T. KUNDTZ.

BLOWER, EXHAUSTER, AND THE LIKE.

APPLICATION FILED MAR. 26, 1909.

996,651.

Patented July 4, 1911.

2 SHEETS—SHEET 1.

Fig. 1.

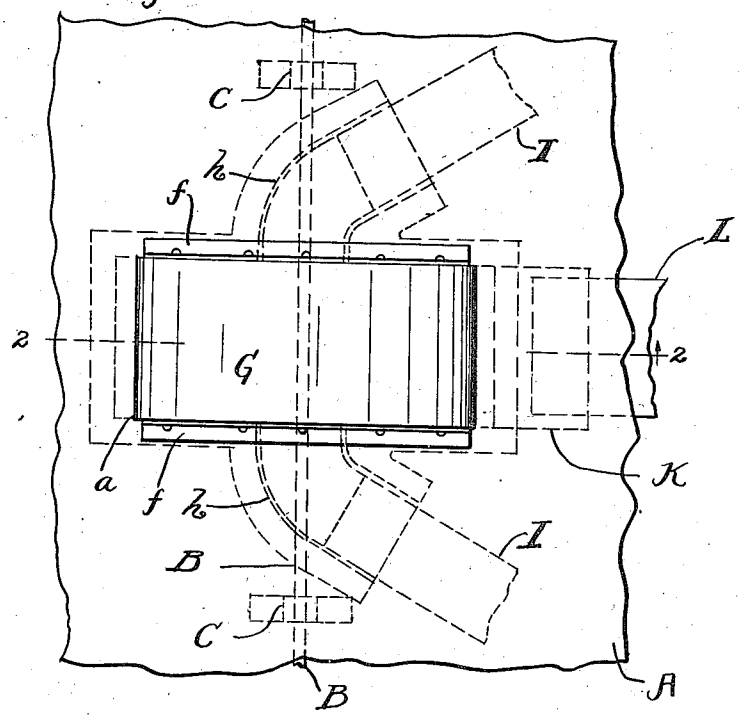
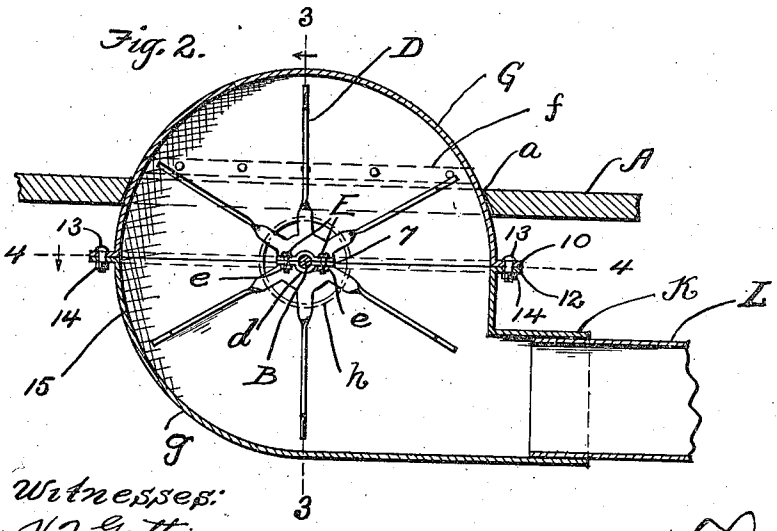


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

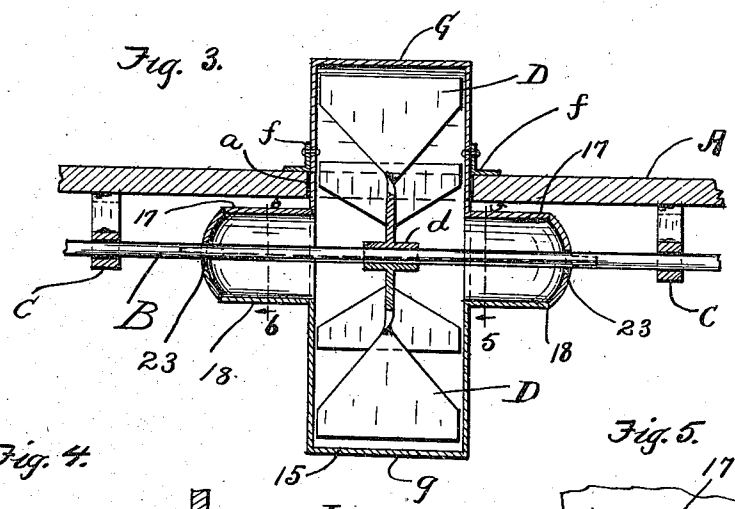


Fig. 4.

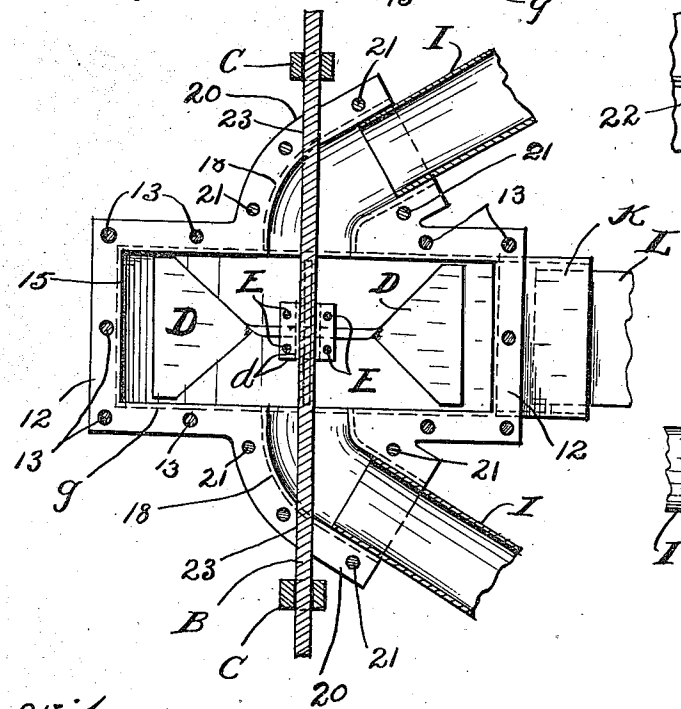


Fig. 5.

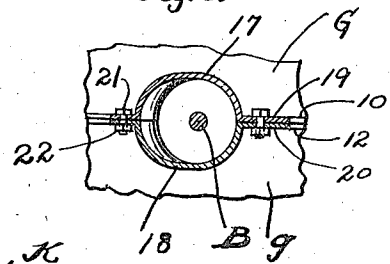
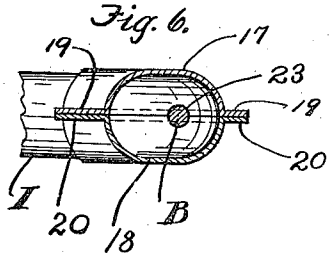


Fig. 6.



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UNITED STATES PATENT OFFICE.

THEODOR KUNDTZ, OF LAKEWOOD, OHIO.

BLOWER, EXHAUSTER, AND THE LIKE.

996,651. Specification of Letters Patent. Patented July 4, 1911.

Application filed March 26, 1909. Serial No. 485,926.

To all whom it may concern:

Be it known that I, THEODOR KUNDTZ, a citizen of the United States of America, residing at Lakewood, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Blowers, Exhausters, and the Like; and I 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 pertains to make and use the same.

This invention relates to improvements in blowers, exhausters and the like for mills and factories.

The primary object of this invention is to provide a blower, exhauster or the like rendered exceedingly powerful or efficient and economical in operation by having its fan-wheel operatively mounted on a line-shaft and inclosed by a casing or housing which is supported independently of the line-shaft so that no portion of the weight of the housing comes upon the shaft.

Another object is to accommodate the location of the fan-wheel and housing when the line-shaft is hung from and near the under side of a floor arranged between two adjacent stories of a mill or factory building by having the housing and fan-wheel extend upwardly through and above the said floor, and to support the housing from the said floor independently of the line-shaft.

Another object is to have the said housing composed of an upper section which is supported independently of the line-shaft and a lower section which is removably secured to the upper housing-section to facilitate the assemblage of the parts and so that the lower housing-section can be separated from the upper housing-section to afford access to the fan-wheel or interior of the housing without disturbing the upper housing-section.

Another object is not only to accommodate the extension of the housing and fan-wheel from within the lower into the upper of two adjacent stories of a mill or factory building but to have the upper housing-section supported from the floor within the upper story and to have the lower housing-section removably attached to the upper housing-section within the lower story and enable the removal of the lower housing-section within the lower story in which the line-shaft is located without interfering with the line-shaft, fan-wheel or upper housing-section.

Another object is to avoid the necessity of using a separate engine or motor, or belting or gearing, or separate power-transmitting means in the operation of the fan-wheel, and thereby effect a great saving in power; to avoid costly framework for supporting the fan-wheel and housing; to prevent any bearing of any portion of the housing upon the line-shaft; to avoid the necessity of using bearings on or in the housing, and to avoid lubrication of any portion of the housing and fan-wheel.

Another object is to provide a blower, exhauster or the like which requires substantially no care or attention, is simple and durable in construction, readily installed, inexpensively maintained, economically operated, reliable and efficient in its operation and not liable to get out of order.

With these objects in view, and to the end of realizing any other advantages hereinafter appearing, this invention consists in certain features of construction, and combinations and arrangement of parts, hereinafter described, pointed out in the claims, and illustrated in the accompanying drawings.

In the said drawings, Figure 1 is a top plan of a blower, exhauster or the like, embodying my invention, and also shows the floor between two adjacent stories of a factory building. Fig. 2 is a vertical section on line 2—2, Fig. 1, looking in the direction indicated by the arrow, except that the fan-wheel is shown in elevation. Fig. 3 is a vertical section on line 3—3, Fig. 2, looking in the direction indicated by the arrow. Fig. 4 is a horizontal section on line 4—4, Fig. 2, looking downwardly. Fig. 5 is a vertical section in detail on line 5—5, Fig. 3, looking inwardly. Fig. 6 is a vertical section in detail on line 6—6, Fig. 3, looking outwardly.

Referring to the said drawings, A indicates a substantially horizontal floor arranged between two adjacent stories of a mill or factory building. Within the lower story and in suitable proximity to the under side of the floor A is a substantially horizontally arranged solid line-shaft B which has bearing in two boxes C and C which are spaced longitudinally of the line-shaft and suitably supported from and rigid with the floor A. The line-shaft B is therefore hung from the floor A.

D indicates the fan-wheel of my improved

blower, exhauster or the like. The said fan-wheel is operatively mounted on the line-shaft B centrally between the boxes C and C. Preferably the fan-wheel (see Fig. 2) is divided, as at 7, centrally and longitudinally of its hub *d* into two sections or halves, and oppositely arranged halves of the hub *d* embrace opposite sides respectively of the line-shaft to which the said halves are clamped by suitably applied bolts E and nuts *e*, as shown in Figs. 2 and 4.

A casing or housing incloses the fan-wheel and is divided substantially horizontally and preferably substantially on a line with the axis of the fan-wheel into two sections G and *g* which are arranged the one above the other and form the upper half and lower half respectively of the housing.

The fan-wheel shown is too large in diameter to render possible the location of the fan-wheel and housing wholly below the floor A or wholly within the story containing the line-shaft, and consequently the said floor is provided with a hole *a* extending vertically therethrough and arranged to accommodate the extension upwardly through the floor of the housing and the fan-wheel within the housing. It will be observed therefore that the fan-wheel projects upwardly through the floor A and the upper housing-section G extends upwardly through the said floor and is provided above the said floor and externally with two angle-irons *f* and *f* which are arranged at opposite sides respectively of and suitably attached to the said housing-section and rest upon the floor. The upper housing-section G is arranged therefore partially above and partially below the floor A and is provided at its lower end and externally with laterally and outwardly projecting flanges 10, and the lower housing-section *g*, which is of course arranged wholly below the said floor, is provided at its upper end and externally with laterally and outwardly projecting flanges 12 which are arranged next below the flanges 10 of the upper housing-section and (see Fig. 2) are secured preferably removably by suitably applied bolts 13 and nuts 14 to the last-mentioned flanges.

By the construction hereinbefore described it will be observed that the upper housing-section, and consequently the housing, are supported from the floor A independently of the line-shaft B,—that is, independently of the line-shaft-supporting boxes C. The chamber 15 formed by and within the housing and containing the fan-wheel of course extends around the shaft and is only enough larger in dimensions than the fan-wheel to conveniently accommodate the location and operation of the fan-wheel. The housing is provided with two flues *h* and *h* arranged at opposite sides respectively and centrally of the housing and extending externally of the housing around the shaft B. The flues *h* communicate with and thereby form the inlets of the chamber 15 and through the inlets the dust or material to be sucked or drawn into the said chamber during the rotation of the fan-wheel is conducted into the chamber, and I indicates flues or pipes for conducting such dust or material from any desired place to the flues *h*. The flues *h* preferably project laterally of the same side of the shaft B and diverge toward their outer ends. Each flue *h* is divided substantially horizontally centrally between the top and bottom of the flue and substantially on a line with the axis of the line-shaft, into two sections 17 and 18 arranged one above the other and formed on or rigid with the upper housing-section G and lower housing-section *g* respectively. The upper section 17 of each flue *h* is provided at the bottom thereof and externally with laterally and outwardly projecting flanges 19, and the lower section 18 of the said flue is provided at the top thereof and externally with laterally and outwardly projecting flanges 20 arranged next below the said flanges 19 on the said upper flue-section and secured preferably removably by suitably applied bolts 21 and nuts 22 to the said last-mentioned flanges.

By the construction hereinbefore described it will be observed that the lower housing-section *g* and the connected flue-sections 18 are detached from the upper housing-section G upon withdrawing the nuts 14 and 22 from the engaging bolts to permit the removal of the lower housing-section downwardly from the upper housing-section to afford access to the fan-wheel and interior of the housing.

To accommodate the projection of the flues *h* laterally of the line-shaft as hereinbefore described the line-shaft extends through holes 23 formed in the said flues, and the relative arrangement of the upper sections and lower sections of the flues *h* is preferably such relative to the line-shaft that the hole *h* in each flue *h* is formed partially in the upper section and partially in the lower section of the flue.

The housing is provided at the bottom with a laterally projecting flue K which communicates with and forms the outlet of the chamber 15, through which outlet any dust or other matter sucked or drawn into the said chamber during the rotation of the fan-wheel is discharged from the chamber, and L represents a flue or pipe for conducting the discharge from the said outlet to any desired place.

By the provision of a blower, exhauster or the like in accordance with my invention, no separate engine or motor, or belting and pulleys or gearing, or the like, are required to rotate the fan-wheel, and no lubrication of or other care or attention to the fan-wheel

or inclosing housing is required. Such a blower, exhauster or the like is not only simple and durable in construction and economically operated, but readily installed, inexpensively maintained, reliable and efficient in its operation and not liable to get out of order. Of no inconsiderable value is the great saving in power resulting from the mounting of the housed fan-wheel directly upon the line-shaft without any interference with the line-shaft by the housing.

What I claim is:—

1. The combination, with a floor arranged between two stories of a building, and a suitably supported shaft arranged below the said floor, of a fan-wheel operatively mounted on the shaft, and a casing or housing inclosing the fan-wheel and having its fan-wheel-containing chamber provided with an inlet and an outlet, said housing comprising an upper section and a lower section, the upper housing-section extending above and below the floor and supported from the floor above the floor, and the lower housing-section being removably secured to the upper housing-section.

2. The combination, with a suitably supported shaft, of a fan-wheel operatively mounted on the shaft, and a casing or housing inclosing the fan-wheel and supported independently of the shaft and provided with a flue arranged centrally of the housing and extending around the shaft, which flue communicates with the chamber formed in and by the housing and projects from and at an angle to the shaft and is divided substantially on a line with the axis of the shaft into two oppositely arranged sections which are removably secured together, said flue having a hole arranged to accommodate the location and operation of the shaft, the aforesaid chamber having an outlet, the housing being divided substantially on a line with the axis of the shaft into two sections which carry opposite sections respectively of the aforesaid flue.

3. The combination, with a suitably supported shaft, of a fan-wheel operatively mounted on the shaft, and a casing or housing inclosing the fan-wheel and provided with a flue arranged centrally of the housing and extending around the shaft, which flue communicates with the chamber formed in and by the housing and projects laterally of the shaft and is divided substantially horizontally and substantially on a line with the axis of the shaft into two sections which are removably secured together, said flue having a hole arranged to accommodate the location and operation of the shaft, and said housing being divided substantially horizontally and substantially on a line with the axis of the shaft into an upper section and a lower section, the upper housing-section being supported independently of the shaft and carrying the upper section of the aforesaid flue and provided with a flue which communicates with and forms the outlet of the aforesaid chamber.

In testimony whereof, I sign the foregoing specification, in the presence of two witnesses.

THEODOR KUNDTZ.

Witnesses:
C. H. Dorer,
B. C. Brown.