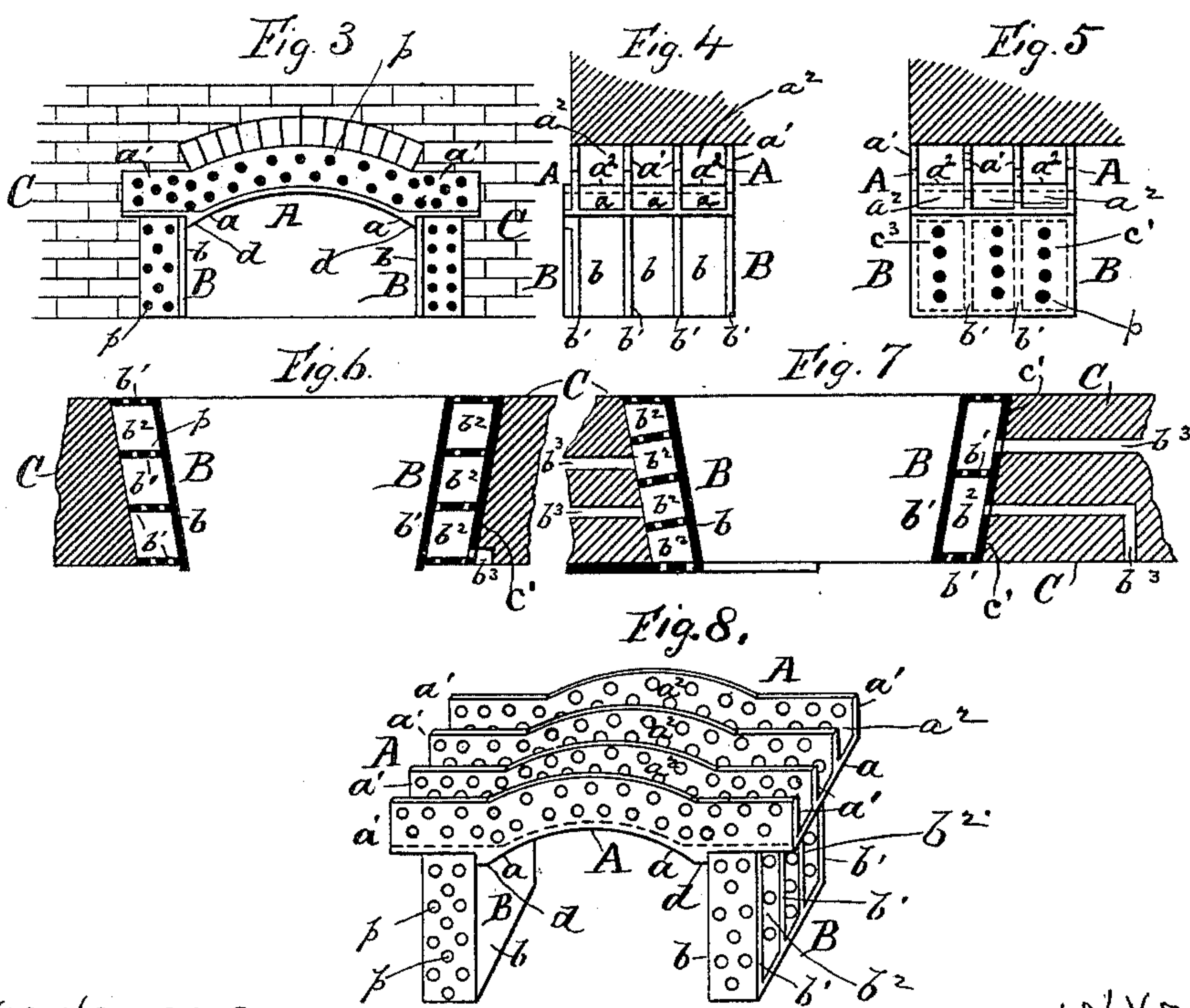
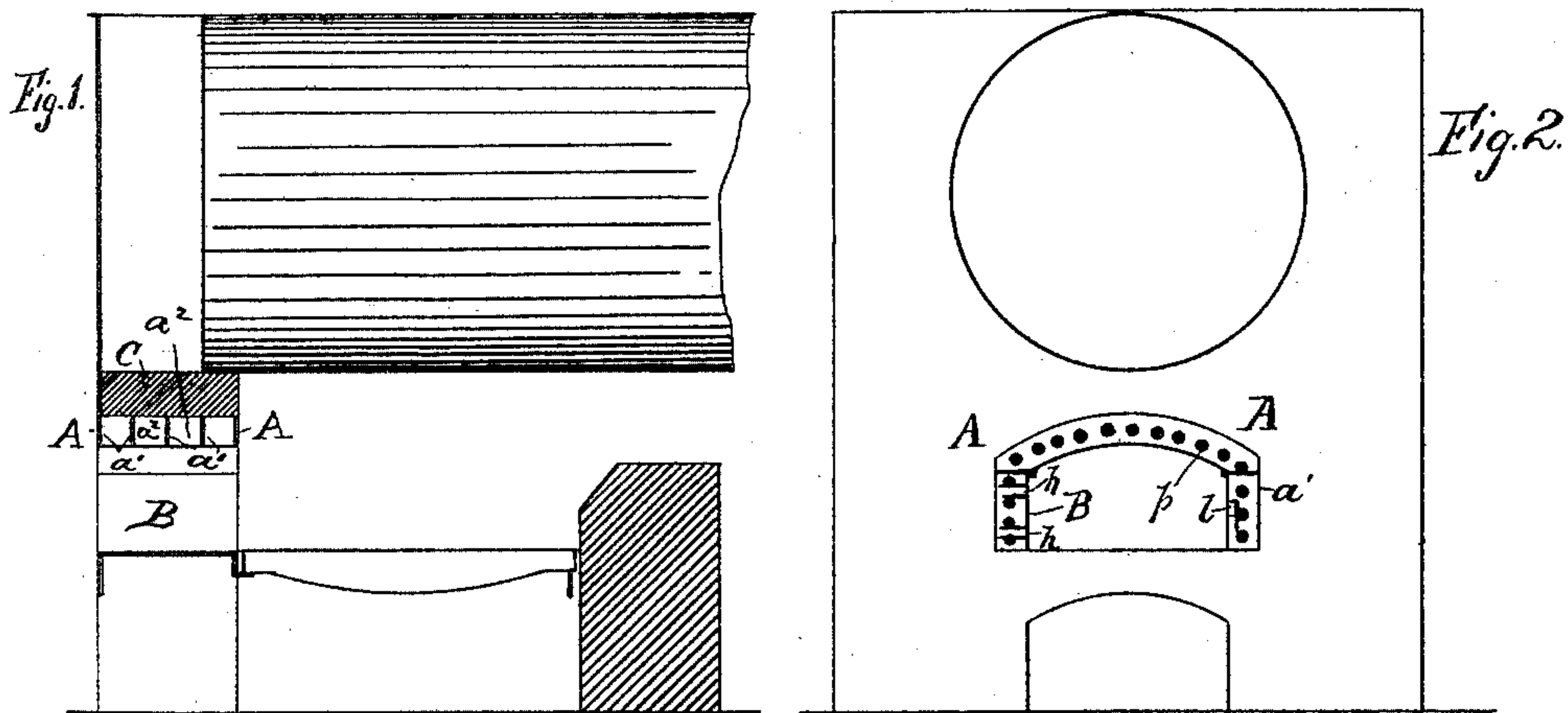


(No Model.)

H. FINNEY.
FURNACE DOORWAY.

No. 462,402.

Patented Nov. 3, 1891.



WITNESSES:-

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UNITED STATES PATENT OFFICE.

HECTOR FINNEY, OF BROOKLYN, NEW YORK.

FURNACE-DOORWAY.

SPECIFICATION forming part of Letters Patent No. 462,402, dated November 3, 1891.

Application filed August 13, 1891. Serial No. 402,565. (No model.)

To all whom it may concern:

Be it known that I, HECTOR FINNEY, a citizen of the United States, residing in Brooklyn, Kings county, and State of New York, have invented certain new and useful Improvements in Furnace-Doorways, of which the following is a specification, reference being had to the accompanying drawings.

My improvements relate especially to the construction of a doorway, about or surrounding which are located a series of chambers, through which air from without may pass above the fuel or to the combustion chamber for the purpose of assisting in the combustion of the fuel-gases.

My improvements consist in the formation of a doorway having an upper span-piece and two side uprights, each of which is constructed with projecting ribs to form one or more heating chambers or passages, through which air passes on its way to furnace or combustion-chamber. These ribs are perforated to provide for communication between associate chambers.

In the drawings, Figures 1 and 2 represent sectional and front views of a boiler-furnace provided with a doorway embodying my improvements. Figs. 3, 4, and 5 show the method of constructing the doorway. Figs. 6 and 7 are sectional views through the side uprights with connecting brick-work. Fig. 8 shows a perspective view of doorway ready for brick-ing in.

The letter A designates the upper span-piece, and B B the side uprights forming the doorway.

a designates the bottom-plate metal, and *a'* the projecting perforated ribs made use of as partitions to form the several heating-chambers *a*² above the span-piece.

b designates the side metal, *b'* the projecting perforated ribs, and *b*² the heating-chambers formed thereby in the side uprights.

C designates the brick-work surrounding the doorway and its heating-chambers; and *c'*, a special outside metal, used, if preferred, for additional strength or for enclosing the heating-chambers independent of the brick-work.

d d designate projections adapted to hold the side uprights in an erect position.

p designates the perforations in the partition-ribs; *b*³, special air-passages in the brick-work to reach the chambers *b*² when no holes or perforations are desired in the front of doorway.

h designates furnace-door hinges, which may be attached to the outer perforated ribs, as shown in Fig. 2.

l designates a latch for door. The passage of the air is from the outside of furnace through the outer rib metal to the first chamber *b*, and thence through inner partition-ribs *b'* and the succeeding chambers *b*² to and through the last rib *b'* to the furnace and combustion-chamber.

In the use and erection of these doorways the side uprights are placed in position and the span-piece stretched across, resting upon them. The projections *d d* reach downward within the uprights, as shown, to render the whole united and firm. They are set at an angle, as shown in Figs. 6 and 7, to conform to the usual shape of doorway.

What I claim as new, and desire to secure by Letters Patent, is—

1. A span-piece for a furnace-doorway composed of the bottom-plate metal forming the top of doorway and a series of upwardly-projecting partition-ribs adapted to form the horizontal chambers above said doorway, each of said partition-ribs being perforated to provide for the passage of air from without to and through said chambers and into the combustion space or furnace beyond and above the fuel and grates, substantially as set forth.

2. A side upright for a furnace-doorway composed of the side-plate metal, forming the side of doorway, and a series of projecting partition-ribs adapted to form vertical chambers at the sides of said doorway, each of said partition-ribs being perforated to provide for the passage of air from without to and through said chambers and into the combustion space or furnace beyond and above the fuel or grates, substantially as set forth.

3. The combination of a span-piece and two side uprights forming the doorway of a fur-

nace, each of which is composed of the main doorway-forming metal, and a series of projecting partition-ribs adapted to form air-chambers about said doorway, each of said
5 partition-ribs being perforated to provide for the passage of air from without, to and through said chambers, and thence into the

combustion space or furnace beyond and above the fuel or grates, substantially as set forth.

HECTOR FINNEY.

Witnesses:

WM. H. WEIGHTMAN,
ARTHUR M. PIERCE.