

A. HUGUENIN.
BLADE FOR THE WHEELS OF ROTARY FLUID COMPRESSORS.
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1,059,161.

Patented Apr. 15, 1913.

Fig. 1.

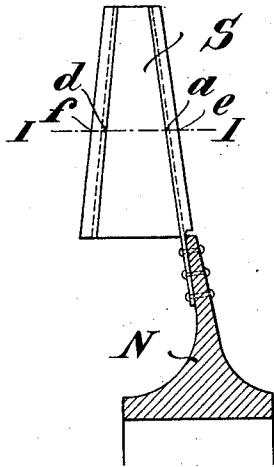


Fig. 2.

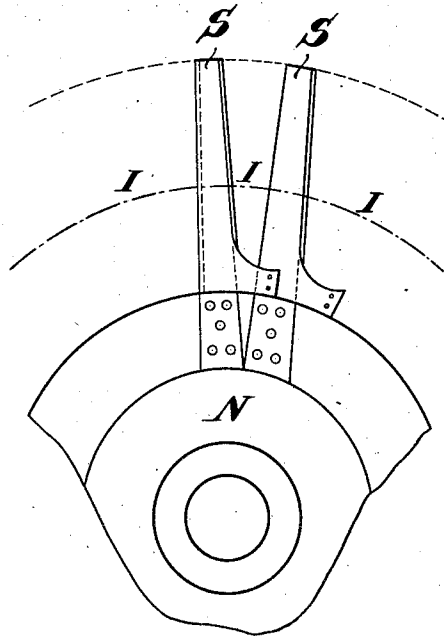


Fig. 3.

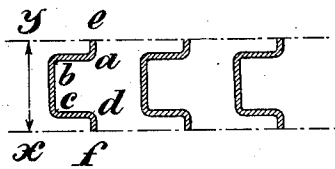
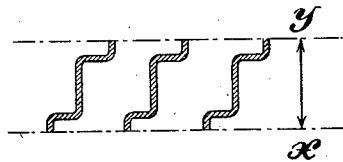


Fig. 4.



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ALBERT HUGUENIN, OF ZURICH, SWITZERLAND.

BLADE FOR THE WHEELS OF ROTARY FLUID-COMPRESSORS.

1,059,161.

Specification of Letters Patent.

Patented Apr. 15, 1913.

Application filed September 7, 1910. Serial No. 580,915.

To all whom it may concern:

Be it known that I, ALBERT HUGUENIN, a citizen of the Republic of Switzerland, and whose post-office address is 139 Weinbergstrasse, Zurich, Switzerland, have invented certain new and useful Improved Blades for the Wheels of Rotary Fluid-Compressors, of which the following is a specification.

In the rotor wheels of rotary compressors and the like which run at a very high peripheral speed, suitable blades of sheet metal are employed in known manner, which project a considerable distance from the boss of the wheel to which they are attached, and which have a U or Z shaped cross-section for the purpose of stiffening and fastening. Such an arrangement of blades is disclosed in my previous application, Ser. No. 513,109, filed August 16, 1909 (Patent No. 1,036,627). This form of cross-section, however, possesses the drawback that it is difficult to true up the same so that the blades work with sufficient accuracy in the fixed casing. This truing up must be very carefully done, because when the clearance between the casing and the blades becomes too large, the efficiency of the wheel falls off considerably, and when the clearance is too little, there is great danger of scraping of the rotating blades on the casing walls.

The present invention consists in providing the U and Z cross section of the blades with edges projecting at right angles or other suitable angle to the plane of rotation of the blades. This edge permits an easy and accurate truing up, so that the trued up blades can run safely with the desired clearance from the profile of the casing.

The accompanying drawing illustrates the method of carrying out the invention.

Figure 1 illustrates in cross section a portion of a rotor wheel for a compressor, having blades formed according to the invention. Fig. 2 is a side view of Fig. 1. Fig. 3 shows in section through the line I—I of Figs. 1 and 2, a development of three blades of U cross section. Fig. 4 shows a similar view with blades of Z cross section.

The blades S are fixed to the boss N by means of rivets, and have an essentially U-shaped cross-section $a b c d$. (See Fig 3.)

According to this invention the blades are provided for the greatest part of their radial height with edges $a-e$ and $d-f$. These edges give the shanks $a-b$ and $c-d$ an enhanced resistance to vibration. More particularly, however, they enable the blades to be easily and accurately trued up to have all an axial measurement $x-y$. If these edges were not present and assuming the shanks $a-b$ and $c-d$ to be as wide as $x-y$, then truing up would have to be done to the whole length $a-b$ and $c-d$. This would render the shanks so thin that their strength would be seriously impaired. Moreover, such a truing up of the whole surface $a-b$ would take considerable time and be much more difficult to carry out than merely truing up the thin edges $a-e$ and $d-f$. These truing edges can obviously be applied to Z-shaped cross-section, as illustrated in Fig. 4.

What I do claim as my invention, and desire to secure by Letters Patent of the United States, is:—

1. A blade for rotary wheels of compressors, the body of which is composed of a central or intermediate portion transverse to the plane of rotation of the wheel, and side portions parallel to the plane of rotation of the wheel bounding the central portion, the free edges of said side portions being bounded by flanges, integral with, and bent outwardly at right angles to, said side portions, substantially as and for the purposes hereinbefore set forth.

2. A blade for rotary wheels of compressors having a body of U-shape in cross section, the central portion of the U being transverse to the plane of rotation of the wheel, and the leg of side portions of the U blade being bounded along their free ends or edges by outwardly bent flanges integral with, and at right angles to, said side portions, substantially as and for the purposes hereinbefore set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ALBERT HUGUENIN.

Witnesses:

H. KLAUSEY,
CARL GUBLER.