March 8, 1932. W. C. UHRI, JR 1,848,400

DRIER DEVICE

Filed Nov. 14, 1929

Fig. 1.

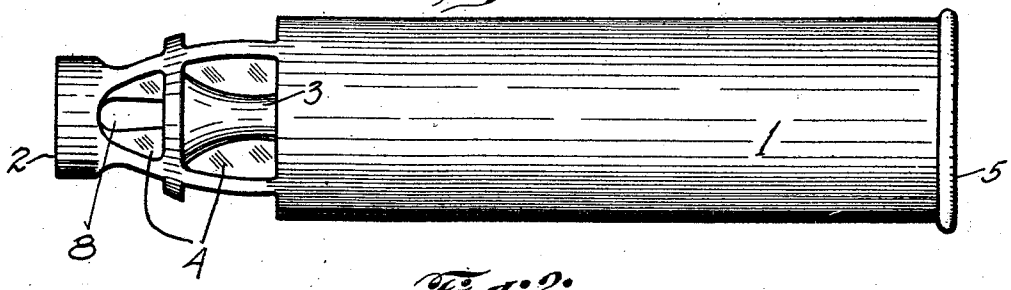


Fig. 2.

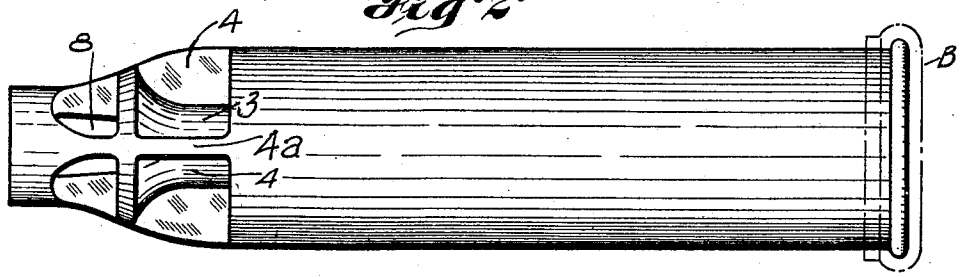


Fig. 3.

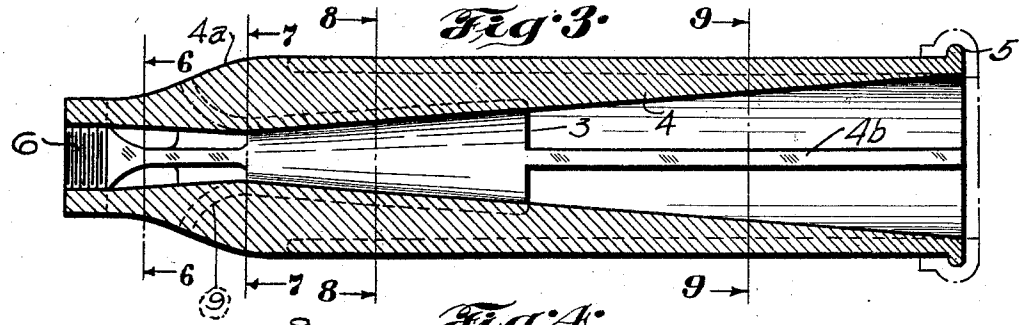
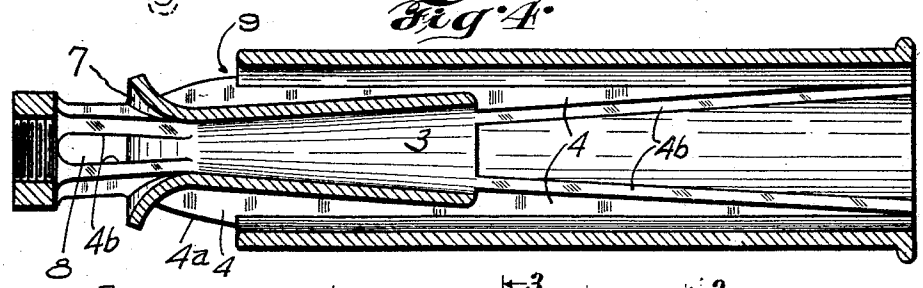


Fig. 4.



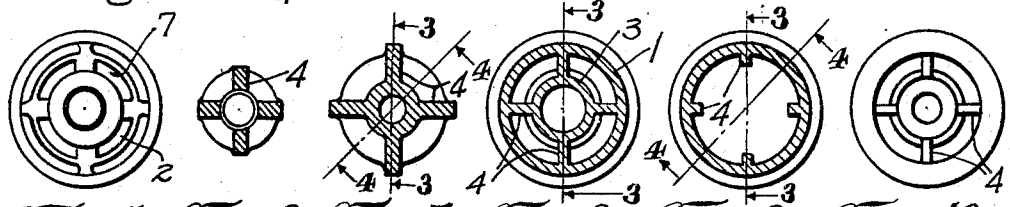


Fig. 5. Fig. 6. Fig. 7. Fig. 8. Fig. 9. Fig. 10.

Inventor
William C. Uhri, Jr
By Rodney Bedell
Attorney

Patented Mar. 8, 1932 1,848,400

UNITED STATES PATENT OFFICE

WILLIAM C. UHRI, JR., OF CLAYTON, MISSOURI, ASSIGNOR, BY MESNE ASSIGNMENTS, TO CENTRAL ENGINEERING & SALES COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI

DRIER DEVICE

Application filed November 14, 1929. Serial No. 407,144.

My invention relates to the art of drying by means of a discharge of air through a drier barrel and consists in a novel drier and method adapted to be used for such purpose.

The objects of my invention are to provide a compact drier barrel for attachment to the end of a pressure hose which shall be as easy to handle as the average nozzle, and to provide an air drier having a means whereby a small volume of compressed air more effectively entrains a large volume of atmospheric air to discharge a combined stream of compressed air and atmospheric air upon the surface to be dried.

In the accompanying drawings which illustrate a selected embodiment of my invention—

Figures 1 and 2 are side elevations of my drier, Figure 2 being turned on its longitudinal axis 45° with reference to Figure 1.

Figures 3 and 4 are longitudinal sections and are taken on the lines 3—3 and 4—4 respectively of Figures 7, 8 and 9 to be described later.

Figure 5 is a left end view of Figure 2.

Figures 6, 7, 8 and 9 are transverse sections taken on the lines 6—6, 7—7, 8—8 and 9—9 of Figure 3.

Figure 10 is a right end view of Figure 2.

My device includes four main elements, a cylindrical outer nozzle 1, a nose portion 2, an inner Venturi-tube shaped nozzle 3 and radial ribs 4 connecting the outer nozzle, the nose and inner nozzle.

An outwardly projecting ring 5 is integral with the outer nozzle 1 at the discharge end thereof and provides a seat for a rubber bumper B on the discharge end of the drier.

Nose 2 is the receiving end of my device and includes an interiorly threaded bore 6 for connection to a supply of air under pressure.

Inner nozzle 3 has a converging mouth 7 between and spaced from the receiving end of nozzle 1 and the nose 2. Mouth 7 with ribs 4, nose 2 and the two nozzles form ports 8 and passages 9 for the entrance of atmospheric air into the drier, ports 8 permitting air to enter nozzle 3 and passages 9 leading through the space between the two nozzles to the interior of the outer nozzle 1 beyond inner nozzle 3.

The outer edges 4*a* of ribs 4 curve outwardly from nose 2 and merge with the rim of the mouth 7, and also merge with the outer surface of nozzle 1. From nose 2, the inner edges 4*b* of ribs 4 converge to points beyond mouth 7 where nozzle 3 has the smallest diameter and there merge with the inner surface of nozzle 3.

From the narrowest part of nozzle 3, forward of mouth 7, the sides of nozzle 3 gradually diverge to the discharge end of the nozzle which is substantially smaller in diameter than the inside diameter of nozzle 1. At these points the inner edges of ribs 4 again appear and gradually diverge until they merge into the inner surface of outer nozzle 1 at the discharge end of the drier.

Ribs 4 are the sole connection between nose 2 and mouth 7 and are substantially thicker at this point than throughout the remainder of their length.

In operation, my drier functions in the following manner:

Nose 2 is secured to a supply of air under pressure. Compressed air rushes into nozzle 3 drawing atmospheric air through ports 8, the passage of air into the nozzle being facilitated by the shape of the mouth 7. The compressed air and atmospheric air mix with each other in nozzle 3 and the volume of air expands as it travels along nozzle 3 which increases in diameter toward its discharge end, and as the volume of expanding air is discharged from nozzle 3 into larger nozzle 1 further expansion takes place, more atmospheric air is drawn in through the plurality of passages 9 which air mixes with the air discharged from nozzle 3 and the resultant stream is in turn discharged from the drier through the discharge end of the nozzle 1.

By means of my drier barrel, a comparatively small stream of compressed air may be utilized to direct a relatively large volume of air against a surface to be dried. My device is particularly adapted for use in connection with washing operations such as washing

automobiles, and with painting or similar operations where quick drying is desired.

Obviously, many of the details of my invention may be modified without departing from the spirit thereof, and I contemplate the exclusive use of such modifications as come within the scope of my claims.

I claim:

1. In a drier, a nozzle, elongated radial ribs extending externally along said nozzle and projecting beyond the ends thereof, a threaded hose connecting element on one end of said ribs adjacent the inlet end of said nozzle, a second nozzle mounted on said ribs and extending from a point intermediate the ends of said first nozzle to a point beyond the discharge end thereof, said ribs cooperating with said nozzles to form elongated restricted passages for directing atmospheric air into said second nozzle.

2. In a drier, a nozzle, elongated ribs extending externally along said nozzle and projecting beyond one end thereof, a hose connecting element on the projecting ends of said ribs, and a barrel mounted on said ribs and extending from a point intermediate the ends of said nozzle to a point beyond the end of said nozzle opposite said connecting element, said nozzle being open at both ends for receiving a stream of compressed air and atmospheric air and discharging the same into said barrel and said ribs cooperating with said nozzle and barrel to form elongated restricted passages directing atmospheric air into said barrel for further augmenting said stream.

In testimony whereof I hereunto affix my signature this 8 day of November, 1929.

WM. C. UHRI, JR.