

(No Model.)

B. J. DOWNS.  
TREE PROTECTOR.

No. 306,007.

Patented Sept. 30, 1884.

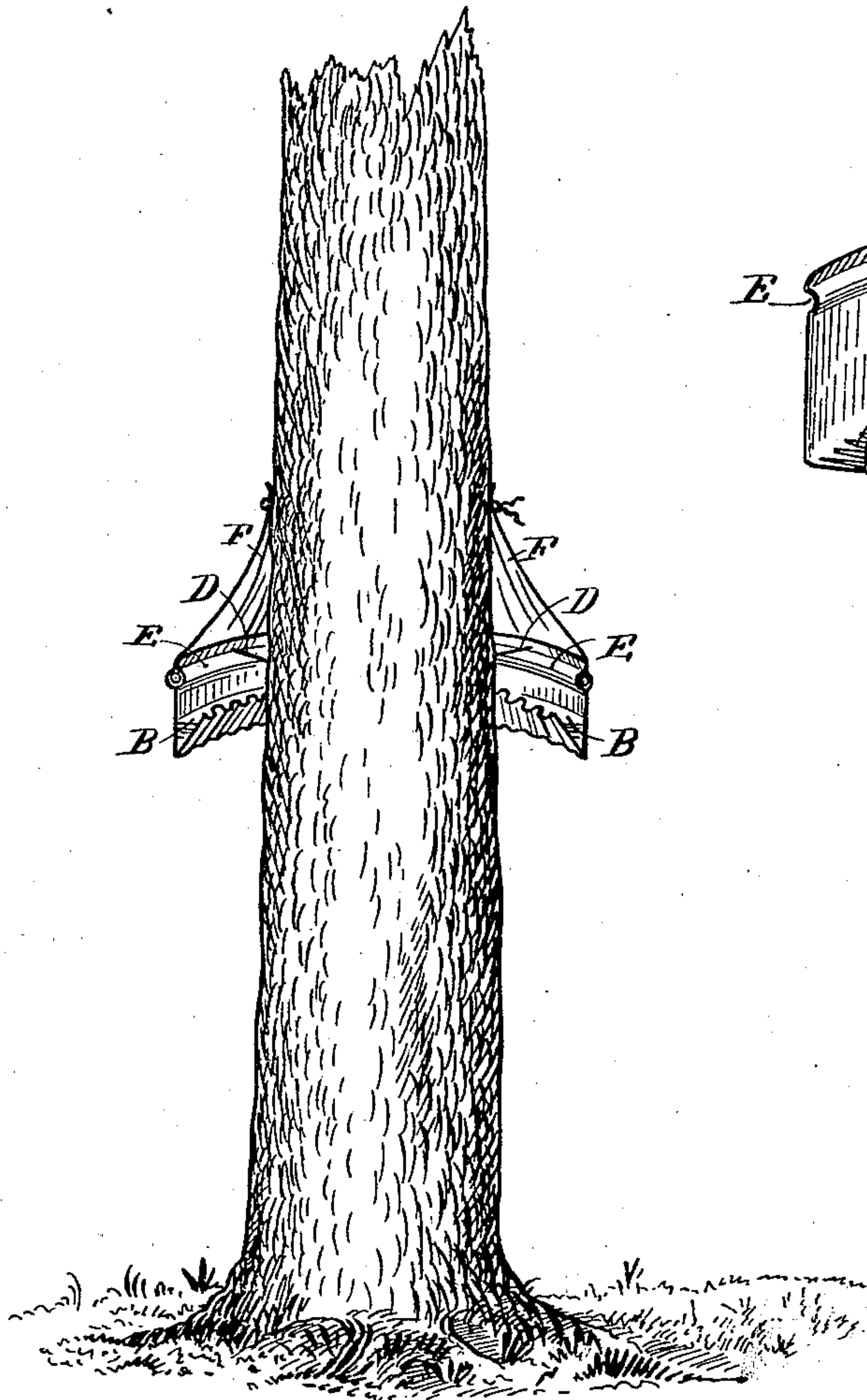


Fig. 1.

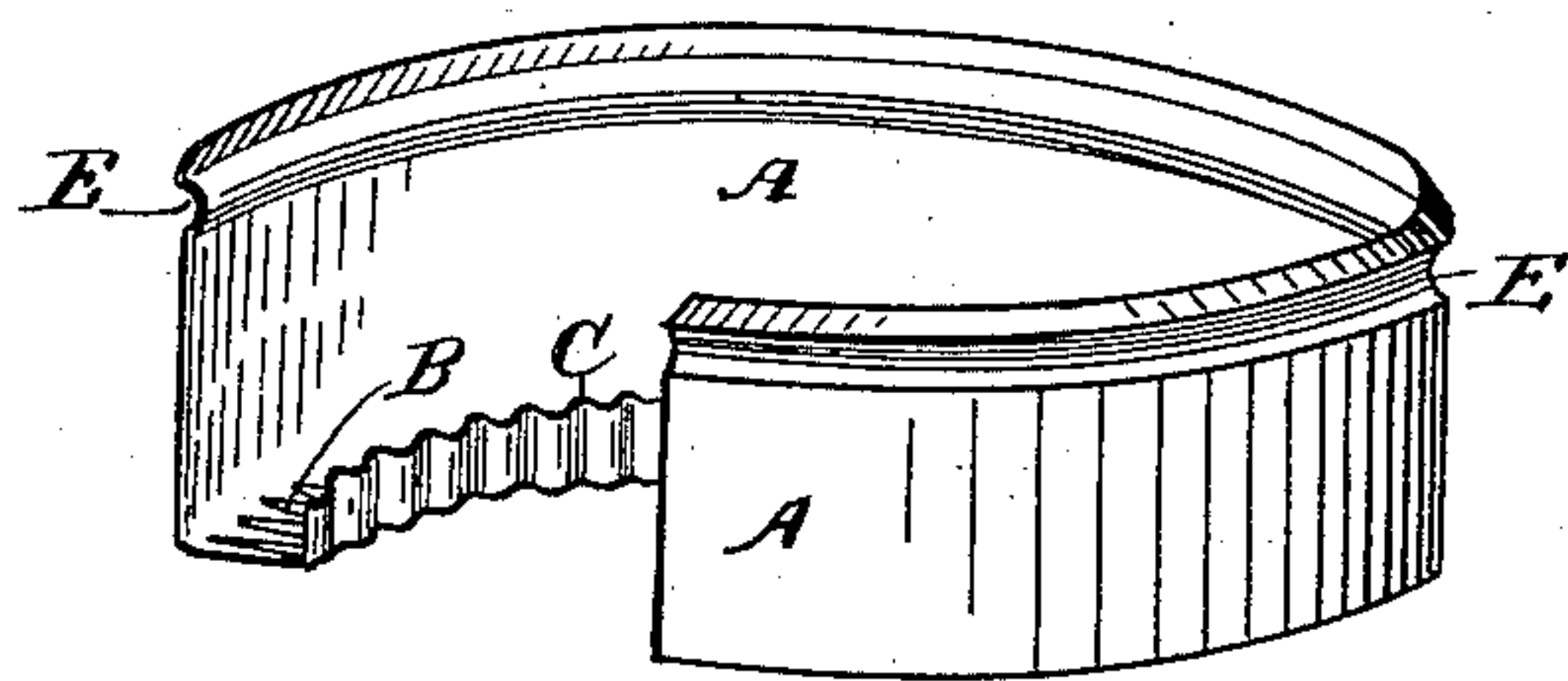


Fig. 2.

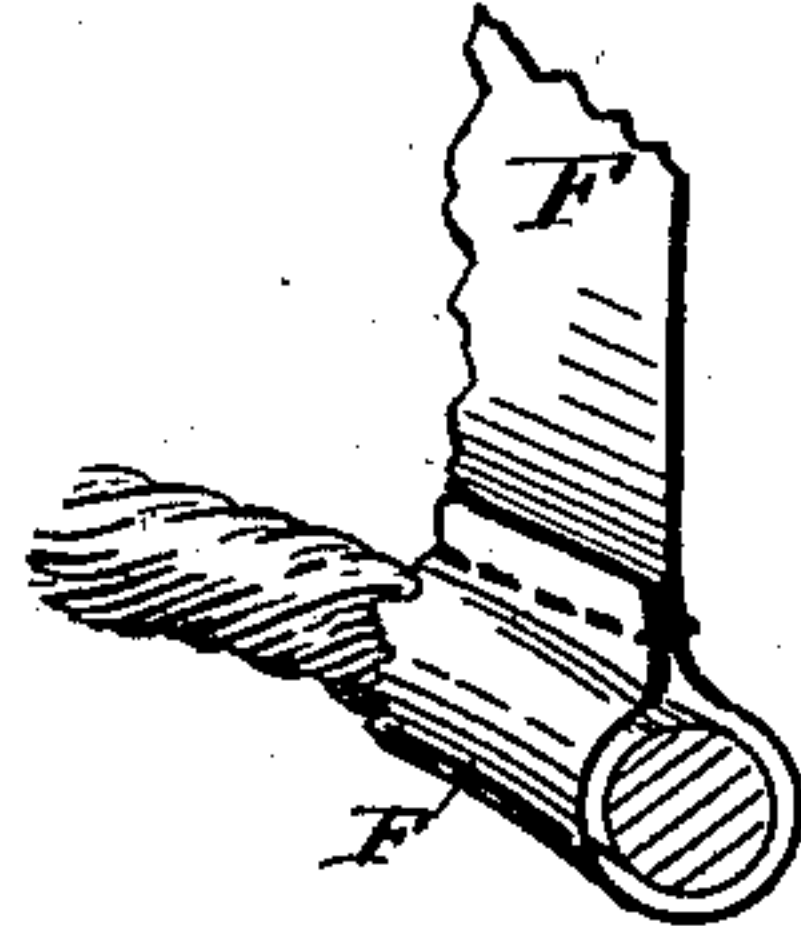


Fig. 3.

Witnesses.

W. E. Remick  
E. A. Phelps.

Inventor.

Benjamin J. Downs  
by A. H. Jewett



# UNITED STATES PATENT OFFICE.

BENJAMIN J. DOWNS, OF WEST SOMERVILLE, MASSACHUSETTS, ASSIGNOR  
OF FOUR-FIFTHS TO JOHN W. COOK, ALFRED J. CUNNINGHAM, AND JE-  
ROME 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-Pro-  
5 tectors; and I do hereby declare that the same are fully described in the following specification and illustrated in the accompanying draw-  
10 ings.

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  
15 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  
20 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 cor-  
25 rugated edge or inner wall standing substantially vertical.

Another feature of my invention is the grooving of the cylindrical body and the in-  
30 ward 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  
35 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  
40 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  
45 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 de-

vice, and B the trough formed in one with  
50 it. This trough is corrugated or crimped to take up the stock as the metal is bent into an-  
nular shape. The trough being nearer the cen-  
ter of the circle than is the vertical wall A,  
it follows that the flutes or corrugations will  
55 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  
60 a bottom substantially horizontal and an up-  
turned 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  
65 of this character from a single piece of sheet  
zinc or copper by means of a machine in-  
vented by me for the purpose, which machine  
will form the subject of another application  
for patent to be hereafter filed by me. The  
70 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  
75 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 ex-  
treme upper edge of the cylinder, in order  
80 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  
85 by a stout cord drawn tightly and tied around  
it, and in order to make as neat an appear-  
ance 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  
90 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  
95 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  
5 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 com-

posed 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.