

PATENT EXAMINATION BOARD

DRAFTING OF PATENT SPECIFICATIONS – GROUP 2(e)

[PAPER 1]

JULY 2024

Examiner: V Williams

Moderator: J D Whittaker

Time: 6 Hours

Total marks: 100

This paper consists of 13 pages (including this cover page), and includes two questions.

Instructions:

- Answer both questions; and
- Write legibly.

Question 1**[50 Marks]**

Your client, a midwife who works for the World Health Organization, suspects that the use of non-sterile feeding bottles is the single biggest contributor to the high mortality rate of babies by transmission of cholera, dysentery, and other diseases. She has found that in certain regions, apart from not having clean drinking water, the main source of the problem is caused by a dire lack of access to any means of sterilizing a feeding bottle prior to feeding. As a result, she believes that it is critical to prevent persons in these regions from reusing feeding bottles and exacerbating the problem. To address the problem, your client has developed a non-reusable feeding bottle which she calls “the STERI-bottle”. She provides you with the description and drawings below of the STERI-bottle, and she tells you that this bottle is a low-cost, fail-safe product.

The STERI-bottle

The STERI-bottle 10 is illustrated in an inoperative condition in Figure 1 (see page 5 below) and in an operative, feeding condition in Figure 2 (see page 6 below). The bottle 10 includes a teat 12 attached to a teat support ring 14 having a catch formation 16 about its circumference. The teat support ring 14 is attached to a collapsible container 22 filled with a baby feeding liquid formula 20. As can be seen in Figure 1, the teat support ring 14 is separated from the contents of the container 22 by a membrane 24. A tube 18 extends downwardly from a central region of the teat support ring 14 and includes a serrated free end (not shown) for piercing the membrane 24.

The STERI-bottle 10 further includes a tubular collar 26 having an inwardly extending, first stage upper catch formation 28, and an inwardly extending, second stage lower catch formation 30. The upper catch formation 28 is designed to retain the teat support ring 14 in the inoperative condition illustrated in Figure 1 by engaging the catch formation 16. Similarly, the catch formation 30 is designed to retain the teat support ring 14 in the operative, feeding condition illustrated in Figure 2 by engaging the catch formation 16. In the inoperative condition of the teat support ring 14, the lower end of the tube 18 is

located above the membrane 24 (see Figure 1), and in the operative condition of the teat support ring 14, the lower end of the tube 18 has pierced the membrane 24 to allow the baby feeding liquid formula 20 out of the bottle 22 via the teat 12.

A weakened zone 32 is located between the teat support ring 14 and the catch formation 16 (see Figure 1). The weakened zone 32 allows the catch formation 16 to flex inwardly when the teat support ring 14 is displaced downwardly, in use, from the inoperative, Figure 1 condition to the operative, Figure 2 condition. As the catch formation 16 descends below the catch formation 30 on the collar 26, it snaps outwardly and is locked below the catch formation 30 to retain the teat support ring 14 in the operative condition. If an attempt is made to forcibly remove the teat 12 from the bottle 22 so as to refill the bottle after use, the weakened zone 32 causes the teat support ring 14 to tear away from the catch formation 16, rendering the bottle unusable.

The tubular collar 26 is connected to the bottle 22 via an inward extending shoulder 34 at the base of the collar.

The STERI-bottle 10 also includes a cap 36 (see Figure 1) for keeping the teat 12 sterile prior to use.

A mother or caregiver may use the STERI-bottle 10 to feed a baby by removing the cap 36, pushing the support ring 14 down so as to pierce the membrane 24 with the tube 18 as the support ring is displaced from the inoperative condition to the operative condition, and inverting the STERI-bottle 10 to allow the baby to access the contents of the bottle via the teat 12. Once the baby has finished feeding, the non-reusable STERI-bottle 10 may be discarded.

Your client then provides you with a conventional feeding bottle for babies which is depicted immediately below, and which should be considered the only relevant prior art.

Prior Art



You are required to identify the inventive feature(s) of the invention, and to draft up to three claims to protect the invention.

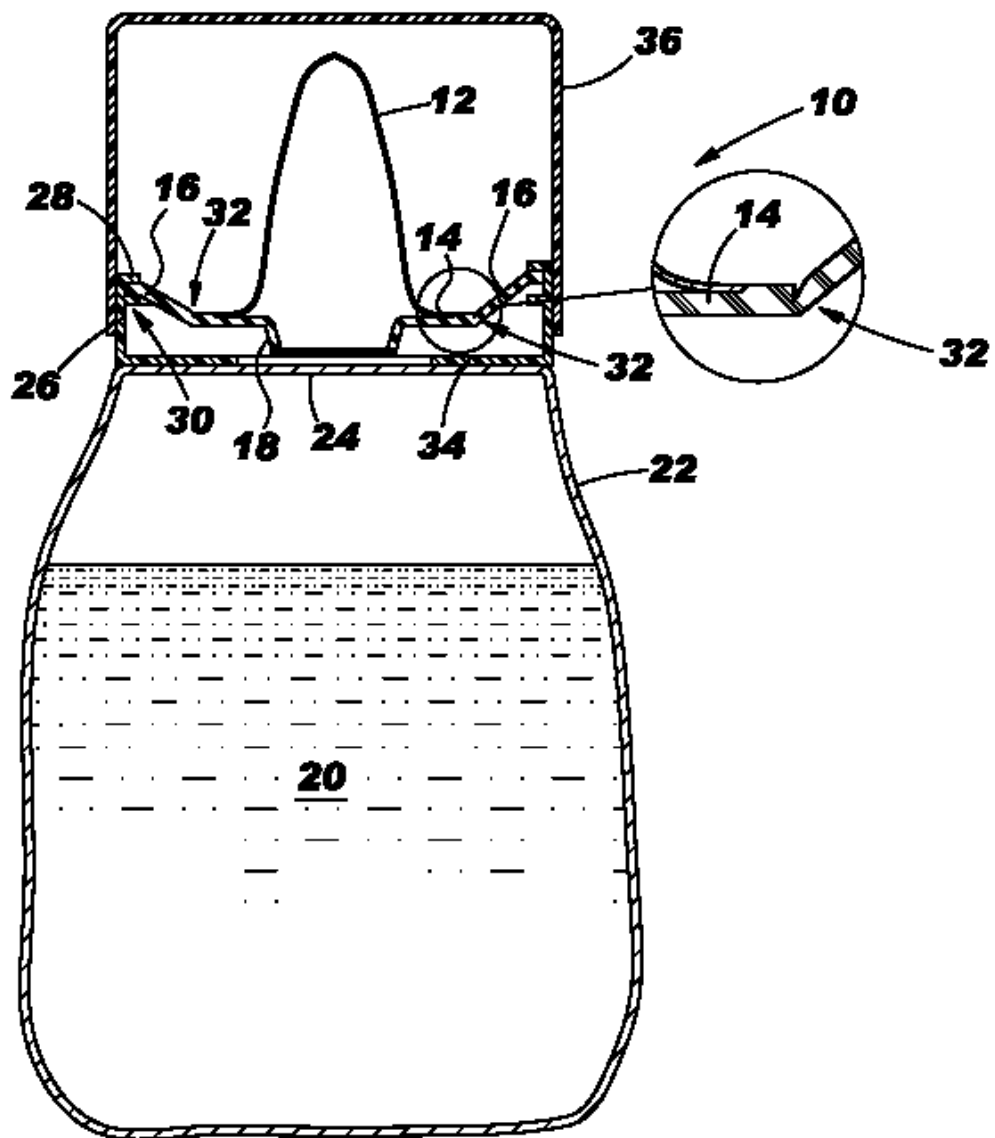


FIGURE 1

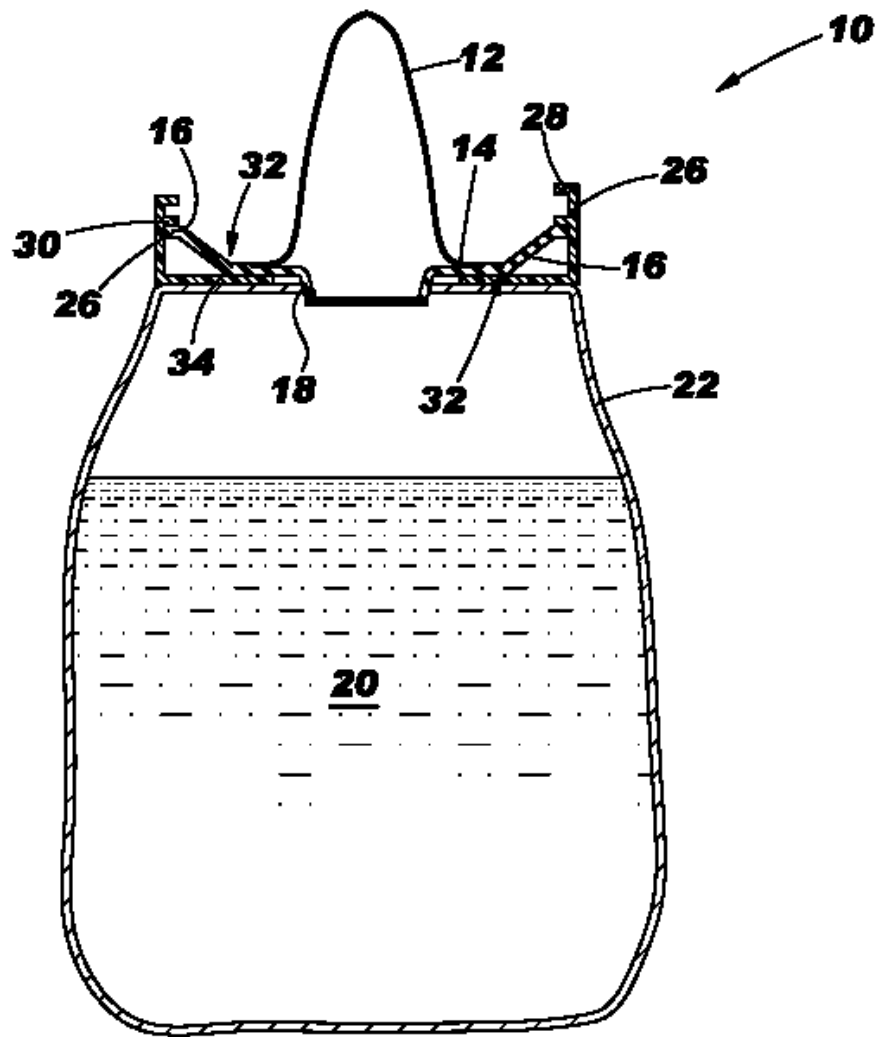


FIGURE 2

Question 2**[50 Marks]**

Your client, Mr. Signovic, tells you that his new "Sign-o-matic" invention will revolutionize the signage market which currently includes one dimensional advertising devices such as the prior art teardrop sign shown in the pamphlet on page 9 below. Your client hands you the drawings which appear on pages 10 to 13 below, and tells you that Figure 1 is a side view of his invention; Figure 2 is a plan view of the invention; Figure 3 is an exploded view of the invention; and Figure 4 is a promotional pamphlet for the Sign-o-matic invention. Your client also hands you the following description of his invention.

Sign-o-matic technical description

The Sign-o-matic, which is generally designated by the reference numeral 12, includes a shaft 2 for vertical mounting on a pole 1. An upper bobbin 4.1 is provided proximate the upper end of the shaft 2 for connection to an upper end of each of three resiliently flexible composite rods 7. Similarly, a lower bobbin 4.2 is provided proximate the lower end of the shaft 2 for connection to a lower end of each of the rods 7. The upper bobbin 4.1 and the lower bobbin 4.2 are held in place on the shaft 2 via threaded collars 3.1 and 3.2 respectively. Each rod 7 is longer than the distance between the upper bobbin 4.1 and the lower bobbin 4.2 so that a curved peripheral sleeve (shown in dotted lines in Figure 3) of a banner 8 of printable flexible material may, in use, be spanned by one of the rods 7 to form an advertisement having a straight side adjacent the shaft 2 and a curved side defined by the rod 7 inside the curved peripheral sleeve of the banner 8.

With reference to Figure 2, each of the upper and lower bobbins includes three attachment points (generally depicted by the dotted lines 14 extending radially into the bobbins) for attaching the upper ends of the rods 7 to the upper bobbin 4.1 and the lower ends of the rods 7 to the lower bobbin 4.2.

In use, the pole 1 is mounted on a ground spike 9 (see Figure 3) so as to extend vertically from the ground spike, and the shaft 2 is configured to be mounted on and rotatable relative to the pole 1.

The shaft 2 is provided with a disk-shaped magnet 5 and the pole 1 is provided with a disk-shaped magnet 6. The magnets 5 and 6 are axially aligned and are arranged with corresponding poles opposing one another. In this way, the opposing magnetic forces separate the magnets 5 and 6 from one another, as shown in Figure 1, and counter at least some of the weight of the shaft 2, the collars 3.1 and 3.2, the bobbins 4.1 and 4.2, the rods 7 and the banners 8, to facilitate rotation of the shaft 2 on the pole 1.

You are required to identify the inventive feature(s) of the invention, and to draft up to three claims to protect the invention.

Teardrop prior art pamphlet



This Extra-Large Teardrop banner comes with a single-sided custom print flag, a stand, and a spike base. With the default spike base, the flag may be used on any grass or soft, penetrable ground. With the stand it may be used on any hard ground outside, such as concrete, or indoors. The banner design is customized to your graphic artwork, and is printed on a polyester-blend mesh material by dye sublimation. Our inks heavily saturate the material to create a “bleed-through” effect for our single-sided displays such as this one. Black flag trim is sewn on the edge of the graphic (pole-side), leaving a pocket for pole insertion. A set of grommets are installed on the bottom of the trim in which a short bungee cord (included) can loop through and snugly attach the graphic to the base.

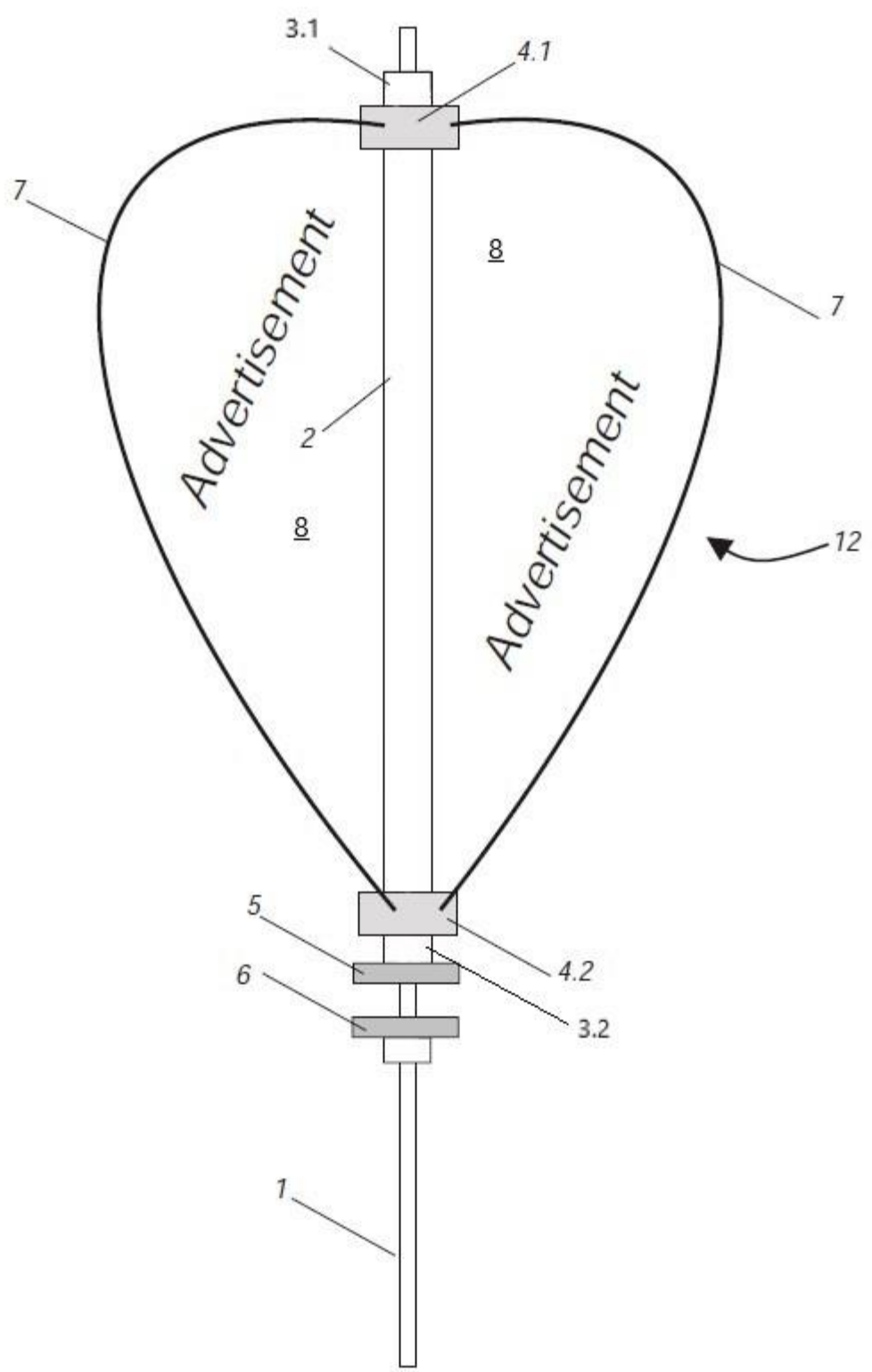


Figure 1

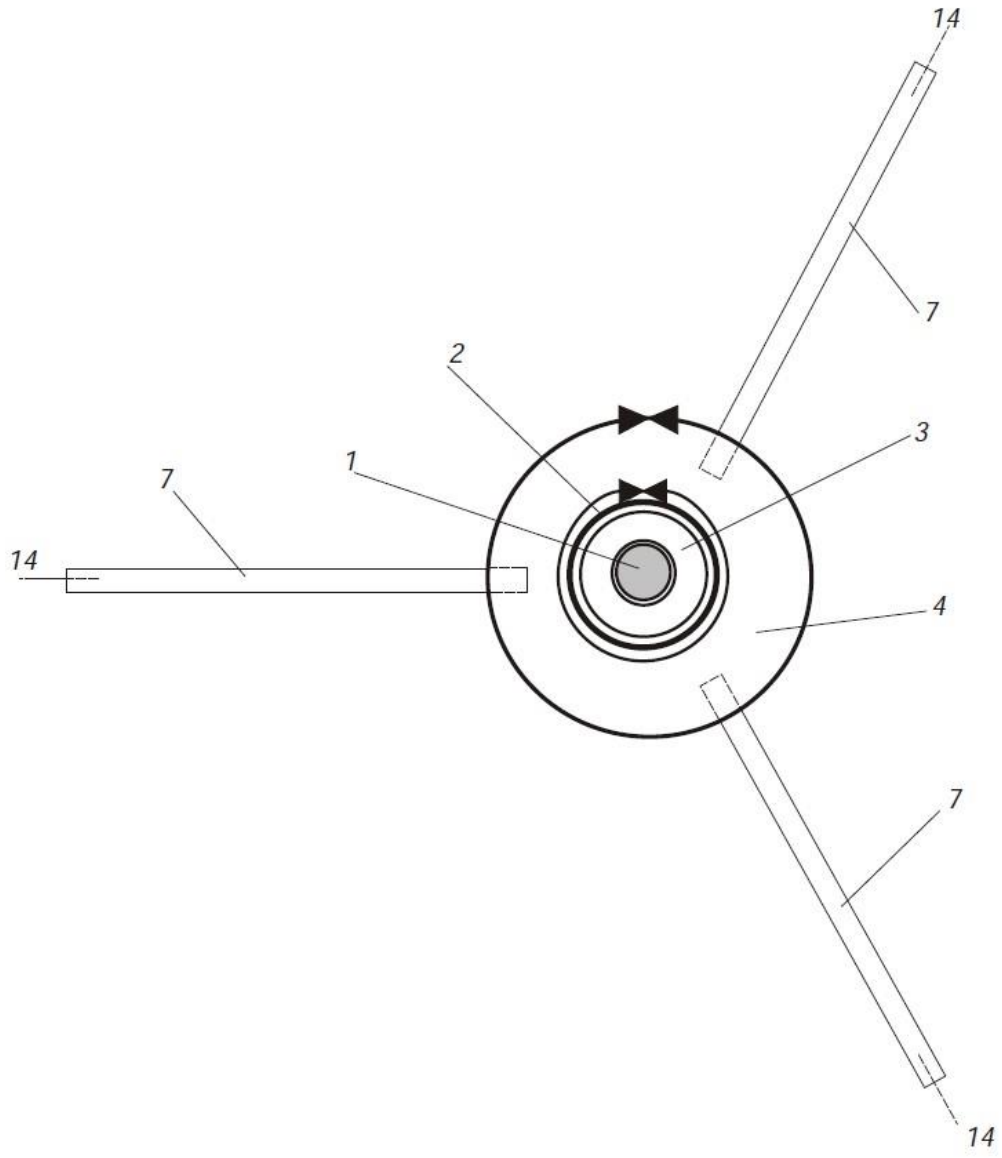
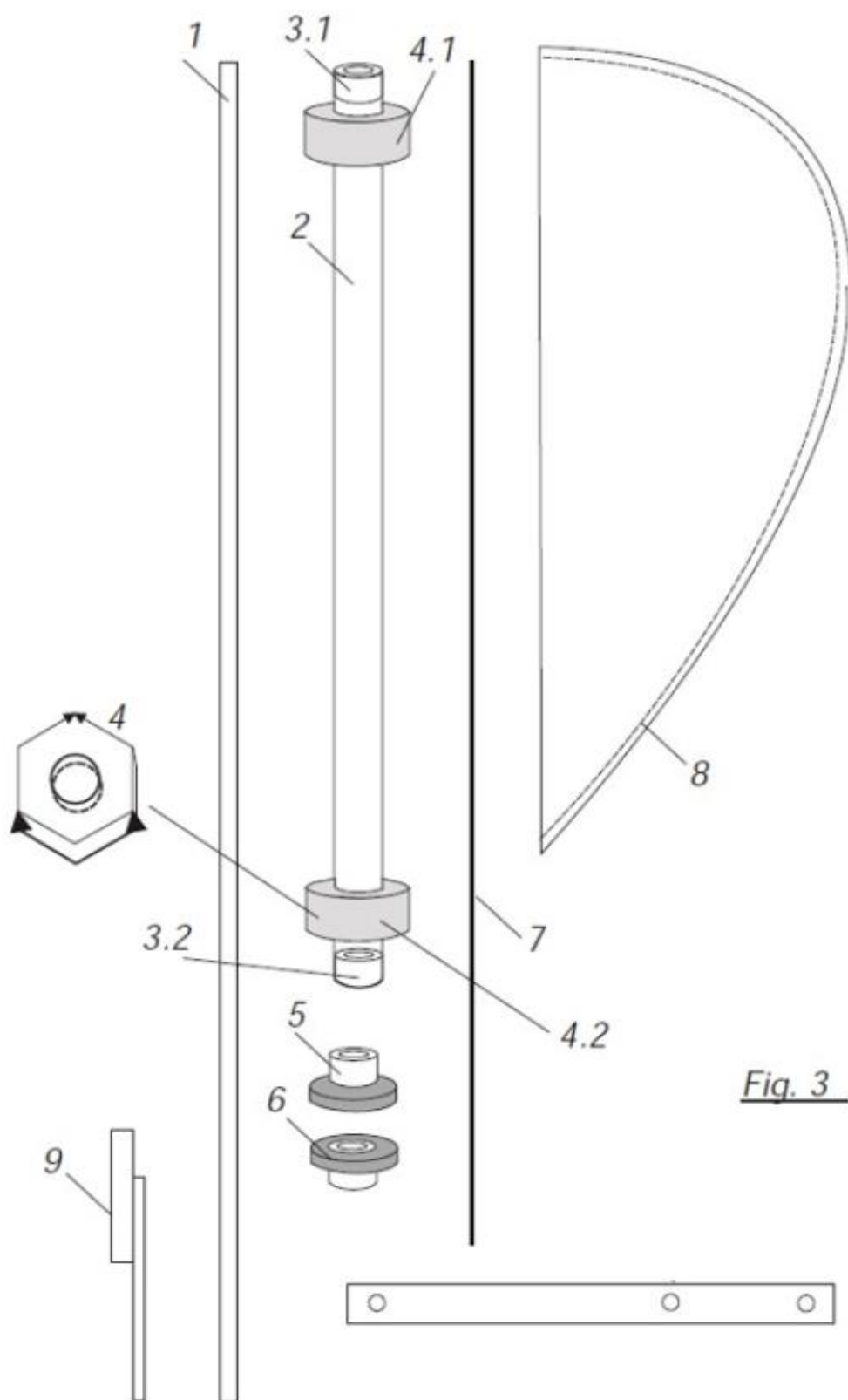


Figure 2



Where your advertising hits the bull's eye!



- Large surface area for branding**
- 3 advertising faces**
- Free rotational movement**
- Portability**
- Goes up and down in 2 to 3 minutes**
- Collapses into a 1.5m bag**

Free rotation

Figure 4