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H. STRONG

1,641,833

ROTARY AIR COMPRESSOR

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Fig. 1.

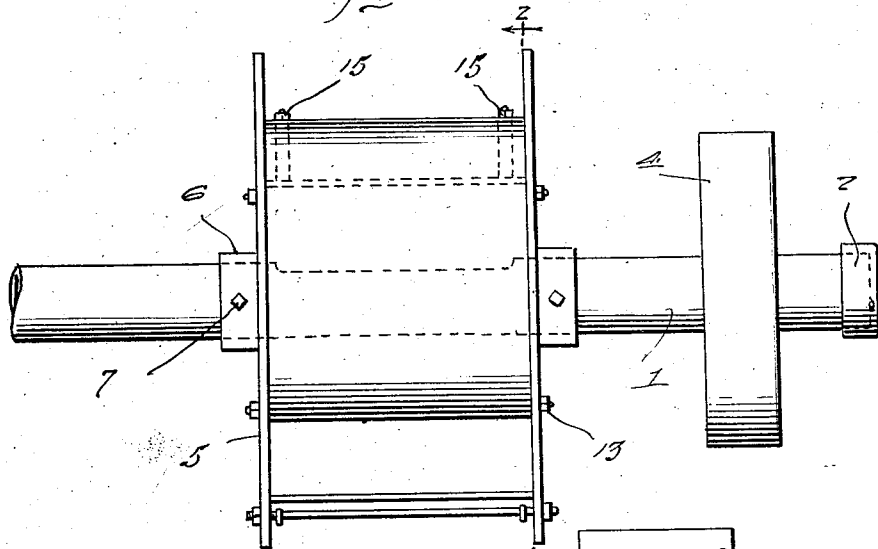


Fig. 2.

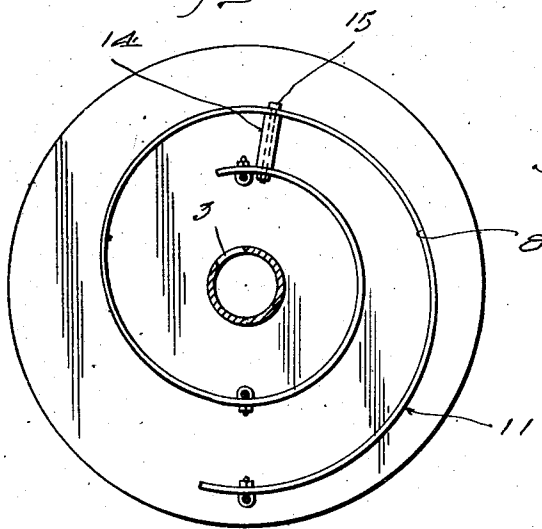
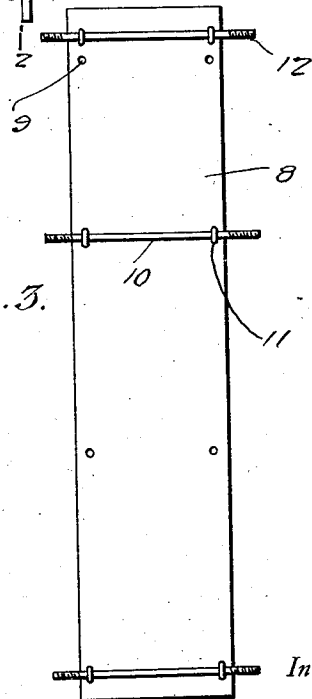


Fig. 3.



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ROTARY AIR COMPRESSOR.

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My present invention pertains to air compressors; and it contemplates the provision of a rotary air compressor so constructed that it is possessed of high efficiency in providing air under pressure for the operation of a blow pipe or any other device connected with the eduction conduit of the compressor.

The invention also contemplates the provision of a compressor so constructed that its parts may be expeditiously and easily assembled and connected together to form a durable and efficient compressor.

Other objects and practical advantages of the invention will be fully understood from the following description and claims, when the same are read in connection with the drawings, accompanying and forming part of this specification, in which:—

Figure 1 is a side elevation of the compressor constituting the preferred embodiment of my invention.

Figure 2 is a transverse section of the compressor taken on the plane indicated by the line 2—2 of Figure 1, looking toward the right.

Figure 3 is a view showing in straight or flat state, the blade of my novel compressor, and certain appurtenances of said blade.

Similar numerals of reference designate corresponding parts in all of the views of the drawing.

Among other elements, my improvement comprises a tubular shaft 1, capped or otherwise closed at one end as designated by 2, and designed at its opposite end to be appropriately connected with a blow pipe or any other device to which it is desirable to furnish air under pressure. The said tubular element 1 is designed to be journaled in standards or any other appropriate supports, not shown.

The tubular shaft 1 is provided at 3 with an opening in its wall, and it will also be understood from Figure 1 that the shaft 1 is equipped with a pulley 4 or is otherwise adapted to be connected with power means for the rotation at a high rate of speed of the air compressing means on the shaft.

In the preferred embodiment of my invention, the said air compressing means is made up of two spaced discs 5 having exterior hubs 6, appropriately fixed at 7 to the shaft 1, so that the shaft 1 and the discs 5 will turn as one piece. The said air compressing

means also comprises a curvilinear blade 8, preferably of sheet steel. Normally the said blade 8 is flat as indicated in Figure 3, and it will be noted that the said blade 8 is apertured at 9, and is provided with transverse rods 10, three in number, at points adjacent to its ends and also at a point intermediate of the first named point. The rods 10 are connected by shackles 11 to the blade 8 and are arranged at right angles to the length of the said blade 8, and have threaded portions 12 extended beyond the longitudinal edges of the said blade 8.

In assembling the parts of the air compressing means, the blade 8 is disposed in curved state between the discs 5, and adjustment is then made so that the threaded ends 12 of the rods 10 are extended through apertures in the discs 5 so as to receive securing nuts 13, and struts 14, preferably of steel, are interposed between opposite portions of the blade 8 and are connected to the said blade portions through the medium of bolts 15, Figures 1 and 2.

It will be apparent from the foregoing that when my novel compressor constructed as described is rotated at a high rate of speed about the center of the shaft 1, air will be gathered and compressed by the curvilinear blade 8, and will be forced through the shaft 1 for use in actuating a blow pipe or any other suitable device connected with the eduction portion of the said shaft 1.

It will be appreciated from the foregoing that my novel air compressor is simple and inexpensive in construction, and is free of delicate parts such as are likely to get out of order after a short period of use.

It will also be appreciated that when operated in the manner described, my novel air compressor may be depended upon to furnish an ample quantity of compressed air for the proper operation of one or more blow pipes.

I have entered into a detailed description of the construction and relative arrangement of the parts embraced in the present and preferred embodiment of my invention in order to impart a full, clear and exact understanding of the said embodiment. I do not desire, however, to be understood as limiting myself to the specific construction and relative arrangement of parts disclosed, my invention being defined by my appended

claims within the scope of which modifications may be made without departure from my invention.

Having thus described the invention, what I claim is:—

1. An air compressor comprising a tubular shaft having a lateral induction opening and also having an eduction portion, spaced discs surrounding said shaft and fixed thereto and disposed at opposite sides of said lateral induction opening, and a resilient curvilinear spiral blade interposed between and carried by said disc and spirally arranged about the lateral induction opening in the shaft; the said discs being provided with transverse apertures, and the said blade being equipped with transverse rods connected thereto and having end portions secured in the apertures of the discs whereby the discs operate to retain the blade in spiral state between the discs against the inherent resiliency of the blade.

2. An air compressor comprising a tubular shaft having a lateral induction opening and also having an eduction portion, spaced discs surrounding said shaft and fixed thereto and disposed at opposite sides of said induction opening, a curvilinear spiral blade

interposed between and carried by said disc and spirally arranged about the induction opening in the shaft; the said blade being inherently resilient and possessed of the tendency to resume a flat state, and being secured to and between the disc and held by the discs against said tendency.

3. A rotary air compressor comprising a tubular shaft having a lateral induction opening and also adapted to have an eduction portion connected with devices to which it is desired to supply air under pressure, discs fixed to the shaft and surrounding the same at opposite sides of the induction opening and having transverse apertures, a resilient spirally curved blade interposed between the discs and surrounding the induction aperture of the shaft, transverse rods connected to the said blades and having threaded portions extending through the transverse apertures in the discs, nuts on the outer sides of the discs and mounted on and engaging the threaded portions of said rods, and struts interposed between and connected to opposite portions of the blades at points between the discs.

In testimony whereof I affix my signature.

HENRY STRONG.