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(72) , ' , 06880, , 26

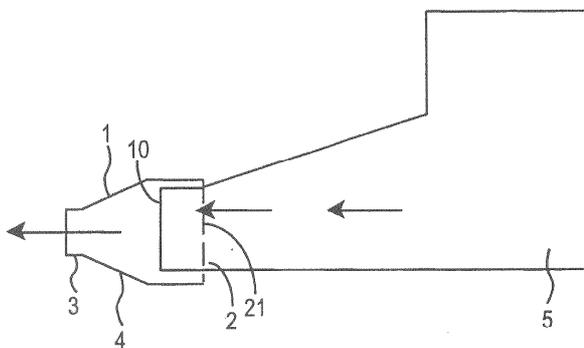
, ' , 08550, , 7

(74)

:

(54)

DPI MDI
/ 가



, DPI, MDI,

back) . , , (metered dose inhalers: 'MDIs') (mouthpiece) (patient feed nebulizers) ('DPIs')

가 , , MDI

(MDIs) 가 , , MDI

가 , , 가 , , MDI

가 , , 가 , , DPI

. DPI 가 , , DPI

6,142,146 (Abrams et al.) 가 , ,

(protocol) , ,

가 , ,

8 2.5 , ,

() , , 가

가 , , 가 , ,

(inhalation chamber) (inlet) (fixture), MDI (spacer)' (expanded hollow body) , , 가 , , / (outlet) 가 , , 가 , , / 가 , ,

가 , , 가 , , (face mask)가 , ,

가 , , /가 , ,

MDIs DPIs (nebulizers) (cloud) 가 , , ; 10

가 , , 가() ; (AC) ;

가 가 .
 가 가 , MDIs DPIs 가
 MDI DPI PCT 995398 (Watt) 66
 7168 (Minar et al.)

MDIs DPIs MDIs DPIs()
 MDIs DPIs MDIs DPIs

DPIs, MDIs
 가
 가

- 1 ;
- 2 ;
- 3 ;
- 4 ;
- 5 ;
- 6 ;
- 7 - / ;
- 8 7 - / ;
- 9 8 - / .

MDIs DPIs ,
 1 1 5 10
 (airtight seal) , 2 10
 가 (friction fit)

1 3 2 4 . 4 2

(holding chamber)

가 3 4 1mm ~ 15mm

4 가 2 21, 6

가 3 21 20 2

가 10 21 10 21 10

2 21 7

3 MDI DPI 가

1 2

5 2 2 1mm² 200mm² 1

가 3 2 (rubber ring) 2,

4 3 10 2 10 10

(distal end) 10 2 25 2 10

9 (ridge)가 10

3 8 4 가

3 가 6 6 가 2, 4

3 6 4 (airfoil)

(가) (가)

7 9 가 MDI DPI 14, / 15,

16, , 17, 17 14가 18, 가 12, 13 . 7
 , , 15 ' ' . , , 18 18
 , , 18 12 가 , 18
 13 , / 18 , 1 / 12 18 /
 , / 18 , 가 .

가

DPIs, MDIs

, , , 가 , , 가
 , , 가 가

(57)

1.

;

;

2.

1 ,

3.

2 ,

4.

1 ,

5.

1 ,

(metered dose inhaler)

6.

2 ,

(friction fit)

7.

1 ,

8.

3 ,

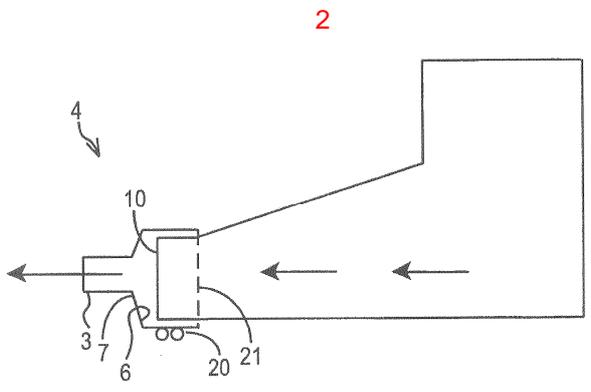
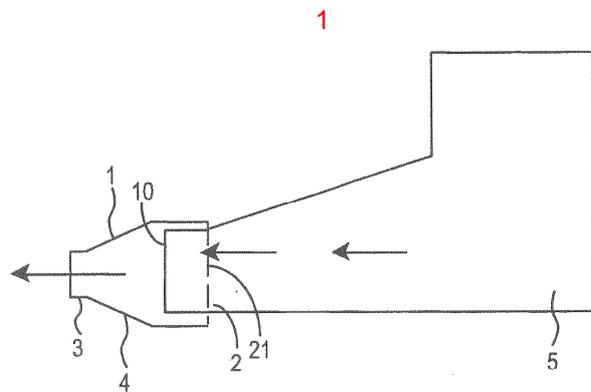
9.

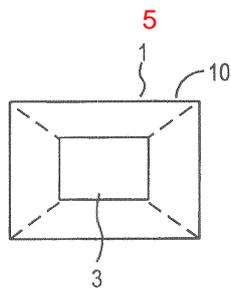
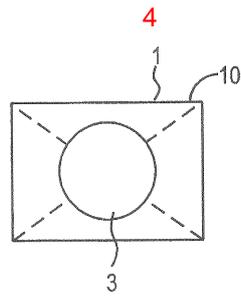
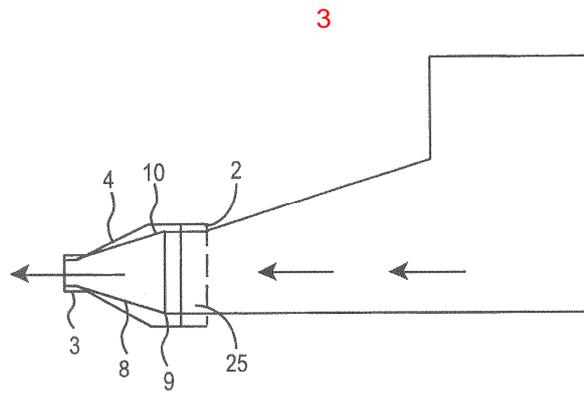
3 ,

(foil)

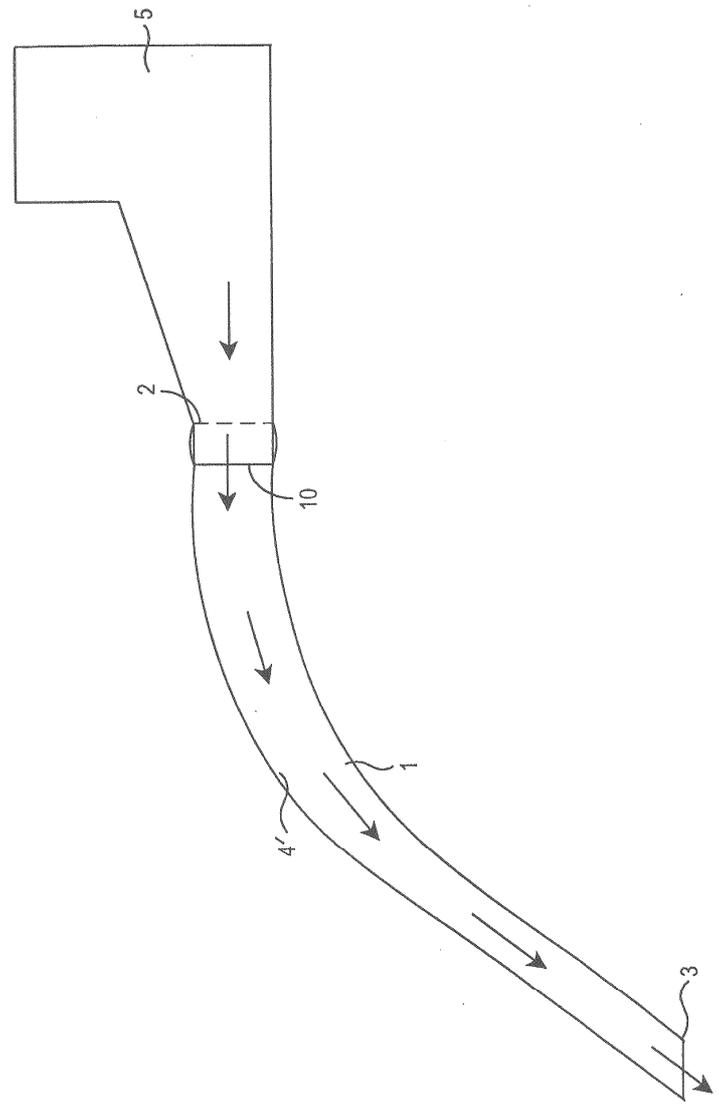
- 2 10.
- 1 11.
- 11 12.
- 1 13.
- 13 14.
- 13 15.
- 16 16.
- 16 17.

(airfoil)

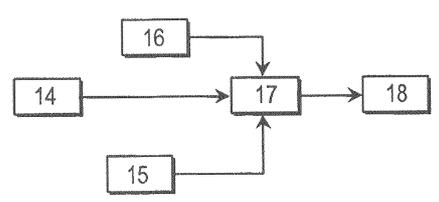




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7



8

