T. H. C. HOMERSHAM.

CENTRIFUGAL BLOWER AND LIKE MACHINE.

APPLICATION FILED JUNE 1, 1914.

1,187,428. Patented June 13, 1916.

Fig. 1.

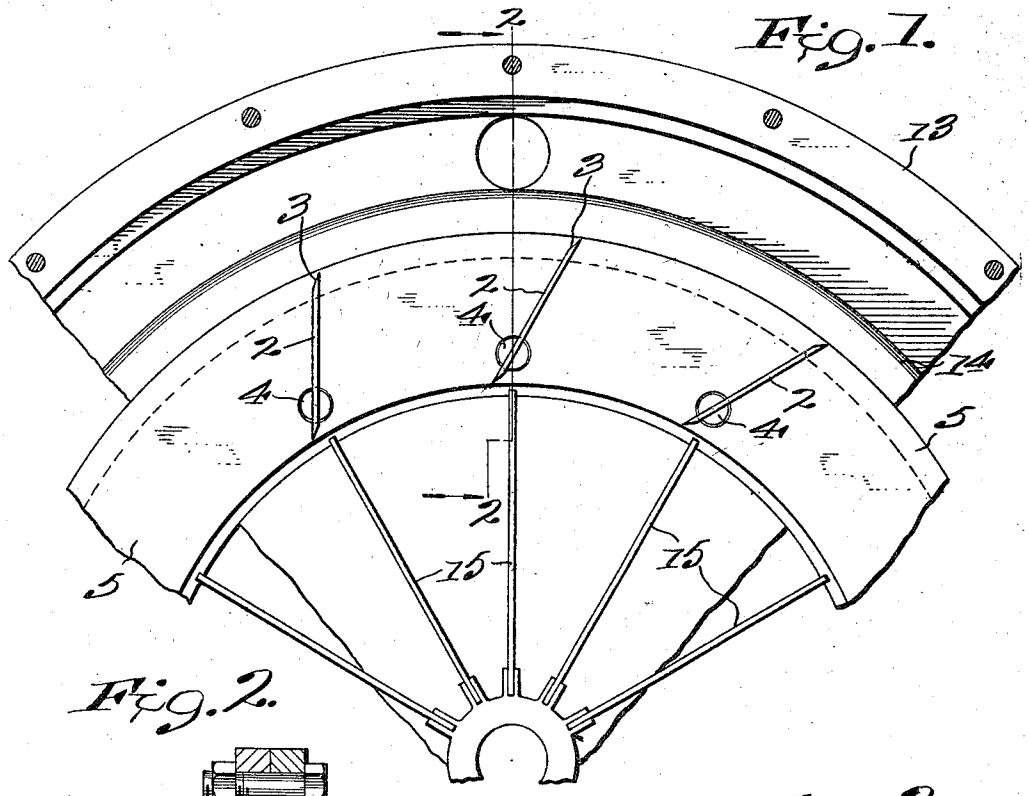


Fig. 2.

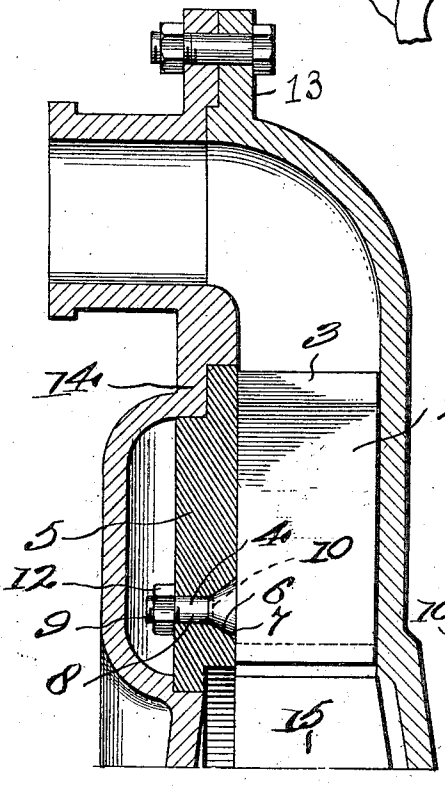


Fig. 3.

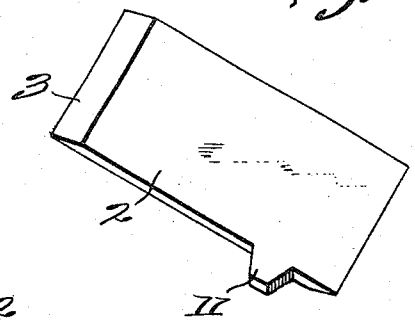
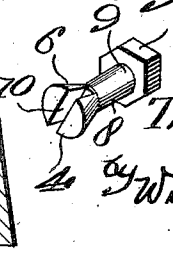


Fig. 4.



Inventor.

Thomas H. C. Homersham,

by Wilkinson, Gunter & Mackaye,

Attorneys.

THE COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

THOMAS HENRY COLLETT HOMERSHAM, OF BRADFORD, ENGLAND.

CENTRIFUGAL BLOWER AND LIKE MACHINE.

1,187,428. Specification of Letters Patent. Patented June 13, 1916.

Application filed June 1, 1914. Serial No. 842,241.

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 like Machines; 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 the method of and means for mounting the blades in the guide passages of centrifugal blowers and other centrifugal machines of a similar nature including centrifugal pumps, turbine pumps, turbo blowers, compressors, exhausters, rotary condensers and the like.

An object of the invention is to arrange the machines formed with standardized parts so that they can be adjusted to perform any desired duty with maximum efficiency.

A further object is to mount the blades so that their necessary adjustment to produce maximum efficiency is easily brought about.

A still further object is to mount the blades so that the guide passages are free from all obstructions or protuberances.

A still further object is to mount the blades so that they are individually adjustable and firmly held in their adjusted position by the tightening of a single nut.

My invention will be understood by reference to the accompanying drawings, in which:

Figure 1 is a fragmentary view showing the interior of the case with part of the fan in elevation, one side of the casing being removed; Fig. 2 shows a section along the line 2—2 of Fig. 1, but on a larger scale; Fig. 3 is a detail showing the perspective view of one of the blades; and Fig. 4 is a perspective view showing one of the pins on which the blades are mounted.

In carrying out the invention the blades 2 preferably consist of sheet steel sharpened or beveled at their front edges as at 3. Each blade is mounted on a pin or pins 4 which project through and bear in an annulus or ring 5 mounted inside the frame 13 of the machine. These pins are provided with conical heads 6 which fit into taper sockets 7 formed in the annulus or ring 5. The taper of the sockets is somewhat less than that of the conical heads of the pins. The conical portions 6 of the pins terminate in a screw threaded portion 9. The screw threaded portion is of such a length as to project through to the opposite side of the annulus or ring 5. The pin in its conical head 6, and for a certain portion of the cylindrical portion 8 if desired, is provided with a diametrical slot 10. The blade is provided with a tang or projection 11 which preferably corresponds exactly in size and shape to the diametrical slot. The diametrical slot is of such a width that the tang fits tightly therein. It will be obvious that when the blade is secured by its tang and the pin inserted in the corresponding hole in the annulus or ring and the end of the pin screwed up by means of the nut 12 the sides of the slot in the conical head will be forced together to firmly grip the tang of the blades. It will also be seen that the conical head of the pin will be countersunk in the inner surface of the annulus or ring and as the tang or projection on the blade will project into the diametrical slot in the pin, the side of the blade will lie up against the inner side of the annulus or ring, so that no part of the means used for mounting the blade projects into the passage so that these passages are kept absolutely free from all obstructions and protuberances.

It will be obvious that it will be a simple matter before tightening the nut 12 on the pin 4 to adjust the blade to the angle which will enable the machine to perform the duty required of it and that, on the other hand, if it be desired to alter the duty of the machine it will be easy to slack off the nut on the pin somewhat and re-set the blade for the new duty. In Fig. 2 the annulus 5 is shown mounted in the plate 14, and one of the rotating blades is shown at 15.

I claim:—

1. In centrifugal blowers and other centrifugal machines of the kind set forth, a part forming the side of the blade passages, a pin provided with a diametrical slot in its head and terminating in a screw threaded portion, the pin being of such a length as to lie with its head countersunk in the part forming the blade passage and with part of its screw threaded portion projecting through the part forming the side of the blade passage, means for securing the pin

in this position, a blade, a tang on the said blade, said tang being located within the slot formed in the said pin.

2. In centrifugal blowers and other centrifugal machines of the kind set forth, a part which forms the side of the blade passages of the machine, a guide blade, a tang on said guide blade, a pin provided with a conical head and having a slot corresponding in size to the said tang diametrically arranged in its head and means for securing said pin in the part forming the side of the blade passage of the machine.

3. In centrifugal blowers and other centrifugal machines of the kind set forth, parts forming the walls of the blade passages of the machine one of the parts being arranged with a series of orifices equal in number to the number of blades to be secured to the machine and with a portion of their length toward the blade passage somewhat splayed, pins with conical heads located in each of the orifices in the said part and provided with diametrical slots in their heads, blades located in said blade passages, tangs formed on each of said blades and located in a slot in the head of said pins and means for tightening said pins in the part forming part of the blade passages of the machine.

4. In centrifugal blowers and other centrifugal machines of the kind set forth, guide blades, a tang formed on the side of each guide blade, a pin provided with a conical head having a diametrical slot in the head adapted to receive the whole of said tang, a part forming one of the sides of the blade passages of the machine and means for mounting and securing said pin in said part with its head countersunk substantially as described.

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

THOMAS HENRY COLLETT HOMERSHAM.

Witnesses:
HUBERT HUMPHREY,
CHARLES HIBBERT.

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