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Lau et al.

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- (54) **HEADGEAR FOR NONINVASIVE VENTILATION INTERFACE**
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- (*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

3,156,923	A *	11/1964	Walter	2/419
3,441,020	A *	4/1969	Aasen et al.	128/205.25
3,683,907	A *	8/1972	Cotabish	128/200.28
3,955,570	A *	5/1976	Hutter, III	128/201.23
4,055,173	A *	10/1977	Knab	128/847
4,195,363	A *	4/1980	Jenson	2/8.6
4,593,688	A *	6/1986	Payton	128/200.28
4,774,946	A *	10/1988	Ackerman et al.	128/207.18
5,704,916	A *	1/1998	Byrd	604/179
6,119,694	A *	9/2000	Correa et al.	128/207.13
6,889,689	B1 *	5/2005	Neuman	128/201.22

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- (22) Filed: **Mar. 1, 2005**

* cited by examiner
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- (65) **Prior Publication Data**
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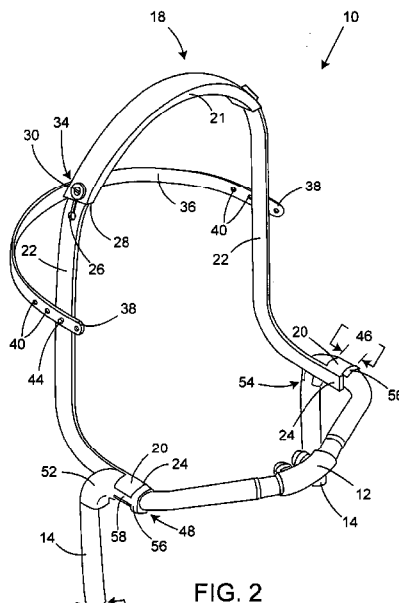
(57) **ABSTRACT**

- (51) **Int. Cl.**
A61M 15/08 (2006.01)
A62B 7/00 (2006.01)
- (52) **U.S. Cl.** **128/207.18**; 128/206.21; 128/206.24; 128/207.11; 128/206.28; 128/201.22; 128/206.26; 128/206.18; 128/206.11; 128/202.27; 128/206.27; 128/201.23; 128/201.29
- (58) **Field of Classification Search** 128/207.18, 128/200.24, DIG. 26, 206.21, 206.24, 207.11, 128/206.28, 201.22, 206.26, 206.18, 206.11, 128/202.27, 206.27, 201.23, 201.29
See application file for complete search history.

The present invention is a headgear for noninvasive ventilation interface made up of a nasal cannula including cannula tubing having a given outside diameter, and a headgear yoke with ends including tubing retainers. The yoke is adapted to extend transversely over a wearer's head. The tubing retainers are C-shaped projections having a given length and an inside diameter substantially equal to the tubing outside diameter. The present invention further includes a retainer mating element for each of the C-shaped tubing retainers to prevent the tubing from kinking near the C-shaped tubing retainers. The retainer mating element has an elbow section with an open side and a clip section connected to the elbow section by a rigid beam having a length substantially equal to the C-shaped tubing retainer given length, wherein both of the sections have an inside diameter substantially equal to the tubing given outside diameter.

- (56) **References Cited**
U.S. PATENT DOCUMENTS
2,292,568 A * 8/1942 Kanter et al. 128/203.28
2,525,236 A * 10/1950 Palmer

6 Claims, 4 Drawing Sheets



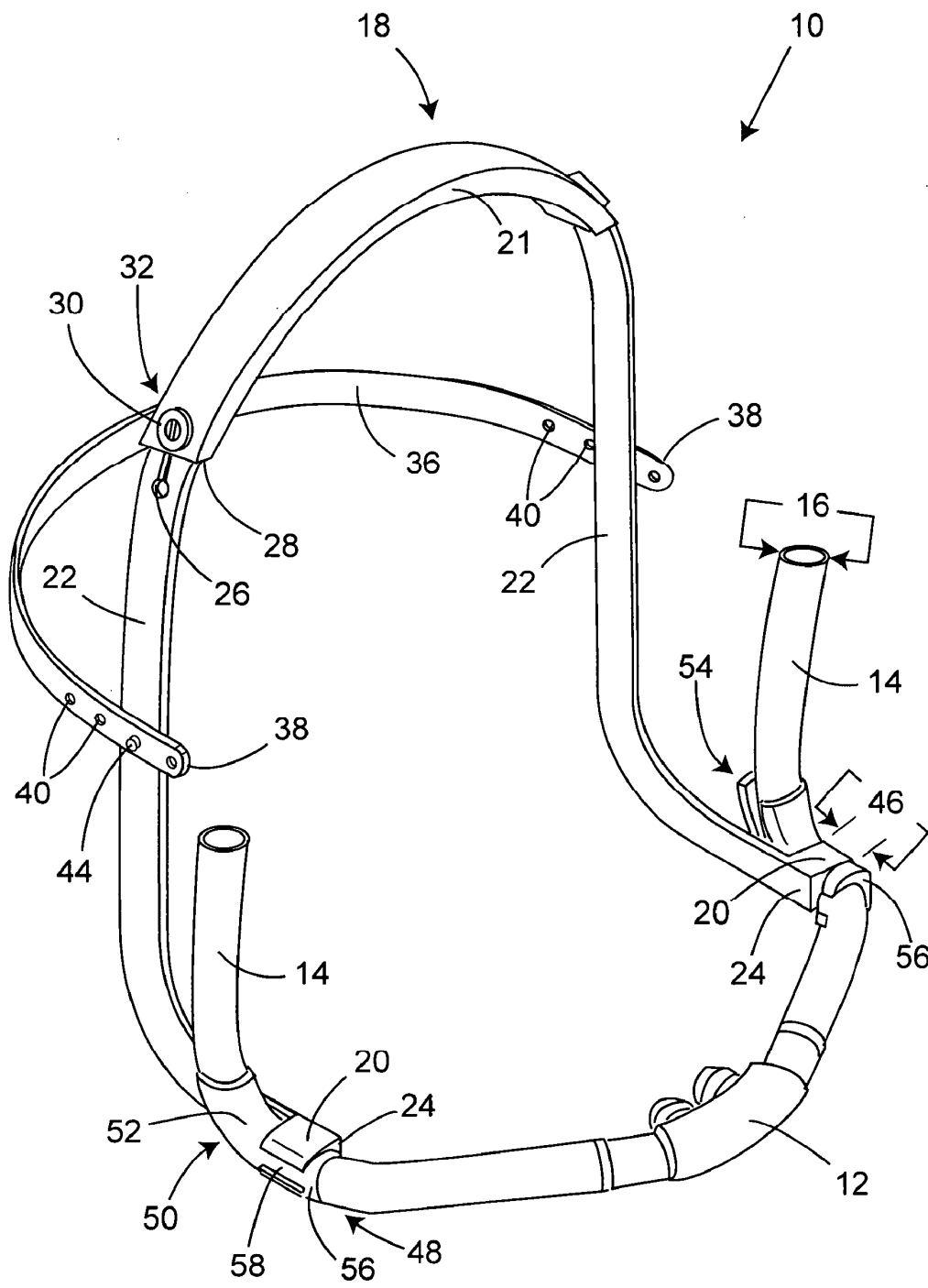
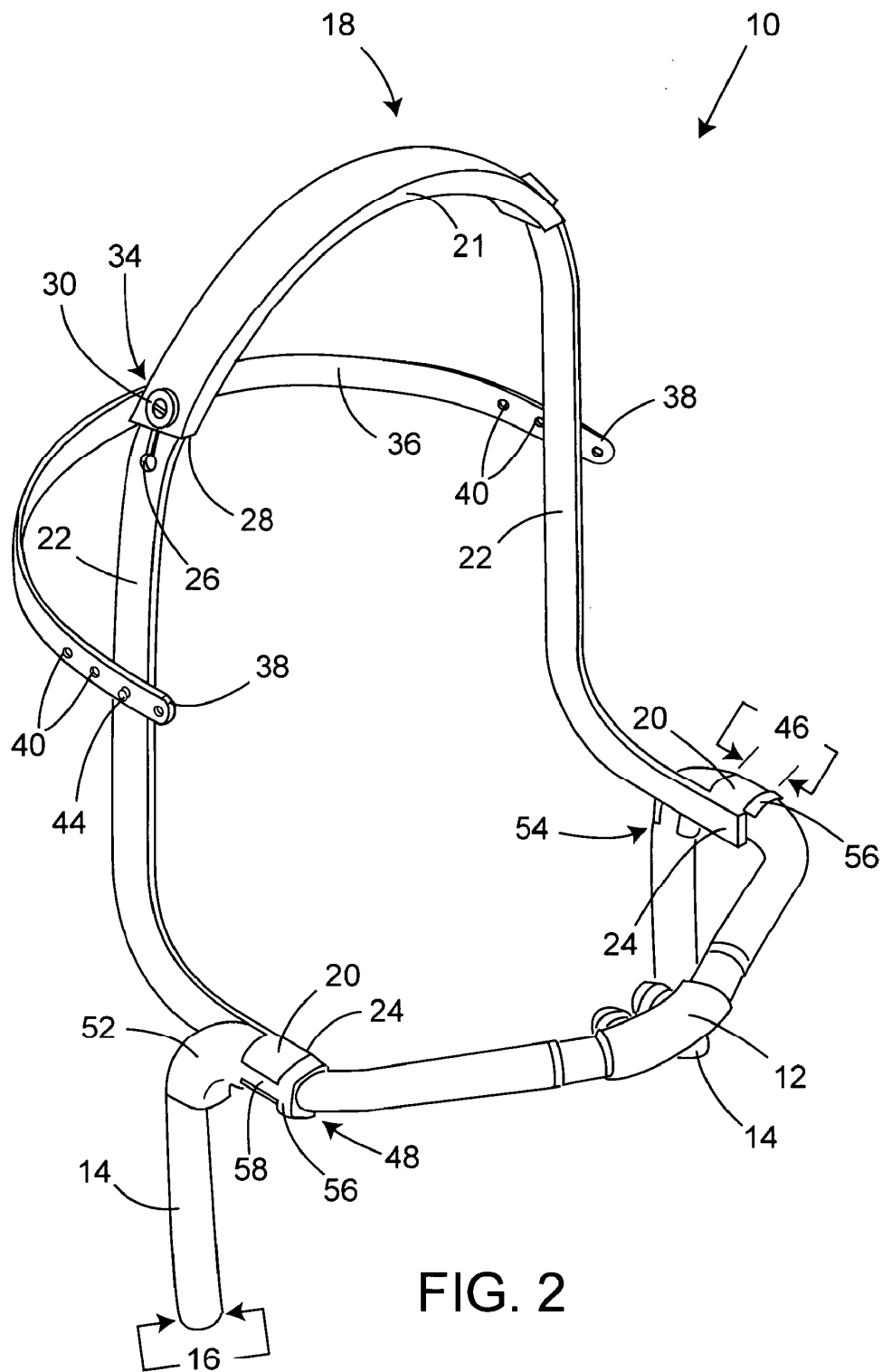
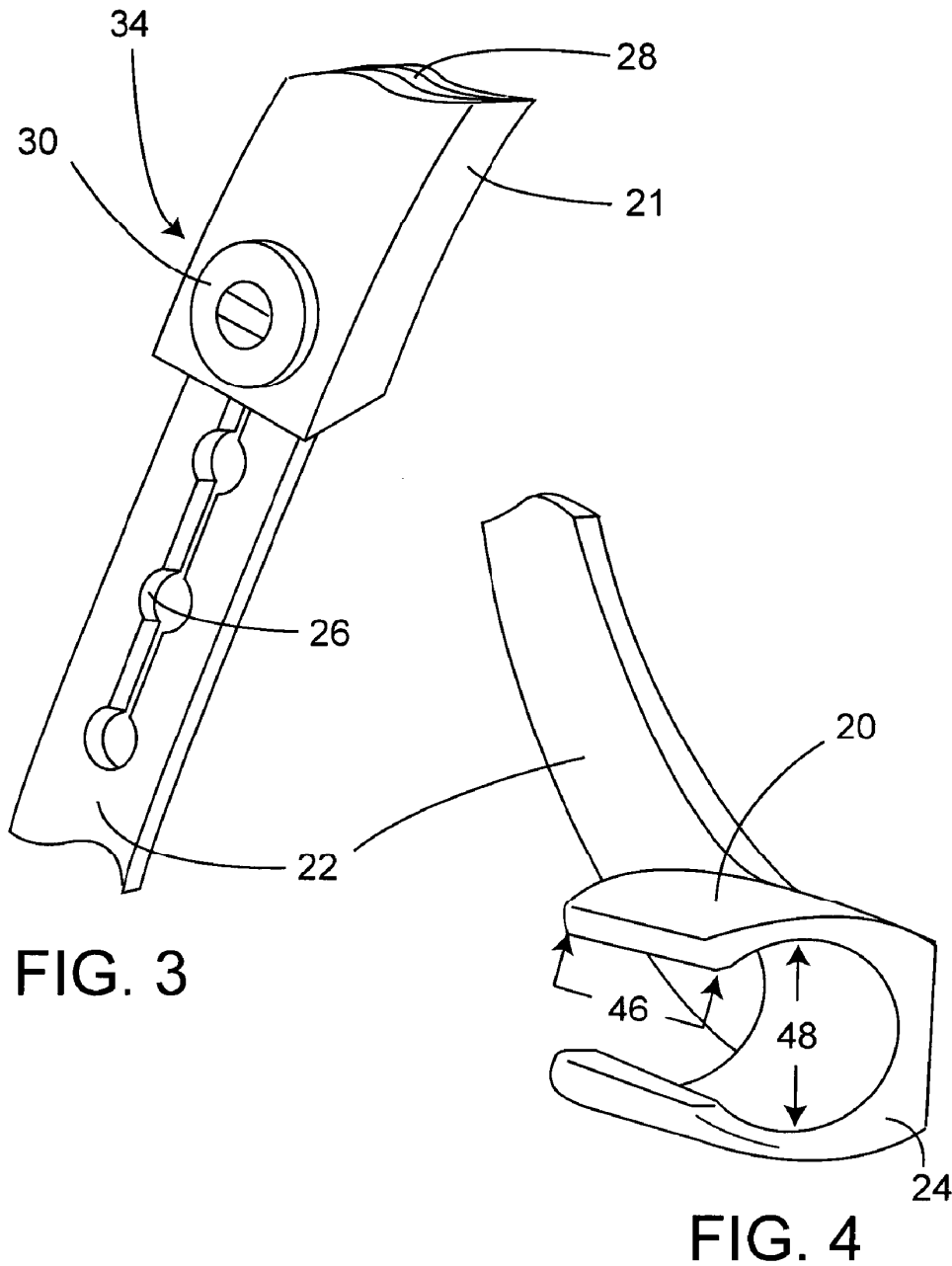


FIG. 1





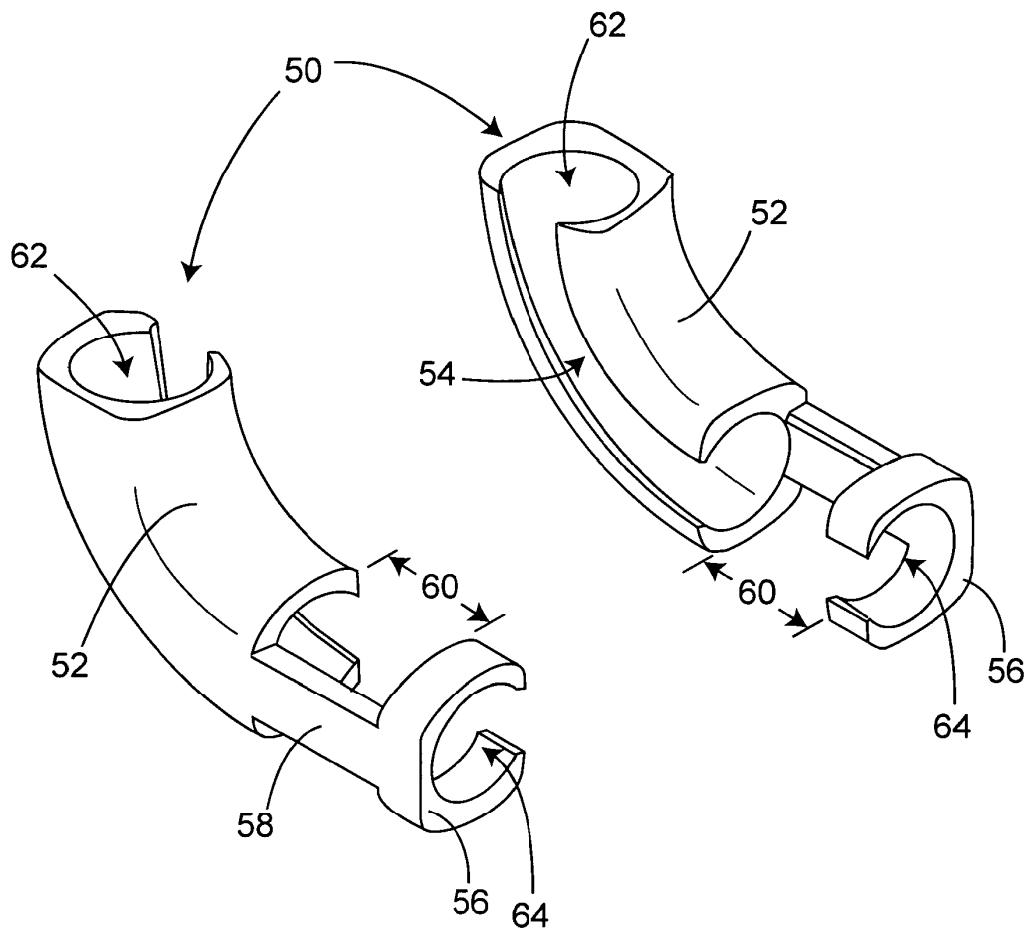


FIG. 5

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