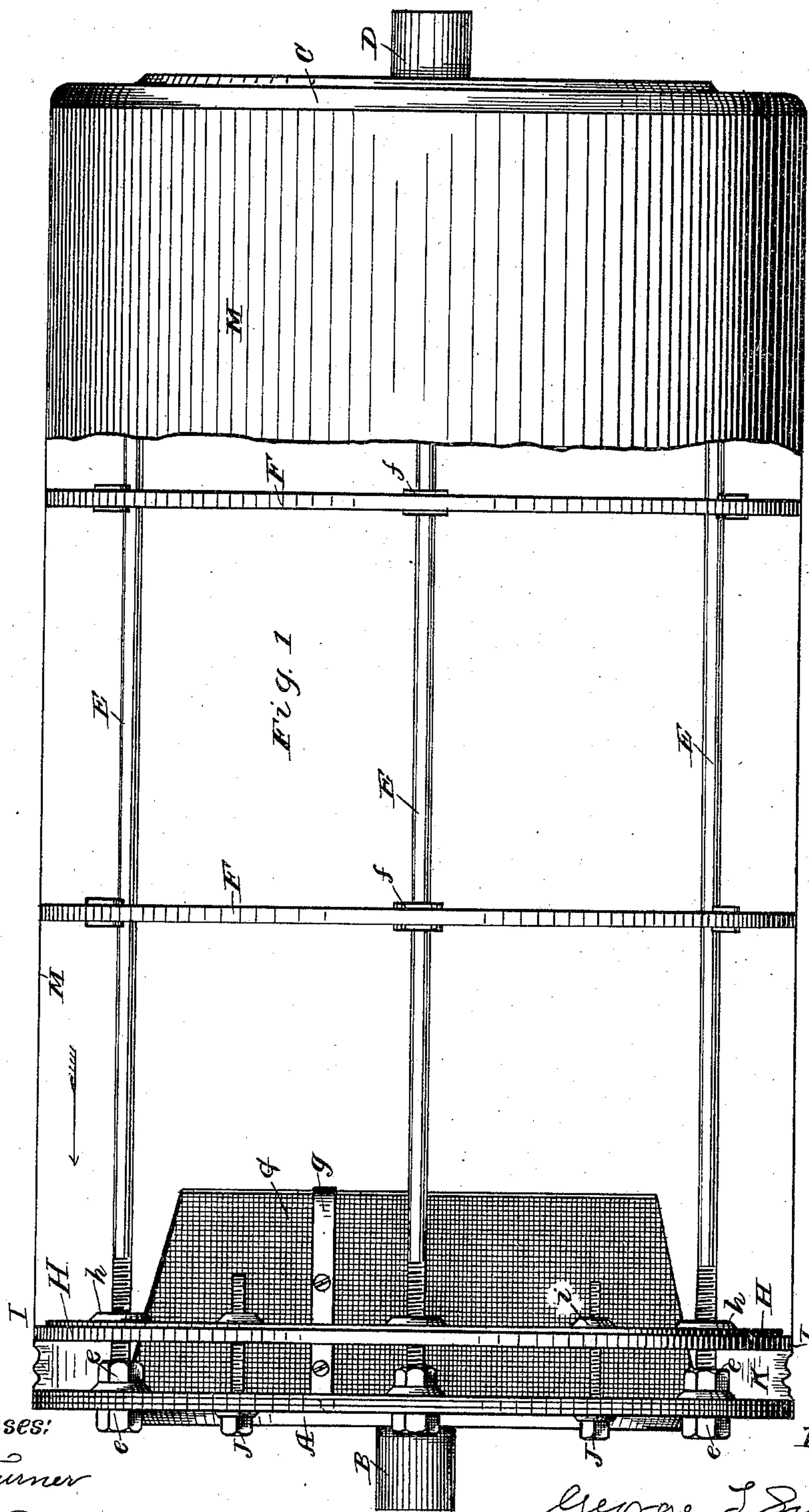
2 Sheets—Sheet 1.

G. T. SMITH.

DEVICE FOR TIGHTENING BOLTING CLOTH.

No. 335,155.

Patented Feb. 2, 1886.



Witnesses:

J. C. Turner
J. S. Barker.

Inventor:

George T. Smith
by Doubleday & Bliss
attys.

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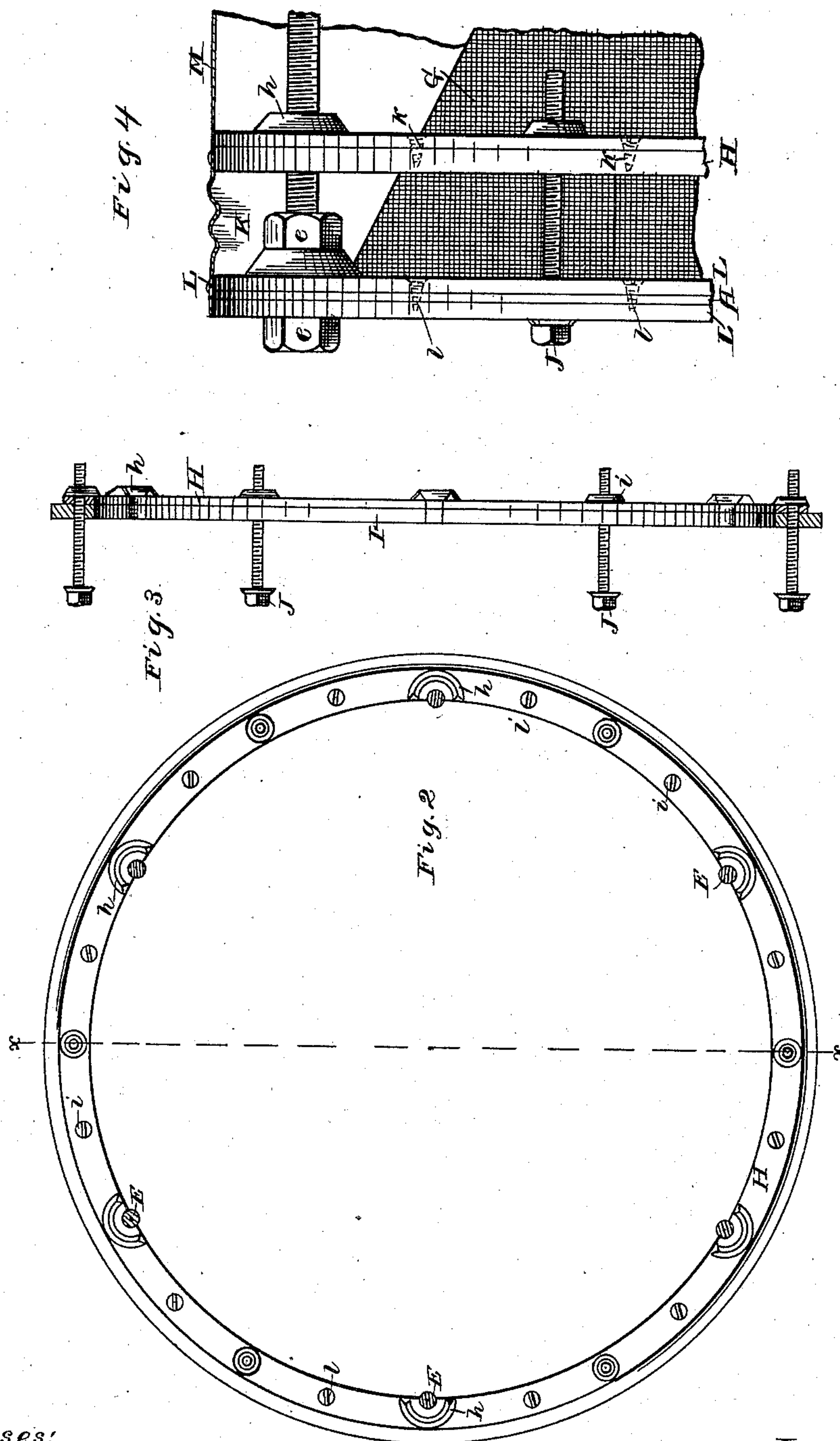
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UNITED STATES PATENT OFFICE.

GEORGE T. SMITH, OF JACKSON, MICHIGAN.

DEVICE FOR TIGHTENING BOLTING-CLOTH.

SPECIFICATION forming part of Letters Patent No. 335,155, dated February 2, 1886.

Application filed May 9, 1885. Serial No. 164,960. (No model.)

To all whom it may concern:

Be it known that I, GEORGE T. SMITH, a citizen of the United States, residing at Jackson, in the county of Jackson and State of Michigan, have invented certain new and useful Improvements in Devices for Tightening Bolting-Cloth, of which the following is a specification, reference being had therein to the accompanying drawings.

Figure 1 is a side elevation of so much of a flour-bolt as is necessary to illustrate my invention. Fig. 2 is an elevation of the ring to which one end of the bolt-cloth is attached, looking in the direction indicated by the arrow, Fig. 1, the position of the stay-rods being indicated in this figure. Fig. 3 is a vertical section on line *x x*, Fig. 2, having the tightening-bolts added. Fig. 4 is a detached partial view enlarged of the left-hand end of Fig. 1.

Similar letters of reference indicate like parts in all the figures.

A is the reel-head, having the trunnion B at the receiving end of the bolt.

C is the reel-head at the tail end, and D is its supporting-trunnion, both trunnions being in this instance hollow to receive a beater-shaft. (Not shown.)

E are stay-rods passing through the heads and provided with nuts *e e*.

F F are cloth-rings supported upon the stay-rods by means of interposed carriers *f f*.

G is a reticulated shell or casing of a disintegrator, secured to the reel-head A by means of straps or angle-irons *g* in a position which is concentric to the trunnion B.

As the above parts may be of any usual or approved construction adapted to have my invention applied thereto, they need not be more specifically described; and, although I have shown a frame of a bolt adapted more particularly for use in that construction known as "centrifugal reels," I do not wish to be limited thereby, nor even to making a reel cylindrical in form, because my invention is equally adapted for use upon many-sided reels.

H is a ring, preferably of cast metal, of an external diameter a little less than that of the reel-heads A C. The inner edge of this ring is provided with notches or seats *h*, adapted to fit the outer surfaces of the stay-rods F F,

and is thereby supported concentrically to the reel-heads.

As indicated in Figs. 1 and 3, I propose to re-enforce or strengthen the ring at its notched points by means of a rib or bead. This ring is provided with a series of screw-threaded seats, *i i*, for the purpose which will soon be explained.

I is a wooden ring or rim having an outer diameter equal to that of the reel-heads, and is secured to that face of the ring H which is adjacent to the reel-head A by means of a series of common wood-screws, *k k*, although rivets or other suitable fastening devices may be employed.

J J are tightening-bolts seated loosely in the reel-head A, and engaging at their inner ends with the screw-threaded seats *i i*, so that when the tightening-bolts are turned in the proper direction the rings H I will be drawn toward the reel-head A.

L L are wooden rings or rims, secured to the periphery of the reel-head A by means of common wood-screws *l l* or equivalent devices. Although I have shown two of these wooden rings or rims, one on either side of the reel-head, yet it is apparent that one of them might be dispensed with, because under ordinary circumstances one such rim will probably be found sufficient for all practical purposes.

K is a folding strip, of leather, cloth, or other suitable flexible material, encircling the reel, and having its ends united to form a band, and having also its edges tacked, cemented, or otherwise secured to the wooden rings or rims. Thus this folding strip constitutes a flexible connection between the movable ring and the reel-head A to prevent the escape of material.

M represents the bolting-cloth, which is secured at one end to the reel-head C by any usual or preferred means. The opposite end of the bolt-cloth is fastened to the wooden ring or rim I, preferably by tacking, or by tenter-hooks or some equivalent therefor.

From an examination of the above drawings it will be readily understood that by means of the tightening-bolts J and movable wooden ring or rim I the desired tension of the bolt-cloth may be produced, and that as the said ring I is drawn toward the reel-head A for such purpose the folding strip K will

be folded or doubled upon itself, and will prevent any leakage or waste of material between the wooden ring I and the head A of the reel. It will also be seen that the extent of the lateral movement of the ring I is practically limited only by the length of the tightening-bolts J J and the width of the folding strip K.

While I prefer to use the metal ring H in combination with and as a support for the wooden ring I, yet this is not essential to the working of my invention, it being apparent that the wooden ring I might be made of such strength as to answer the purposes of stretching the cloth. In case the metal ring H be dispensed with I would prefer to reverse the position of the bolts J J, putting their headed ends through the wooden ring, and applying nuts to their ends, which would in that case project through the reel-head, although I prefer the construction shown. Nor do I wish to be limited to the employment of wooden rims in combination with the reel-head itself, because the folding strip K might be attached to the periphery of the reel-head by various other means—such, for instance, as a hoop or band encircling the outer periphery of the reel-head and clamping one edge of the folding strip to the head.

I prefer to employ these cloth-tightening devices at the receiving end of the reel, because I believe that the introduction of the folding-strip will interfere less with the bolting capacity than it would if it were arranged at the discharging end; but I do not wish to be limited to such an arrangement of parts, as is shown.

It is also obvious that when this tightener

is used in an ordinary reel, which is practically entirely open at its discharging end, it will be found much more convenient to arrange the tightener at the receiving end, because the reel-head at that point affords a convenient support for the outer ends of the tightening-bolts, although they could be arranged at the discharging end of a bolt which is open at that end by providing suitable supports for the said bolts.

What I claim is—

1. As a means for tightening a bolting-cloth, the combination of a ring having one edge of the bolting-cloth attached thereto, means for moving the ring and the attached end of the bolting-cloth toward one end of the reel, and a flexible connection between the movable ring and the end of the reel to prevent the escape of material, substantially as set forth.

2. The combination, with the reel-head and the bolt-cloth, of the movable ring H, the tightening-bolts, and the folding strip, substantially as set forth.

3. The combination, with the reel-heads, the stay-rods, and the bolt-cloth, of the movable rings supported upon the stay-rods, and the folding strip, substantially as set forth.

4. In a bolt-cloth tightener, the combination, with the wooden ring I, of the metal rim H, provided with screw-threaded seats for the tightening-bolts, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE T. SMITH.

Witnesses:

ARTHUR L. FAULKS,
GEO. S. BENNETT.