

PROBLEM STATEMENT: Individuals who need the assistance of underarm crutches for mobility currently do not have an effective , feasible way to transport beverages 5 to 10 feet, possibly from the kitchen counter to the table.

Our team found some existing products and patents for products that attempt to solve our problem. None of the solutions perform the way we want our design to, but the fact that there are some products confirm that the problem exists.

Past and Present Solutions

We did an Internet search to find products that would solve our problem. We also looked at websites selling medical equipment and accesories, and distributers such as Walgreens and Walmart. This search did not yield any products that would solve our specific problem. We found 3 existing products on the market that were all closely similar to one another.

However, most of them were made more specifically for canes and walkers. All of them would attach to under-arm crutches, but would not swivel back and forth. Two of them had slots for mug handles. One of them allowed for various sizes of beverage containers. Images of these products are below:



<http://www.amazon.com/Nova-Ortho-med-Ch-2000-Economy-Holder/dp/B003ZSCFZM>

This product can be purchased at Amazon.com. Its benefits are that it holds basic water bottles of soda cans, installs in 5 - 10 minutes, and is made of sturdy plastic. Customer reviews on the site ranged from "just what my mom needed" to "The cup is made of soft plastic and is not high enough to provide any support. Don't waste your time or money." Another disadvantage is that it does not attach to crutches.

<http://www.walgreens.com/store/c/nova-cup-holder/ID=prod1362928-product?V=G&ext=frgl Google Home Medical Supplies & Equipment> (<http://www.walgreens.com/store/c/nova-cup-holder/ID=prod1362928-product?V=G&ext=frgl Google Home Medical Supplies & Equipment>)



This product is available at Walgreens. Some of the pros listed by users were "Durable,

Easy To Use, Effective, Compact." Cons included "Ok if your drink has a lid or cover to prevent spilling. Otherwise, you would need to drink your liquid down a bit to avoid spilling." It too does not attach to crutches.



<http://www.amazon.com/Cup-Holder-Wheelchair-Cane-Walker/dp/B000P3KLLK>

[Cane-Walker/dp/B000P3KLLK](http://www.amazon.com/Cup-Holder-Wheelchair-Cane-Walker/dp/B000P3KLLK)

Available at Amazon.com, customers of this product said, "I am so pleased with my choice of this cup holder over the others. The attachment can be hung on the side of the walker." Pros were listed as "It doesn't hold very many things securely and sticks out so far that people bumped into it!!! A bottle of water falls all over the place." Again, it is not designed to be used on a crutch.

We then researched to see if there were items designed for other uses, but essentially solved the same problem that we had. We looked at the "Gyro Bowl" which sells for \$12.88 at Walmart. This bowl prevents spillage but is designed for toddler use, rather than attaching to a crutch.

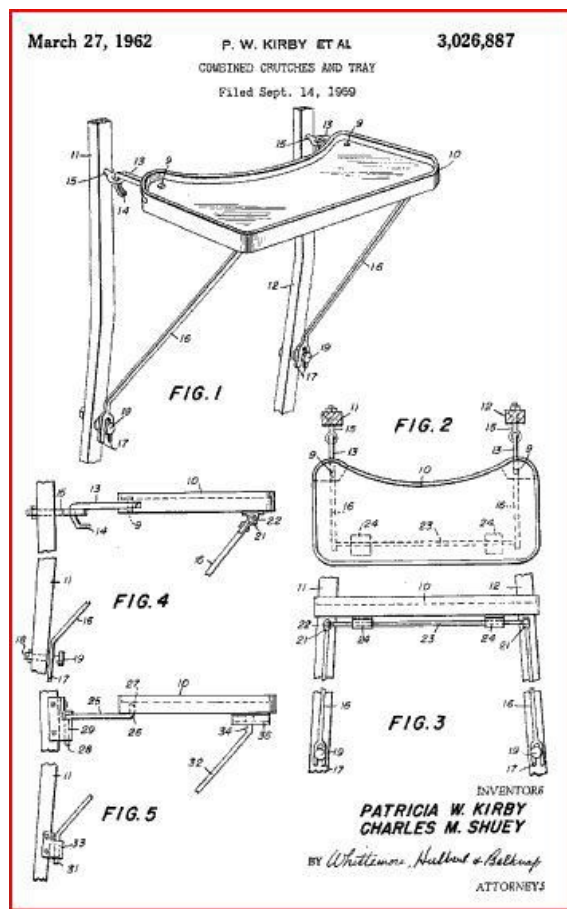


<http://www.walmart.com/ip/As-Seen-on-TV-Gyro-Bowl/15939502>

Reading customer reviews of this product, most consumers gave it two stars out of five, due to flimsy construction, lack of durability, and inability to prevent spills. One user of the above "Gyro Bowl" recommended "Munchkin Snack Cup". This is simply a toddler cup with a snap-on cover. Based on our search, there does not seem to be an existing product that does what we are striving to do.

Patents

We also found eight patents that had some merit. There are a few patents that were made specifically for underarm crutches. However, once again, none of these patents allowed for a beverage to maintain upright, minimizing spillage. We also found a patent for a tray for carrying food, but it only allows for minimal crutch movement. Most of these patents will allow for successful transportation of open containers, but the movement of the individual would have to be slow and extremely careful. The patent numbers and their file dates are listed below:



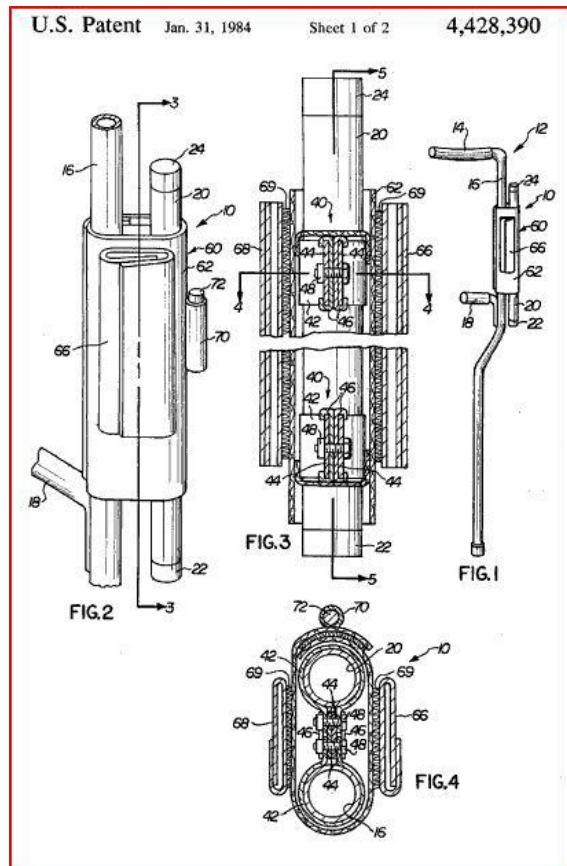
#4428390 issued 1/31/84

#5647519 issued 7/15/97

Patent # 5803327 issued 9/8/98 and patent # 8146614B2 issued on 4/3/12 perform in a manner that is similar to what we want. They both allow the crutch user to carry a beverage, but the holders are anchored to the crutch and remain stationary, which would cause the beverage to move with the same range of movement as the crutch. It doesn't appear that it would prevent most spills when the patient is actually moving with the crutches. They pictured below:

5803327 issued 9/8/98

8146614B2 issued on 4/3/12



We believe our solution would be more beneficial to individuals using underarm crutches because they can fill up their beverage container and continue to use crutches normally. They would not have to be extremely careful and they could move at a normal pace. Our design is the only one that allows the beverage holder to sway back and forth, moving along with the crutch and maintaining balance. We feel that people who use crutches as a mobility aid for any length of time would benefit and desire our product.

FIG. 1a

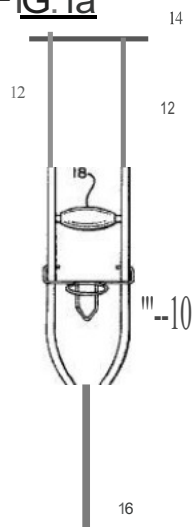


FIG. 1b

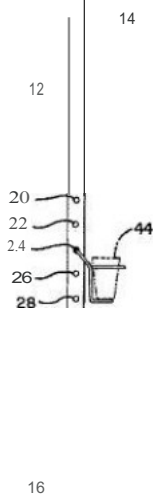


FIG. 2

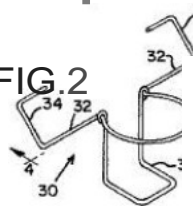
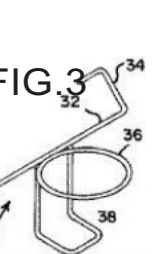


FIG. 3



Sep. 8, 1998

FIG. 1

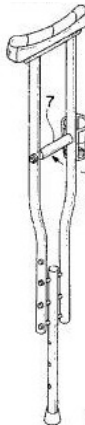


FIG. 2

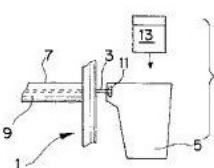


FIG. 3

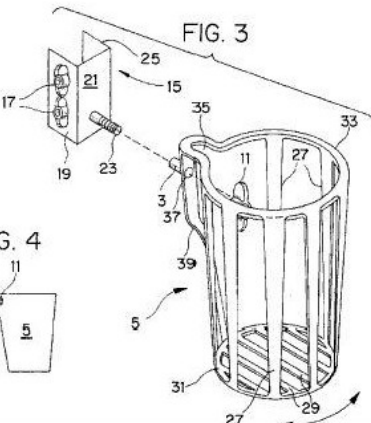
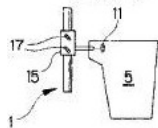


FIG. 4



U.S. Patent

Apr. 3, 2012

US 8,146,614 B2

