(No Model.)

B. J. DOWNS.

TREE PROTECTOR.

No. 306,007. Patented Sept. 30, 1884.

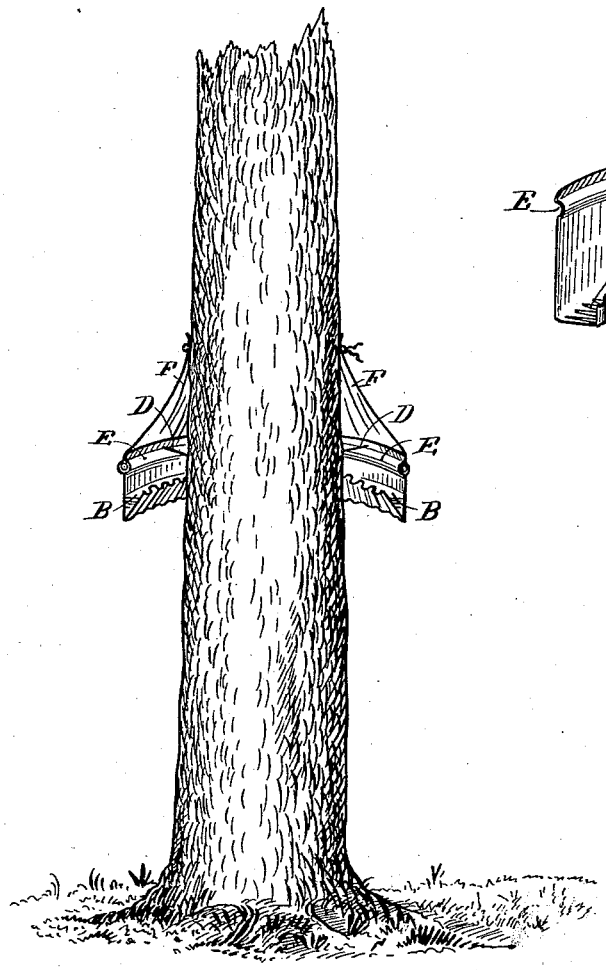

Fig. 1.

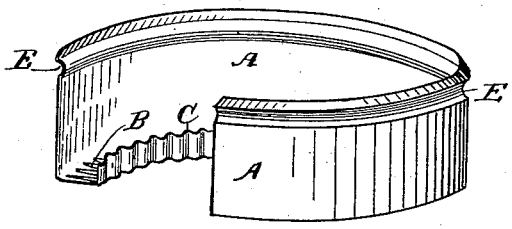

Fig. 2.

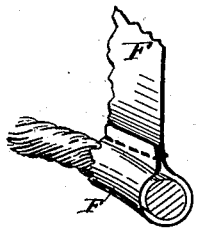

Fig. 3.

Witnesses.

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Inventor.

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UNITED STATES PATENT OFFICE.

BENJAMIN J. DOWNS, OF WEST SOMERVILLE, MASSACHUSETTS, ASSIGNOR OF FOUR-FIFTHS TO JOHN W. COOK, ALFRED J. CUNNINGHAM, AND JEROME A. ROBBINS, ALL OF SAME PLACE.

TREE-PROTECTOR.

SPECIFICATION forming part of Letters Patent No. 306,007, dated September 30, 1884.

Application filed March 8, 1884. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN J. DOWNS, a citizen of the United States, residing at West Somerville, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Tree-Protectors; and I do hereby declare that the same are fully described in the following specification and illustrated in the accompanying drawings.

The object of this invention is to increase the durability and capacity and to lessen the cost of tree-protectors of that class in which an annular trough containing a viscid liquid is secured in position around the tree to protect it from the ravages of worms and insects.

My invention consists in a sheet-metal cylinder having an inward-turned annular trough formed in one with it, in combination with a water-proof flexible apron adapted to be secured directly to the outer face of said cylinder and to the tree to be protected.

It also consists in such cylinder and trough in a single piece, the trough having a corrugated bottom in a horizontal plane and a corrugated edge or inner wall standing substantially vertical.

Another feature of my invention is the grooving of the cylindrical body and the inward bevel of its upper edge for securing the apron and protecting it from injury.

This invention is in the nature of an improvement on the tree-protector shown in the patent to A. G. Cook, No. 223,996, dated February 3, 1880. In that device the corrugated trough was turned up obliquely, leaving but a limited space for the liquid, and the apron was not secured to the cylinder, of which the trough formed a part, but to a separate ring arranged to slip down outside of said cylinder, with a liability of space between the two through which insects may penetrate.

In the drawings, Figure 1 shows my protector as applied to a tree, the device being in vertical section. Fig. 2 represents the metallic cylinder and the preferred form of trough. Fig. 3 is an enlarged detail.

A is the vertical cylindrical part of the device, and B the trough formed in one with it. This trough is corrugated or crimped to take up the stock as the metal is bent into annular shape. The trough being nearer the center of the circle than is the vertical wall A, it follows that the flutes or corrugations will increase in depth inwardly from the line of junction of the parts A and B to the inner edge of the trough. The trough may be turned in to extend obliquely upward, as in said Cook patent; but I prefer to form it with a bottom substantially horizontal and an upturned inner edge, C, standing vertically, since an acute angle in the metal is thereby avoided, and greater capacity in the trough is attained. I construct an annular trough of this character from a single piece of sheet zinc or copper by means of a machine invented by me for the purpose, which machine will form the subject of another application for patent to be hereafter filed by me. The trough is secured to the tree by long nails D through the cylinder A into the wood. The holes in the metal may be countersunk, or may be formed in a groove of the metal, so as not to have the nail-heads protrude. I form an inward bead or groove, E, entirely around the cylinder A, in which to confine the lower edge of the water-proof flexible apron; and I bevel or curve inwardly the extreme upper edge of the cylinder, in order that the apron may not be worn or caused to leak by bearing against the sharp edge of the metal. The apron F is preferably of a stout fabric, oiled or otherwise rendered water-proof. Its lower edge is secured in the groove E by a stout cord drawn tightly and tied around it, and in order to make as neat an appearance as possible I prefer to turn in a hem at the bottom and run the cord through the same to conceal it. The upper portion of the apron is gathered in and secured closely to the tree, to which it converges uniformly, as usual.

I claim as my invention—

1. The cylinder A, having the annular groove E, and the annular trough, corrugated or crimped as described, the whole formed of a single piece of metal, in combination

with the apron F, secured in said groove in the cylinder, substantially as described, and for the purpose stated.

2. The cylinder A, having annular groove E, and the annular trough, said trough having a bottom substantially horizontal when in use and an upturned inner wall, the wall and bottom being corrugated, and all composed of a single piece of metal, substantially as described.

In testimony whereof I hereto affix my signature in presence of two witnesses.

BENJAMIN J. DOWNS.

Witnesses:
A. H. SPENCER,
E. A. PHELPS.