R. THORNTON.

SECTION BEAM HEAD.

APPLICATION FILED JULY 21, 1917.

1,297,751.

Patented Mar. 18, 1919.

2 SHEETS—SHEET 1.

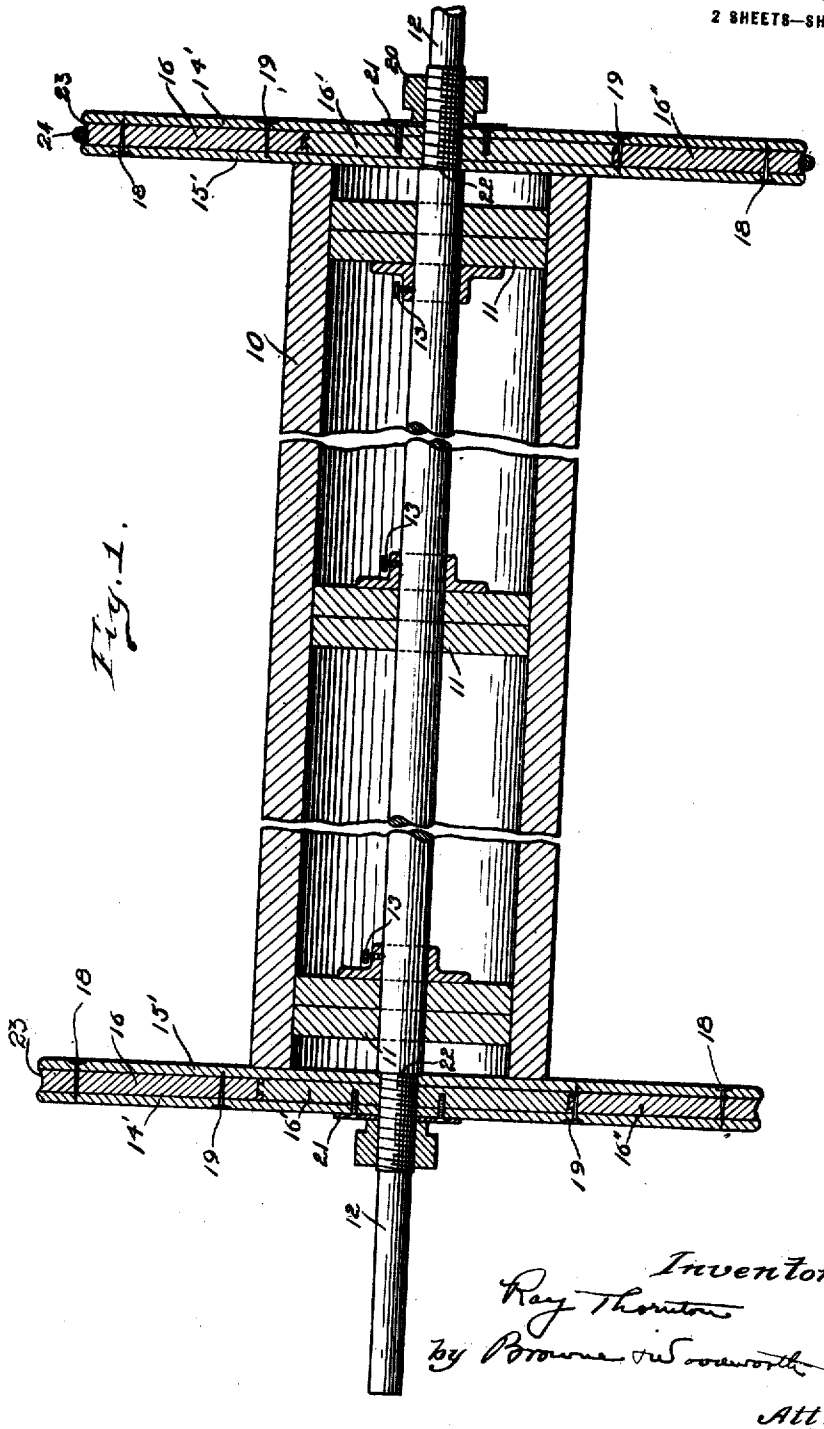


Fig. 1.

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2 SHEETS—SHEET 2.

Fig. 2.

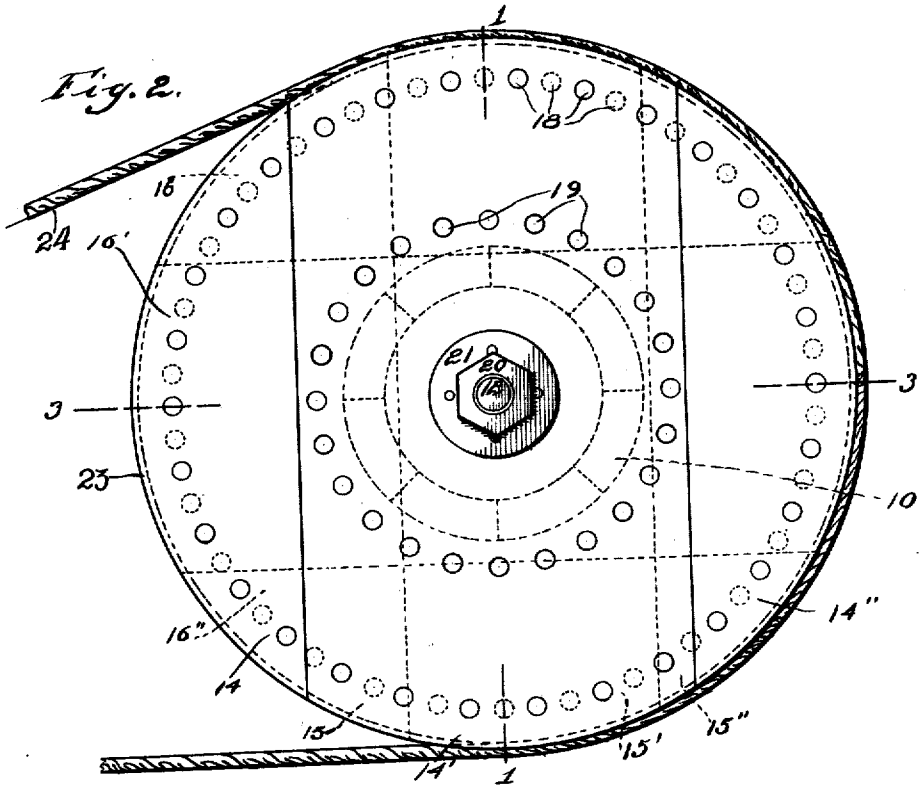
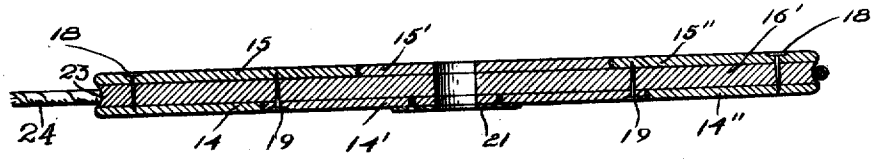


Fig. 3.



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UNITED STATES PATENT OFFICE.

RAY THORNTON, OF DARTMOUTH, MASSACHUSETTS.

SECTION-BEAM HEAD.

1,297,751. Specification of Letters Patent. Patented Mar. 18, 1919.

Application filed July 21, 1917. Serial No. 182,051.

To all whom it may concern:

Be it known that I, RAY THORNTON, a citizen of the United States, and a resident of Dartmouth, in the county of Bristol and State of Massachusetts, have invented a new and useful Improvement in Section-Beam Heads, of which the following is a specification.

My invention relates to section-beams, used for storing and transporting warp and filling, and more particularly to the construction of the flanges or heads of such beams.

The heads of section beams in most general use are made of cast iron, and weigh about fifty pounds apiece, thereby greatly increasing the weight of the structure and the cost of shipping the same. Pressed steel heads are also used to a certain extent. It is a matter of common experience that such cast iron beam heads are frequently broken and pressed steel heads often bent because, in order to reduce their weight, they are made of minimum thickness, and also that unless great care is taken in the storage and shipping of such beams, the metallic heads cut into and injure the wooden barrels of the beams.

In fact, on account of claims for breakage, the freight rate on uncrated empty beams with cast iron heads is about twenty per cent. higher than the rate on my improved beam and empty metallic-headed beams must be crated if shipped over substantial distances, thereby greatly increasing the cost of shipment.

The object of the present invention is to provide a unitary or one-piece beam head that will not be subject to these defects and limitations, and that will be very much lighter in weight than a metal head without sacrificing the strength required for devices of this character.

I attain this object by making the beam head of cross-banded wood as hereinafter more fully set forth, and while I am aware that wooden beam heads have heretofore been proposed, experience has shown that they have not proven satisfactory in practice, and that they have never gone into commercial use.

My invention will be described by a reference to the drawings which accompany and form a part of this specification and which illustrate a type of wooden beam head which has proven to be a satisfactory and practical substitute for the metallic heads of the prior art.

In the drawings:—

Figure 1 is a longitudinal central section of my improved section-beam, taken on the line 1—1 of Fig. 2;

Fig. 2 is an end view; and

Fig. 3 is a section of the beam head taken on the line 3—3 of Fig. 2.

In the particular drawings selected for more fully disclosing my invention, 10 represents the barrel made up, as usual, of a number of slats secured to the disks 11 which in turn, are mounted on the shaft 12 by the set screws 13 or other appropriate means. It is to be understood, however, that my improved beam head or flange may be used with any type of section-beam.

The beam heads are each formed of a plurality of layers of wood preferably three in number as shown, and each layer consists of a plurality of bands herein shown as three in number. The outer bands 14, 14′, 14″, and 15, 15′, 15″, are united at their meeting edges preferably by dovetailing, and are secured to the inner bands 16, 16′, 16″, by gluing under pressure in the usual well-known manner, or in any other suitable way. For the bands, I prefer to use rock maple or other tough resilient wood, although I do not limit myself to any particular kind of wood. Preferably, the bands of one layer have a different direction from those of the other or others, and as shown in Fig. 2, the inner bands are arranged at right angles to the outer bands. The dovetailed joints between the bands of one of the outer layers are preferably out of line with the joints of the other outer layer.

The beam head is grooved as at 23 to receive the friction cord 24 when the thread is being unwound and means are provided for binding the layers together, said means comprising, as shown, two series of nails 18 or their equivalents passing in opposite directions through the layers near their outer edges, the nails of one series alternating with respect to those of the other. Another series of nails 19 located about midway between the hub and the outer edge of the head and preferably driven from the outside may also be used.

The head or flange is applied to the beam in the usual manner by means of nuts 20 threaded to the shaft, and bearing against the washers 21 secured to the head, thereby

forcing the head against the barrel and the shoulder 22 of said shaft.

It has been practically demonstrated that beam heads constructed as above set forth, are very much lighter than the metallic heads now in common use, and that they possess such great resiliency that it is practically impossible to break them, while at the same time, they can be made much more cheaply than cast iron heads. It has been demonstrated also that said beam heads in addition to being of much lighter weight than the metallic heads of the prior art, can be perfectly balanced, which, when they are used as loom beams, results in securing an even tension in the winding of fine yarns or warps and also in preventing the beam from having the uneven movement known as "jumping ahead", to which metallic loom beams are commonly subject, such uneven movement resulting in making bad spots in the cloth.

It will be understood that various modifications may be made in the device herein specifically described, and illustrated, without departing from the true scope of my invention.

Having thus described one illustrative embodiment of my invention without, however, limiting the same thereto, what I claim and desire to secure by Letters Patent, is:—

1. The combination with a section-beam of a peripherally grooved head comprising in its construction a plurality of layers of wood, each layer formed of a plurality of bands permanently united at their meeting edges, means for binding said layers together comprising a series of nails passing through said layers near their outer edges, and a friction cord engaging said peripheral groove.

2. The combination with a section-beam of a peripherally grooved head comprising in its construction a plurality of layers of wood each layer formed of a plurality of bands permanently united at their meeting edges, means for binding said layers together comprising two series of nails passing in opposite directions through said layers near their outer edges, and a friction cord engaging said peripheral groove.

3. The combination with a section-beam of a peripherally grooved head comprising in its construction a plurality of layers of wood each layer formed of a plurality of bands permanently united at their meeting edges, means adjacent said grooved periphery for binding said layers together in permanent contact, and a friction-cord engaging said peripheral groove.

4. A circular section-beam head formed of a plurality of crossed grain layers of wood having a wooden grooved periphery in combination with means slightly within the circumference of said grooved periphery for rigidly binding the marginal portions of said layers together in permanent contact and a friction cord engaging said grooved periphery.

In testimony whereof, I have hereunto subscribed my name this 18th day of July, 1917.

RAY THORNTON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."