

J. S. GREEN.
 TURBINE BLADE SHROUD.
 APPLICATION FILED APR. 28, 1909.

1,010,749.

Patented Dec. 5, 1911.

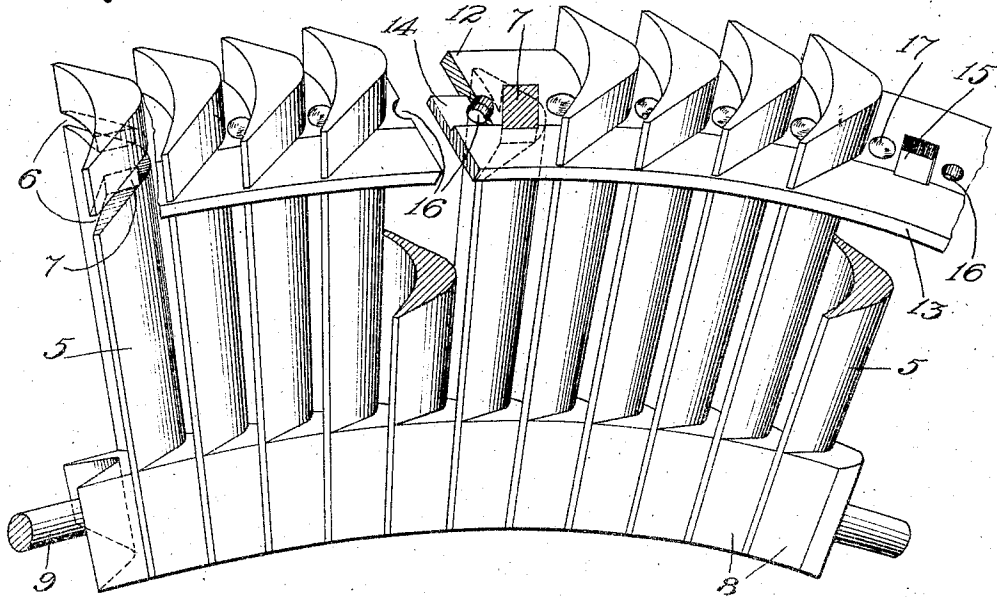


Fig. 1.

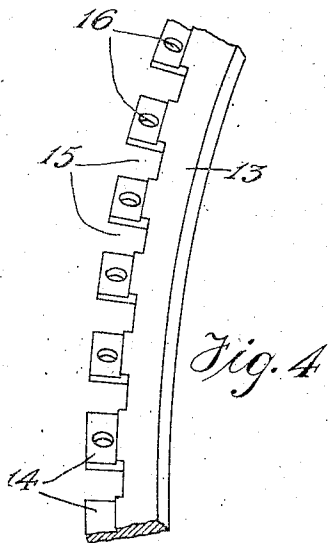


Fig. 4.

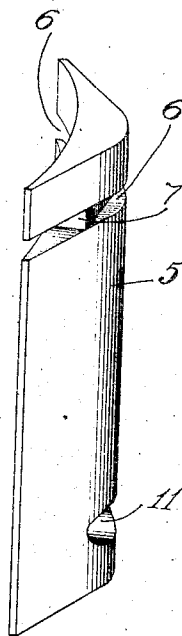


Fig. 2.

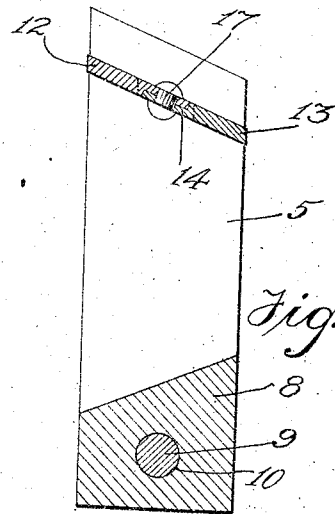


Fig. 3.

WITNESSES:

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UNITED STATES PATENT OFFICE.

JONATHAN S. GREEN, OF PITTSBURGH, PENNSYLVANIA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE COLONIAL TRUST COMPANY, TRUSTEE, OF PITTSBURGH, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

TURBINE-BLADE SHROUD.

1,010,749.

Specification of Letters Patent.

Patented Dec. 5, 1911.

Application filed April 23, 1909. Serial No. 492,734.

To all whom it may concern:

Be it known that I, JONATHAN S. GREEN, 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 Turbine-Blade Shrouds, of which the following is a specification.

This invention relates to turbine blade construction and more especially to covers or shrouds therefor, and has for its object to provide a simple and reliable construction and one of minimum cost.

In the drawings accompanying this application and forming a part thereof: Figure 1 is a view in perspective of a plurality of blades provided with covers or shrouds constructed in accordance with this invention; Fig. 2 is a view in perspective of a single blade machined for use in this construction; Fig. 3 is a view showing the face of a blade, the shroud or cover in cross section, and a spacing piece, such as utilized between adjacent blades, in section; and, Fig. 4 is a view in perspective of a portion of one-half of the cover or shroud used in this invention.

It will be understood that the invention is equally applicable to the stationary blades, generally termed vanes, of a turbine, although in the drawings I have illustrated it as applying to the rotary blades or buckets only, without any idea of limiting the invention to use with either.

In carrying out the invention a blade of any desired cross section and formed in any desired manner, either drawn or cast or drop forged, is milled near one end as shown at 6 so as to leave a rectangular connecting portion 7 joining the top and bottom portions of the blade.

The blades may be secured in any suitable manner to the turbine element and, if desired, may be assembled into groups prior to assemblage in the turbine as shown in Fig. 1. In this view separate spacing members 8 lie between adjacent blades and a wire or rod 9 passes through the spacing members and blades, the spacing members being provided with holes 10 to receive the rod or wire while the blades are provided

with holes 11 for the same purpose. A shroud or cover formed of two portions 12 and 13 secures the outer or free ends of the blades together and each of the portions 12 and 13 is reduced in thickness along one of its edges, as at 14 and notched as at 15. Holes 16 are provided in the reduced portion between the notches and when the two portions are assembled to form a shroud so that the reduced portions overlap, the two parts are secured together by means of rivets 17.

Having thus described my invention, what I claim is:

1. In a turbine, the combination of blades or buckets, a cover or shroud for the buckets compounded throughout its length and means independent of said blades for binding the parts of said shroud together.

2. In a turbine, blades or buckets, a cover or shroud for said blades or buckets formed of two parts overlapping throughout their length and means independent of said blades for binding said parts together.

3. In a turbine, blades or buckets, a cover or shroud for said blades or buckets formed of two parts, each of which embraces the same blades or buckets, and means independent of said blades or buckets for securing the parts together.

4. In a turbine, blades or buckets, a cover or shroud for said blades or buckets formed of two parts, each of which embraces the same blades or buckets and rivets situated between adjacent blades or buckets for securing the parts together.

5. In a turbine, blades or buckets, a cover or shroud for said blades or buckets formed of two parts, each of which embraces the same blades or buckets, and means located between adjacent blades or buckets for securing the parts together.

6. The combination with a turbine blade or bucket of a cover therefor composed of two portions overlapping throughout their length and means independent of said turbine blade or bucket for binding said portions together.

7. A shroud for turbine blades or buckets composed of two members overlapping throughout their length and means inde-

pendent of said blades or buckets for binding said members together.

8. A shroud for turbine blades or buckets composed of two overlapping members, each notched along one edge, and means for securing the same together.

In testimony whereof, I have hereunto

subscribed my name this 27th day of April, 1909.

JNO. S. GREEN.

Witnesses:

C. W. MCGHEE,
GEO. A. WALKER.