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United States Patent [19] Kawasaki

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[54] **PEDIATRIC NEBULIZER ENHANCER**

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[57] **ABSTRACT**

[51] **Int. Cl.⁶** **A61M 16/00**

[52] **U.S. Cl.** **128/200.14; 128/200.21; 128/203.12; 128/204.18**

[58] **Field of Search** 128/200.14, 200.21, 128/200.11, 200.24, 203.28, 204.18, 200.22, 203.12

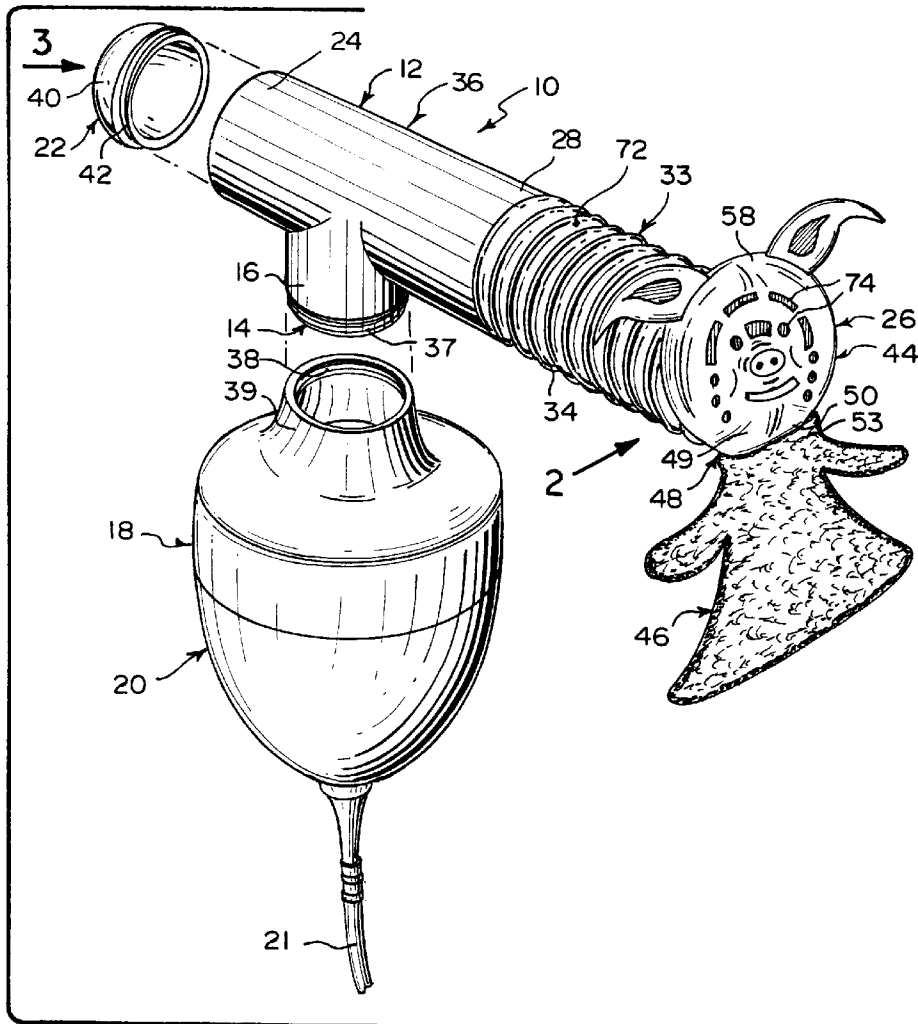
A pediatric nebulizer enhancer (10) comprising a T-fitting (12). A structure (14) is for mounting a first end (16) of the T-fitting (12) to a dome cover (18) on a dome (20), which holds medication and saline, that is connected to an end of a tubing (21) from an oxygen outlet. A plug (22) is for sealing off a second end (24) of the T-fitting (12). A facility (26) on a third end (28) of the T-fitting (12) is for spraying a medicated mist (29) directly into a face (30) of a child (32). The child (32) can focus onto the spraying facility (26) without any fear, by being attracted to the spraying facility (26).

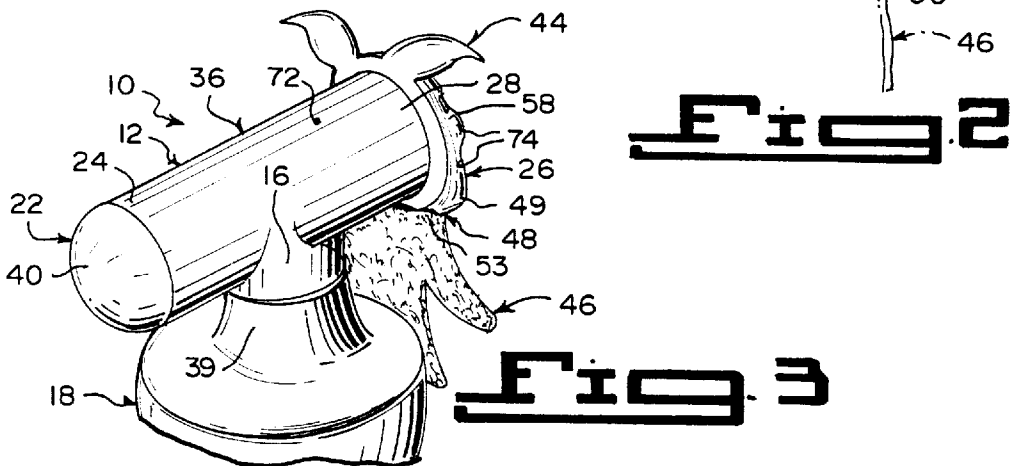
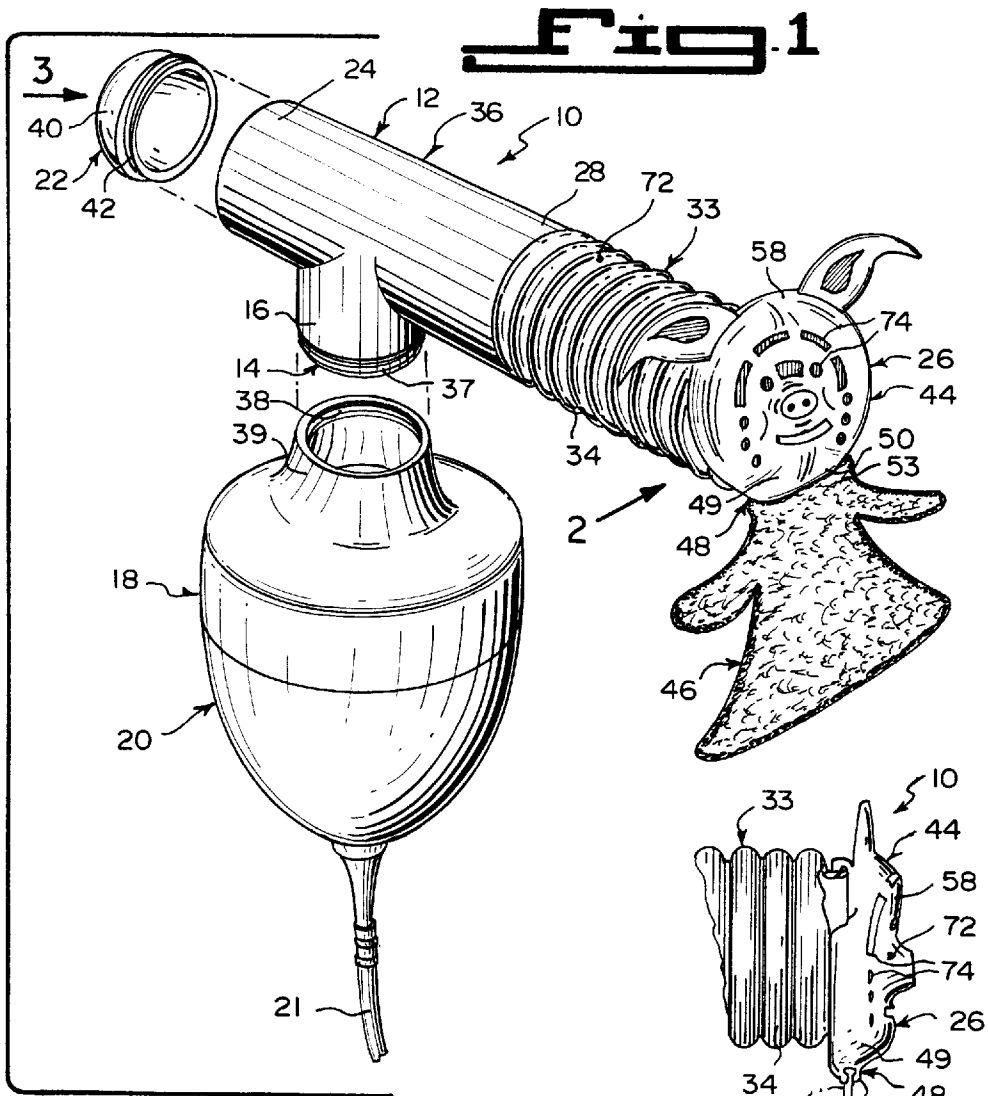
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27 Claims, 3 Drawing Sheets





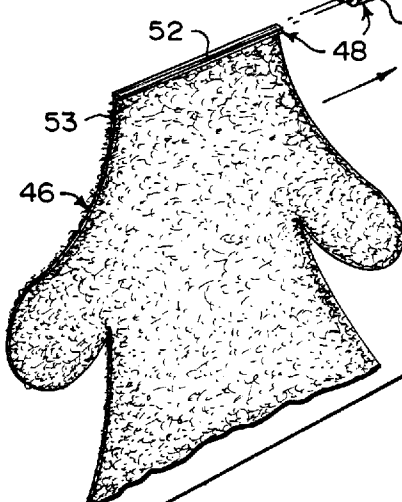
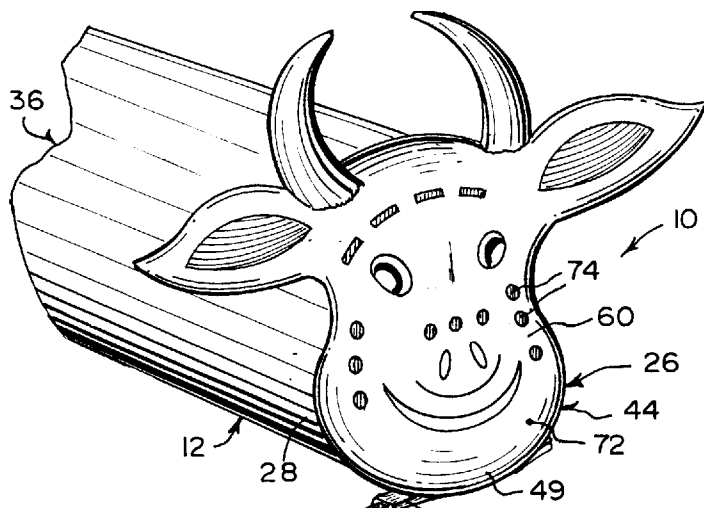
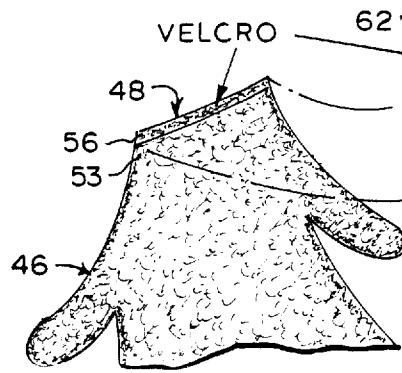
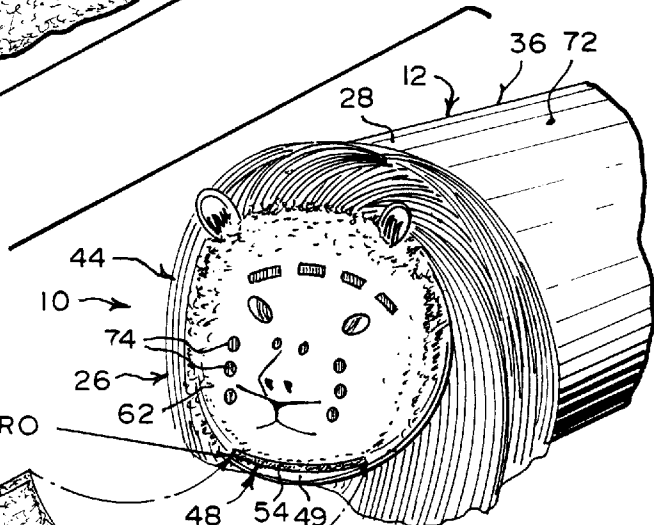
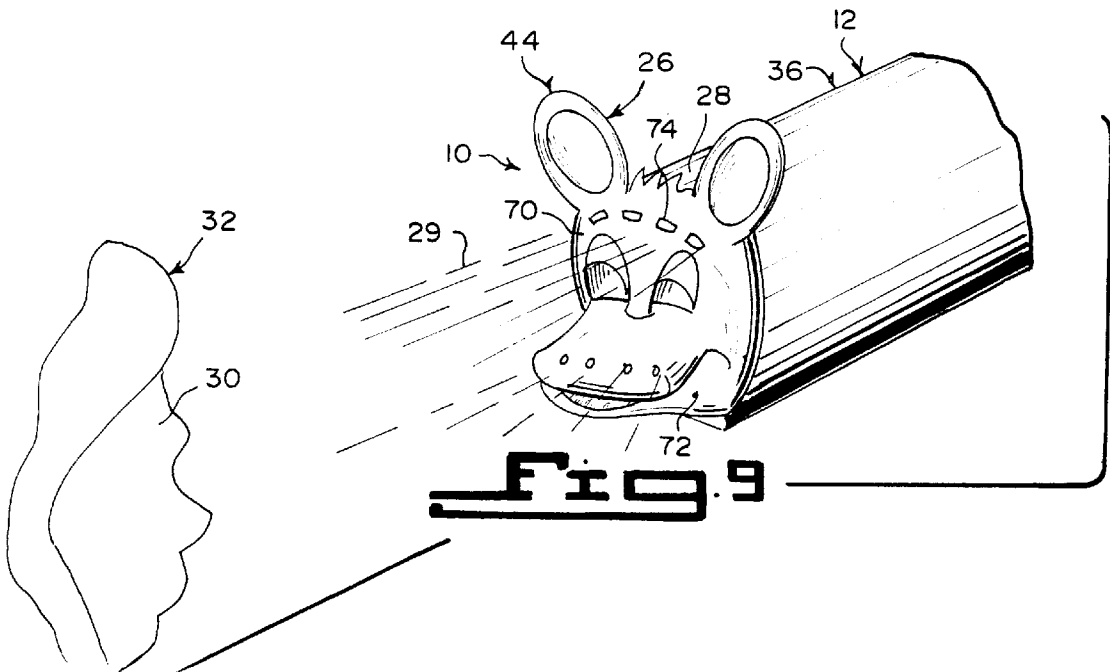
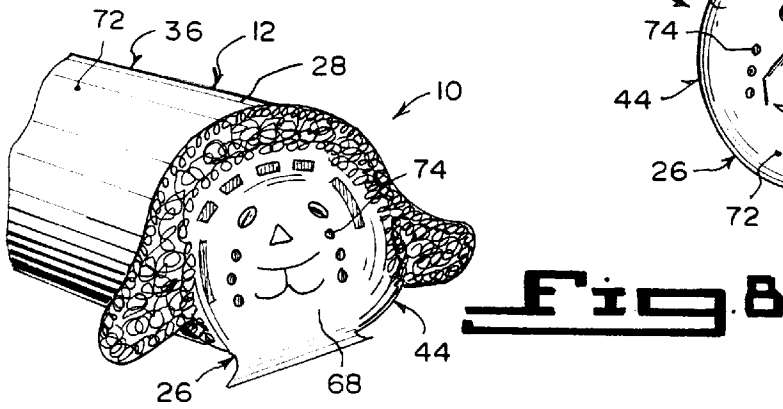
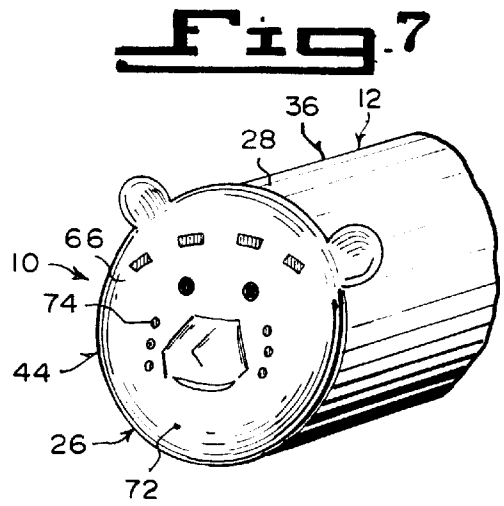
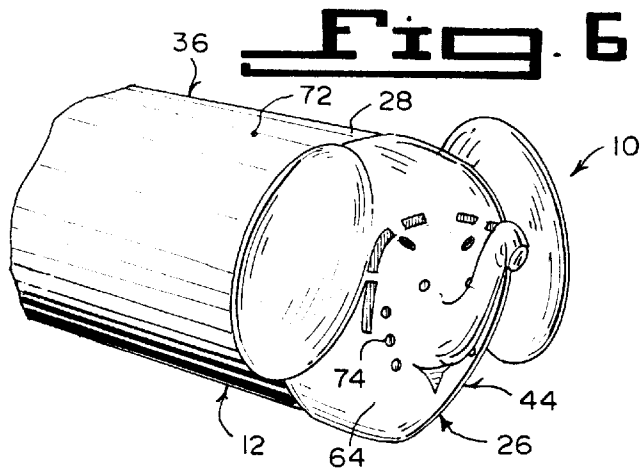


Fig. 4

Fig. 5





PEDIATRIC NEBULIZER ENHANCER

BACKGROUND OF THE INVENTION

1. Field of the Invention

Asthma is the most common of the chronic lung diseases diagnosed in children and accounts for a large percentage of emergency department/hospital admissions. Recently, the use of continuous and intermittent administration of Beta-adrenergic agents has been found to be a safe and effective method of therapy for the pediatric patient experiencing severe asthma. An understanding of equipment, monitoring parameters, and nursing implications can help prepare pediatric and emergency room nurses to provide care for children receiving continuous and intermittent nebulization. An urban hospital in the northeastern United States organized a multidisciplinary team to investigate the use of continuous nebulization of Beta 2 agonists in the care of the pediatric patient experiencing an acute asthma episode.

The instant invention relates generally to nebulizers and more specifically it relates to a pediatric nebulizer enhancer. The pediatric nebulizer enhancer will allow for a greater accuracy for administering nebulized treatments to children with special needs, such as asthma.

2. Description of the Prior Art

Numerous nebulizers have been provided in prior art that are adapted to spray medicated liquid doses, so that the doses can be breathed into the lungs of patients, for the treatment of asthma and other respiratory diseases. While these units may be suitable for the particular purpose to which they address, they would not be as suitable for the purposes of the present invention as heretofore described.

SUMMARY OF THE INVENTION

A primary object of the present invention is to provide a pediatric nebulizer enhancer that will overcome the shortcomings of the prior art devices.

Another object is to provide a pediatric nebulizer enhancer that will allow for a greater accuracy for administering a nebulized treatment of a sprayed medicated mist into the face of a child with a special need, such as asthma.

An additional object is to provide a pediatric nebulizer enhancer in which a perforated animal face on an end of the enhancer will serve to distract the child, so that the sprayed medicated mist can be directed into the face of the child to inhale the sprayed medicated mist.

A further object is to provide a pediatric nebulizer enhancer that is simple and easy to use.

A still further object is to provide a pediatric nebulizer enhancer that is economical in cost to manufacture.

Further objects of the invention will appear as the description proceeds.

To the accomplishment of the above and related objects, this invention may be embodied in the form illustrated in the accompanying drawings, attention being called to the fact, however, that the drawings are illustrative only, and that changes may be made in the specific construction illustrated and described within the scope of the appended claims.

BRIEF DESCRIPTION OF THE DRAWING FIGURES

Various other objects, features and attendant advantages of the present invention will become more fully appreciated as the same becomes better understood when considered in conjunction with the accompanying drawings, in which like

reference characters designate the same or similar parts throughout the several views, and wherein;

FIG. 1 is a partly exploded front perspective view of a first embodiment of the instant invention, showing a perforated pig face.

FIG. 2 is a side view taken in the direction of arrow 2 in FIG. 1, with parts broken away and the cloth body shown in phantom.

FIG. 3 is an assembled rear perspective view taken in the direction of arrow 3 in FIG. 1, with parts broken away and the flexible conduit removed therefrom.

FIG. 4 is a front perspective view of a second embodiment of the instant invention, showing a perforated cow face with parts broken away and the cloth body exploded therefrom.

FIG. 5 is a front perspective view of a third embodiment of the of the instant invention, showing a perforated lion face with parts broken away and the cloth body exploded therefrom.

FIG. 6 is a front perspective view of a fourth embodiment of the instant invention with parts broken away, showing a perforated elephant face.

FIG. 7 is a front perspective view of the fourth embodiment with parts broken away, showing a perforated bear face.

FIG. 8 is a front perspective view of the fourth embodiment with parts broken away, showing a perforated lamb face.

FIG. 9 is a front perspective view of the fourth embodiment with parts broken away, showing a perforated dog face spraying a medicated mist into a face of a child.

Similar reference characters denote corresponding features consistently throughout the attached drawings.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Turning now descriptively to the drawings, in which similar reference characters denote similar elements throughout the several views, FIGS. 1 through 9 illustrate a pediatric nebulizer enhancer 10 comprising a T-fitting 12. A structure 14 is for mounting a first end 16 the T-fitting 12 to a dome cover 18 on a dome 20, which holds medication and saline, that is connected to an end of a tubing 21 from an oxygen outlet (not shown).

A plug 22 is for sealing off a second end 24 of the T-fitting 12. A facility 26 on a third end 28 of the T-fitting 12 is for spraying a medicated mist 29 directly into a face 30 of a child 32. The child 32 can focus onto the spraying facility 26 without any fear, by being attracted to the spraying facility 26.

An elongate flexible conduit 33, as shown in FIGS. 1 and 2, can be attached between the third end 28 of the T-fitting 12 and the spraying facility 26, so as to put the child 32 further away from a noise produced at the dome 20. The elongate flexible conduit 33 is a piece of corrugated tubing 34. The T-fitting 12 is a hollow cylindrical housing 36. The mounting structure 14, as best seen in FIG. 1, is external threads 37 formed on the first end 16 of the T-fitting 12, so as to engage with internal threads 38 on a top neck 39 of the dome cover 18.

The plug 22 is a dome shaped cap 40 having a reduced diameter externally threaded collar 42 thereon, whereby the collar 42 threads into the second end 24 of the T-fitting 12. The spraying facility 26 is a perforated animal face 44.

The pediatric nebulizer enhancer 10 can further include a flat cloth body 46, as shown in FIGS. 1 through 5. An

assembly **48** is for attaching the flat cloth body **46** to a bottom portion **49** of the perforated animal face **44**.

The attaching assembly **48**, as best seen in FIG. **4**, consists of a track **50** on the bottom portion **49** of the perforated animal face **44**. A rail **52** is affixed onto a neck segment **53** of the flat cloth body **46**. The rail **52** can be inserted into the track **50**, to hold the flat cloth body **46** under the perforated animal face **44**.

The attaching assembly **48**, as best seen in FIG. **5**, comprises a first VELCRO strip **54** affixed onto the bottom portion **49** of the perforated animal face **44**. A second VELCRO strip **56** is affixed onto the neck segment **53** of the flat cloth body **46**. The second VELCRO strip **56** can mate with the first VELCRO strip **54**, to hold the flat cloth body **46** under the perforated animal face **44**.

The perforated animal face **44** can be of a pig **58**, as shown in FIGS. **1**, **2** and **3**. The perforated animal face **44** can be of a cow **60**, as shown in FIG. **4**. The perforated animal face **44** can be of a lion **62**, as shown in FIG. **5**. The perforated animal face **44** can be of an elephant **64**, as shown in FIG. **6**. The perforated animal face **44** can be of a bear **66**, as shown in FIG. **7**. The perforated animal face **44** can be of a lamb **68**, as shown in FIG. **8**. The perforated animal face **44** can be of a dog **70**, as shown in FIG. **9**.

Other types of animal faces can also be utilized, such as a bird, a cat, a monkey, different human faces, a clown, etc. The enhancer **10** can be manufactured in all types of durable materials, including plastic **72**. The perforated animal face **44** can have a plurality of apertures **74** of different sizes and shapes, to direct the medicated mist **29** towards the face **30** of the child **32**.

LIST OF REFERENCE NUMBERS

10 pediatric nebulizer enhancer
12 T-fitting of **10**
14 mounting structure of **10**
16 first end of **12**
18 dome cover on **20**
20 dome connected to **21**
21 tubing
22 plug of **10**
24 second end of **12**
26 spraying facility of **10**
28 third end of **12**
29 medicated mist
30 face of **32**
32 child
33 elongate flexible conduit of **10**
34 piece of corrugated tubing for **33**
36 hollow cylindrical housing for **12**
37 external threads on **16** for **14**
38 internal threads on **39**
39 top neck of **18**
40 dome shaped cap for **22**
42 externally threaded collar on **40**
44 perforated animal face for **26**
46 flat cloth body of **10**
48 attaching assembly for **46**
49 bottom portion of **44**
50 track of **48** on **49**
52 rail of **48** on **53**
53 neck segment of **46**
54 first VELCRO strip of **48** on **49**
56 second VELCRO strip of **48** on **53**
58 pig face for **44**
60 cow face for **44**

62 lion face for **44**
64 elephant face for **44**
66 bear face for **44**
68 lamb face for **44**
70 dog face for **44**
72 plastic for **10**
74 aperture in **44**

It will be understood that each of the elements described above, or two or more together may also find a useful application in other types of methods differing from the type described above.

While certain novel features of this invention have been shown and described are pointed out in the annexed claims, it is not intended to be limited to the details above, since it will be understood that various omissions, modifications, substitutions and changes in the forms and details of the device illustrated and in its operation can be made by those skilled in the art without departing in any way from the spirit of the present invention.

Without further analysis, the foregoing will so fully reveal the gist of the present invention that others can, by applying current knowledge, readily adapt it for various applications without omitting features that, from the standpoint of prior art, fairly constitute essential characteristics of the generic or specific aspects of this invention.

What is claimed is new and desired to be protected by Letters Patent is set forth in the appended claims:

1. A pediatric nebulizer enhancer comprising:

- a) a T-fitting;
- b) means for mounting a first end of said T-fitting to a dome cover on a dome, which holds medication and saline, that is connected to an end of a tubing from an oxygen outlet;
- c) a plug to seal off a second end of said T-fitting;
- d) means on a third end of said T-fitting for spraying a medicated mist directly into a face of a child, so that the child can focus onto said spraying means without any fear, by being attracted to said spraying means, wherein said spraying means is a perforated animal face;
- e) a flat cloth body; and
- f) means for attaching said flat cloth body to a bottom portion of said perforated animal face.

2. A pediatric nebulizer enhancer as recited in claim **1**, further including an elongate flexible conduit attached between the third end of said T-fitting and said spraying means, so as to put the child further away from a noise produced at the dome.

3. A pediatric nebulizer enhancer as recited in claim **2**, wherein said elongate flexible conduit is a piece of corrugated tubing.

4. A pediatric nebulizer enhancer as recited in claim **1**, wherein said T-fitting is a hollow cylindrical housing.

5. A pediatric nebulizer enhancer as recited in claim **1**, wherein said mounting means is external threads formed on the first end of said T-fitting, so as to engage with internal threads on a top neck of the dome cover.

6. A pediatric nebulizer enhancer as recited in claim **1**, wherein said plug is a dome shaped cap having a reduced diameter externally threaded collar thereon, whereby said collar threads into the second end of said T-fitting.

7. A pediatric nebulizer enhancer as recited in claim **1**, wherein said attaching means, further includes:

- a) a track on the bottom portion of said perforated animal face; and
- b) a rail affixed onto a neck segment of said flat cloth body, whereby said rail can be inserted into said track to hold said flat cloth body under said perforated animal face.

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8. A pediatric nebulizer enhancer as recited in claim 1, wherein said attaching means, further includes:

- a) a first VELCRO strip affixed onto the bottom portion of said perforated animal face; and
- b) a second VELCRO strip affixed onto a neck segment of said flat cloth body, whereby said second VELCRO strip can mate with said first VELCRO strip to hold said flat cloth body under said perforated animal face.

9. A pediatric nebulizer enhancer as recited in claim 1, wherein said perforated animal face is of a pig.

10. A pediatric nebulizer enhancer as recited in claim 1, wherein said perforated animal face is of a cow.

11. A pediatric nebulizer enhancer as recited in claim 1, wherein said perforated animal face is of a lion.

12. A pediatric nebulizer enhancer as recited in claim 1, wherein said perforated animal face is of an elephant.

13. A pediatric nebulizer enhancer as recited in claim 1 wherein said perforated animal face is of a bear.

14. A pediatric nebulizer enhancer as recited in claim 1, wherein said perforated animal face is of a lamb.

15. A pediatric nebulizer enhancer as recited in claim 1, wherein said perforated animal face is of a dog.

16. A pediatric nebulizer enhancer as recited in claim 3, wherein said T-fitting is a hollow cylindrical housing.

17. A pediatric nebulizer enhancer as recited in claim 16, wherein said mounting means is external threads formed on the first end of said T-fitting, so as to engage with internal threads on a top neck of the dome cover.

18. A pediatric nebulizer enhancer as recited in claim 17, wherein said plug is a dome shaped cap having a reduced diameter externally threaded collar thereon, whereby said collar threads into the second end of said T-fitting.

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19. A pediatric nebulizer enhancer as recited in claim 18, wherein said attaching means, further includes:

- a) a track integrally formed onto the bottom portion of said perforated animal face; and
- b) a rail affixed onto a neck segment of said flat cloth body, whereby said rail can be inserted into said track to hold said flat cloth body under said perforated animal face.

20. A pediatric nebulizer enhancer as recited in claim 18, wherein said attaching means, further includes:

- a) a first VELCRO strip affixed onto the bottom portion of said perforated animal face; and
- b) a second VELCRO strip affixed onto a neck segment of said flat cloth body, whereby said second VELCRO strip can mate with said first VELCRO strip to hold said flat cloth body under said perforated animal face.

21. A pediatric nebulizer enhancer as recited in claim 18, wherein said perforated animal face is of a pig.

22. A pediatric nebulizer enhancer as recited in claim 18, wherein said perforated animal face is of a cow.

23. A pediatric nebulizer enhancer as recited in claim 18, wherein said perforated animal face is of a lion.

24. A pediatric nebulizer enhancer as recited in claim 18, wherein said perforated animal face is of an elephant.

25. A pediatric nebulizer enhancer as recited in claim 18, wherein said perforated animal face is of a bear.

26. A pediatric nebulizer enhancer as recited in claim 18, wherein said perforated animal face is of a lamb.

27. A pediatric nebulizer enhancer as recited in claim 18, wherein said perforated animal face is of a dog.

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