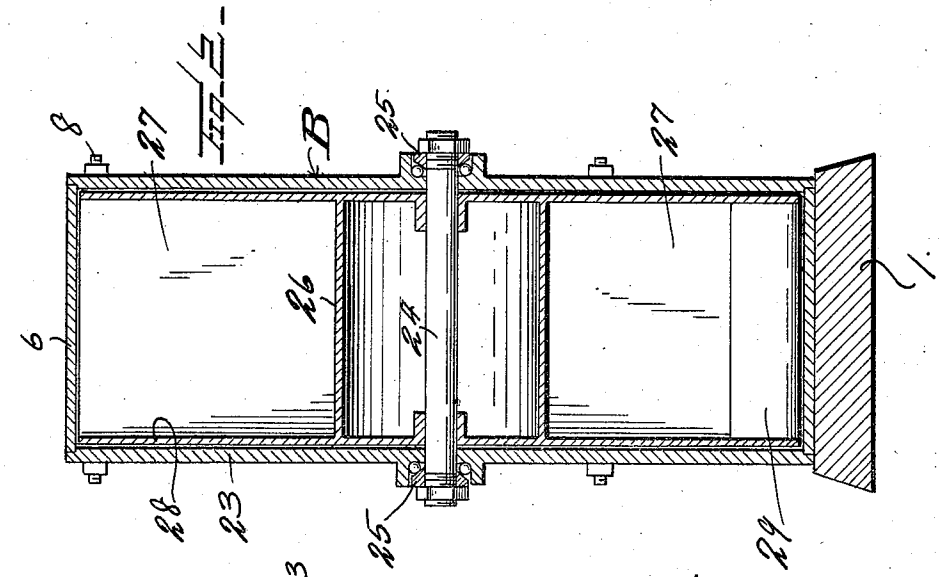
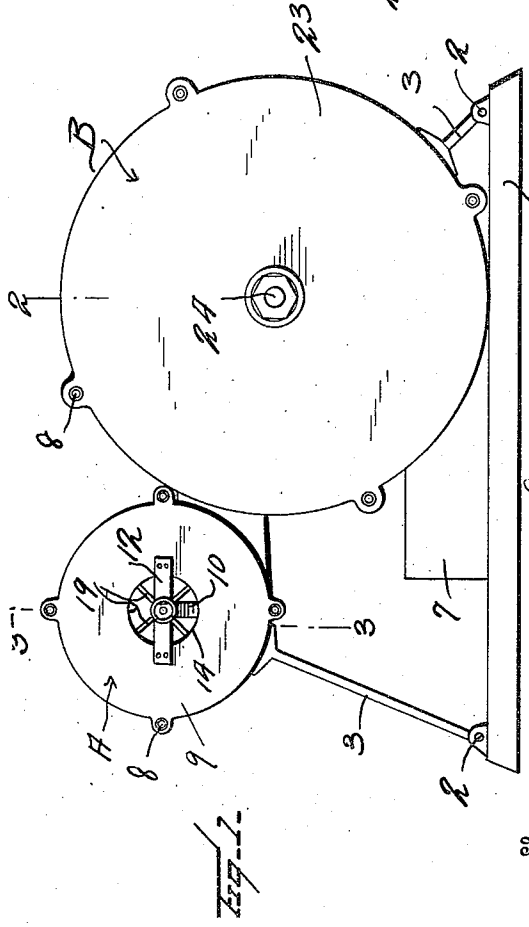
March 15, 1927. 1,621,025

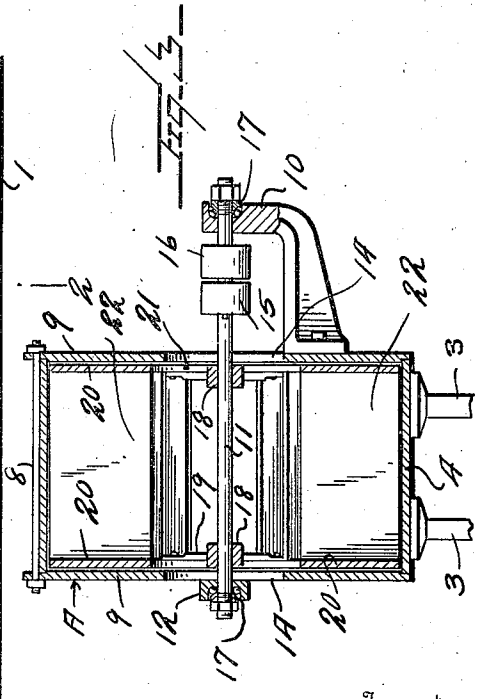
J. M. POTTER

TRAIN AIR BLOWING MACHINE

Filed July 1, 1925 2 Sheets-Sheet 1







Inventor

J. M. Potter

By Watson E. Coleman

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TRAIN AIR BLOWING MACHINE

Filed July 1, 1925 2 Sheets-Sheet 2

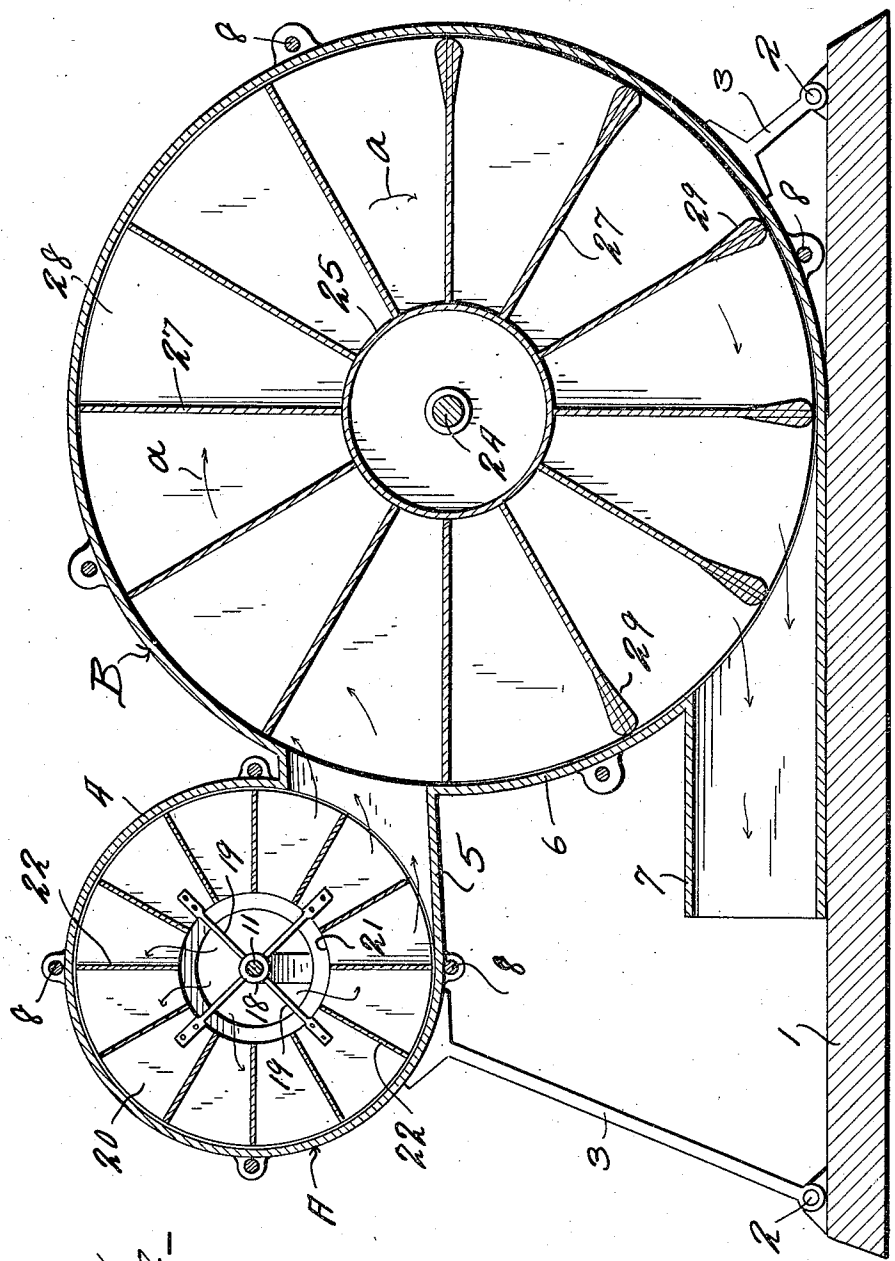


Fig. 1.

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Patented Mar. 15, 1927. 1,621,025

UNITED STATES PATENT OFFICE.

JOSHUA MILLER POTTER, OF BINGHAMTON, NEW YORK.

TRAIN-AIR-BLOWING MACHINE.

Application filed July 1, 1925. Serial No. 40,777.

This invention relates to certain improvements in train air blowing machines and it is an object of the invention to provide a machine of this general character wherein the maximum amount of air will be expelled with a minimum amount of power.

Another object of the invention is to provide a device of this general character constructed in a manner whereby the movable parts will operate with a minimum of frictional resistance and wherein the blast of air created by a driven fan will be expelled with increased volume and velocity by a larger fan propelled by the first named fan, said second or larger fan being unbalanced whereby the discharge of air will be in puffs due to the increase of velocity on the downward rotation of the heavier portion of the unbalanced fan.

The invention consists in the details of construction and in the combination and arrangement of the several parts of my improved train air blowing machine whereby certain important advantages are attained and the device rendered simpler, less expensive and otherwise more convenient and advantageous for use, as will be hereinafter more fully set forth.

The novel features of my invention will hereinafter be definitely claimed.

In order that my invention may be the better understood, I will now proceed to describe the same with reference to the accompanying drawings, wherein:—

Figure 1 is a view in side elevation illustrating a train air blowing machine constructed in accordance with an embodiment of my invention;

Figure 2 is an enlarged sectional view taken substantially on the line 2—2 of Figure 1;

Figure 3 is an enlarged sectional view taken substantially on the line 3—3 of Figure 1;

Figure 4 is an enlarged vertical sectional view taken longitudinally through the machine as illustrated in Figure 1.

As disclosed in the accompanying drawings, 1 denotes a base member of requisite dimensions and configuration to which is suitably secured, as at 2, the supporting members 3 for the lower casings A and B. The casing A is considerably smaller than the casing B and is supported above the axial center of the casing B, the peripheral wall 4 of the casing A having leading from its lower portion a conduit 5 in communication with the larger casing B through the peripheral wall 6 thereof. In communication with the lower portion of the casing B through the peripheral wall 6 thereof is an outlet conduit 7 disposed in a general direction toward the casing A. Each of the casings A and B is maintained in assembled relation by the tie rods 8.

Carried by one head 9 of the casing A is an outboard bearing 10 providing a mounting for the shaft 11, said shaft being disposed through the casing A and having its opposite end portion rotatably supported by the member or strip 12 secured to the second head 9 of the casing A and disposed radially across the adjacent air inlet opening 14. It is to be understood that the first named head 9 is also provided with a similar air inlet opening, both of said openings 14 being concentric to the shaft 11. Mounted upon the extended portion of the shaft 11 is a fixed pulley 15 and a loose pulley 16 with which is adapted to coact in a well known manner a drive belt leading from a suitable source of power. It is to be stated at this time that any means may be employed for driving the shaft 11. It is also to be noted that the shaft 11 is provided with suitable anti-friction means 17 coacting with the outboard bearing 10 and the member or strip 12 so that the shaft 11 will rotate with a minimum of frictional resistance.

Fixed to the shaft 11 within the casing A and immediately adjacent to the heads 9 thereof are the collars or hubs 18 from which radiate the arms 19 the outer extremities of which being riveted or otherwise secured to the inner faces of the annular side plates 20, the central opening 21 of each of said side plates, as herein disclosed, being of a diameter slightly larger than that of the adjacent air inlet opening 14.

The plates 20 are connected by a series of blades 22 equidistantly spaced in a circumferential direction around the plates 20 and extending entirely thereacross, said blades 22 being radial with respect to the shaft 11. The peripheral edges of the plates 20 closely approach the peripheral wall 4 of the casing A. These plates 22 may be welded or otherwise secured in applied position.

Disposed through the axial center of the casing B and rotatably supported by the heads 23 is a shaft 24 having coacting therewith the anti-friction means 25 whereby said

shaft rotates with a minimum of frictional resistance. Mounted upon the shaft 24 within the casing B and substantially bridging the space between the heads 23 thereof is a drum 26. Radiating from the drum 26 is a series of circumferentially and equidistantly spaced blades 27 radial to the shaft 24 and which extend immediately adjacent to the peripheral wall 6 of the casing B. The side edges of the blades 27 are connected by the annular plates 28. The outer end portions 29 of certain of the blades 27, preferably one-half of such blades, are of increased weight so that the fan afforded by the drum 26 and the blades 27 is of an unbalanced type.

The blades 22 in the casing A are caused to rotate at the desired speed and in a direction to force the air draft through the conduit 5 into the casing B and the impact of such air blast upon the blades 27 will cause the same to rotate in the direction indicated by the arrows *a* and the requisite rotation of said blades as a unit is facilitated at intervals by the added impetus given by the blades 27 of increased weight as the same travel downwardly.

An air blowing machine constructed as hereinbefore described results in the expelling of an increased amount and velocity of air when the power required only operates a fan of a relatively small size.

In view of the foregoing it is to be understood that the fan mechanism within the casing B may be termed a "momentum fan."

From the foregoing description it is thought to be obvious that a train air blowing machine constructed in accordance with my invention is particularly well adapted for use by reason of the convenience and facility with which it may be assembled and operated, and it will also be obvious that my invention is susceptible of some change and modification without departing from the principles and spirit thereof and for this reason I do not wish to be understood as limiting myself to the precise arrangement and formation of the several parts herein shown in carrying out my invention in practice except as hereinafter claimed.

I claim:—

1. An air blowing machine comprising a fan and a smaller fan directing an air blast upon the first named fan for operating the same.

2. An air blowing machine comprising, in combination, two fan casings of different sizes in communication one with the other, fans of different sizes mounted within the casings, and means for driving the smaller fan to direct an air blast upon the larger fan, said larger casing having a discharge opening.

3. An air blowing machine comprising, in combination, two fan casings of different sizes in communication one with the other, fans of different sizes mounted within the casings, and means for driving the smaller fan to direct an air blast upon the larger fan, said larger casing having a discharge opening, certain of the blades within the larger casing being of a weight greater than the remainder of such blades.

4. An air blowing machine comprising, in combination, two fan casings of different sizes in communication one with the other, fans of different sizes mounted within the casings, and means for driving the smaller fan to direct an air blast upon the larger fan above the axial center of said larger fan, said larger casing having a discharge opening, the communication between the casings leading from the lower portion of the smaller casing.

5. An air blowing machine comprising, in combination, two fan casings of different sizes in communication one with the other, fans of different sizes mounted within the casings, and means for driving the smaller fan to direct an air blast upon the larger fan above the axial center of said larger fan, said larger casing having a discharge opening, the communication between the casings leading from the lower portion of the smaller casing, said communication being through the peripheral walls of the casings.

6. An air blowing machine comprising, in combination, two fan casings of different sizes in communication one with the other, fans of different sizes mounted within the casings, and means for driving the smaller fan to direct an air blast upon the larger fan above the axial center of said larger fan, said larger casing having a discharge opening, the communication between the casings leading from the lower portion of the smaller casing, the delivery opening of the larger casing being at the lower portion thereof.

7. An air blowing machine comprising, in combination, two fan casings of different sizes in communication one with the other, fans of different sizes mounted within the casings, and means for driving the smaller fan to direct an air blast upon the larger fan above the axial center of said larger fan, said larger casing having a discharge opening, the communication between the casings leading from the lower portion of the smaller casing, the delivery opening of the larger casing being at the lower portion thereof and through the peripheral wall of said larger casing.

In testimony whereof I hereunto affix my signature.

JOSHUA MILLER POTTER.