G. E. PRICE.

PRESSING AND FINISHING IRON.

APPLICATION FILED NOV. 24, 1911.

1,045,179.

Patented Nov. 26, 1912.

3 SHEETS—SHEET 1.

Fig. 1.

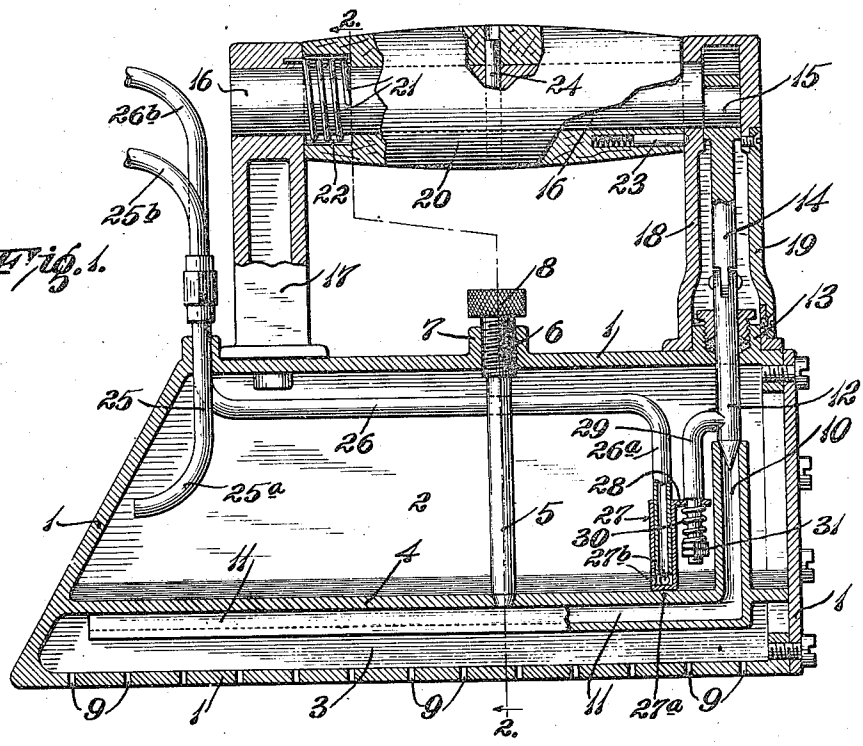
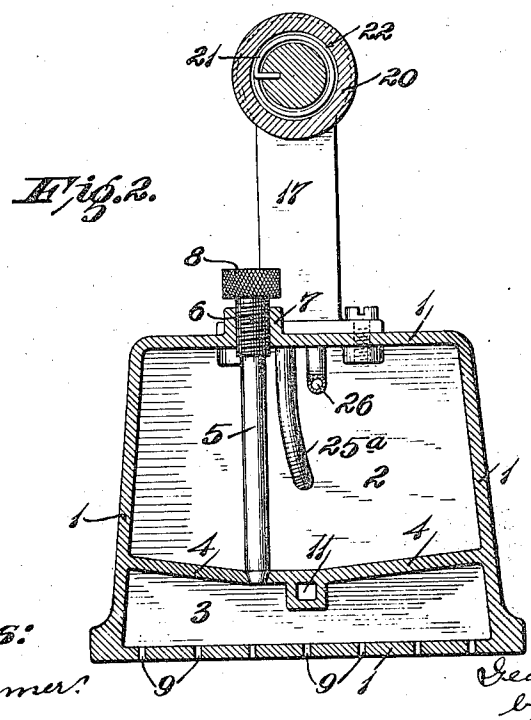


Fig. 2.



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3 SHEETS—SHEET 2.

Fig. 3.

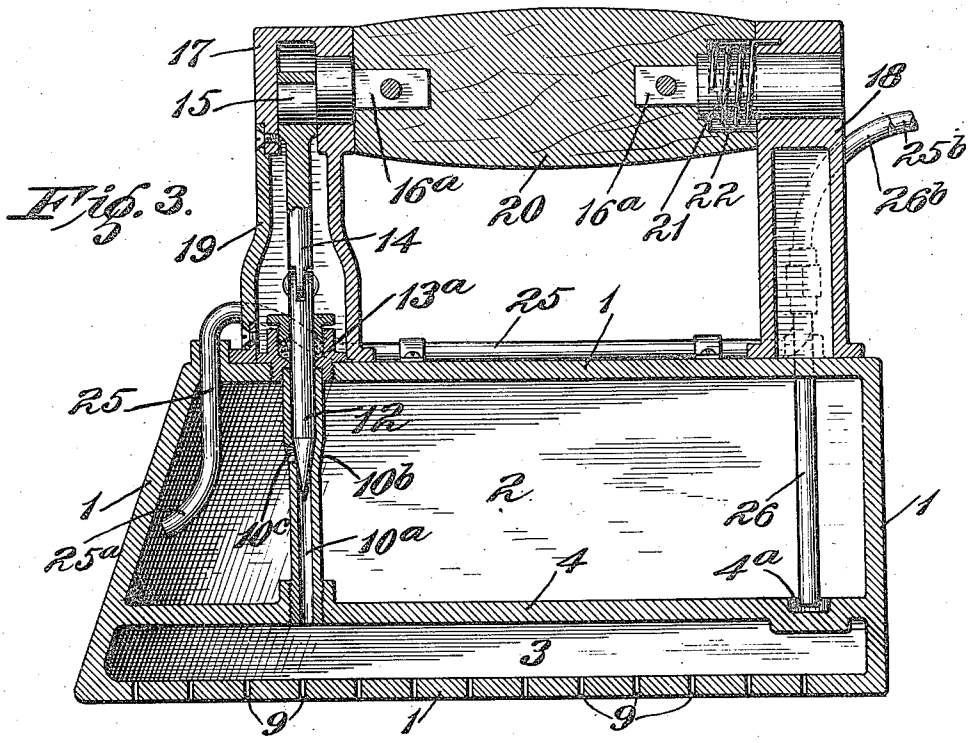
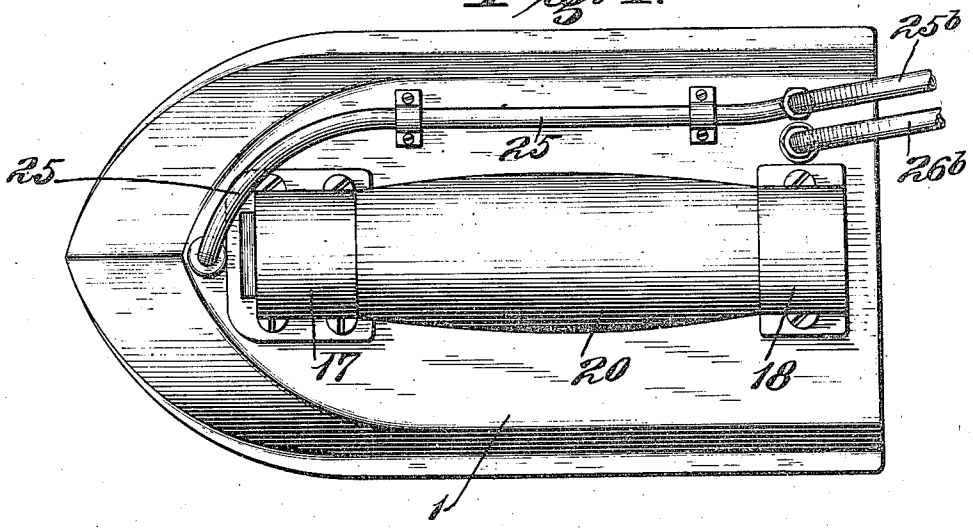


Fig. 4.



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3 SHEETS—SHEET 3.

Fig. 5.

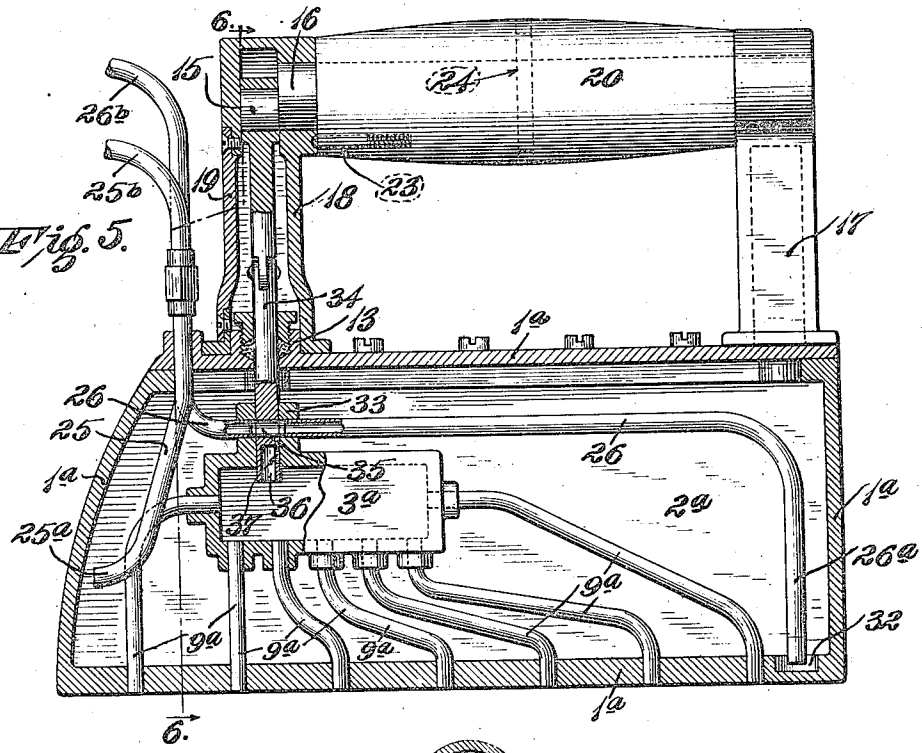
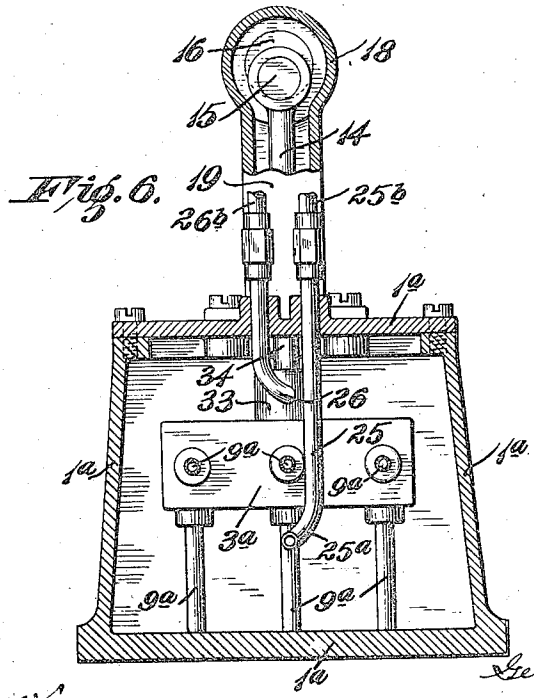


Fig. 6.



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UNITED STATES PATENT OFFICE.

GEORGE E. PRICE, OF ST. LOUIS, MISSOURI.

PRESSING AND FINISHING IRON.

1,045,179. Specification of Letters Patent. Patented Nov. 26, 1912.

Application filed November 24, 1911. Serial No. 662,163.

To all whom it may concern:

Be it known that I, GEORGE E. PRICE, a citizen of the United States, and a resident of the city of St. Louis and State of Missouri, have invented a new and useful Improvement in Pressing and Finishing Irons, of which the following is a specification.

This invention relates to pressing and finishing irons and more particularly to steam-heated irons.

It has for its principal objects to produce a device which is simple and economical in operation and maintenance, to prevent the accumulation of water of condensation within the steam chamber, to provide for dampening the cloth or goods being pressed, and to attain certain other advantages hereinafter more fully appearing.

The invention consists in the parts and in the arrangements and combinations of parts hereinafter described and claimed.

In the accompanying drawings which form part of this specification and wherein like symbols refer to like parts wherever they occur,—Figure 1 is a view, partly in longitudinal vertical section and partly in side elevation, showing a pressing iron embodying the invention; Fig. 2 is a section taken on or about the line 2—2 of Fig. 1; Fig. 3 is a view similar to Fig. 1, showing a modified structure; Fig. 4 is a top plan view; Fig. 5 is a view in longitudinal vertical section, showing a further modification; and Fig. 6 is a section on the line 6—6 of Fig. 5.

Referring now more particularly to Figs. 1 and 2 of the drawings, the iron comprises a hollow shell 1 which is divided into an upper steam chamber 2 and a lower chamber 3 by a substantially horizontal partition 4. However, while the partition 4 extends horizontal from end to end of the iron, it is preferably concaved transversely or in the form of a gutter, so that the water of condensation which might accumulate within the steam chamber 2 will run to the middle of the partition.

At some point along the middle portion of the partition 4, an opening is provided which is normally closed by a needle valve 5 whose upper end portion 6 is preferably screw-threaded and projects up through a screw-threaded bore in a boss 7 on the top of the casing 1. This valve 5 may be provided with any suitable manipulating device, but, preferably, a knurled knob 8 is secured on the upper end of the valve.

The bottom of the casing 1 is provided with a multiplicity of small perforations or drill holes 9; and said lower chamber 3 communicates with the upper steam chamber 2 through a tube 10 extending up from the rear portion of the partition 4 a considerable distance into said chamber 2. At its lower end said tube 10 communicates with a tube or passageway 11 extending along the under side of said partition 4 to a point in proximity to the front wall or nose of the iron.

The upstanding tube 10 is normally closed by a needle valve 12 which projects up through a packing gland 13 on the top of the casing 1 and is connected by a pitman 14 to an eccentric 15 on a rotatory handle member 16. This handle member 16 is journaled in upright handle members 17, 18, located respectively at the front and rear of the iron. The rear upright handle member 18 is made hollow so as to house the needle valve 12 and its operating pitman 14 and eccentric 15; and, for convenience in assembling the parts and effecting adjustment thereof, said upright handle member 18 is provided with a removable cover-plate or closure 19.

The rotatory handle member 16 is preferably made of metal and provided with a covering of wood or other suitable insulation 20. The connection between the valve 12 and handle member 16 is such that in one position of the handle member (hereinafter called the normal position), the valve is seated in the end of the tube.

It is preferable to provide a spring 21 which is coiled about the handle member 16 and located within an annular recess or pocket 22 in the wooden or insulating member 20 and having one of its ends secured to the upright handle member 17 and its opposite end to the rotatory member 16. The tendeney of this spring is to hold the valve 12 to its seat on the tube 10 and restore it to such position after it has been opened. It is also preferable to provide the wooden handle member 20 with a spring-pressed pin 23 adapted to engage a notch or indentation in the adjacent face of one of the handle members 17 or 18, as the case may be, so as to hold the rotatory handle members against accidental movement.

The wooden handle member 20 may be secured in any desirable manner to the rotatory metallic member or core 16, but, pref-

erably, said members 16 and 20 are bored diametrically and a pin 24 which is shorter than the outside diameter of the member 20 is driven into the alined perforations, so that the two members 16 and 20 are held against independent movement and the ends of the pin 24 do not come in contact with the hand of the user.

Steam may be admitted into the chamber 2 in any desirable manner, but, preferably, an inlet pipe 25 is arranged to discharge into the front portion of the iron, and it is also preferable to turn the lower end portion 25^a of the inlet pipe toward and adjacent to the nose of the iron, so that the steam is directed first against the nose before it is circulated through the chamber.

To secure the circulation of the steam throughout the chamber, an outlet pipe 26 extends to the rear thereof and is preferably turned down, as at 26^a, and terminates close to the bottom of the chamber, so that no water of condensation will accumulate above the end of said pipe.

The inlet pipe 25 may be connected through a flexible pipe 25^b to any suitable source of steam supply; and the outlet pipe 26 may be connected through a flexible pipe 26^b to any suitable receptacle adapted to receive the exhaust or it may exhaust direct into the atmosphere, as desirable.

By the foregoing described construction, the steam is circulated from the front to the rear of the steam chamber and the iron is maintained at even heat throughout, and there is practically little or no accumulation of water of condensation. Provided, of course, there is no resisting pressure in the outlet pipe to overcome the steam pressure in the chamber. So, too, when it is desired to moisten or dampen the goods it is only necessary to open the valve 12 and admit steam into the chamber 3 whence it passes through the perforations.

By having the tube or passageway 11 discharge into the front or nose portion of the chamber 3 the steam will be let out through the holes at the front portion of the iron before it reaches the rear of the chamber 3; and, in some cases, where only a slight moistening of the goods is desired, the valve 12 is opened momentarily and the steam or moisture will pass out through the front holes and practically none will pass out through those at the rear. Thus, in moving the iron across the goods, the moistening is done at the front portion of the iron while the rear or heel portion is sufficiently dry to effect the drying and pressing of the goods so moistened. Of course, if a great quantity of steam is admitted to the chamber 3 and under sufficient pressure, the moisture will pass out evenly through all of the perforations 9.

While the valve 12 is open, it is desirable to close the outlet pipe 26. As shown in Fig. 1, the shutting off of the pipe 26 is automatically effected by providing a tubular member 27 on the downturned end portion 26^a of said pipe 26, said member 27 having a closed end 27^a and a lateral port or ports 27^b. This tubular member 27 slidably fits the pipe extension 26^a and normally the end wall 27^a of the tube 27 is away from the end of the pipe extension 26^a and communication is established between said pipe extension and the chamber 2 through the ports 27^b in said member 27.

Preferably, the tubular member 27 is provided with a horizontal lug or ear 28 which is located adjacent to the tube 10, and said ear is perforated to receive the reduced lower end portion of a bar 29 which is secured at its upper end to the needle valve 12. The shoulder formed on the member 29 at the upper end of the reduced portion thereof is adapted to bear against the upper side of said ear 28, so that, when the needle valve 12 is lowered, the tubular member 27 is moved down so as to effect the opening of the outlet pipe 26.

A spring 30 is coiled about the reduced lower end portion of said bar 29 and located between the bottom face of the ear 28 and a suitable stop on the extreme lower end portion of said bar 29, preferably a pair of jam nuts 31, whereby the tension of the spring may be varied. By this arrangement, the valve 12 may be opened to any desirable degree beyond its movement which effects the shutting off of the pipe 26. That is, as soon as the end wall 27^a of the tubular member 27 comes in contact with the end of the pipe extension 26^a, the spring 30 on the bar 29 will yield and permit a further opening movement of the valve 12.

In the modification illustrated in Figs. 3 and 4 the arrangement of the steam chamber 2 and dampening chamber 3 is similar to those shown in Fig. 1. The handle and valve operating parts are also similar. In this modification the pipe 25 is carried along the top of the iron to the rear end thereof; and the exhaust pipe 26 is let into the iron near the rear end thereof. The end of the exhaust pipe 26 extends into a trap 4^a formed in the horizontal division wall 4. By this arrangement no water of condensation will accumulate on the top of the division wall.

The tube 10^a is secured in an opening in the division wall 4 near the front end of the iron. The upper end portion of this tube 10^a is of larger diameter than the lower portion and the portion intermediate is tapered as at 10^b. The upper end of the tube 10^a is fitted tightly in a recess in a plug 13^a which is in turn fitted tightly in an opening in the top of the iron. This plug 13^a is provided with a packing gland similar to that shown

in Fig. 1 for the valve stem or needle 12. The valve stem 12 is provided with a tapered lower end portion which is seated in the tapered portion of the tube 10^a so as to normally close an opening 10^c in said tapered portion of the tube. When it is desired to admit steam into the dampening chamber 3 the handle 20 is manipulated in the manner hereinbefore described to raise the needle or valve stem 12 so that the steam in the chamber 2 passes through the opening 10^c and tube 10^a into the chamber 3. By this construction the packing in the gland need not be as tight as might be otherwise required as the tapered end of the needle valve always seats tightly in the tube 10^a and effectively closes the opening 10^c which is lateral with respect to the taper of the valve. In this construction instead of having a continuous handle member 16 the journals are mounted on stub members 16^a which are embedded in the end portions of the wooden or non-heat-conducting handle member 20.

In Figs. 5 and 6 a further modification of the structure is illustrated. In this case the shell 1^a comprises but a single chamber 2^a. A separate shell 3^a is mounted in said chamber 2^a and said shell 3^a has the inner end portions of a multiplicity of tubes 9^a connected thereto and communicating with the interior thereof. The opposite end portions of said tubes 9^a are fitted tightly in perforations in the bottom of the shell 1^a. In this construction the inlet pipe 25 is arranged similar to that shown in the hereinbefore described constructions; and the outlet pipe 26 is arranged in the manner somewhat similar to that shown in Fig. 3. That is, the downturned extension 26^a projects into a recess or trap 32 in the bottom of the iron.

The pipe 26 in this modification passes horizontally through a boss 33 on the casing 3^a and said boss is provided with a vertical bore which intersects the pipe. Slidably fitted in the vertical bore of said boss 33 is a valve member 34 which is provided with a transverse passageway 35 adapted to normally register with the outlet pipe 26. It is also provided with a vertical bore 36 in its lower end portion and a single lateral port 37 communicating with said vertical bore so that, when said valve member 34 is raised until the port 37 communicates with the inner half of the outlet pipe 26, communication is established between the interior of the chamber 2^a and the chamber 3^a and cut off from said chamber 2^a and the outer half of the outlet pipe 26. When the valve is in the position shown in Fig. 5, steam is circulated through the chamber 2^a and pipe 26 and return pipe 26^b; but, when the valve is raised as above described, the steam is admitted into the chamber 3^a and circulated out through the several tubes 9^a to dampen the goods. The handle arrangement and operating device for the valve are similar to that shown in the other structures.

It will thus be seen that an iron constructed and arranged according to my invention as herein set forth is of high efficiency and will press and finish, without scorching, many kinds of cloth, goods and other materials which it is practically impossible to press and finish with an ordinary iron heated over a fire or by internal combustion, or which would at least be injured by careless handling of such irons. It also makes it unnecessary to use a damp cloth between the goods and iron and presses and finishes without glossing as the ordinary iron does.

Obviously the device admits of considerable further modification without departing from my invention. Therefore, I do not wish to be limited to the specific constructions and arrangements shown.

What I claim is:

1. A pressing and finishing iron comprising a body portion having a steam heating chamber, means for supplying steam to said chamber, said body portion having a second chamber, means for conducting steam from said second mentioned chamber through the bottom of the iron, and means for establishing communication between said first and second mentioned chambers, said means comprising a valve, a rotatory handle for the iron having an eccentric thereon, an operative connection between said valve and eccentric, and resilient means acting upon said handle to rotate it in one direction to hold the valve normally to its seat.

2. A steam heated pressing and finishing iron having a rotatory handle, said iron having means for discharging steam through the bottom, and means for controlling such discharge comprising a valve, an eccentric on said rotatory handle, an operative connection between said valve and eccentric, and a spring acting upon said rotatory handle to turn it in one direction whereby said valve is yieldingly held to its seat.

3. A pressing and finishing iron comprising a hollow shell divided by a substantially horizontal partition adjacent to the bottom thereof to provide an upper steam chamber and a lower dampening chamber, the bottom of said shell having a multiplicity of perforations therein, a vertical tubular steam passage communicating with said upper and lower chambers, a valve for controlling said steam passage, a movably mounted handle for the iron, an operative connection between said valve and handle, and means for maintaining a circulation of steam through said steam chamber.

4. A pressing and finishing iron comprising a body portion having a steam heating chamber, means for maintaining a circula-

tion of steam through said chamber, said body portion having a second chamber, a steam passage between said steam heating chamber and said second mentioned chamber, said passage comprising a tube extending up in said steam heating chamber, a portion of said tube being tapered and having an opening in its wall, and a reciprocatory valve member having a tapered portion corresponding to the tapered portion of said tube, means for discharging steam from said second mentioned chamber through the bottom of the iron, a movably mounted handle for the iron, an operative connection between said valve and handle, and resilient means acting upon said handle to hold said valve seated in the tapered portion of said tube.

5. A steam pressing and finishing iron comprising a hollow shell divided into an upper heating chamber and a lower dampening chamber, the bottom of the iron having a multiplicity of perforations therein communicating with the dampening chamber, a tube extending vertically through said heating chamber, said tube communicating at its lower end with the dampening chamber and opening through the top of the iron, and having a lateral opening therein, a reciprocatory valve member slidably fitted in said tube and adapted to close the lateral opening therein, and means for actuating said valve member including a movable handle for the iron and a working connection between said handle and said valve member.

Signed at St. Louis, Missouri, this 18th day of November, 1911.

GEORGE E. PRICE.

Witnesses:
G. A. PENNINGTON,
PAULINE AMBERG.