

[54] PAINT SPRAY NOZZLE

[75] Inventors: John Robert Dwyer, Jr., Timonium;
Jonathan Durand Bell, Towson,
both of Md.

[73] Assignee: The Black and Decker
Manufacturing Company, Towson,
Md.

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Primary Examiner—M. Henson Wood, Jr.

Assistant Examiner—John J. Love

Attorney, Agent, or Firm—Joseph R. Slotnik; Leonard
Bloom; Edward D. Murphy

[57]

ABSTRACT

A nozzle for a paint spray gun operable by pressurized air is provided. The nozzle includes and elongated body having first and second tapered passages extending therethrough for receiving paint and pressurized air, respectively. The passages extend from larger entrance openings at the rear of the body and terminate in smaller exit openings adjacent the front of the body. The body includes an inlet passageway for supplying paint to the first passage. A hollow cap is mounted at the front of the body to provide a mixing chamber for pressurized air and paint. The cap includes a spray opening to form a paint spray from paint and pressurized air supplied to the tapered passages. A plug is provided at the rear end of the body for covering the entrance openings of the passages. The plug includes a passageway for supplying pressurized air to the second fluid passage and sealingly engages the body. The cap and plug are both removable to facilitate cleaning of the mixing chamber and tapered passages.

13 Claims, 4 Drawing Figures

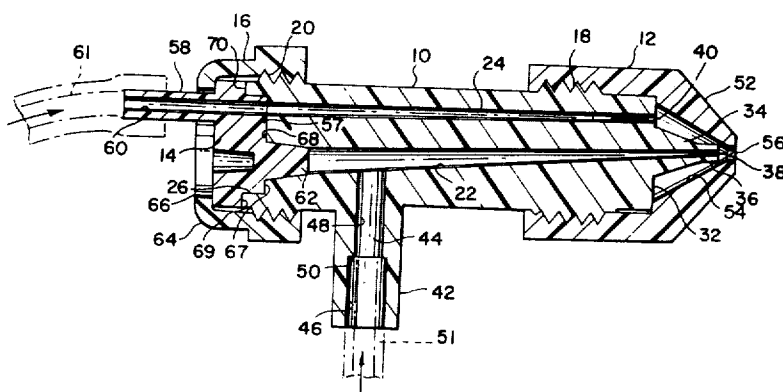


FIG. 1

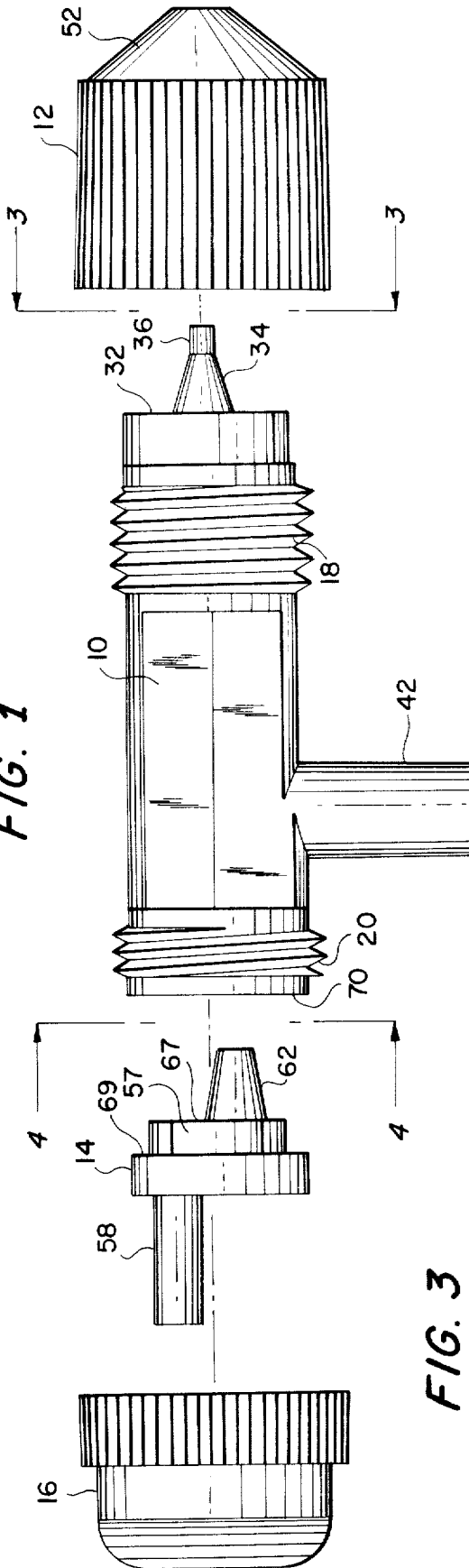


FIG. 3

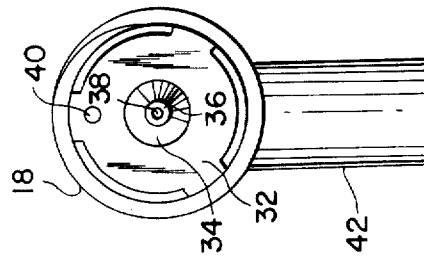


FIG. 2

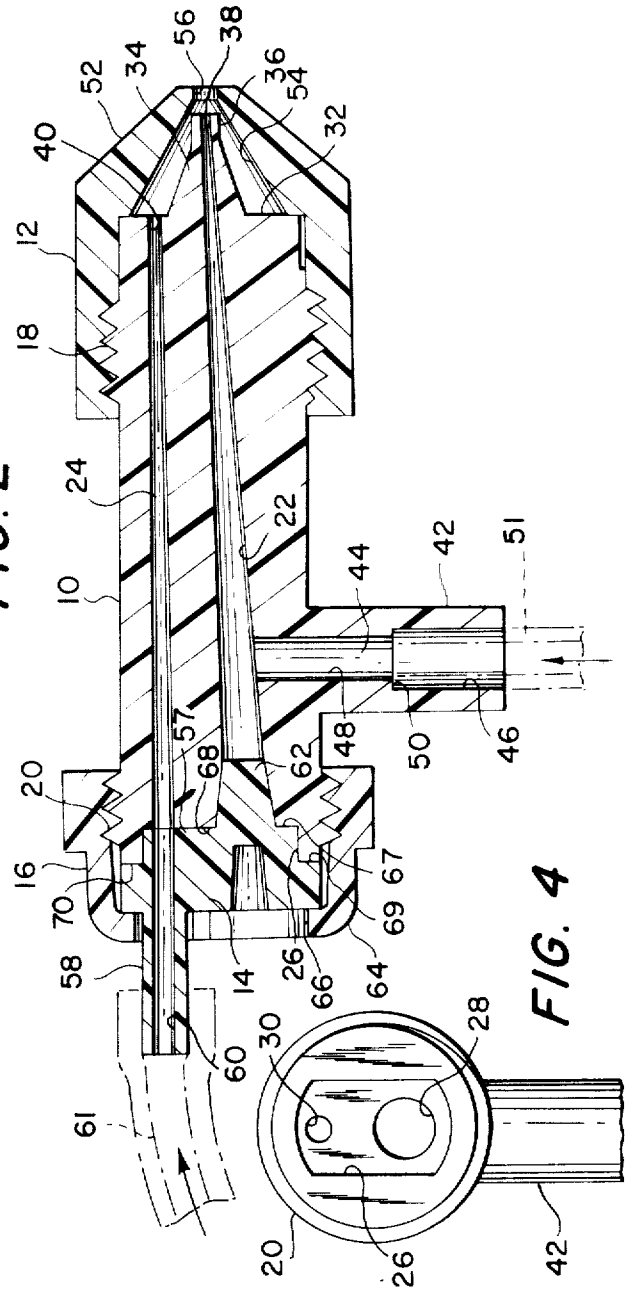
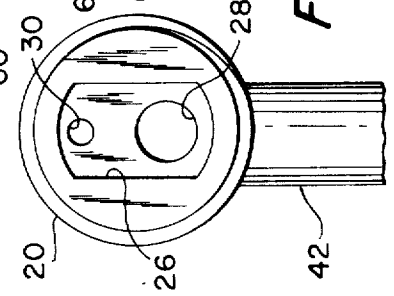


FIG. 4



PAINT SPRAY NOZZLE

The present invention relates to a liquid spray nozzle and, more particularly, to a nozzle for a paint spray gun operable by pressurized air.

In the art of paint spray apparatus, paint spray guns have been developed which include nozzles for ejecting a paint spray. The prior art nozzles have, however, been complicated in structure and, therefore, difficult and expensive to manufacture. Typically, the nozzles have required multiple drilling operations in the nozzle fabrication. In addition, because of the complicated structure, the prior art nozzles have been prone to clog during painting operations. Further, the complicated structure of the nozzles has made it difficult to clean the nozzles after painting operations.

In view of the recent development of inexpensive compressed air sources for general use, it has become desirable to provide paint spray apparatus operable by pressurized air for general applications, including home use. To avoid the disadvantages occurring in the prior art because of the complicated nozzle designs, and the prohibitive expense resulting from the requirement of replacing complicated nozzle structures, it is necessary to provide a paint spray nozzle having an internal structure which is readily accessible for cleaning. It is also extremely desirable to provide a nozzle which can be manufactured by inexpensive conventional techniques, such as molding.

It is an object of the present invention to provide a nozzle for a paint spray gun which is operable by pressurized air.

It is another object of the present invention to provide a nozzle for a paint spray gun which, when assembled, is effectively sealed against leakage, but which can be readily disassembled to provide easy access to the internal nozzle structure for cleaning.

It is a further object of the present invention to provide a nozzle for a paint spray gun which can be formed by inexpensive manufacturing techniques, such as molding.

The present invention provides a paint spray nozzle which includes a body including first and second fluid passages for receiving paint and pressurized air, respectively, with the fluid passages terminating in exit openings at the front of the body. The nozzle includes means in fluid communication with the first fluid passage for supplying paint to the first fluid passage and means in fluid communication with the second fluid passage for supplying pressurized air to the second fluid passage. In addition, the nozzle can include a cap mounted on the front of the body. The cap has a hollow interior to provide a mixing chamber for paint and pressurized air. A spray opening extends through the cap to form a paint spray from paint and pressurized air supplied to the first and second fluid passages, respectively.

A preferred embodiment of the paint spray nozzle comprises an elongated body including a first tapered passage extending longitudinally therethrough for receiving paint and a second tapered passage extending longitudinally therethrough for receiving pressurized air. A front end of the body comprises a flat, circular face provided with a cone-shaped extension located on the face including a tip projecting forward from the face. The first tapered passage extends from a separate, larger entrance opening formed at a rear end of the body through the cone-shaped extension to a smaller

exit opening provided at the tip of the cone-shaped extension. The second tapered passage extends from a larger, entrance opening at the rear end of the body to a smaller exit opening in the face at the front end of the body. The body also includes an inlet port in fluid communication with the first tapered passage for supplying paint to the first tapered passage.

In addition, the preferred embodiment of the nozzle includes a removable cap mounted on the front end of the body. The cap has a hollow, cone-shaped interior which, in cooperation with the face and cone-shaped extension of the body, provides a mixing chamber for paint and pressurized air. A spray opening extends through the cap to form a paint spray from paint and pressurized air supplied to the first and second tapered passages, respectively. Further, the preferred embodiment of the nozzle includes a removable plug sealingly engaging the rear end of the body and covering the entrance openings of the first and second tapered passages. The plug can include a passageway extending therethrough in fluid communication with the entrance opening of the second tapered passage for receiving pressurized air to be supplied to the second tapered passage. The plug also includes a plug-like projection to be received in the entrance opening of the first tapered passage to help align the plug and body and to assist in sealing the entrance opening. A plug retainer is provided for retaining the plug in sealing engagement with the rear end of the body.

The present invention provides a nozzle which is readily disassembled to permit easy access for cleaning. The tapered passages of the body and the removable cap and plug facilitate cleaning of the nozzle. In addition, it is possible to fabricate the nozzle by conventional molding techniques to minimize its cost of manufacture.

The accompanying drawings illustrate a preferred embodiment of the invention and, together with the description, serve to explain the principles of the invention.

Of the drawing:

FIG. 1 is a disassembled, side elevation of a paint spray nozzle comprising a body, a cap, a removable plug, and a plug retainer constructed according to the principles of the present invention;

FIG. 2 is a side elevation, in section, showing the assembled relationship of the body, cap, plug and plug retainer of the nozzle;

FIG. 3 is a front elevation of the body of the nozzle taken along line 3—3 of FIG. 1; and

FIG. 4 is a rear elevation of the body of the nozzle taken along line 4—4 of FIG. 1.

Referring to FIG. 1, the nozzle comprises, in general, an elongated body 10, a cap 12, a plug 14 and a plug retainer 16. Body 10 is provided with a first set of external threads 18 adjacent to its front end. Cap 12 is generally cylindrical in shape and provided with internal threads (shown in FIG. 2) for engaging external threads 18 to secure the cap to the body. Cap 12 has a knurled exterior surface to facilitate manual threading of the cap on external threads 18. In addition, body 10 is provided with a second set of external threads 20 adjacent to its rear end. Plug retainer 16 is generally annular in shape and provided with internal threads (shown in FIG. 2) for engaging external threads 20 to secure the plug retainer to the body and to hold plug 14 against the rear end of the body. Plug retainer 16 has a knurled

exterior surface to facilitate manual threading of the plug retainer on external threads 20.

In accordance with the invention, the body includes first and second fluid passages extending therethrough for receiving paint and pressurized air, respectively. The fluid passages terminate in exit openings provided adjacent the front end of the body. As shown in FIG. 2, elongated body 10 includes first and second tapered passages 22 and 24, respectively, extending longitudinally through the body. Referring to FIGS. 2 and 4, body 10 includes a key-shaped recess 26 formed at its rear end. Fluid passage 22 extends from a first, enlarged entrance opening 28 (FIG. 4) formed in the recess and gradually tapers as it extends toward the front end of the body 10. Similarly, fluid passage 24 extends from a second, enlarged entrance opening 30 formed in the recess and tapers gradually as it extends toward the front end of the body.

Referring to FIGS. 2 and 3, the front end of body 10 comprises a flat, circular face 32 provided with a cone-shaped extension 34 projecting forward from the face. Cone-shaped extension 34 is centrally located on circular face 32 of the body and terminates in a cylindrical tip 36. Fluid passage 22 extends from larger entrance opening 28 (FIG. 4) through body 10 and its cone-shaped extension 34 and terminates in a smaller exit opening 38 (FIG. 3) in cylindrical tip 36. Similarly, fluid passage 24 extends from larger entrance opening 30 (FIG. 4) through body 10 to a smaller exit opening 40 (FIG. 3) in circular face 32.

In accordance with the invention, the nozzle includes means in fluid communication with the first fluid passage for supplying paint to the first fluid passage. In the preferred embodiment, this means comprises an inlet port in the body in fluid communication with the first passage. Referring to FIG. 2, body 10 is provided with a stem 42 projecting laterally from the body. A passageway 44 extends through stem 42 into fluid communication with passage 22. Passageway 44 includes an enlarged diameter section 46 which extends inwardly from the outer end of stem 42 and a reduced diameter section which being approximately midway between the outer end of the stem and passage 22 to provide an annular ledge 50.

A conduit 51 for supplying paint to the nozzle is inserted in enlarged diameter portion 46 of passageway 44. Annular ledge 50 limits the extent to which the conduit can be inserted into the passageway. The conduit is in fluid communication with a container (not shown) which contains paint and pressurized air. A manually operable valve (not shown) is provided in the conduit to control the flow of paint from the container to the nozzle.

In accordance with the invention the cap 12 is mounted on the body 10 at its front end and has a hollow interior to provide a mixing chamber for paint and pressurized air. A spray opening extends through the cap to form a paint spray from paint and pressurized air supplied to the fluid passages. Referring to FIGS. 1 and 2, cylindrical cap 12 includes a tapered front wall 52 provided with a cone-shaped interior surface 54 which, in cooperation with flat, circular face 32 and cone-shaped extension 34 of body 10, provides a mixing chamber for paint and pressurized air. The front wall of cap 12 includes a central opening 56 in axial alignment with exit opening 36 of fluid passage 22 in cylindrical tip 36 of the cone-shaped extension to form a

paint spray from paint and pressurized air supplied to the mixing chamber.

As shown in FIG. 1, plug 14 includes a key-shaped front portion 57 adapted to be received in key-shaped recess 26 (FIGS. 2 and 4) in the rear end of body 10 to cover entrance openings 28 and 30 of fluid passages 22 and 24, respectively. The peripheral outline of key-shaped portion 57 corresponds to the shape of recess 26 illustrated in FIG. 4 to position and align plug 14 and body 10 and prevent relative rotation therebetween. In addition, plug 14 has a front face 67 which engages a face 68 in the bottom of recess 26, and a peripheral face 69 which sealingly engages a face 70 at the rear end of body 10.

In accordance with the invention, the nozzle includes means in fluid communication with the second fluid passage for supplying pressurized air to the second fluid passage. In the preferred embodiment, this means comprises a passageway extending through the plug in fluid communication with the entrance opening of the second fluid passage. As shown in FIG. 2, plug 14 includes a cylindrical inlet member 58 extending rearwardly from the plug. A passageway 60 extends through the cylindrical member into fluid communication with entrance opening 30 (FIG. 4) of fluid passage 24. A conduit 61 connected to a source of pressurized air (not shown) is attached to inlet member 58 to supply pressurized air to fluid passage 24. In addition, plug 14 includes a plug-like projection 62 extending forwardly from its front face 57. Plug-like projection 62 is tapered in shape to be received in entrance opening 28 of fluid passage 22 to seal the entrance opening against passage of paint and to help align passageway 60 and fluid passage 24.

In the preferred embodiment of the nozzle, the plug retainer constitutes means for retaining the plug in sealing engagement with the rear end of the body. Referring to FIG. 2, plug retainer 16, which is generally annular in shape, includes a rear wall 64 provided with a circular opening 66 to permit inlet member 58 to extend beyond the plug retainer. As shown in FIG. 2, rear wall 64 of plug retainer 16 engages the outer edge of plug 14 to retain the plug face 69 in sealing engagement with the face 70 at the rear end of body 10.

In the operation of the paint spray nozzle, pressurized air is continuously supplied to the nozzle via conduit 61. The pressurized air flows into passageway 60 through fluid passage 24 and out of exit opening 40 into the mixing chamber defined by the hollow interior of cap 12 and the front face of body 10. In addition, paint is supplied under pressure to the nozzle via conduit 51. As mentioned above, the flow of paint through conduit 51 is controlled by a manually operable valve (not shown). The paint flows into passageway 44 through fluid passage 22 and out of exit opening 38 at cylindrical tip 36. As the paint emerges from exit opening 38, it is combined with the air flowing through the mixing chamber and is ejected with the air through spray opening 56 to form a paint spray.

The body, cap, plug, and plug retainer of the nozzle are preferably formed of a suitable plastic material to which paint does not readily adhere, e.g., an acetal polymer. This type of material enables the nozzle to be readily cleaned. In addition, the removable plug permits easy access to the tapered passages and the removable cap permits easy access to the mixing chamber to facilitate cleaning of the nozzle.

The provision of tapered passages also allows the body of the nozzle to be manufactured by molding techniques using removable pins rather than expensive drilling operations. The capability of manufacturing the nozzle by molding permits the nozzle to be manufactured at minimum cost.

The invention in its broader aspects is not limited to the specific details shown and described, and modifications may be made in the details of the spray nozzle without departing from the principles of the present invention. Thus, this invention is not limited to paint spray applications alone, the term "paint spray" being understood to include a variety of liquid spray applications.

What is claimed is:

1. A paint spray nozzle, comprising:

a body including first and second straight fluid passages extending therethrough for receiving paint and pressurized air, respectively, said fluid passages originating in inlet openings adjacent one end of said body and terminating in exit openings adjacent the other end of said body;

means in fluid communication with said first fluid passage for supplying paint to said first fluid passage;

means in fluid communication with said second fluid passage for supplying pressurized air to said second fluid passage; and

plug means removably secured to said body at said one end and covering said inlet openings, said plug means when removed from said body exposing said passages for cleaning; said plug means including a passage therethrough communicating between one of said passages in said body and the corresponding one of said fluid communication means.

2. A paint spray nozzle, comprising:

a body including first and second straight fluid passages extending therethrough for receiving paint and pressurized air, respectively, each of said fluid passages being tapered from a larger entrance opening adjacent one end of said body to a smaller exit opening adjacent the other end of said body; means in fluid communication with said first fluid passage for supplying paint to said first fluid passage;

means in fluid communication with said second fluid passage for supplying pressurized air to said second fluid passage; and

plug means removably sealably secured to said body at said one end and covering said passage entrance openings, said plug means when removed from said body exposing said passages for cleaning; said plug means including a passage therethrough communicating between one of said passages in said body and the corresponding one of said fluid communication means.

3. A paint spray nozzle operable by pressurized air, comprising:

a body including a first fluid passage extending therethrough for receiving paint and a second fluid passage extending therethrough for receiving pressurized air, said fluid passages including separate entrance openings provided on an exterior surface of said body and terminating in exit openings at one end of said body, said body further including an inlet port in fluid communication with said fluid

passage for supplying paint to said first fluid passage;

a cap mounted on said body adjacent said one end, said cap having a hollow interior to provide a mixing chamber for paint and pressurized air and a spray opening extending therethrough to form a paint spray from paint and pressurized air supplied to said fluid passages; and

a plug located at said exterior surface of said body for covering said entrance openings of said fluid passages, said plug including a passageway extending therethrough in fluid communication with said entrance opening of said second fluid passage for receiving pressurized air to be supplied to said second fluid passage.

4. A paint spray nozzle operable by pressurized air, comprising:

an elongated body including a first tapered passage extending longitudinally therethrough for receiving paint and a second tapered passage extending longitudinally therethrough for receiving pressurized air, said fluid passages including separate entrance openings formed at a rear end of said body and terminating in exit openings provided at a front end of said body, said body further including an inlet port in fluid communication with said first tapered passage for supplying paint to said first tapered passage;

a cap mounted on said front end of said body, said cap having a hollow, cone-shaped interior to provide a mixing chamber for paint and pressurized air and a spray opening extending through said cap to form a paint spray from paint and pressurized air supplied to said first and second tapered passages, respectively;

a plug located at said rear end of said body for covering said entrance openings of said first and second tapered passages, said plug including a passageway extending therethrough in fluid communication with said entrance opening of said second tapered passage for receiving pressurized air to be supplied to said second tapered passage and a plug-like projection received in said entrance opening of said first tapered passage to seal said entrance opening and align said plug passageway and said second tapered passage; and

means for retaining said plug in engagement with said rear end of said elongated body.

5. A nozzle for a paint spray gun operable by pressurized air, comprising:

an elongated body having a rear end provided with a recess and a front end which comprises a flat face provided with an extension projecting forward from said face, said body including a first tapered passage extending longitudinally therethrough from said recess through said extension and a second tapered passage extending longitudinally therethrough from said recess to said face, said body further including an inlet port in fluid communication with said first tapered passage for supplying paint to said first tapered passage;

a cap mounted on said front end of said body and surrounding said face, said cap being generally cylindrical in shape and including a front end provided with an interior surface which in cooperation with said face and extension of said elongated body provides a mixing chamber for paint and pressurized

air and a central opening to form a paint spray from paint and pressurized air supplied to said first and second tapered passages, respectively;

a removable plug adapted to be received in said recess provided in said rear end of said elongated body for covering said fluid passages, said plug including a passageway extending therethrough in fluid communication with said second tapered passage for receiving pressurized air to be supplied to said second tapered passage and a plug-like projection extending forwardly from said plug into said first tapered passage to seal said first tapered passage; and

means for retaining said plug in said recess at said rear end of said elongated body.

6. A nozzle for a paint spray gun operable by pressurized air, comprising:

an elongated body having a rear end provided with a recess and a front end which comprises a flat, circular face provided with a cone-shaped extension centrally located on said face including a tip projecting forward from said face, said elongated body including a first tapered passage extending longitudinally therethrough from a first entrance opening in said recess through said cone-shaped extension to a first exit opening in said tip of said cone-shaped extension and a second tapered passage extending longitudinally therethrough from a second entrance opening in said recess to a second exit opening in said face, said elongated body further including an inlet port extending transversely therethrough in fluid communication with said first tapered passage for supplying paint to said first tapered passage;

a generally cylindrical cap mounted on said front end of said elongated body secure said cap to said body, said cap including a front wall provided with a cone-shaped interior surface which in cooperation with said face and cone-shaped extension of said elongated body provides a mixing chamber for paint and pressurized air, said front wall of said cap including a central opening in axial alignment with said first exit opening in said tip of said cone-shaped extension to form a paint spray from paint and pressurized air supplied to said first and second tapered passage, respectively;

a removable plug adapted to be received in said recess provided in said rear end of said elongated body for covering said entrance openings of said first and second tapered passages, said plug including a passageway extending therethrough in fluid communication with said second entrance opening for receiving pressurized air to be supplied to said second tapered passage and a plug-like projection extending forwardly from said plug into said first entrance opening to seal said first entrance opening; and

a plug retainer mounted on said rear end of said elongated body for engaging said plug to retain said plug in said recess at said rear end of said elongated body.

7. A nozzle for a paint spray gun operable by pressurized air, comprising:

an elongated body having a rear end provided with a recess and a front end which comprises a flat, circular face provided with a cone-shaped extension centrally located on said face including a tip pro-

jecting forward from said face, said elongated body including a first tapered passage extending longitudinally therethrough from a first entrance opening in said recess through said cone-shaped extension to a first exit opening in said tip of said cone-shaped extension and a second tapered passage extending longitudinally therethrough from a second entrance opening in said recess to a second exit opening in said face, said elongated body further including an inlet port extending transversely therethrough in fluid communication with said first tapered passage for supplying paint to said first tapered passage, said elongated body further including external threads provided at its front and rear ends;

a generally cylindrical cap including a hollow interior provided with internal threads for engaging said external threads on said front end of said elongated body to secure said cap to said body, said cap including a front wall provided with a cone-shaped interior surface which in cooperation with said face and cone-shaped extension of said elongated body provides a mixing chamber for paint and pressurized air, said front wall of said cap including a central opening in axial alignment with said first exit opening in said tip of said cone-shaped extension to form a paint spray from paint and pressurized air supplied to said first and second tapered passages, respectively;

a removable plug adapted to be received in said recess provided in said rear end of said elongated body for covering said entrance openings of said first and second tapered passages, said plug including a passageway extending therethrough in fluid communication with said second entrance opening for receiving pressurized air to be supplied to said second tapered passage and a plug-like projection extending forwardly from said plug into said first entrance opening to seal said first entrance opening; and

a plug retainer for retaining said plug in said recess at said rear end of said elongated body, said plug retainer being annular in shape and including internal threads for engaging said external threads at said rear end of said elongated body to secure said plug retainer to said body and a rear wall for engaging said plug to retain said plug in engagement with said elongated body.

8. A nozzle for a paint gun operable by pressurized air, comprising:

an elongated body having a rear end provided with a recess and a front end which comprises a flat, circular face provided with a cone-shaped extension centrally located on said face including a tip projecting forward from said face, said elongated body including a first tapered passage extending longitudinally therethrough from a first entrance opening in said recess through said cone-shaped extension to a first exit opening in said tip of said cone-shaped extension and a second tapered passage extending longitudinally therethrough from a second entrance opening in said recess to a second exit opening in said face, said elongated body further including a stem projecting laterally therefrom provided with a passageway extending therethrough in fluid communication with said first tapered passage for supplying paint to said first tapered passage,

said elongated body further including external threads provided at its front and rear ends;

a generally cylindrical cap including a hollow interior provided with internal threads for engaging said external threads at said front end of said elongated body to secure said cap to said elongated body, said cap including a front wall provided with a cone-shaped interior surface which in cooperation with said face and cone-shaped extension of said elongated body provides a mixing chamber for paint and pressurized air, said front wall of said cap including a central opening in axial alignment with a said first exit opening in said tip of said cone-shaped extension to form a paint spray from paint and pressurized air supplied to said first and second tapered passages, respectively;

a removable plug adapted to be received in said recess provided in said rear end of said elongated body for covering said entrance openings of said first and second tapered passages, said plug including a passageway extending therethrough in fluid communication with said second entrance opening for receiving pressurized air to be supplied to said second tapered passage and a plug like projection extending forwardly from said plug into said first entrance opening to seal said first entrance opening; and

a plug retainer for retaining said plug in said recess at said rear end of said elongated body, said plug retainer being annular in shape and including internal threads for engaging said external threads at said rear end of said elongated body to secure said plug retainer to said body and a rear wall for engaging said plug to retain said plug in engagement with said elongated body.

9. A nozzle for a paint spray gun operable by pressurized air, comprising:

an elongated body having a rear end provided with a key-shaped recess and a front end which comprises a flat, circular face provided with a cone-shaped extension centrally located on said face including a tip projecting forward from said face, said elongated body including first and second fluid passages extending longitudinally therethrough for receiving paint and pressurized air, respectively, said first fluid passage being tapered from a larger entrance opening in said recess to a smaller exit opening at said tip of said cone-shaped extension, said second fluid passage being tapered from a larger entrance opening in said recess to a smaller exit opening in said face, said elongated body further including an inlet port extending transversely therethrough in fluid communication with said first fluid passage for supplying paint to said first fluid passage, said elongated body further including external threads provided at its front and rear ends;

a generally cylindrical cap including a hollow interior provided with internal threads for engaging said external threads at said front end of said body to secure said cap to elongated body, said cap including a conical front wall provided with a cone-shaped interior surface which in cooperation with said face and cone-shaped extension of said elongated body provides a mixing chamber for paint and pressurized air, said conical front wall including a central opening in axial alignment with said first exit opening in said tip of said cone-shaped extension to

form a paint spray from paint and pressurized air supplied to said first and second fluid passages, respectively;

a removable plug including a key-shaped front face adapted to be received in said key-shaped recess for covering said entrance openings of said first and second fluid passages, said plug including a passageway extending therethrough in fluid communication with said second entrance opening for receiving pressurized air to be supplied to said second fluid passage and a plug-like projection extending forwardly from said front face into said first entrance opening to seal said first entrance opening; and

a plug retainer for retaining said plug in said key-shaped recess, said plug retainer being annular in shape and including internal threads for engaging said external thread at said rear end of said elongated body to secure said plug retainer to said elongated body and a rear wall for engaging said plug to retain said plug in engagement with said elongated body.

10. A nozzle for a paint spray gun operable by pressurized air, comprising:

an elongated body having a rear end provided with a key-shaped recess and a front end which comprises a flat, circular face provided with a cone-shaped extension centrally located on said face including a tip projecting forward from said face, said elongated body including first and second fluid passages extending longitudinally therethrough for receiving paint and pressurized air, respectively, said first fluid passage being tapered from a larger entrance opening in said recess to a smaller exit opening at said tip of said cone-shaped extension, said second fluid passage being tapered from a larger entrance opening in said recess to a smaller exit opening in said face, said elongated body further including an inlet port extending transversely therethrough in fluid communication with said first fluid passage for supplying paint to said first fluid passage, said elongated body further including external threads provided at its front and rear ends;

a generally cylindrical cap including a hollow interior provided with internal threads for engaging said external threads at said front end of said elongated body to secure said cap to said elongated body, said cap including a conical front wall provided with a cone-shaped interior surface which in cooperation with said face and cone-shaped extension of said elongated body provides a mixing chamber for paint and pressurized air, said conical front wall including a central opening in axial alignment with said first exit opening in said tip of said cone-shaped extension to form a paint spray from paint and pressurized air supplied to said first and second fluid passages, respectively;

a removable plug including a key-shaped front face adapted to be received in said key-shaped recess for covering said entrance openings of said first and second fluid passages, said plug including a rearwardly projecting inlet member having a passageway extending therethrough in fluid communication with said second entrance opening for receiving pressurized air to be supplied to said second fluid passage and a plug-like projection extending

forwardly from said front face into said entrance opening to seal said first entrance opening; and

- a plug retainer for retaining said plug in said key-shaped recess, said plug retainer being annular in shape and including internal threads for engaging said external thread at said rear end of said elongated body to secure said plug retainer to said elongated body and a rear wall for engaging said plug to retain said plug in engagement with said elongated body, said rear wall including an opening to permit said inlet member of said plug to extend therethrough.

11. A paint spray gun operable by pressurized air, comprising:

- an elongated body including a first tapered passage extending longitudinally therethrough for receiving paint and a second tapered passage extending longitudinally therethrough for receiving pressurized air, said fluid passages including a separate entrance openings formed at a rear end of said body and terminating in exit openings provided at a front end of said body, said body further including an inlet port in fluid communication with said first tapered passage for supplying paint to said first tapered passage;

- a plug located at said rear end of said body for covering said entrance openings of said first and second tapered passages, said plug including a passageway extending therethrough in fluid communication with said entrance opening of said second tapered passage for receiving pressurized air to be supplied to said second tapered passage and a plug-like projection received in said entrance opening of said first tapered passage to seal said entrance opening; and

means for retaining said plug in engagement with said rear end of said elongated body.

12. A nozzle for a paint spray gun operable by pressurized air, comprising:

- an elongated body having a rear end provided with a recess and a front end which comprises a flat, circular face provided with a cone-shaped extension centrally located on said face including a tip projecting forward from said face, said elongated body including a first tapered passage extending longitudinally therethrough from a first entrance opening in said recess through said cone-shaped extension to a first exit opening in said tip of said cone-shaped extension and a second tapered passage extending longitudinally therethrough from a second entrance opening in said recess to a second exit opening in said face, said elongated body further including an inlet port extending transversely therethrough in fluid communication with said first tapered passage for supplying paint to said first tapered passage, said elongated body further including external threads provided at its rear end;

- a removable plug adapted to be received in said recess provided in said rear end of said elongated

body for covering said entrance openings of said first and second tapered passages, said plug including a passageway extending therethrough in fluid communication with said second entrance opening for receiving pressurized air to be supplied to said second tapered passage and a plug-like projection extending forwardly from said plug into said first entrance opening to seal said first entrance opening; and

- a plug retainer for retaining said plug in said recess at said rear end of said elongated body, said plug retainer being annular in shape and including internal threads for engaging said external threads at said rear end of said elongated body to secure said plug retainer to said body and a rear wall for engaging said plug to retain said plug in engagement with said elongated body.

13. A nozzle for a paint spray gun operable by pressurized air, comprising:

- an elongated body having a rear end provided with a key-shaped recess and a front end which comprises a flat, circular face provided with a cone-shaped extension centrally located on said face including a tip projecting forward from said face, said elongated body including first and second fluid passages extending longitudinally therethrough for receiving paint and pressurized air, respectively, said first fluid passage being tapered from a larger entrance opening in said recess to a smaller exit opening at said tip of said cone-shaped extension, said second fluid passages being tapered from a larger entrance opening in said recess to a smaller exit opening in said face, said body further including an inlet port extending transversely therethrough in fluid communication with said first passage for supplying paint to said first fluid passage, said elongated body further including external threads provided at its front and rear ends;

- a removable plug including a key-shaped front face adapted to be non-rotatably received in said key-shaped recess for covering said entrance openings of said first and second fluid passages, said plug having a front face sealingly engaging a face on said body, said plug including a passageway extending therethrough in fluid communication with said second entrance opening for receiving pressurized air to be supplied to said second fluid passage and a plug-like projection extending forwardly from said front face into said first entrance opening to seal said first entrance opening; and

- a plug retainer for retaining said plug in said key-shaped recess, said plug retainer being annular in shape and including internal threads for engaging said external thread at said rear end of said elongated body to sealingly secure said plug retainer to said elongated body and a rear wall for engaging said plug to retain said plug in engagement with said elongated body.

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