H. S. FROST.

UMBRELLA-TIP CUP.

No. 192,912 Patented July 10, 1877.

Fig. 1.



Fig. 2.

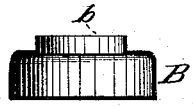


Fig. 3.

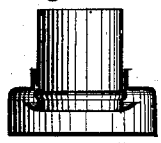


Fig. 4.



Fig. 5.

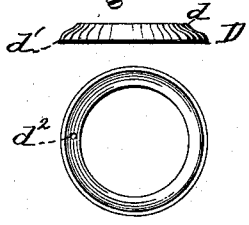


Fig. 6.

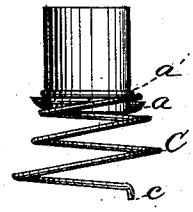


Fig. 7.

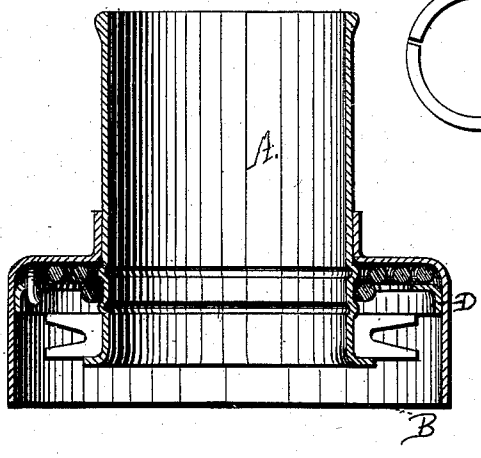


Fig. 9.

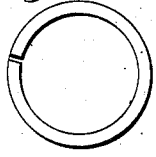
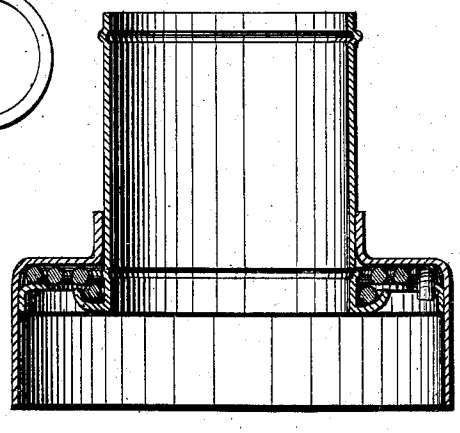


Fig. 8.



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UNITED STATES PATENT OFFICE.

HENRY S. FROST, OF WATERTOWN, CONNECTICUT.

IMPROVEMENT IN UMBRELLA TIP-CUPS.

Specification forming part of Letters Patent No. **192,912**, dated July 10, 1877; application filed June 6, 1877.

To all whom it may concern:

Be it known that I, HENRY S. FROST, of Watertown, in the county of Litchfield and State of Connecticut, have invented a new and useful Improvement in Tip-Cups; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention consists, mainly, in certain details of construction, fully described hereinafter, by means of which a compact and simple device, well adapted for the purpose designed, is obtained at a small cost.

In the drawings, Figure 1 represents an elevation of the cylinder, partially in section. Fig. 2 is a side elevation of the cup; Fig. 3, a similar view of the cylinder and cup, without the intermediate spring; Fig. 4, an elevation of the spring detached; Fig. 5, views of the ring for securing the lower end of the spring; Fig. 6, a side elevation of the cylinder, with the spring properly attached thereto; Fig. 7, a sectional elevation of a cup-runner greatly enlarged, having my improvements applied thereto; Fig. 8, a similar view of a tip-cup; and Fig. 9, a plan view of a modified form of spring.

To enable others skilled in the art to make and use my invention, I will now proceed to describe fully its construction and manner of operation.

A represents the cylinder, having at one end the outwardly-turned annular flange *a*, and the bead *a'* adjacent thereto, as shown. B represents the cup, constructed, generally, in the usual or any other proper manner, which is provided with the central opening *b* for receiving and holding the cylinder, as shown. C represents a spring, wound in conical form, the small end of which is of such diameter as to tightly grasp the cylinder when in place. The first coil of this spring, when the latter is in its proper position, lies in the recess between the flange *a* and the bead *a'* of the cylinder, as shown in Fig. 6, by means of which the two are securely attached together. The end of the last coil, it will be observed, terminates in a bent end, *c*.

D represents a metal ring, having a horizontal, or nearly horizontal, portion, *d*, and a vertical portion, d^1. d^2 represents an opening, adapted to receive the bent end *c* of the spring C.

When the parts are put together the ring is forced into its proper place in the cup by strong pressure, so that the two are firmly united without fastening of any kind.

The operation will be readily understood.

One end of the spring is united to the cylinder by means of the flange and bead of the latter, and the other end to the cup by means of the ring D. From this construction it follows that, when the cup is raised upon the cylinder to admit the tips, it will be returned to its normal position, when released, by the reaction of the spring.

In Fig. 7 the same construction is represented, as applied to a cup-runner.

If desired, a flat spring, as shown in Fig. 9, may be employed, instead of a conical one.

By means of this construction it will be observed that the spring is held in a plane below the upper surface of the cup, and that, when moved to admit the tips, it is drawn out in a direction opposite to its normal position.

It will also be observed that the usual recess formed between the cylinder and the cup is dispensed with.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In combination with the cylinder A, having the flange *a* and bead *a'* located at one extremity, the conical spring C secured at its small end within the recess, as described.

2. In combination with the cylinder A, having the spring C attached at one extremity, the cup B and ring D, the construction being such that the spring is held below the plane of the upper surface of the cup, as shown and described.

3. In combination with the ring, the cup B and the spring C, having a bent end, as described.

4. The tip-cup described, having the cylinder, with flange *a* and bead *a'*, the cup B, the conical spring C, and ring D, secured to the cup, as described.

This specification signed and witnessed this 2d day of June, 1877.

HENRY S. FROST.

Witnesses:
T. P. BALDWIN,
LEMAN W. CUTLER.