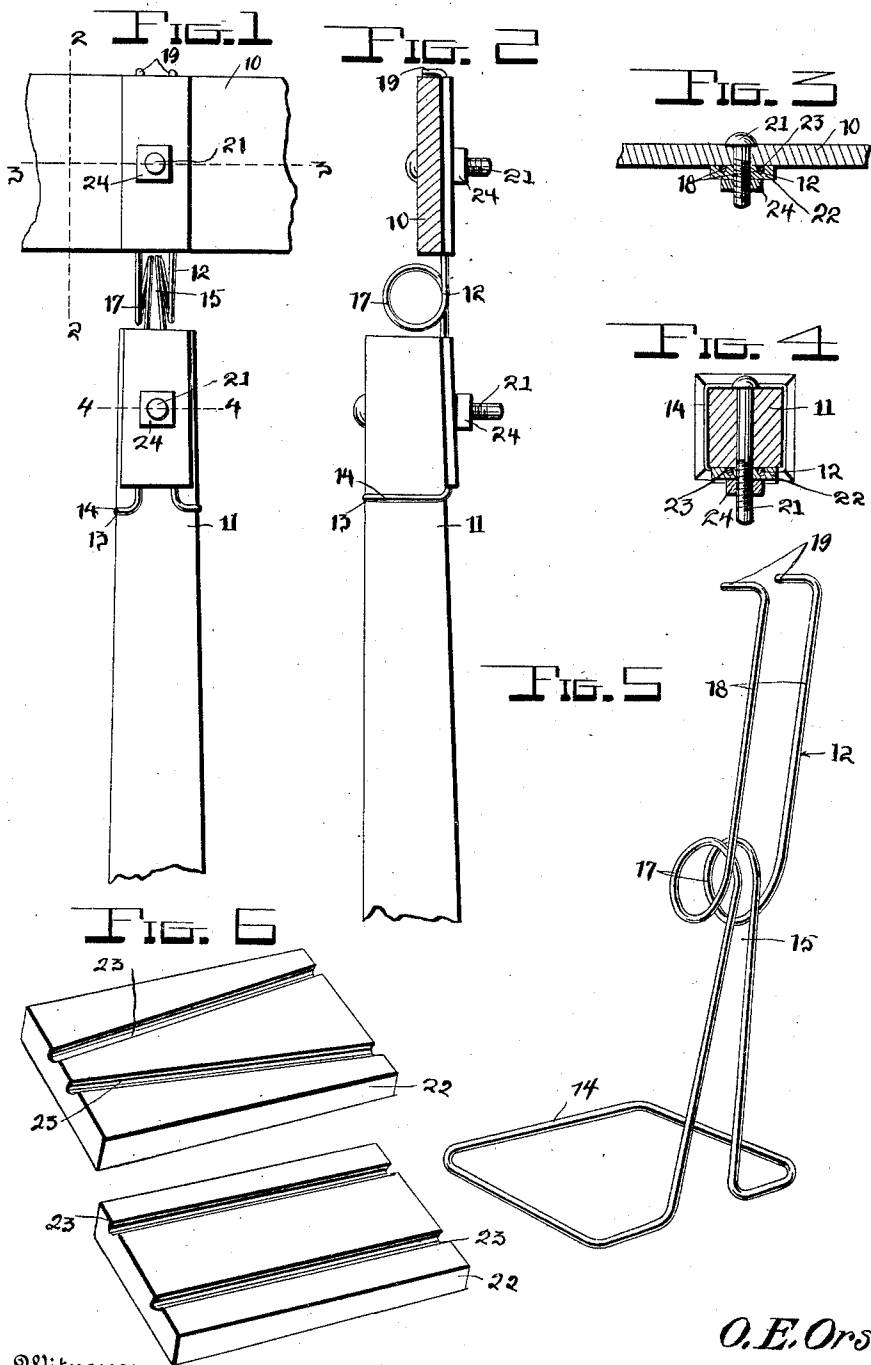


O. E. ORSTAD.
SPRING CONNECTING MEMBER FOR FAN BLADES.
APPLICATION FILED OCT. 13, 1911.

1,042,959.

Patented Oct. 29, 1912.



Witnesses
Frank S. Gatliffe
Charles Richardson

Inventor
O. E. Orstad
By *Charles Richardson*
Attorney

UNITED STATES PATENT OFFICE.

OLE E. ORSTAD, OF PARK RIVER, NORTH DAKOTA.

SPRING CONNECTING MEMBER FOR FAN-BLADES.

1,042,959.

Specification of Letters Patent.

Patented Oct. 29, 1912.

Application filed October 13, 1911. Serial No. 654,484.

To all whom it may concern:

Be it known that I, OLE E. ORSTAD, a citizen of the United States, residing at Park River, in the county of Walsh, State of North Dakota, have invented certain new and useful Improvements in Spring Connecting Members for Fan-Blades; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a novel spring means for connecting the fan blade yieldingly to their supporting arms and more particularly to the fan blades for binder reels.

An object of this invention is the provision of a device which will prevent the fan blades or supporting arms from breaking by their engagement with any undesired object.

A further object of this invention is the provision of a spring connecting member for fan blades and means for attaching said spring connecting member to the fan blades and supporting arms.

A still further object of this invention is to improve and simplify devices of this character, rendering them comparatively simple and inexpensive to manufacture, reliable and efficient in use and readily operated.

With the above and other objects in view, this invention resides in the novel features of construction, formations, combinations and arrangements of parts to be hereinafter more fully described, claimed and illustrated in the accompanying drawing in which:—

Figure 1 is a front elevation of my invention. Fig. 2 is a transverse sectional view taken on the line 2—2 of Fig. 1. Fig. 3 is a horizontal sectional view taken on the line 3—3 of Fig. 1. Fig. 4 is a similar view taken on the line 4—4 of Fig. 1. Fig. 5 is a detail perspective view of the spring connecting member, and Fig. 6 is a similar view of the grooved bearing plates.

Referring to the accompanying drawing by similar characters of reference, the numeral 10 designates generally a fan blade which is attached to its supporting arm 11 by my spring connecting member 12.

The upper end of the arm 11 adjacent its terminal is formed with a groove 13 in which is located a loop 14 extending laterally from the spring connecting member 12 which comprises a single strand of wire bent at its

intermediate portion to produce this said loop 14. From the meeting ends of the loop 14 the strand is converged as at 15 to the extremity of the arm 11 at which point it is bent to produce a plurality of convolutions 17 from the terminals of which the strand of wire is bent upwardly to produce a pair of parallel arms 18 which engage the front face of the fan blade 10 and which are offset at their extremities as at 19 to rest upon the upper edge of the fan blade.

The fan blade 10 and arm 11 are each provided with apertures which open between the extensions 15 and 18 of the strand for the reception of locking bolts 21 which extend from bearing plates 22 which are grooved as at 23 to receive the extensions 15 and 18 of the strand to prevent their displacement and to retain the same rigidly with respect to the arm 11 and blade 10 through the medium of locking nuts 24 threaded upon the said bolts 21.

It will be apparent from the construction of the connecting member 12 that the convolutions 17 separate the blade 10 yieldingly with respect to the arm 11 so that when the former contacts with any desired object, the said connecting member will give to prevent the arm or blade from breaking. It should be understood in this connection that as many connecting members as desired may be attached to a single blade and also that various minor changes in the details of construction can be resorted to within the scope of the appended claims without departing from or sacrificing any of the advantages of the invention.

From the foregoing disclosures taken in connection with the accompanying drawing, it will be manifest that a spring connecting member is provided for which will fulfil all of the necessary requirements of such a device.

Having thus fully described this invention what I claim as new and desire to protect by Letters Patent, is:—

1. A fan consisting, in combination, of an arm and a blade, of a connecting member attached to said arm and blade and formed from a single strand of wire bent to engage the arm and the blade and means for preventing its displacement from the arm and the blade.

2. A fan consisting, in combination, of an arm and a blade, of a connecting member formed from a strand of wire bent to pro-

- duce a loop surrounding the arm and extensions engaging the blade, and means for preventing the displacement of the loop from the arm and the extensions from the blade.
- 5 3. A fan consisting, in combination, of an arm and a blade, of a spring connecting member formed from a strand of wire bent to produce a loop, extensions formed upon the opposite ends of the loop and bent to produce
- 10 a plurality of convolutions, parallel extensions formed at the ends of the convolutions for engagement with the blade and means for preventing the displacement of the extensions from the arm and the blade.
- 15 4. A fan consisting, in combination, of an arm and a blade, of a spring connecting member comprising a strand of wire bent to produce a loop surrounding said arm, converging extensions formed upon the loop,
- said strand being bent at the terminals of the converged extensions to produce a plurality of convolutions, parallel extensions formed by bending a strand at the ends of the convolutions to engage one side of the blade, said parallel extensions being offset to engage one edge of the blade, plates engaging the arm and the blade and provided with grooves to receive the extensions of the strand, and retaining bolts passing through said arm, blade and plates between said strand as and for the purposes set forth.
- In testimony whereof, I affix my signature, in presence of two witnesses.
- OLE E. ORSTAD.
- Witnesses:
PH. K. BRANDWOLD,
BEN TRONSLIN.

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