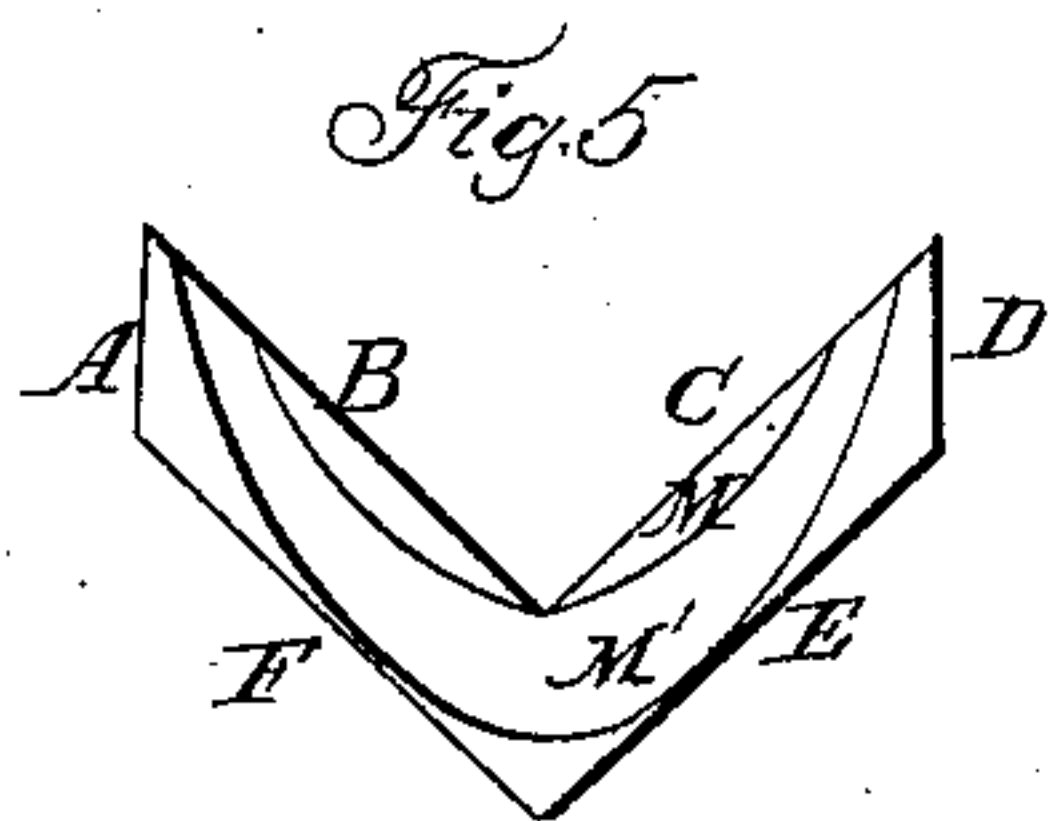
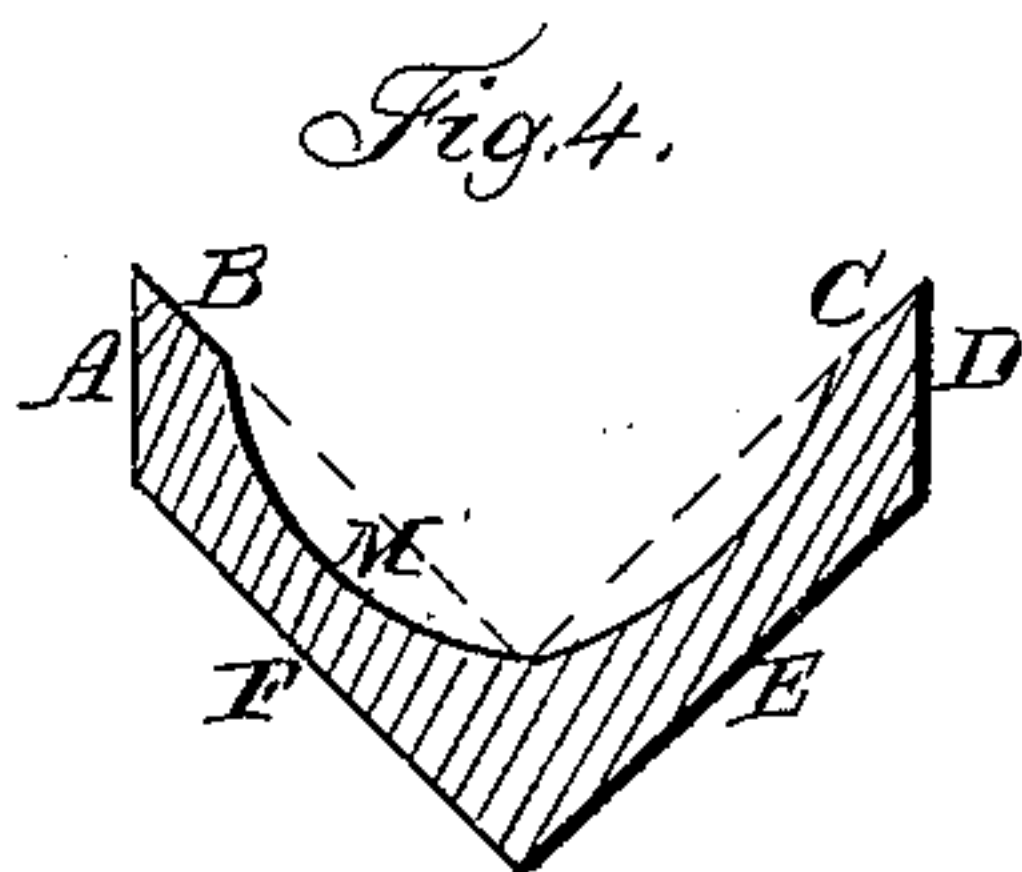
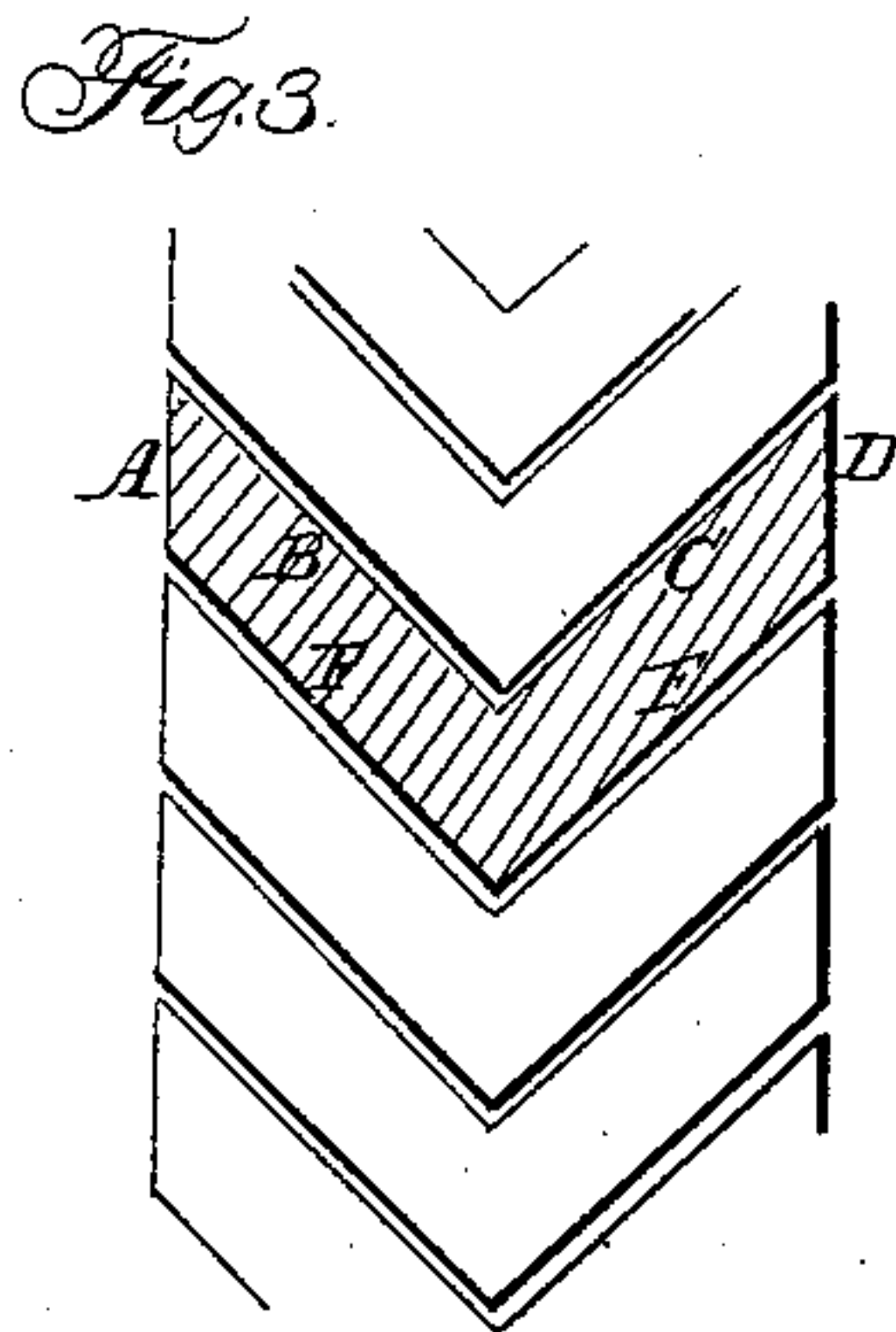
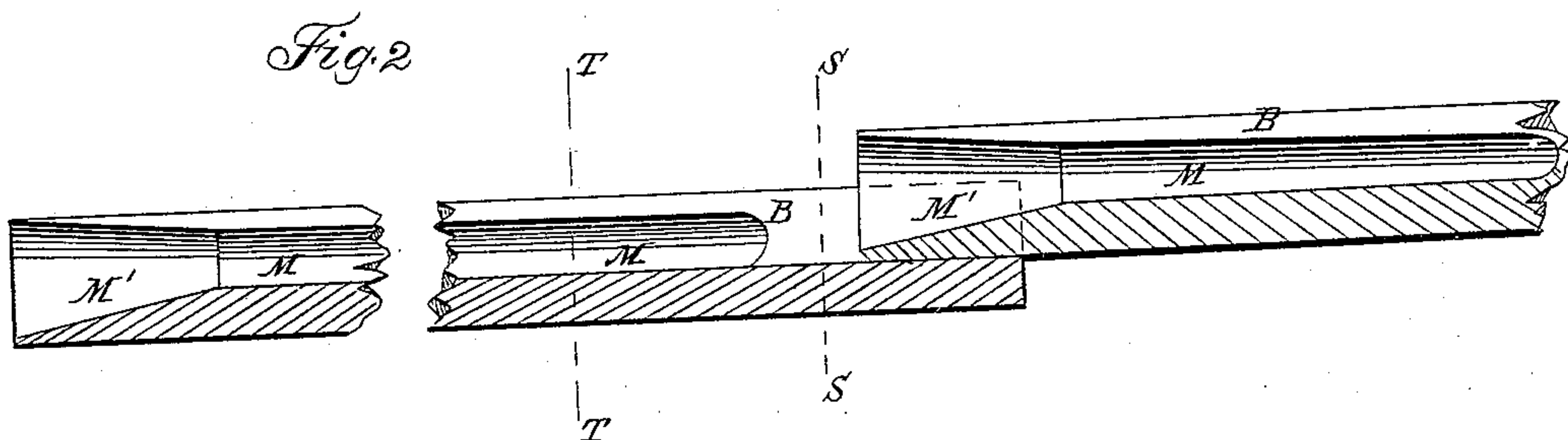
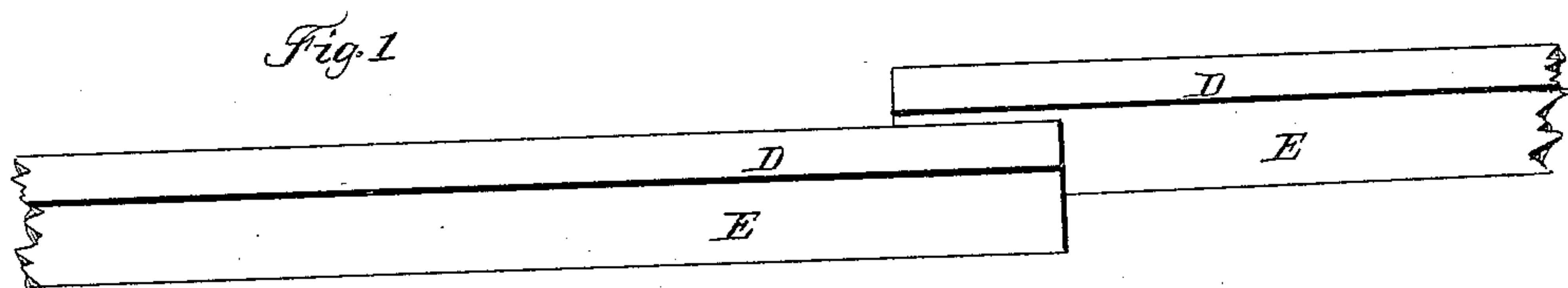


SHELDEN & CHASE.

Sap Spout.

No. 39,072.

Patented June 30, 1863.



Witnesses.

Nelson A Chase
Roswell P Goodell

Inventors.

Moses Sheldon
Wareham A Chase

UNITED STATES PATENT OFFICE.

MOSES SHELDEN AND W. A. CHASE, OF CALAIS, VERMONT.

IMPROVEMENT IN SPOUTS FOR CONVEYING SAP.

Specification forming part of Letters Patent No. 39,072, dated June 30, 1863.

To all whom it may concern:

Be it known that we, MOSES SHELDEN and WAREHAM A. CHASE, of Calais, in the county of Washington, in the State of Vermont, have invented a certain new and useful Maple-Sap Spout, adapted to be employed in the collection of sap for the manufacture of maple-sugar and kindred purposes; and we do hereby declare that the following is a full and exact description of the same, which is prepared with a view to the obtaining of Letters Patent therefor.

The accompanying drawings form a part of this specification.

Figure 1 is a side view, showing the junction of two lengths of our spout. Fig. 2 is a vertical longitudinal central section. Fig. 3 is a cross-section on the line S S in Fig. 2, showing the form of the section, and also the position of a series of spouts relatively to each other in the process of forming the same. Fig. 4 is a cross-section on the line T T in Fig. 2. Fig. 5 is a view of the length of one spout, looking directly at the lower end. Figs. 2, 3, 4, and 5 show very clearly the form, both inside and outside, of the complete spout which constitutes our new article of manufacture.

Each length is made, either by suitable tools or by machinery, from a single piece of any suitable wood, and is chamfered or thinned at its lower end, hollowed out along its entire exterior, except near its upper end, and is formed with plane surfaces on its outside, adapted to apply tightly to the interior of the upper end of the next succeeding length.

The conveyance of the sap by any ordinary means from different parts of an extensive sugar-orchard to the place where it is to be boiled often involves much labor, by reason of the unfavorable character of the ground and the presence of deep snow. Our spouts, laid on suitable supports leading from the elevated parts of the orchard to the sugar-house, serve to receive and convey the sap very expeditiously and cheaply.

To enable others skilled in the art to make and use our invention, we will proceed to describe it by the aid of the drawings, and of the letters of reference marked thereon.

To produce our spouts we take a plank of two inches or other desired thickness, as indicated in Fig. 3, and mount it over a circu-

lar saw at such height and at such an angle therewith that the kerf will form an angle of forty-five degrees with the faces of the plank, and will extend just to the center of the thickness of the plank, and no farther. In this condition we feed the plank along, and repeat the operation until one side, A, of the plank is properly worked. We then turn it and perform the like operation on the other side, D. This divides the plank into a series of uniform pieces, A B C D E F, of an eaves-trough section, each formed in one piece. Each of these pieces is then fed forward, with its hollow side B C uppermost, under a revolving gouge or an equivalent cutting wheel, which excavates down to the curved surface M. This concavity is caused to extend uniformly nearly the entire length of the section of spout; but we take care to leave ungouged a portion at one end, which is to be the higher end of the section or length when in use. We afterward place the other, which is to be the lower, end upon another rest moving in a circle under the same or a different gouging-wheel, and by this means chamfer the lower end of our spout almost or quite to a sharp edge. The surface produced by this latter operation is denoted M' in the drawings.

In the use of these spouts we set a line of stakes of different lengths to compensate for the unevenness of the ground, having crotches sawed in the tops, and shoulders on the side to drive on to prevent splitting. On these we lay the several lengths of spout, lapping the chamfered end of one upon the ungouged end of the one next below it, in the manner shown, securing the lengths together, and upon the supports, if preferred, by twine or otherwise. The sap is collected from the several trees in pails or in other convenient receptacles, and instead of transporting it by ordinary means over the entire distance to the sugar-house it is taken to the nearest spout and poured therein through a suitable hopper. The hopper we employ to pour the sap into is on the same angle as the spouts, with perpendicular ends, in the lower one of which there is a hole to let the sap run out. Our hopper (not represented) holds a large pailful. This can be removed at pleasure, for it rests in the spouts.

The chamfered end and the smooth rounded and enlarged channel are features of much im-

portance in our spouts. The smoothed and rounded interior is important, because it allows a large quantity of sap to be conveyed through a spout of a given size and weight, and small spouts cannot only be manufactured from less material, but may be transported and put up with less labor than larger ones. We can make and sell the spout represented in Figs. 2, 4, and 5 for three-fifths the price per hundred feet that we can make and sell the plain eaves-trough form ungouged of sufficiently greater size to carry the same quantity of sap at the same inclination. The chamfered end is important, because it avoids the splashing over and also the agitation and reflex currents due to the falling of a stream over a thick end. We have observed that in conveying sap at any moderate inclination there is leakage backward through the joint if the lower end of a length is unchamfered. By chamfering the end we make the flow of the sap smooth and continuous, and we find by experience that the tendency to leakage is greatly lessened, so much, in fact, that we have in some instances ventured to give an angular chamfer at the upper end of each length, sinking

the same to a line indicated in red in Fig. 2. This facilitates the vertical curving of the line in going over knolls, and induces no leaking of any note.

We do not claim the production of angular spouts from planks by sawing in the manner indicated, nor do we claim the spout, however produced, as a novel article, except it be rounded on its interior; but,

Having now fully described our spouts, as also the best means known to us for producing and using the same, what we claim as new, and desire to secure by Letters Patent, is as follows:

The within-described spout, as a new article of manufacture, the same being formed in lengths having an angular exterior, E F, and a corresponding interior, B C, at one end, and being rounded and chamfered, substantially as represented by M M', for the purpose herein set forth.

MOSES SHELDEN.
WAREHAM A. CHASE.

Witnesses:

NELSON A. CHASE,
ROSWELL I. GOODELL.