

E. W. LUELLEN.

CUP.

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1,032,557.

Patented July 16, 1912.

Fig. 3.

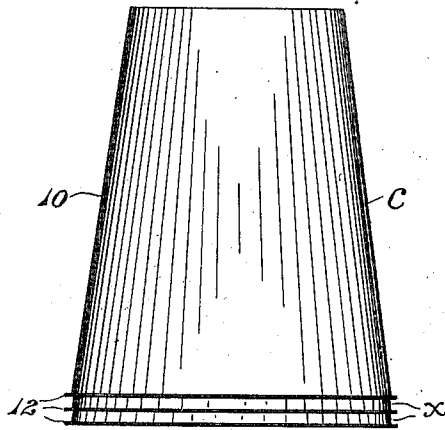


Fig. 2.

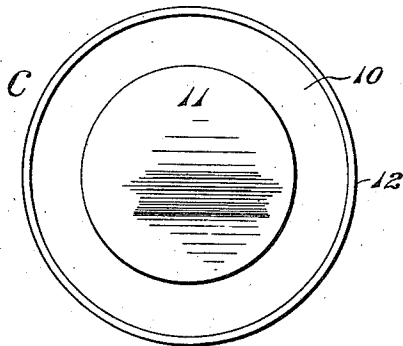
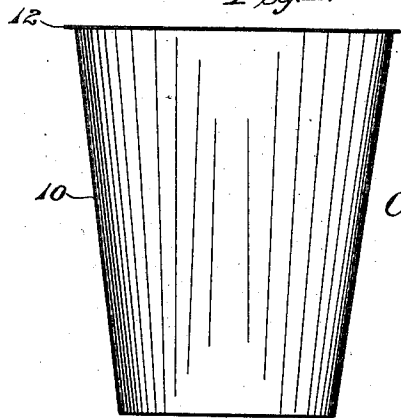


Fig. 1.



Witnesses.

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CUP.

1,032,557.

Specification of Letters Patent.

Patented July 16, 1912.

Application filed May 23, 1908. Serial No. 434,550.

To all whom it may concern:

Be it known that I, LAWRENCE W. LUELLEN, a citizen of the United States, residing at Newton, in the county of Middlesex and State of Massachusetts, have invented a new and useful Cup, of which the following is a specification.

In the development of coin-controlled apparatus for dispensing beverages, for which I filed, on April 2, 1908, an application for Letters Patent, Serial No. 424,732, I have found it desirable to employ a cup, so organized and of such inexpensive material, that it may be automatically delivered by a vending machine from a stock or supply with the liquid contents, it being considered as included in the sale, to be thrown away or otherwise disposed of by the purchaser.

The object of the present invention is to provide a convenient cup or container for this or similar purposes.

In the accompanying drawing, in which similar parts are designated by the same characters throughout the several views, Figure 1 shows a side elevation of one embodiment of my invention; Fig. 2 is a top plan view thereof, and Fig. 3 illustrates a plurality of the cups nested as they would be in the supply, ready for use.

My improved cup, designated as a whole by the character C, is preferably formed from water-proof paper, this material being resilient, cheap and sufficiently durable for the length and character of the service which the article is to perform. It has a tapering side wall 10 and a flat bottom portion 11, which may be assembled and secured in any desired manner, the method of making not playing a part in the present invention.

The frusto-conical form and the comparative thinness of the wall 10 allows the cups to nest closely, as illustrated in Fig. 3, a great number thus placed extending but a little distance, yet the edges about the openings of successive cups in the nested series are separated by definite though narrow spaces α .

Adjacent to the opening of each cup is a projection which I prefer to furnish by a continuous flange 12 integral with the wall 10, it consisting of a single thickness of the paper turned over and lying substantially in the plane of the edge, that is, at right angles to the longitudinal axis of the cup but forming an obtuse angle with the side wall. The flanges in a series are therefore approxi-

mately parallel to one another and separated by the spaces α , this relation giving a maximum ease of admittance between the flanges considering the total space occupied by the series. This permits the terminal cup to have its flange engaged by suitable mechanism, which enters the space α between it and the next cup and withdraws it from the stock for use. There are several other considerations which govern the relation of the flange to the side wall. The natural position of the cup when stored is inverted, to exclude dirt, and even when nested the lowermost individual of the series rests upon its flange. Therefore, this flange should be so arranged that it will not become distorted under the weight applied to it and thus vary the width of the space α previously referred to. This alone would determine that the angle which the flange forms with the wall should not be more obtuse than that existing when the flange is at right angles to the cup-axis. Furthermore, as the flange passed this plane, or approached coincidence with the inclination of the wall, it would offer less resistance to being further bent in the same direction, diminishing its effectiveness as an engaging means. On the other hand, it may be desired that after the cup has been thus seized, it shall be inverted and filled with liquid, and that the weight of the cup and contents shall then withdraw it from the engaging mechanism by bending or straightening out the flange. So, to avoid undue resistance to such release, the angle of the flange with the cup-wall should not be less obtuse than ninety degrees with respect to the axis. This fixes the angle of maximum effectiveness at the intermediate position already described. The flange also strengthens the cup, and, because of its perpendicular position with respect to the axis, offers the greatest resistance to lateral crushing stresses with a minimum of material and of labor in forming. In this connection there should be noted the peculiar cooperation between the cups when nested and their flanges. Each cup is then strengthened, not only by its own flange but by those of a considerable number of other cups which surround it. Consequently, when arranged in a series, the cups may be more safely forced together and handled. The overlapping cups of the series also tend to maintain the true circular cross-section of the terminal

cup, and thus prevent its flattening by the inward spring of the sides and slipping out of the engaging means when the latter is drawing it from the stock. But after the
5 separation of the cup from its fellows the lateral compression acts with the bending of the flange to aid in release.

Having thus described my invention, I claim and desire to secure by Letters Patent:
10 1. A drinking cup for use in connection with vending machines made of thin flexible paper having an open end folded outwardly

to form a narrow flange integral with the body of the cup.

2. A drinking cup for use in connection with vending machines made of thin flexible paper having a narrow flange integral therewith around its open end, the flange forming an unbroken uniform part of the body of the cup.

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Witnesses:

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