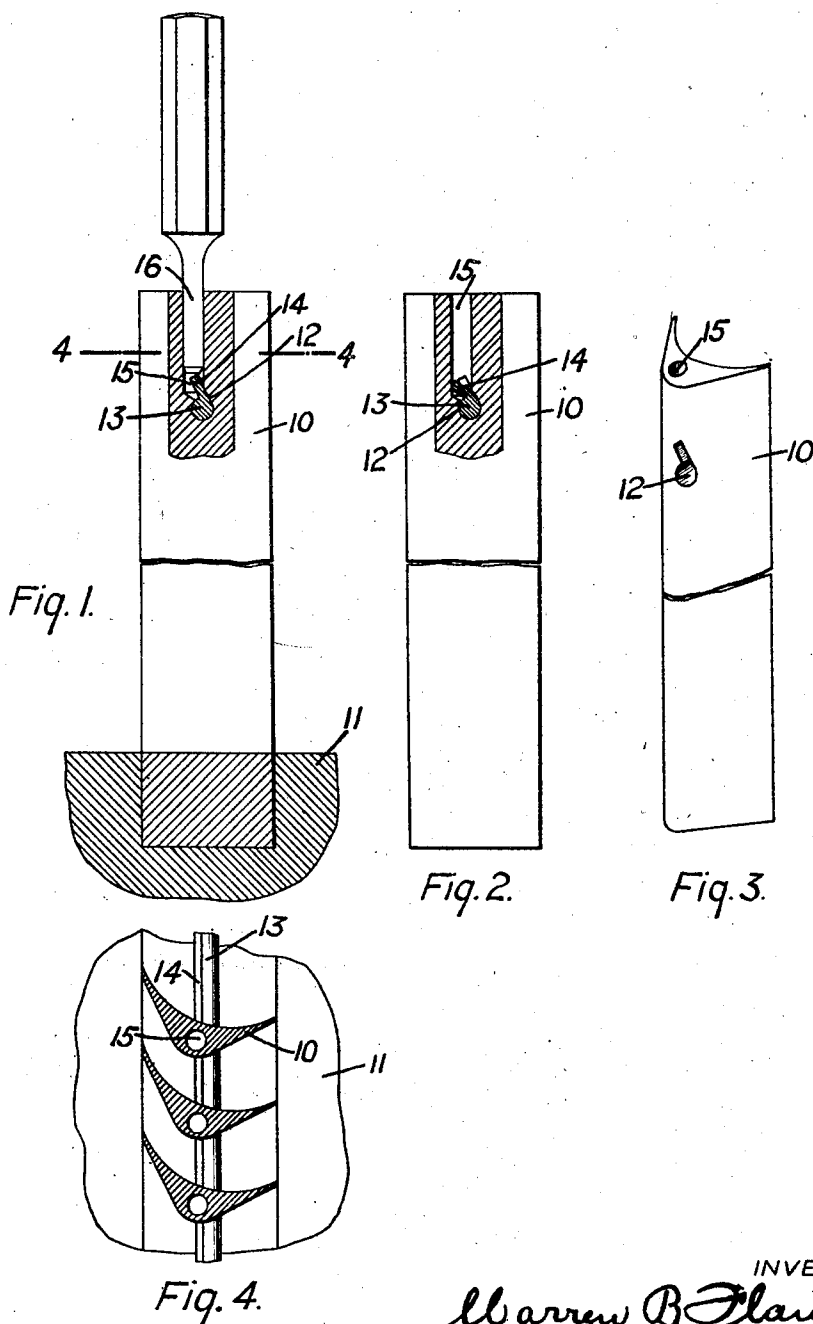


W. B. FLANDERS.  
BLADE MOUNTING.  
APPLICATION FILED AUG. 12, 1911.

1,057,139.

Patented Mar. 25, 1913.



WITNESSES:

R. J. Ridge.  
B. J. Hunt

INVENTOR.

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# UNITED STATES PATENT OFFICE.

WARREN B. FLANDERS, OF PITTSBURGH, PENNSYLVANIA, ASSIGNOR TO THE WESTINGHOUSE MACHINE COMPANY, A CORPORATION OF PENNSYLVANIA.

## BLADE-MOUNTING.

1,057,139.

Specification of Letters Patent.

Patented Mar. 25, 1913.

Application filed August 12, 1911. Serial No. 643,789.

*To all whom it may concern:*

Be it known that I, WARREN B. FLANDERS, a citizen of the United States, and a resident of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have made a new and useful Invention in Blade-Mountings, of which the following is a specification.

This invention relates to blade lashing.

One of the objects of the invention is to provide means whereby each blade may be securely fastened to the lashing which connects a series.

Another object of the invention is to provide means whereby the lashing may be intimately interlocked with the respective blades which it engages.

Other objects and advantages of this invention will be referred to hereinafter, it being understood that changes in form, proportion and minor details of construction may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

In the drawings: Figure 1 is an elevational view of a blade partially in section with a lashing projecting through an opening therein and prior to being distorted. Fig. 2 is a similar view of the blade shown in section with the distorting element removed. Fig. 3 is a perspective view of one of the blades and Fig. 4 is a sectional view on the line 4-4 of Fig. 1, the upsetting tool being removed.

I have illustrated the blades 10 as being secured to a blade-holding element 11, to which they may be attached in any well known manner, but preferably by being calked in grooves. In practice the blades will be provided with alining openings, of such form as to accommodate the cross section of the strip which projects through them. The blades 10 are shown as being provided with approximately inverted

comma shaped openings 12, which will extend transversely through the blades and which receive a strip 13, of approximately comma shaped cross section, the tail of the comma being formed by flange 14.

In the end of each blade may be drilled or otherwise formed a distorting receiving pin or opening 15, which extends longitudinally of the blades and intersects the opening 12. The opening 15 may receive a pin or punch 16 driven into the opening 15, so as to communicate with the flange 14, as indicated in Fig. 2, and distort it or upset it, so that it will be interlocked with the blade 10.

It is obvious that the cross sectional shape of the lashing strips is immaterial, as any form may be employed without departing from the spirit of this invention.

What I claim and desire to secure by Letters Patent is:

1. A plurality of blades, a lashing strip passing through said blades, the said blades having openings to receive a tool to distort the strip.

2. A plurality of blades, a lashing strip through them and a longitudinal opening to receive the tool to distort the strip.

3. A turbine blade having an opening therein, a transverse slot therein, a longitudinal opening intersecting the transverse slot and a locking strip passing through the transverse slot.

4. A turbine blade having an opening therein, a transverse slot in the opening and a longitudinal opening intersecting the transverse slot.

In testimony whereof, I have hereunto subscribed my name this 9th day of August, 1911.

WARREN B. FLANDERS.

Witnesses:

C. W. MCGHEE,  
R. J. RIDGE.