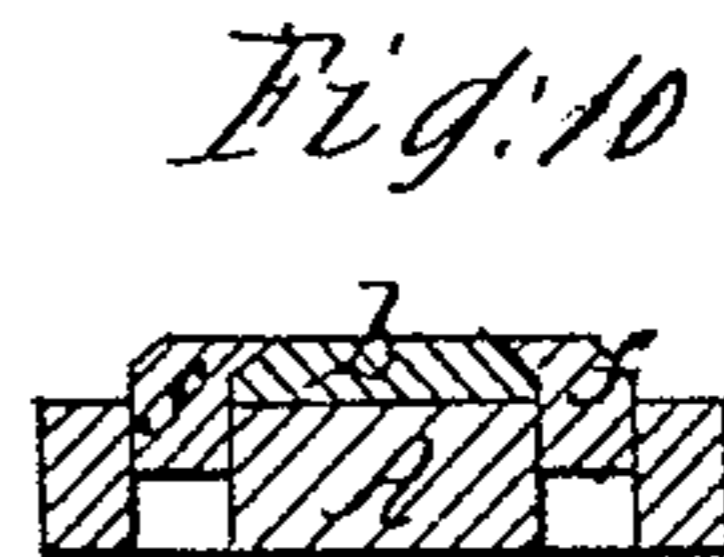
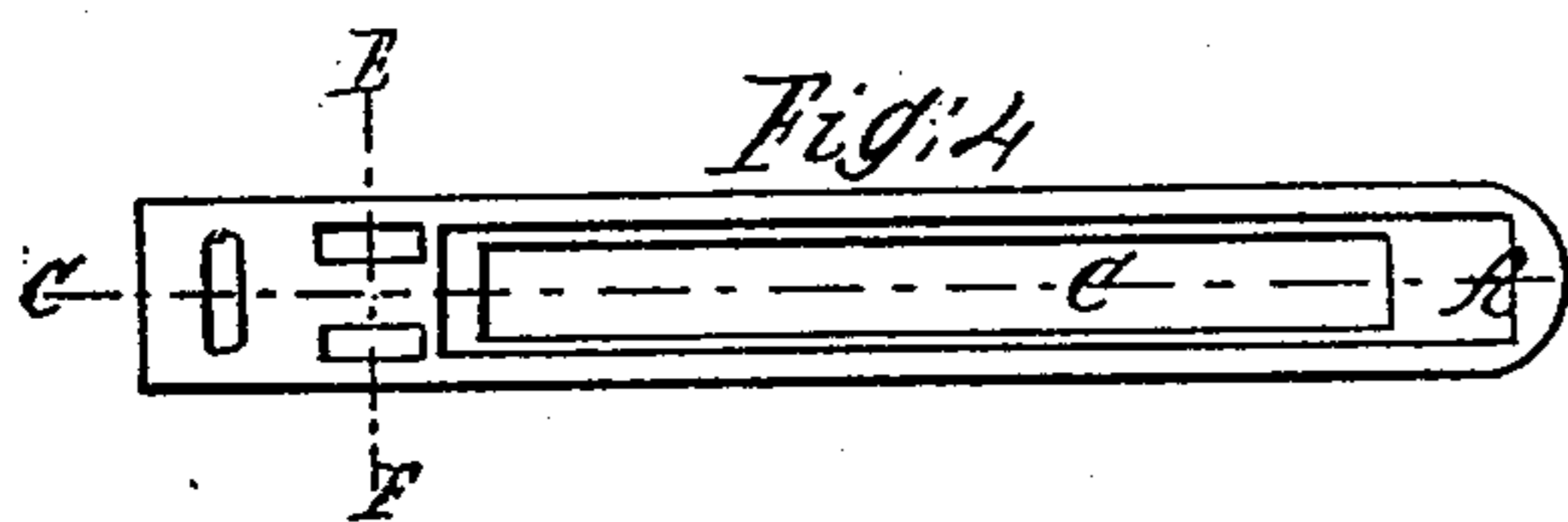
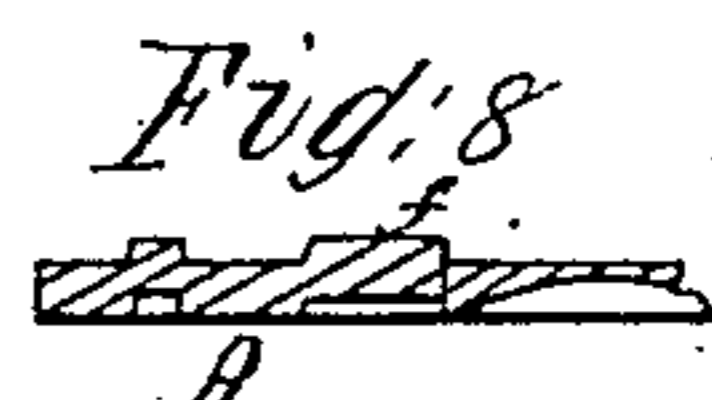
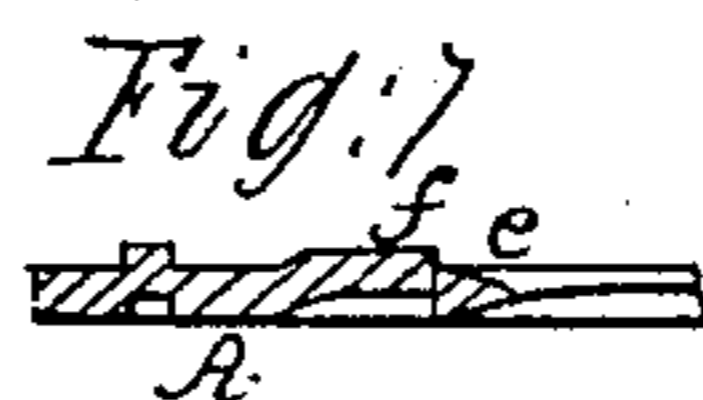
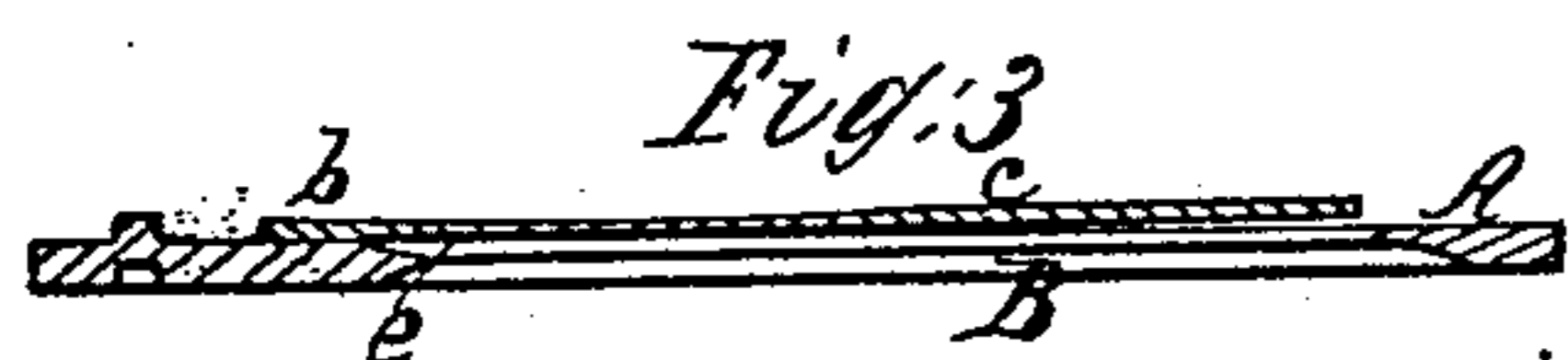
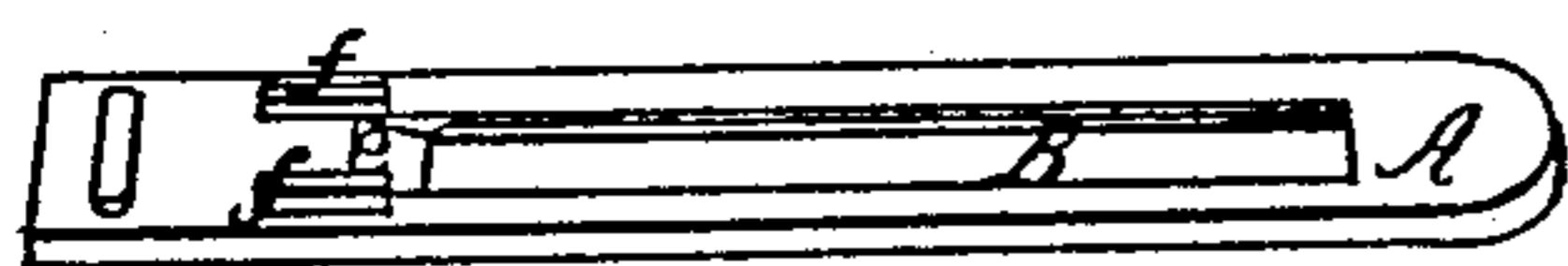
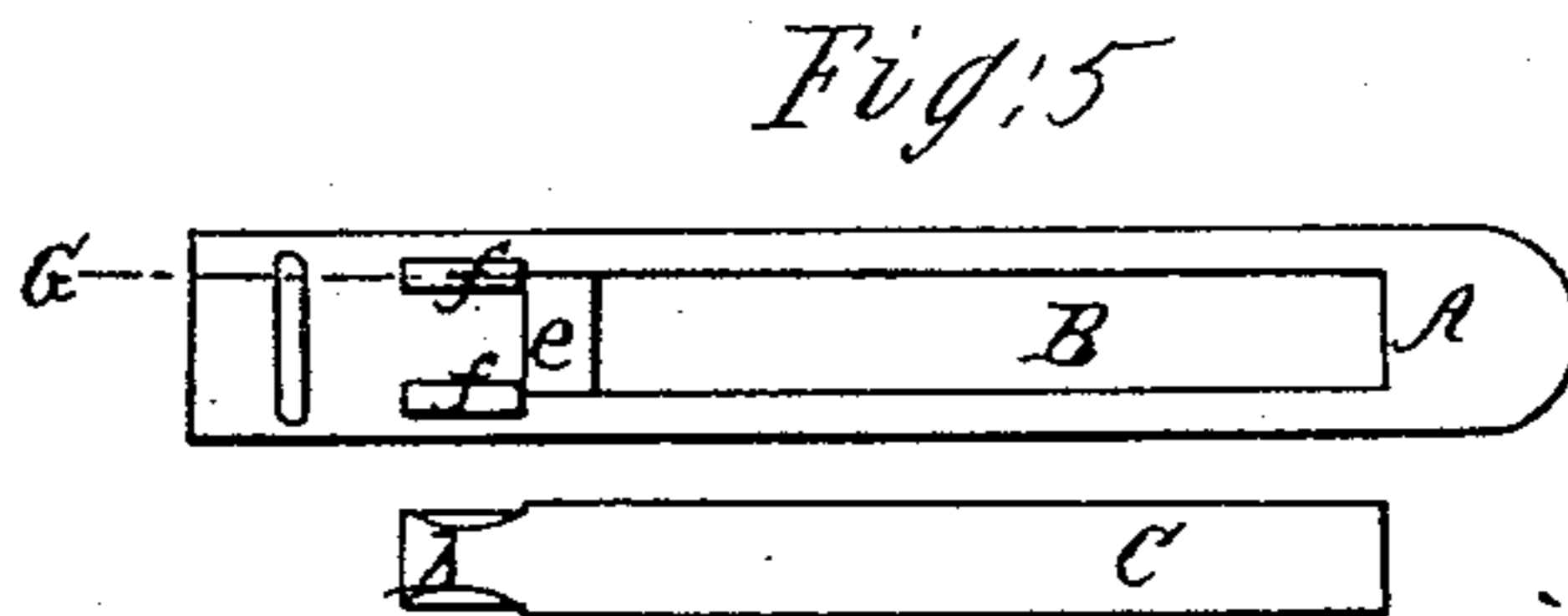
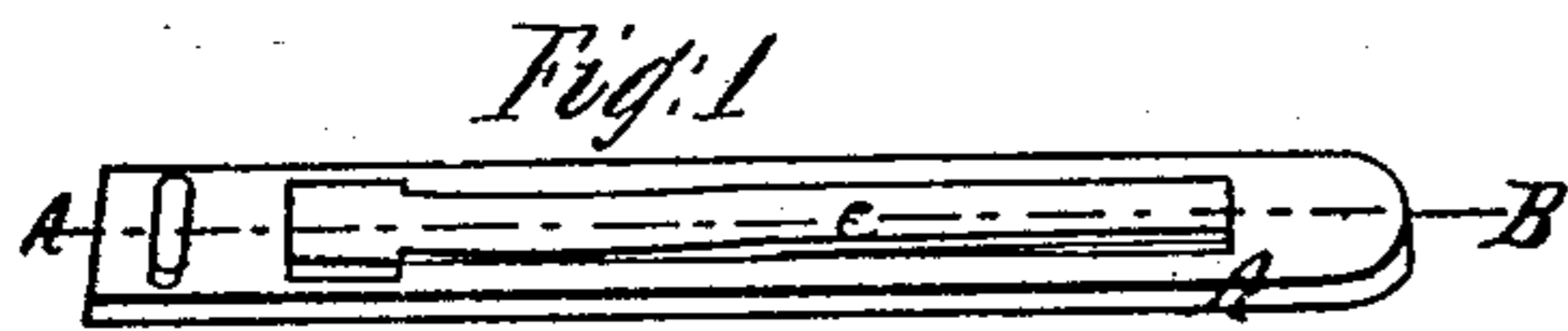


A. H. Hammond

Musical Instruments.

N^o 86,394.

Patented Feb. 2, 1869.



Witnesses

Chas. Burleigh
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A. H. HAMMOND, OF WORCESTER, MASSACHUSETTS.

Letters Patent No. 86,394, dated February 2, 1869.

IMPROVEMENT IN METALLIC REEDS FOR MUSICAL INSTRUMENTS.

The Schedule referred to in these Letters Patent and making part of the same.

Know all men by these presents:

That I, A. H. HAMMOND, of the city and county of Worcester, and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Metallic Reeds for Musical Instruments; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents a perspective view of my improved metallic reed;

Figure 2 represents a perspective view of the same, the tongue and frame being shown separate;

Figure 3 represents a longitudinal section, on line A B, fig. 1;

Figure 4 represents a bottom view of one of the lowest-toned reeds;

Figure 5 represents a plan view of the same, the tongue and frame being shown separate;

Figure 6 represents a longitudinal section of the same on line C D, fig. 4;

Figure 7 represents a longitudinal section through the jaw, on line G, fig. 5;

Figure 8 represents a similar section of the reed shown in fig. 1;

Figure 9 represents a transverse section on line E F, fig. 4, with the tongue and frame separate; and

Figure 10 represents a similar transverse section, after the tongue is secured in place.

(Figs. 9 and 10 show the parts upon an enlarged scale.)

To enable those skilled in the art to which my invention belongs, to make and use the same, I will proceed to describe it more in detail.

The nature of my invention consists—

First, in a reed-frame, with two separate jaws formed from the metal of the frame, for holding the rear end of the tongue, as hereafter explained.

Second, in a tongue-frame, in which the metal at the top of the frame, in rear of the tongue-slot, is removed back to or a little beyond the front ends of the jaws, between which the rear end of the tongue is secured.

Third, in a tongue-frame having two jaws set up from the metal of the tongue-frame, at the proper distance apart, to hold the tongue in its place, without planing or otherwise removing a portion of the inner edge of said jaws, as hereafter set forth.

Fourth, in a tongue for metallic reeds, the corners of the base or rear end of which are bevelled or scalloped, in the manner shown, and for the purpose hereinafter explained.

In the drawings—

The part marked A represents the metallic frame of the reed, provided, in the usual manner, with a slot, B, in which the tongue C vibrates.

At the rear end of the tongue-slot are two jaws, *ff*, formed by setting up portions of the metal of the frame A, in such a manner that the distance between them

shall be exactly equal to the width of the base, *b*, of the tongue C, so that when said tongue is secured to its seat between these jaws *ff*, it will be in proper position to vibrate freely through the slot B.

From the rear end of the slot B to a little distance back of the front ends of the jaws *ff*, the metal is removed, as indicated at *e*, fig. 2, either in the form of a bevel or otherwise, so that the jaws *ff* shall firmly hold the tongue C at a point forward of the rear part of said bevel, thereby rendering it impossible for the tongue C, in vibrating through the slot B, to strike upon any of the metal of the frame A, and, by jarring, produce an imperfect tone.

The top edges of the tongue C are bevelled or scalloped off at its base, *b*, as shown in figs. 2 and 9 of the drawings, and it is secured to the frame A by placing its base *b* between the jaws *ff*, which are riveted down upon and against the scalloped or bevelled edges of the tongue, as indicated in fig. 10. This bevel or scallop may be produced in connection with another necessary operation in manufacturing reed-tongues.

The method of setting up the jaws *ff* is by punching the metal of the frame A partially through, from the back side, which operation is performed by dies and machinery arranged for that purpose. The depressions or bevels *e*, at the rear end of the tongue-slot B, may be made, in the desired form and degree, in connection with another process of manufacturing the reed-frames, and it is not essential that this depression should be of greater depth than just sufficient to clear the vibration of the tongue.

In lieu of setting up the jaws *ff* at a distance apart exactly equal to the width of the base of the tongue C, they may be set up at a less distance apart, as shown in fig. 5, and their inner edges planed out to the required width, either forming erect edges, grooves, or under bevels, or the base, *b*, of the tongue C, may be reduced by an upward bevel or scallop, or erect edges, to fit between the jaws, or, if desired, both operations may be performed.

This latter method of construction may be adopted for some of the lower reeds of the scale, with satisfactory results, and perhaps in some of the highest.

It will readily be observed by all persons familiar with the manufacture of metallic reeds, or their use in reed musical instruments, that reeds constructed in the manner above described have many important advantages over those constructed in the usual manner. The jaws *ff*, being set so that their front ends extend forward to or a little beyond the back part of the bevel *e*, at the rear end of the tongue-slot B, and also being riveted strongly against and upon the base, *b*, of the tongue, which is thereby held firmly down upon the frame in every part that can possibly touch or move in vibrating, it will be seen that there can be no jarring of the tongue upon the frame, for the reason that the vibrating part of the tongue rests on nothing, and can touch nothing, and therefore it will be impossible for the reed to produce

any but the most perfect tone of which a reed is capable, thus surely and completely obviating one of the principal difficulties attendant upon the use of reeds as heretofore constructed, to overcome which has been the chief effort of reed-manufacturers and users for many years past.

By my method of making reeds, no more of the metal of the frame is necessarily set up than is required to form the jaws for holding the tongue, and therefore the frame is not injuriously weakened, and the seat of the tongue remains intact, and level with the other portions of the frame, and the tongue consequently rests upon a solid, uniform seat, which cannot be displaced, thereby securing the utmost solidity and uniformity of tone, together with the greatest reliability in mechanical construction.

As the jaws may be set up at the right distance apart to receive the tongue nearly or quite throughout the entire scale, the whole, or nearly the whole, difficulty and expense of milling or planing a seat for the tongue can be obviated, thereby rendering their man-

ufacture cheaper, while, at the same time, producing a more perfect and desirable article than can be produced by the different modes of construction in use prior to my invention.

Having described my improved metallic reed,

What I claim therein as new, and of my invention, and desire to secure by Letters Patent, is—

1. A reed-frame having two separate jaws set up from the same metal to hold the base of the tongue, substantially as and for the purpose set forth.

2. A reed-frame having two jaws set up, at the exact distance apart to receive and hold the base of the tongue of the reed, as shown and described.

3. A reed-tongue formed of reed-metal, the base of which is bevelled or scalloped upon the edge, substantially as and for the purpose set forth.

A. H. HAMMOND.

Witnesses:

CHAS H. BURLEIGH,

D. L. MILLER.