F. MOSSBERG.

BEAM AND REEL.

APPLICATION FILED OCT. 8, 1920.

1,426,898. Patented Aug. 22, 1922.

Fig. 1

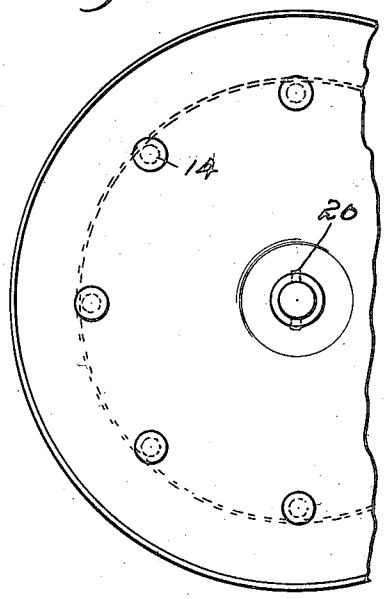


Fig. 2

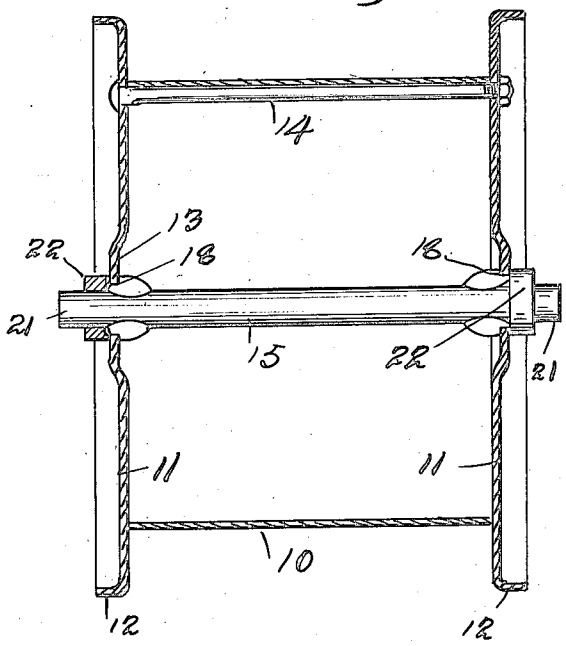


Fig. 3

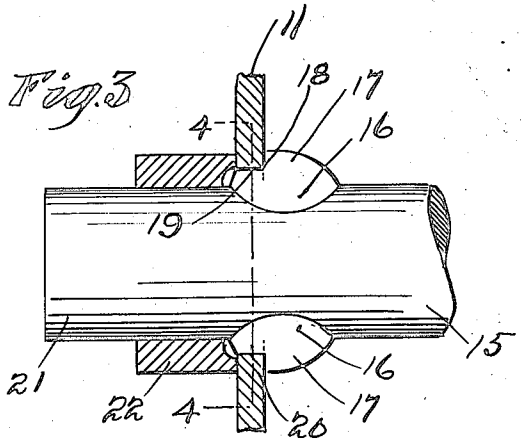
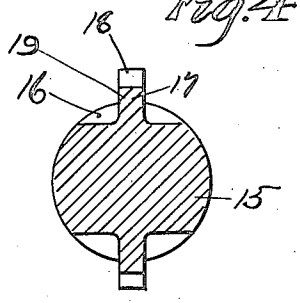


Fig. 4



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UNITED STATES PATENT OFFICE.

FRANK MOSSBERG, OF ATTLEBORO, MASSACHUSETTS, ASSIGNOR TO MOSSBERG PRESSED STEEL CORPORATION, OF ATTLEBORO, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

BEAM AND REEL.

1,426,898. Specification of Letters Patent. Patented Aug. 22, 1922.

Application filed October 3, 1920. Serial No. 415,586.

To all whom it may concern:

Be it known that I, FRANK MOSSBERG, a citizen of the United States, residing at Attleboro, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Beams and Reels, of which the following is a specification.

This invention relates to an improvement in the construction of beams and reels and similar devices, and the invention has for its object to provide a shaft for such devices the same having a portion of its body swaged to provide an integral, laterally-extending fin or portion to serve as a key or as a shoulder, or both, for the purpose of keying the shaft to the head members of the device and also to provide a shoulder or abutment for supporting the heads on the shaft.

The nature and advantages of the invention will be better understood when the following detail description is taken in connection with the accompanying drawings, the invention residing in the combination and arrangement of parts as claimed.

In the drawings forming part of this specification, like numerals of reference indicate similar parts in the several views and wherein:—

Figure 1 is a front view showing a portion of the head of a beam or reel in which my improved construction of shaft is mounted.

Figure 2 is a side elevation partly in section showing the beam or reel with my improved shaft member mounted therein.

Figure 3 is an enlarged view illustrating the fins raised from the body of the shaft by swaging, to serve either or both as a key or as a shoulder for securing the head members to the shaft.

Figure 4 is a section through the shaft on line 4—4 of Figure 3, illustrating the stock raised from the body of the shaft providing laterally-extending integral fins or ribs.

I have herein shown and described an improved construction of shaft in which portions of the body thereof are swaged or forced outwardly to provide one or more fins or ribs, each fin or rib being adapted to provide a shoulder or a key or both on the shaft, and I have shown this shaft as applied to a warp beam or reel, but my improved shaft may be used for any other purpose for which it is adapted.

With reference to the drawings, 10 designates the body or barrel portion of a beam and to the opposite ends of this body are secured heads 11, preferably cut from sheet stock into disk form, each with its peripheral edge turned outwardly as at 12 forming a stiffening flange. I have also shown the center portion of each of these head plates as forced outwardly as at 13 slightly, from the plane of the rest of the plate, the center of each plate being punched out and a keyway formed therein.

These heads are shown as being secured to the ends of the tubular body 10 by means of tie-rods 14 but any other securing means may be employed.

The feature of my present invention is the particular construction of the central shaft member 15 which is passed through the center openings in the head-plates and keyed and secured thereto.

To accomplish this it has heretofore been necessary to provide a shaft enlarged beyond the required size and then turn down its ends to form shoulders thereon, after which a key is inserted into the shaft for securing it to the heads, which construction is quite expensive as a shaft of larger diameter than that actually necessary must be employed, after which the labor of shaping and forming the keyway therein renders the operation quite expensive; also a shaft of this large diameter is of much greater weight than is necessary.

In order to provide a shaft that is very light in weight and to obviate all of the operations above referred to in the construction of a shaft for this purpose, I employ a shaft of the proper diameter for the required strength; I then force a portion of the stock of the shaft as at 16 by a swaging operation causing the same to extend laterally from the normal periphery of the shaft providing one or more laterally-extending fins or ribs 17, the edge of each of which may then be milled off as at 18 to also provide a shoulder against which the inner surface of the head-plate rests, its keyed portion 19 engaging the corresponding keyway slot 20 in the head-plate 11.

I have shown two fins formed on diamet-

rically opposite sides of the shaft at each end thereof, but any required number of these fins may be so provided.

After the shaft has been positioned with its ends 21 projecting through the head-plates 11 and its keys 19 entering the corresponding keyways 20 in the plates and its inner shoulders 18 engaging the inner surface of these plates, I force a collar 22 onto the outer ends of the shaft causing each to bind its head-plate firmly against the inner shoulders 18.

In this way each head-plate is securely keyed to the shaft and also gripped and secured between its collar 22 and the shoulders on the shaft, making a very strong, rigid and serviceable construction, which is most inexpensive to produce and yet most effective in its operation.

The foregoing description is directed solely towards the construction illustrated, but I desire it to be understood that I reserve the privilege of resorting to all the mechanical changes to which the device is susceptible, the invention being defined and limited only by the terms of the appended claims.

I claim:

1. In a device of the character described, a pair of head-plates, a shaft connecting said plates and having integral laterally-extending fins or ribs raised from the stock of the shaft for connecting said plates to said shaft.

2. In a device of the character described, a head-plate provided with a keyway, a shaft on said plate and having a laterally-extending fin raised from the stock of the shaft providing a key to engage the keyway in said plate.

3. In a device of the character described, a pair of head-plates, a shaft passing through said plates and having an integral laterally-extending fin raised from the stock of the shaft engaging each plate providing a supporting shoulder therefor.

4. In a device of the character described, a pair of head-plates, one being provided with a keyway, a shaft extending through said plate and having an integral laterally-extending shouldered fin raised from the stock of the shaft providing a key for said keyway and also a supporting shoulder for said plate.

5. In a device of the character described, a pair of spaced-apart head plates, each having a center bore and a keyway, a shaft extending through said bore and having a pair of oppositely-disposed integral laterally extending fins at each end, said fins being raised from the stock of the shaft and shaped to form keys to engage said keyways, and also to form shoulders to support the inner face of said heads and collars on said shaft binding said plates against said shoulders.

In testimony whereof I affix my signature.

FRANK MOSSBERG.