

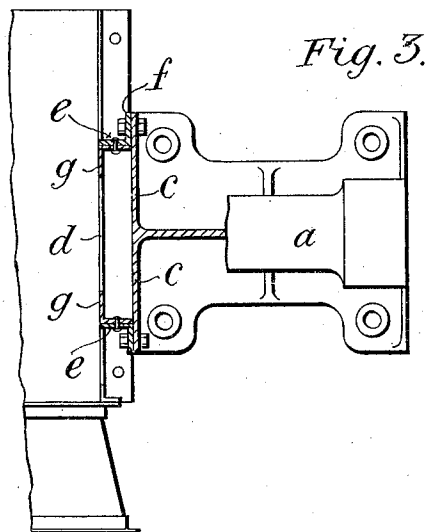
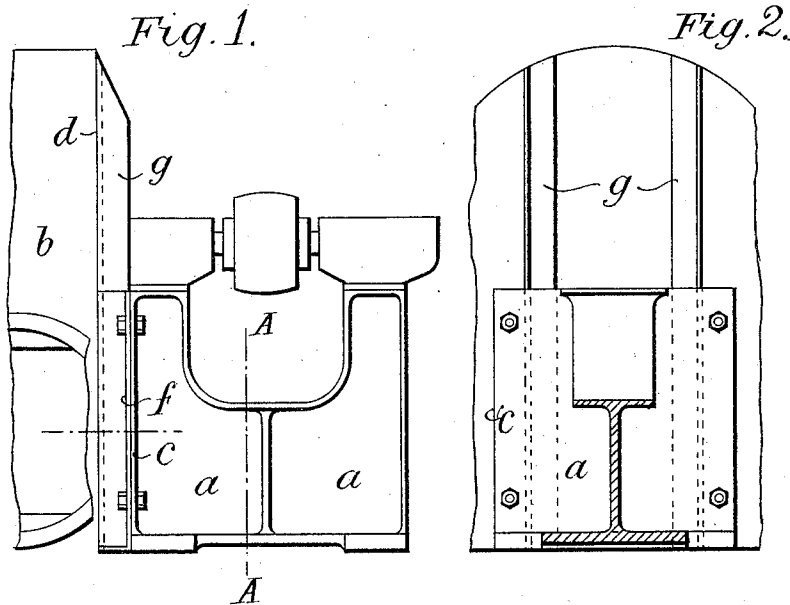
S. C. DAVIDSON.
FAN CASING AND THE PEDESTAL OR BRACKET WHICH CARRIES THE BEARINGS
FOR THE FAN WHEEL SHAFT.

APPLICATION FILED JUNE 8, 1907.

929,567.

Patented July 27, 1909.

3 SHEETS—SHEET 1.



WITNESSES:

Fred White
René P. Ruine

INVENTOR:

Samuel Cleland Davidson,

By his Attorneys

Arthur C. Fraser & Son

S. C. DAVIDSON.
 FAN CASING AND THE PEDESTAL OR BRACKET WHICH CARRIES THE BEARINGS
 FOR THE FAN WHEEL SHAFT.
 APPLICATION FILED JUNE 8, 1907.

929,567.

Patented July 27, 1909.

3 SHEETS—SHEET 2.

Fig. 4.

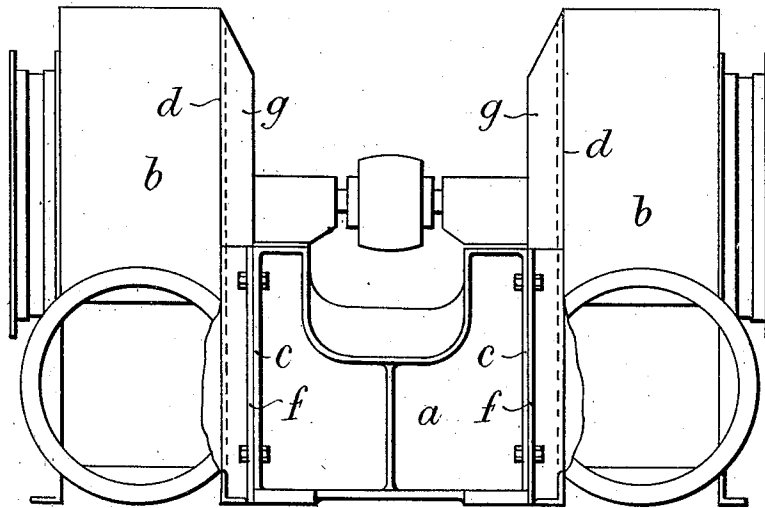
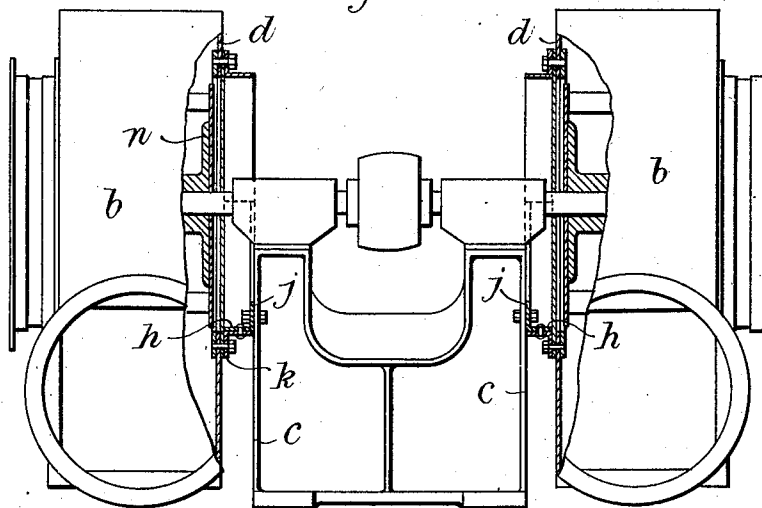


Fig. 8.



WITNESSES:

Fred White
Rene' Bruine

INVENTOR:

Samuel Cleland Davidson
 By his Attorneys

Arthur J. Brown

S. C. DAVIDSON.
FAN CASING AND THE PEDESTAL OR BRACKET WHICH CARRIES THE BEARINGS
FOR THE FAN WHEEL SHAFT.

APPLICATION FILED JUNE 8, 1907.

929,567.

Patented July 27, 1909.

3 SHEETS—SHEET 3.

Fig. 5.

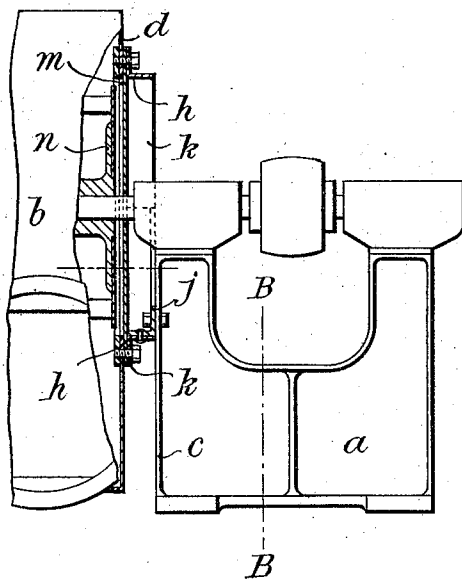


Fig. 6.

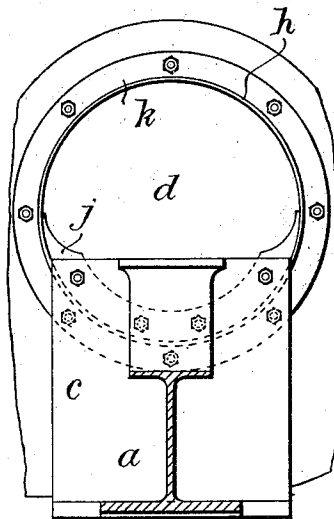
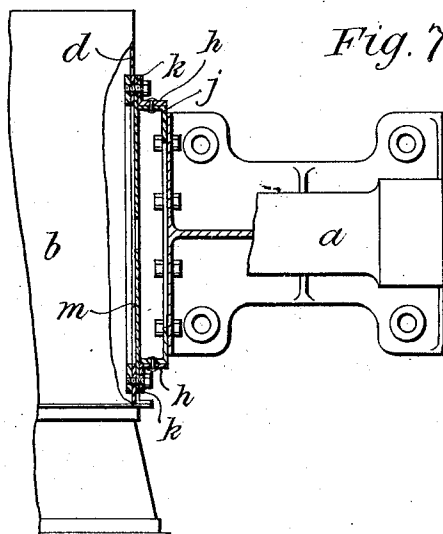


Fig. 7.



WITNESSES:

Fred White
Emil Meine

INVENTOR:

Samuel Cleland Davidson,

By his Attorneys

Arthur C. Mason & Co.

UNITED STATES PATENT OFFICE.

SAMUEL CLELAND DAVIDSON, OF BELFAST, IRELAND, ASSIGNOR, BY MESNE ASSIGNMENTS, TO AMERICAN BLOWER COMPANY, OF GREEN ISLAND, NEW YORK, A CORPORATION OF NEW YORK.

FAN-CASING AND THE PEDESTAL OR BRACKET WHICH CARRIES THE BEARINGS FOR THE FAN-WHEEL SHAFT.

No. 929,567.

Specification of Letters Patent.

Patented July 27, 1909.

Application filed June 8, 1907. Serial No. 378,032.

To all whom it may concern:

Be it known that I, SAMUEL CLELAND DAVIDSON, of "Sirocco" Engineering Works, Belfast, Ireland, merchant, have invented certain new and useful Improvements in or Relating to Fan-Casings and the Pedestal or Bracket which Carries the Bearings for the Fan-Wheel Shaft, of which the following is a specification.

10 This invention relates to fans or pumps, and is particularly directed to an improved construction of pedestal and mounting means for the fan casing.

In constructions heretofore adopted the pedestal has been provided with special side flanges to which parts connected with the casing have been bolted or secured. This construction has necessitated careful machining of the flanges and a precise fitting of the parts. Considerable trouble has also been found in casting the pedestals, due to the presence of the flanges above referred to. In the type of pedestal to which my invention particularly relates the fan casing is mounted at one end of the pedestal so that it is supported wholly on one side. Heretofore it has been the common practice to mount the casing directly against the end of the pedestal in order to obtain as rigid a support for the former as possible. When the fan is used for induced draft so that it is acting upon air or gas at a high temperature it is found that the heat of the gas is communicated to the pedestal with a result that the bearings become so overheated that it is necessary to provide a water cooling system for them. According to my invention these several disadvantages are greatly lessened, if not entirely avoided. To this end I provide a pedestal which is constructed at one or both ends with a vertical face or flange (hereinafter called the "vertical face") at right angles to the fan shaft, and to such vertical face I attach the fan casing by means of brackets of Z-shaped or U-shaped cross section, the parallel flanges of the brackets being attached to such vertical face and to the side of the fan casing respectively. By this construction the cost of the fan mounting is considerably reduced. As the brackets can be attached at any point on the vertical face of the pedestal or the side of the fan casing, no careful fitting is required. If the brackets are connected to

either the casing or the pedestal, the drilling and bolting of the brackets to the remaining part is a simple and certain operation. Furthermore, by this construction the fan casing while adequately supported is spaced apart from the pedestal a distance corresponding to the width of the bracket, so that the heat of the gas being operated upon is prevented to a large extent from being transmitted to the pedestal. In the preferred form of my invention, wherein two straight vertical brackets are used, there exists a vertically disposed air space or gap between the side of the casing and the end of the pedestal, which permits a flow of air between the two parts, so that the bearings are kept comparatively cool. When two fans are mounted on one pedestal, one fan being at each end thereof, said vertical face may be formed on each end of the pedestal and the connection of both fan casings thereto may be the same as herein described.

The accompanying drawings illustrate the invention as applied both to one fan casing mounted on one end of the pedestal and to two fan casings one mounted on each end of a pedestal.

Figure 1 is a side elevation of a single fan mounted upon a pedestal showing the employment of straight brackets. Fig. 2 is a sectional elevation on line A—A Fig. 1. Fig. 3 is a part sectional plan of Fig. 1. Fig. 4 is a similar view of Fig. 1 showing two fans mounted upon a pedestal. Fig. 5 is a part sectional elevation corresponding to Fig. 1 of a modified construction where a curved bracket is used. Fig. 6 is a sectional elevation on the line B—B Fig. 4. Fig. 7 is a part sectional plan of Fig. 4. Fig. 8 is a similar view to Fig. 5 with two fans mounted upon one pedestal.

Referring first to Figs. 1, 2 and 3 the pedestal *a* on which the bearings of the fan shaft are mounted is constructed on the side toward the fan casing *b* with a vertical face or flange *c* (hereinafter called the vertical face) disposed at right angles to the fan shaft and extending from below the bearing which is on that side to the base of the pedestal, said vertical face *c* being also parallel with the side *d* of the casing *b* to be attached thereto, which attachment is effected by the employment of straight brackets of Z or U-shaped cross section as shown at *e*. The

two parallel flanges *f* and *g* of said bracket are respectively attached on the one side to said vertical face *c* and on the other side to the side *d* of the casing *b* with which the surfaces of the said flanges are correspondingly parallel. In the construction illustrated in these figures the fan casing is not entirely supported by the pedestal but itself rests on the floor. In order that the vertical brackets may have a lighter appearance the flanges *f* which are attached to the vertical faces *c* of the pedestal may, from the top of the pedestal upward, be cut away without detriment to the construction, that part of the bracket which is attached to the fan casing being extended upward as shown as far as is convenient or consistent with the strength required.

In Fig. 4 is shown two fan casings *b* mounted at each end of the pedestal *a* said pedestal being provided with vertical faces *c* at each end thereof for the purpose, the construction and references otherwise remaining the same.

Referring to Figs. 5, 6 and 7 which show the modification where a curved bracket is employed and where the casing is entirely supported by the pedestal, the pedestal *a* is constructed as before described with a vertical face *c* and the side *d* of the casing *b* is attached to the said vertical face *c* of the pedestal by means of a curved or ring shaped bracket of *Z* or *U*-shaped cross section as shown at *h* (hereinafter referred to as the ring bracket). The two parallel flanges *j* and *k* of said ring bracket are respectively attached the one *j* to the said vertical face *c* of the pedestal and the one *k* to the side *d* of the casing *b* and with which the surfaces of the said flanges are correspondingly parallel.

The ring bracket *h* is shown as mounted for the whole or a part of its circumference on the side of the casing *b* around an opening *m* therein concentric with the axis of the fan wheel *n* and preferably of a little larger diameter than the fan wheel so as to allow of the latter being inserted and withdrawn therethrough. The same size of opening is provided on the opposite side of the casing so that either face of the casing can be attached to the pedestal and the fan be used to discharge as either a right or left hand type. The projecting flange *k* of the said ring bracket which is spaced apart from and parallel to the fan casing *b* has in it a number of holes, say eight, spaced equidistantly apart around it, and holes corresponding with say four continuous holes in the vertical face *c* of the pedestal at the same radius from the center of the fan shaft as the holes in the ring bracket, so that when the ring bracket is placed with the lower part of its circumference against the vertical face of

the pedestal it can be securely bolted thereto and the fan casing when thus attached to the pedestal is very rigid and requires no further support.

In Fig. 8 the pedestal *a* is provided with two vertical faces *c* and connecting brackets at each end thereof whereby two fans may be mounted upon the one pedestal and driven from the one shaft.

It will be evident that with eight holes in the projecting parallel flange of said ring bracket and same being equidistant apart, that any four contiguous holes therein correspond with four holes in the vertical face of the pedestal, and the said casing can therefore be mounted on the pedestal with its discharge nozzle pointing in any of eight different directions. If, however, the above described facility for adjusting the direction of the discharge be not required then that part of the projecting parallel flange *k* of said ring bracket which is above the fan center may for lightness of appearance be cut away.

I have described the bracket as attached primarily to the fan casing but when preferred it may be primarily attached to the vertical face of the pedestal and further the adjustment as to the position of the discharge nozzle of the fan may be obtained by a similar arrangement of holes and bolts either between the two parts or sections of the ring brackets when such is made in two different parts as shown or by a similar arrangement between the flanges *j* or *k* and the fan casing. The ring bracket construction may be employed where the fan casing rests upon the ground as in Figs. 1 to 3 or the vertical bracket may be employed where the fan casing does not rest directly on the ground.

The pedestal itself apart from the special construction of its vertical face as hereinbefore described may be of any suitable form.

In both of the constructions described it will be observed that the mounting of the fan casing is considerably simplified and cheapened, and that the transmission of heat from the casing to the bearings is very largely reduced.

While I have shown in detail several embodiments of my invention I do not wish to be limited thereto as various modifications may be made therein without departing from the spirit of the invention.

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

1. The improved means for mounting fan casings on pedestals comprising the combination of a pedestal, a fan casing supported on one side only of said pedestal, a vertical face on the pedestal parallel with the side of the fan casing, a bracket formed separately from said pedestal and having two parallel flanges suitably spaced apart, one

flange being parallel to and attached to the side of the fan casing and the other flange parallel to and attached to said vertical face on the pedestal substantially as set forth.

5 2. The improved means for mounting fan casings on pedestals comprising the combination of a pedestal with vertical faces, fan casings disposed at each end of said pedestal, each of said casings being supported on one
10 side only of said pedestal, brackets formed separately from said pedestal disposed at each end of the pedestal and between same and the fan casings, each bracket having two parallel flanges suitably spaced apart,
15 one of said parallel flanges being attached to the fan casing and the other flange parallel to and attached to said vertical face on the pedestal substantially as set forth.

3. The improved means for mounting fan casings on pedestals comprising the combination of a pedestal, a fan casing supported on one side only of said pedestal, a vertical face on the pedestal parallel with the side of the fan casing, a bar like bracket of Z section
25 formed separately from said pedestal having the two parallel flanges thereof spaced apart one flange being attached to the side of the fan casing and the other to the said vertical face on the pedestal, substantially
30 as set forth.

4. The improved means for mounting fan casings on pedestals comprising the combination of a pedestal, a fan casing, a vertical face on the pedestal parallel with the side of the fan casing, a bracket formed of two vertical bars each having two parallel flanges suitably spaced apart, said flanges being attached on the one hand to the side of the fan casing and on the other hand to the said
40 vertical face on the pedestal.

5. The improved means for mounting fan

casings on pedestals comprising the combination of a pedestal, a fan casing, a vertical face on the pedestal parallel with the side of the fan casing, a bracket formed of two vertical bars each bar having two parallel flanges suitably spaced apart, said flanges being attached on the one hand to the side of the fan casing and on the other hand to the said vertical face on the pedestal, the flanges
45 which are attached to the pedestal being discontinued at the top of the pedestal, those flanges which are attached to the casing being continued upward above the pedestal for a suitable distance substantially as set forth.
50

6. The improved means for mounting fan casings on pedestals comprising the combination of a pedestal having a vertical face at an end thereof, a fan casing, and means formed separately from the pedestal for supporting said casing, said means being fixed to said vertical face, and being adapted to hold said casing substantially out of contact therewith.
60

7. The improved means for mounting fan casings on pedestals comprising the combination of a pedestal having a vertical face at an end thereof, a fan casing, and two vertically arranged brackets each having two parallel flanges suitably spaced apart, one of said flanges being connected to said vertical face and the other to said fan casing and said brackets being spaced apart to provide an air gap between the casing and pedestal.
75

In witness whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

SAMUEL CLELAND DAVIDSON.

Witnesses:

JOHN CLEAVER,
SAMUEL WOOD.