

(No Model.)

A. H. HOYT.  
MAXIMUM METER.

No. 601,256.

Patented Mar. 29, 1898.

Fig. 1.

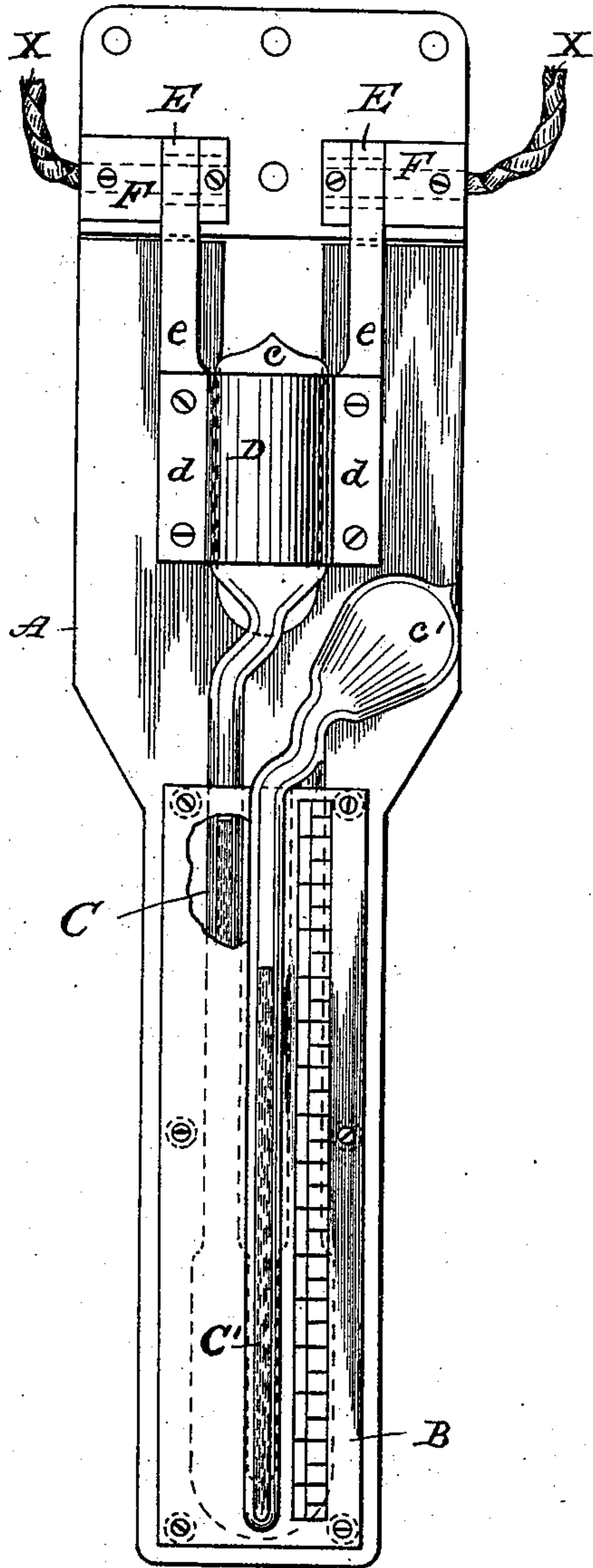


Fig. 2.

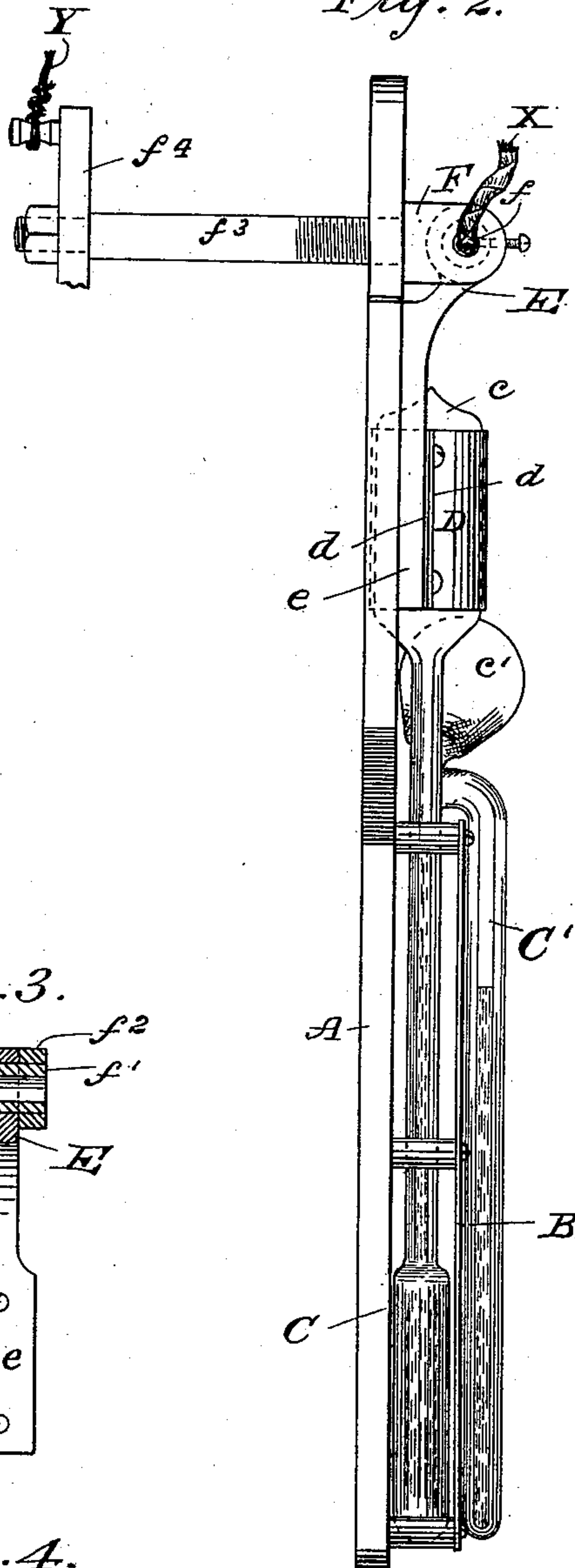


Fig. 3.

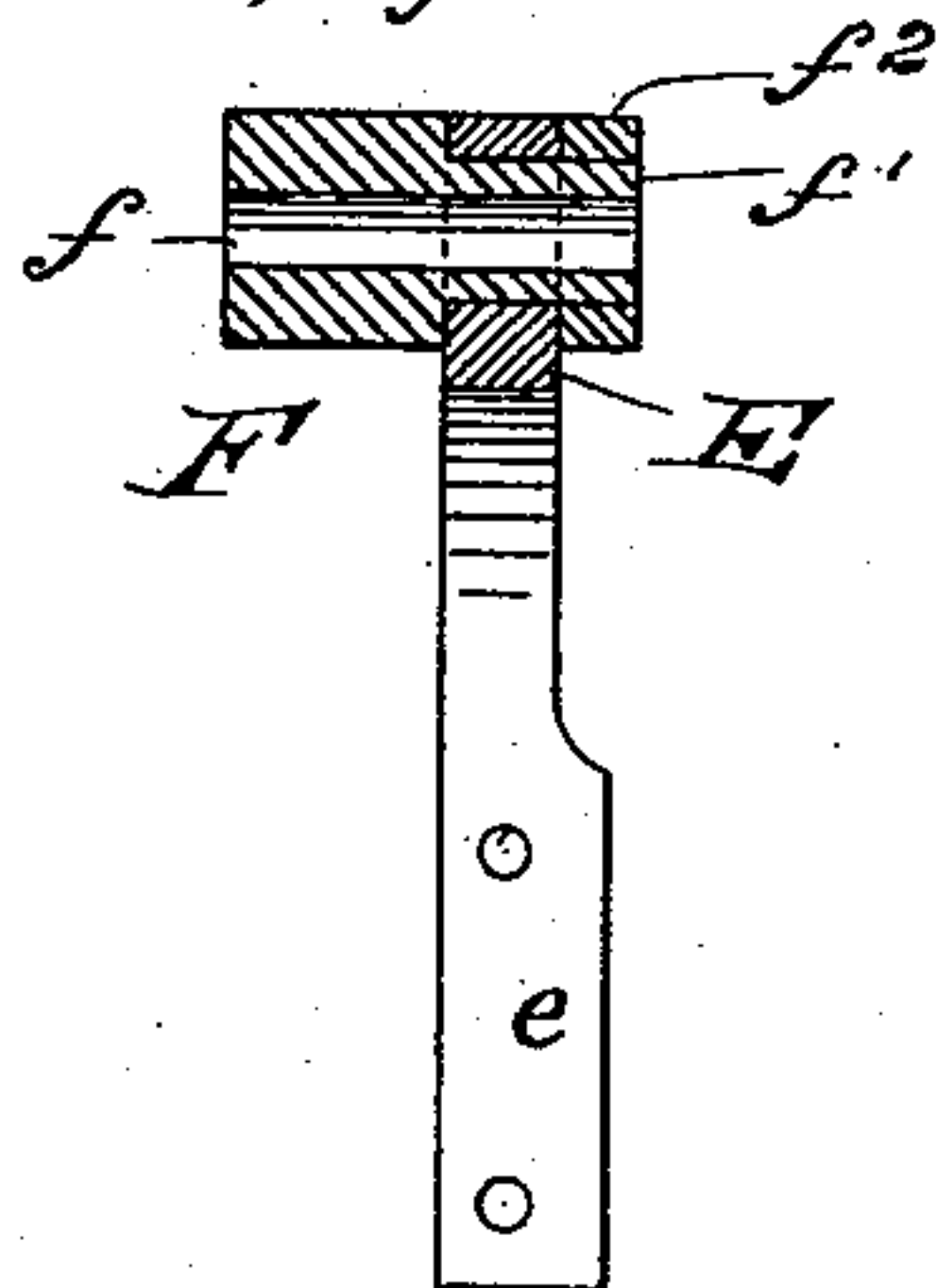


Fig. 4.



Witnesses

Albert R. Clough  
W. W. Eastman

Inventor

Adrian H. Hoyt

By his Attorney

J. B. Thurston



# UNITED STATES PATENT OFFICE.

ADRIAN H. HOYT, OF PENACOOK, NEW HAMPSHIRE.

## MAXIMUM METER.

SPECIFICATION forming part of Letters Patent No. 601,256, dated March 29, 1898.

Application filed July 29, 1897. Serial No. 646,333. (No model.)

*To all whom it may concern:*

Be it known that I, ADRIAN H. HOYT, a citizen of the United States, residing at Penacook, in the county of Merrimac and State of New Hampshire, have invented certain new and useful Improvements in Maximum Meters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to maximum meters which register thermally.

It is highly essential in the construction of a thermal instrument of this character that all heat should be practically confined to the bulb or heating area of the thermal tube—i. e., that there should be no perceptible heat in any other part of the instrument. After much experimenting in this field I have found that the metal carrying the current around the bulb should be as thin as possible, for if thick metal is used I find the area to be heated is considerably reduced and the capacity of the metal limited by numerous air-spaces which occur between the metal and the bulb, as thick metal cannot be uniformly fitted to the bulb without danger of breaking it, and to obviate this difficulty I use two strips of thin metal wholly surrounding the bulb and connected in parallel, one strip passing over the posterior and the other over the anterior of the heating area, thus permitting the use of metal of a given thickness one-half the length with one-quarter the heating capacity and allowing such instruments to be made of much higher range. I also find that in the manufacture of ammeters or instruments of low resistance, where it is necessary to use a shunt, the connections in the circuit should be absolutely uniform at all times and that an ordinary hinge is ineffective. In the drawings I show a hinge of novel form which is expressly adapted for this purpose and quite accurate in operation. By means of this construction I am enabled to shunt the instrument at its rear terminal, thereby permitting instruments of larger carrying capacity to operate with the same degree of accuracy of low-reading instruments of any form.

The object of my invention is to simplify and cheapen the construction, to improve the

electrical conductivity of the hinge, and to utilize the maximum heating area of the thermal bulb in instruments of this character; and my invention consists in the novel constructions, as fully set forth in the following specification and claims, and clearly illustrated in the drawings accompanying and forming a part of the same, of which—

Figure 1 is a front elevation of a maximum meter to which my improvements are applied. Fig. 2 is an edge view of same. Fig. 3 is my improved hinge connection in section. Fig. 4 is a sectional plan showing the heating area or bulb and my improved electrical conductors surrounding the same.

Similar reference-letters denote like parts in all the views.

A is a wooden base carrying a graduated scale B and a suitable thermal tube C, the heating area of which is the bulb c, which is preferably cylindrical, as shown.

This thermal tube is made in form of a U, having a bulb at each end and contains a suitable liquid, as indicated, the bulbs containing air or gas. The bulb c is surrounded by my improved heating resistances D D, formed of thin metal, each strip being long enough to more than cover one-half the area of the bulb c, the projecting portions d d being secured by screws at opposite sides of said bulb to the movable member of one of my improved electrically-connected hinges or to an extension e thereof, as shown and to be hereinafter explained. The tube C has near its bulb c' an overflow-tube C', and as the current passing through the resistances D D increases the gas in the bulb c expands, causing the liquid in the bulb c to overflow into the tube C', which may be read by the scale B.

The stationary member of the hinge, as indicated in sectional detail, Fig. 5, consists of a block F, secured to a base or plate G, formed of rubber or other insulating material, said block having an opening f extending through its side and through a cylindrical extension f', to which the perforated end of the movable member E is fitted and secured thereon by a suitable collar f<sup>2</sup>, which is shrunk or otherwise rigidly secured to said cylindrical extension f'. Such a hinge can be made to form quite a sure electrical connection between its stationary and movable members.



This instrument may be easily shunted, as seen in Fig. 2, by means of a bar  $f^3$ , rigidly fastened to the block F and extending rearward and horizontally through a partition or support and to which bar a plate or bar  $f^4$  may be secured and adapted to carry a wire Y.

Having described my improvements, what I claim is—

1. In a thermal registering maximum meter, two strips of thin metal covering opposite sides of the heating area of the thermal tube and electrically connected in parallel, and similarly connected to the stationary and movable parts of the instrument.

2. In a thermal registering maximum meter, an electrically-connected hinge connecting the stationary and movable parts of the instrument, and thin metal plates closely fitting and surrounding the cylindrical portion of the heating area of the thermal tube and

electrically connected in parallel to the movable member of said hinge.

3. An electrically-connected hinge comprising a stationary body having a reduced lateral extension, said body being perforated longitudinally and through said lateral extension, a movable body bored to fit said lateral sleeve or extension, a collar shrunk upon or otherwise tightly fitting said extension and against the movable body, and one or more screws threaded to the stationary body and its collar and adapted to the perforation of the former, all substantially for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ADRIAN H. HOYT.

Witnesses:

J. B. THURSTON,

HENRY E. BURNHAM.