T. H. C. HOMERSHAM.

CENTRIFUGAL BLOWER AND OTHER CENTRIFUGAL MACHINE OF A SIMILAR NATURE.

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1,136,877. Patented Apr. 20, 1915.

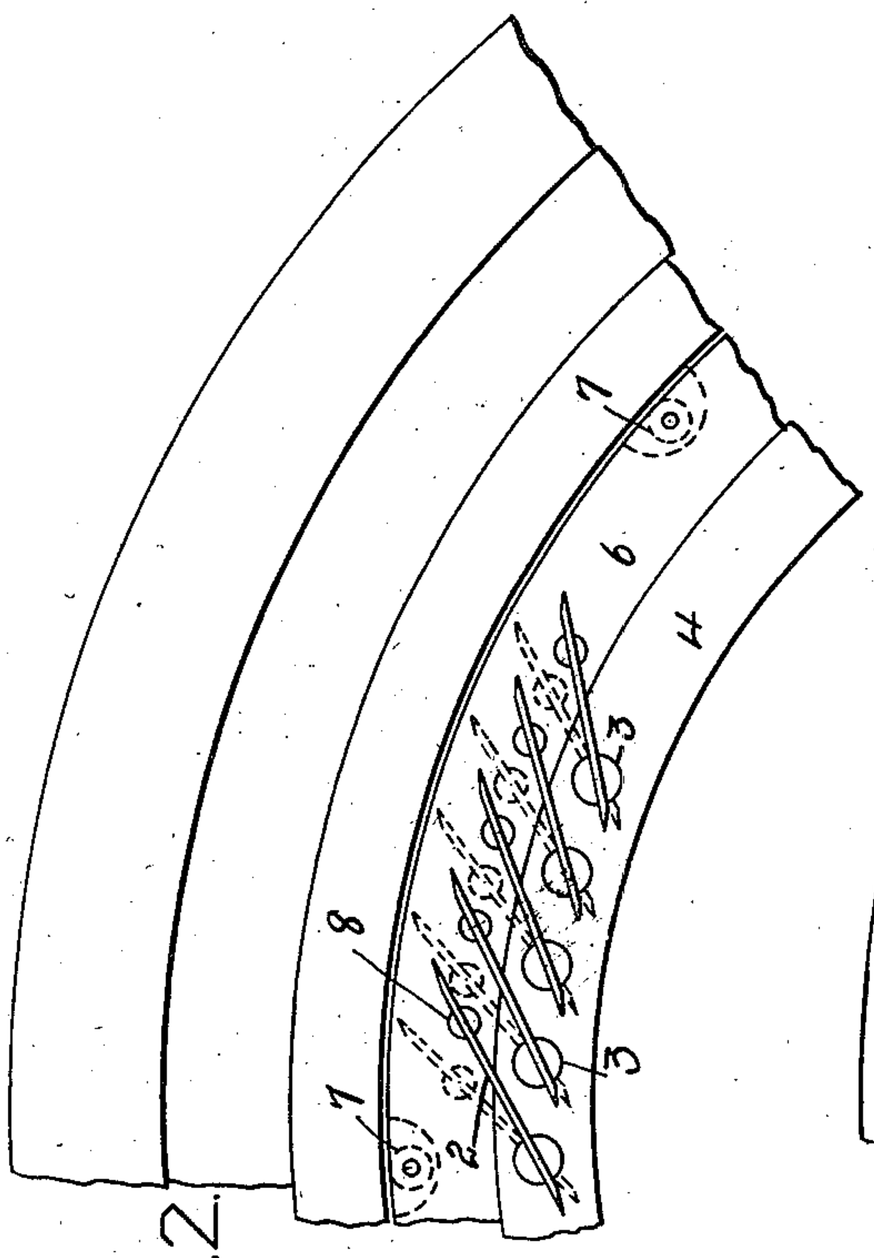


FIG. 2.

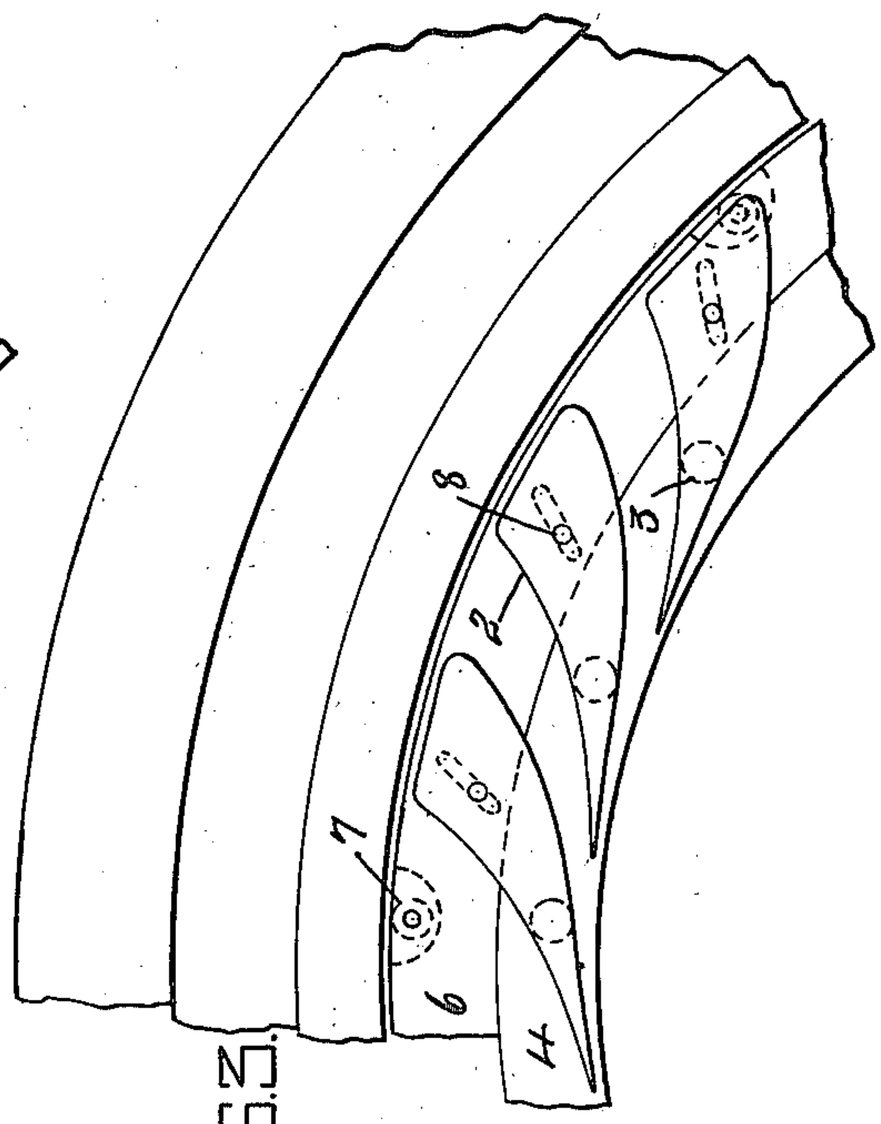


FIG. 3.

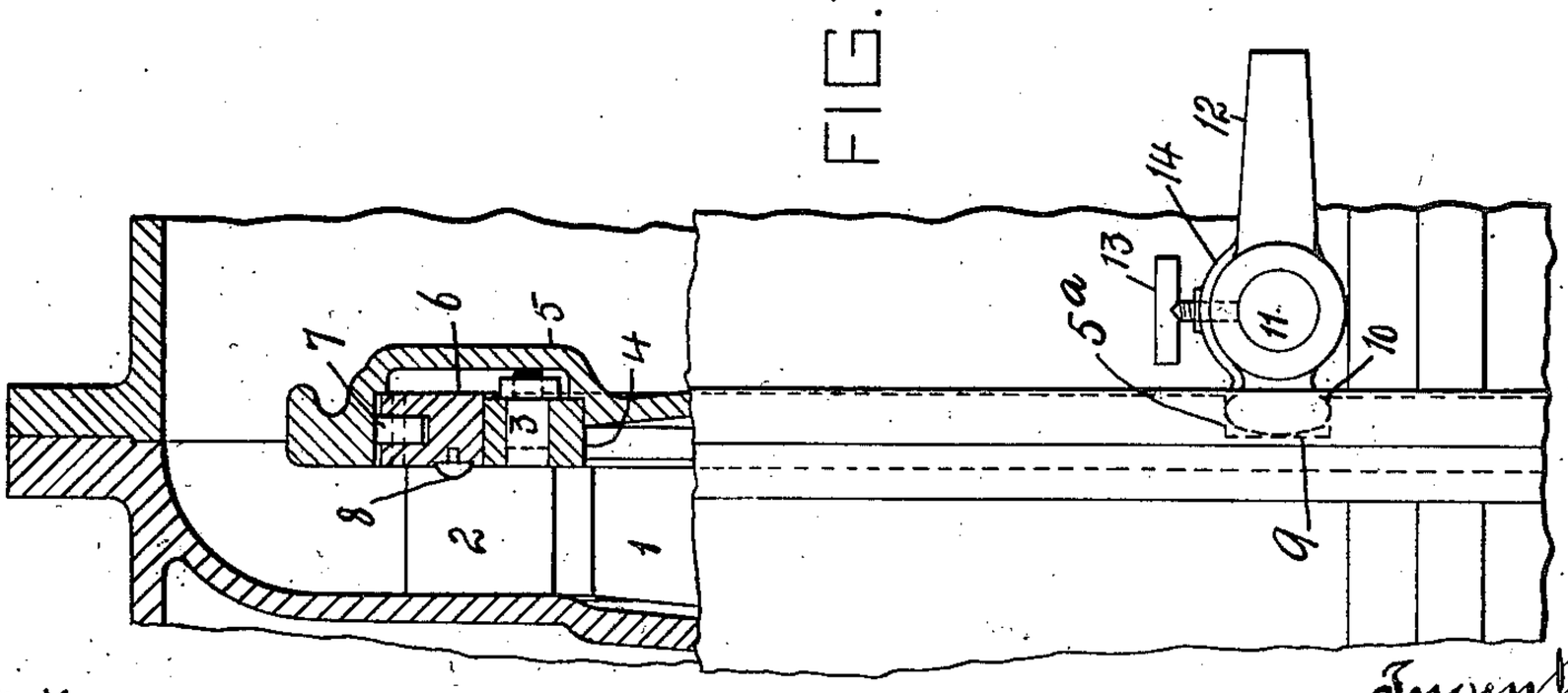


FIG. 1.

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UNITED STATES PATENT OFFICE.

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CENTRIFUGAL BLOWER AND OTHER CENTRIFUGAL MACHINE OF A SIMILAR NATURE.

1,136,877. Specification of Letters Patent. Patented Apr. 20, 1915.

Application filed June 1, 1914. Serial No. 842,242.

To all whom it may concern:

Be it known that I, THOMAS HENRY COLLETT HOMERSHAM, a subject of the King of Great Britain, residing at Bradford, Yorkshire, England, have invented certain new and useful Improvements in Centrifugal Blowers and other Centrifugal Machines of a Similar Nature; 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.

The present invention relates to improvements in centrifugal blowers and other centrifugal machines of a similar nature including centrifugal pumps, turbine pumps, turbo blowers, compressors, exhausters, rotary condensers and the like.

The object of the invention is to mount the guide blades of the machine so that they automatically set themselves to the position of maximum efficiency whatever duty may be demanded of the machine.

A further object is to interconnect the blades so that in their correct adjustment they retain their correct relative spacings.

The invention will now be described with reference to the accompanying drawings which show portions of a machine of the type described which are sufficient to enable the invention to be understood.

Figure 1 shows a portion of a centrifugal blower in partial section. Figs. 2 and 3 are side views of Fig. 1 taken on the line II—II of Fig. 1 showing two somewhat different forms of guide blades.

In these drawings 1 represents a portion of the rotor. The guide blades 2 are each mounted by means of a pin 3 in an annulus 4 which annulus is mounted in the frame 5 of the machine. About the annulus 4 and in the framework 5 there is mounted a floating ring or annulus 6 which bears by means of anti-friction devices 7 in the framework 5. This floating annulus 6 carries small pivotal pins 8 having saw cuts in their heads into which the edges of the guide blades 2 enter. The frame 5 is cut away somewhat as at 5^a and a recess 9 is formed in the floating annulus 6 into which the head of a small crank 10 enters. This crank 10 is mounted on a shaft 11 which is provided with a handle 12. A set screw 13 mounted in a small bracket 14 is arranged so that it can be brought into contact with the shaft 11. Fig. 2 is an elevation of the arrangement shown in Fig. 1 while Fig. 3 is a similar view to Fig. 2 with somewhat differently shaped guide blades as used in turbines.

As will be appreciated from the above description the floating annulus 6 is free to move in a circumferential direction. If the duty of the compressor be changed by throttling or other means the guide blades will themselves tend to move and to take up the position to render the machine most efficient. It will be seen that they are quite free to take up this position and in so doing turn the pins 3 in the ring 4 and move with their outer edges so as to move the floating annulus 6 which, owing to its engagement with the guide blade by the pins 8, keeps the guide blades with their correct relative spacings. The object of the crank 10 and handle 12 is to provide an arrangement to indicate to the attendant any movement on the part of the annulus 6 and at the same time to provide means for locking the annulus in any given position should it for any purposes be desired so to do.

I claim:—

1. In centrifugal blowers and other centrifugal machines of the character described, guide blades, pins secured to the guide blades, means for revolubly mounting said pins in a portion of the framework of the machine, a floating annulus and sliding engaging means between said floating annulus and said blade.

2. In centrifugal blowers and other centrifugal machines of the character described, a plurality of guide blades, a pin mounted on each guide blade, an annulus fixed in the framework of the machine, means for mounting said pins in said annulus, a floating annulus located about said fixed annulus, anti-friction means between said floating annulus and the framework of the machine, revoluble pins mounted one for each guide blade in said floating annulus said pins being each provided with a saw cut on its head in which the edge of the respective blade enters.

3. In centrifugal blowers and other centrifugal machines of the character described, a plurality of guide blades, revoluble means for mounting said guide blades in the machine, a floating annulus free to move in a circumferential direction under the influence of said blades and connected to all of said blades substantially as described.

4. In centrifugal blowers and other centrifugal machines of the character described, a plurality of guide blades, a ring free to rotate in a circumferential direction connected to each of said guide blades, a crank engaging with said ring, a shaft carrying said crank and a handle connected to said shaft, substantially as and for the purpose described.

5. In centrifugal blowers and other centrifugal machines of the character described, a plurality of guide blades, a ring free to rotate in a circumferential direction connected to each of said guide blades, and means connected to said floating ring for moving the same by hand and giving visible indication of any movements made thereby substantially as described.

In testimony whereof, I affix my signature, in presence of two witnesses.

THOMAS HENRY COLLETT HOMERSHAM.

Witnesses:

HUBERT PUMPHREY,

CHARLES HIBBERT.