No. 697,444. Patented Apr. 15, 1902.

M. F. CANODE & C. F. WOOLEY.

SAWDUST BURNING STOVE.

(Application filed May 25, 1901.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

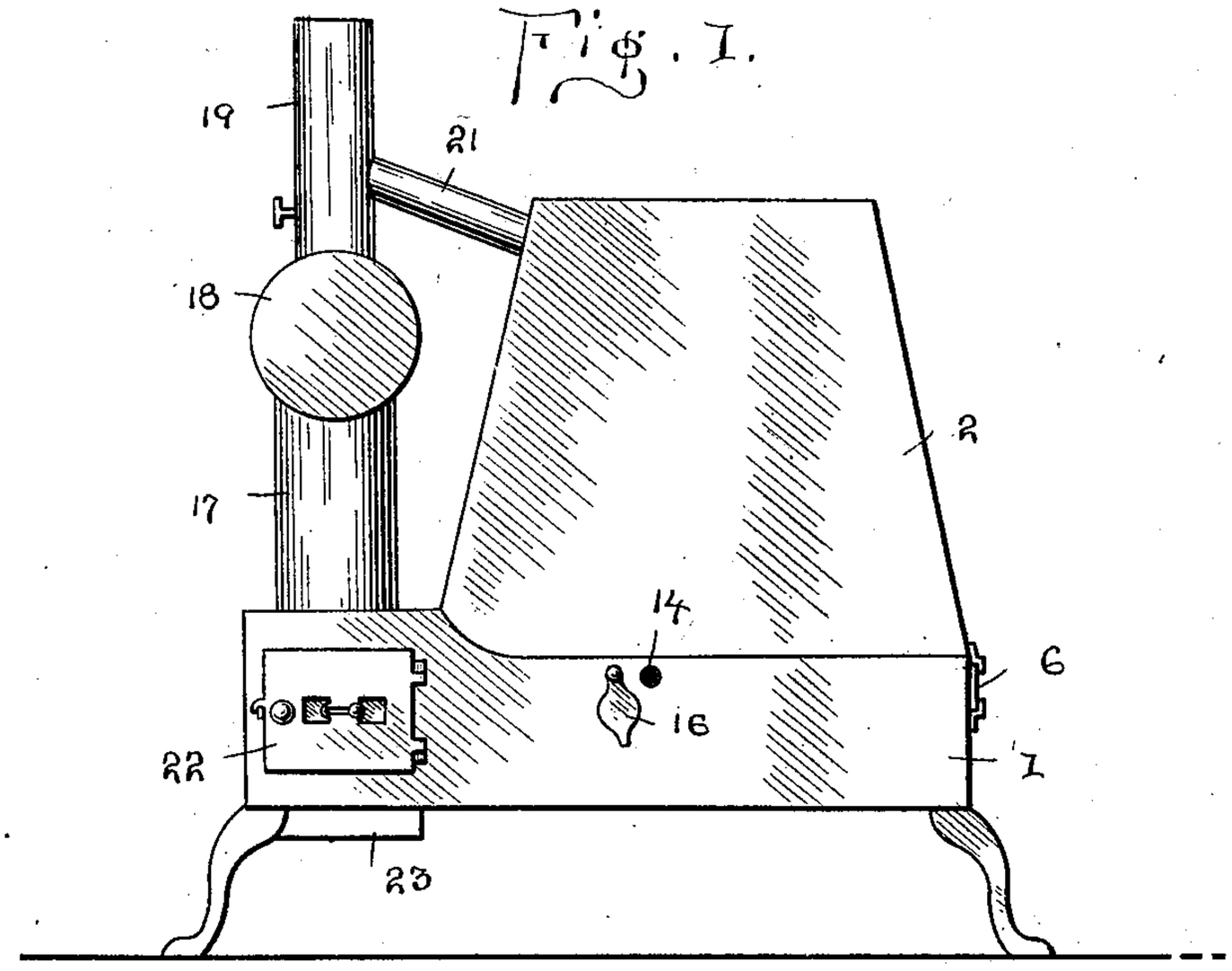

Fig. 2.

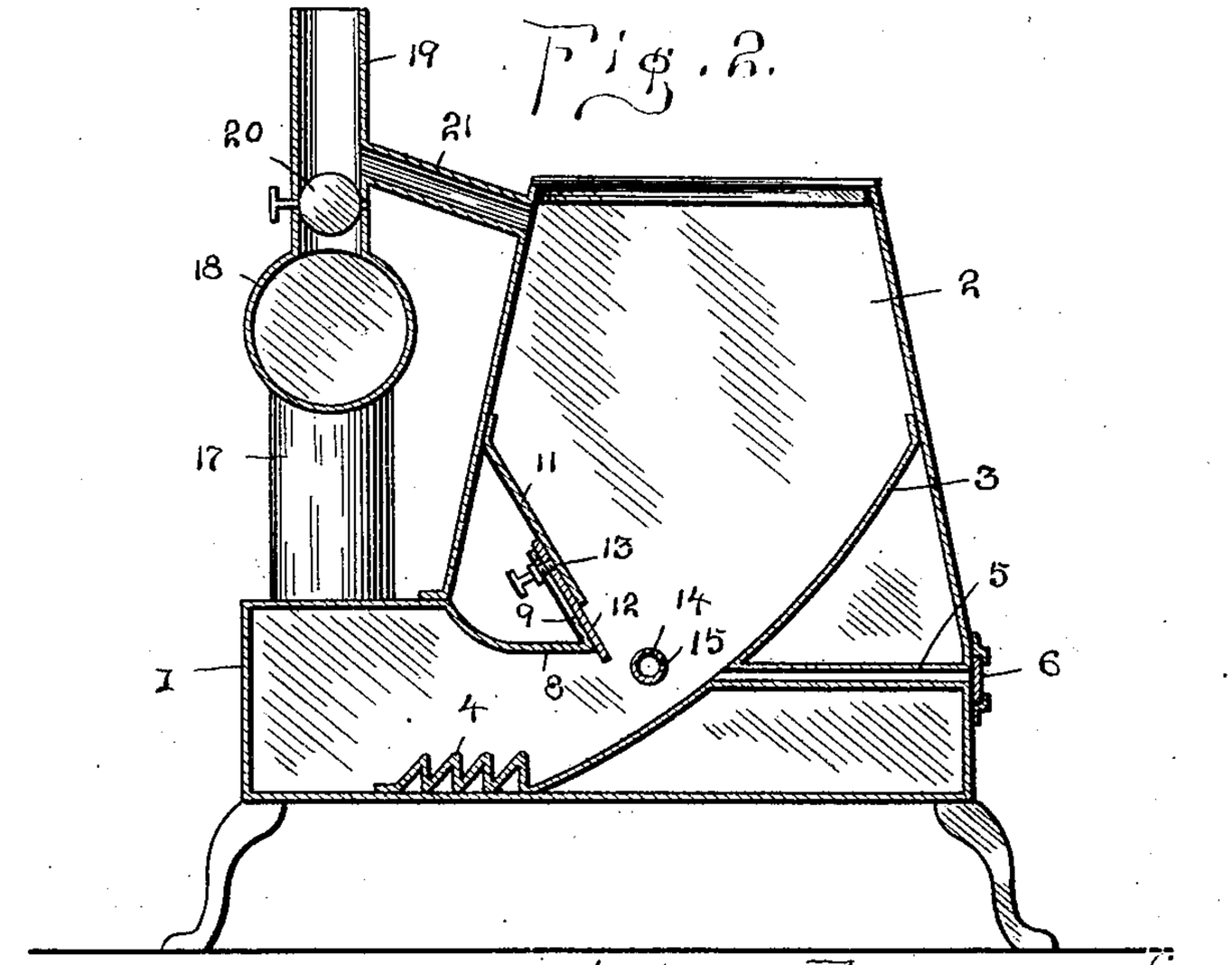

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Fig. 3.

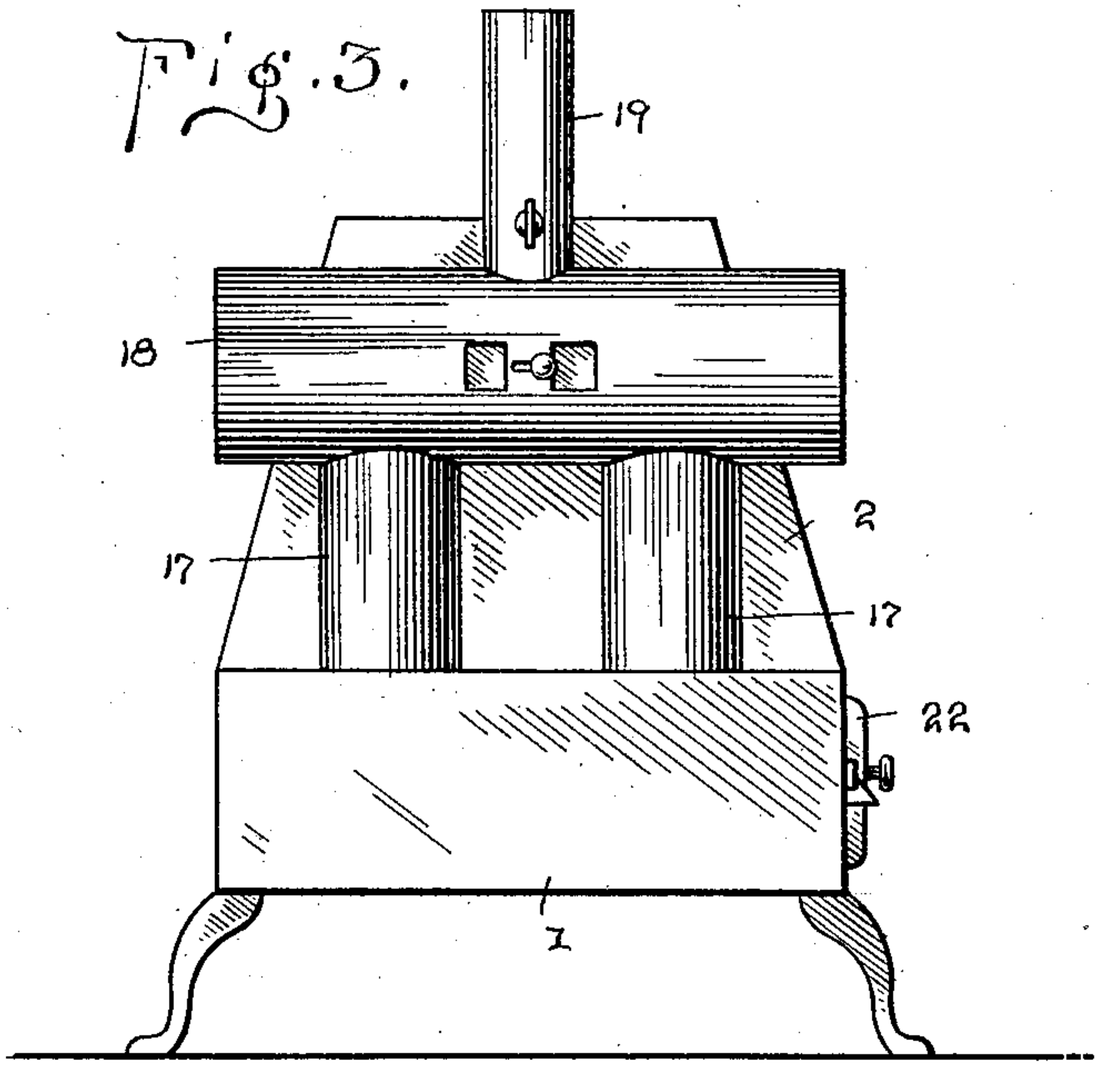


Fig. 4.

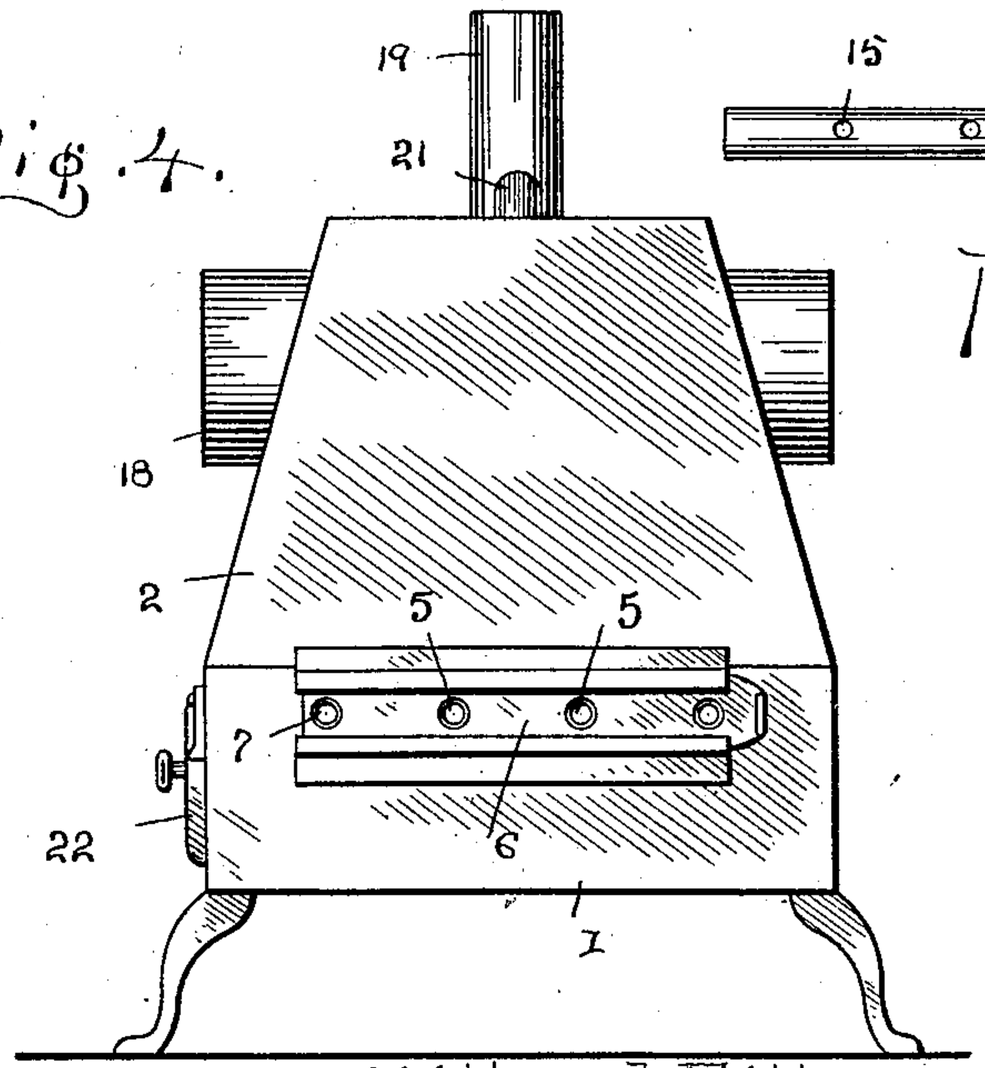
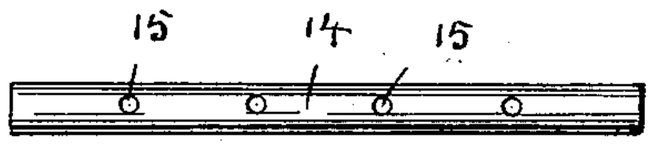


Fig. 5.



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UNITED STATES PATENT OFFICE.

MILLARD FILLMORE CANODE AND CHARLES FREDRICK WOOLEY, OF WEST MANSFIELD, OHIO.

SAWDUST-BURNING STOVE.

SPECIFICATION forming part of Letters Patent No. 697,444, dated April 15, 1902.

Application filed May 25, 1901. Serial No. 61,969. (No model.)

To all whom it may concern:

Be it known that we, MILLARD FILLMORE CANODE and CHARLES FREDRICK WOOLEY, citizens of the United States, residing at and whose post-office address is West Mansfield, in the county of Logan and State of Ohio, have invented new and useful Improvements in Sawdust-Burning Stoves, of which the following is a specification.

This invention relates to improvements in sawdust-burning stoves.

The object of the present invention is the provision of a stove of this character embodying in its construction a simple and efficient arrangement of the parts, so that an efficient radiation of the heat is effected; and, furthermore, the invention means to provide a sawdust-burning stove wherein the parts are so related as to effectually prevent smoking of the stove during the burning of the sawdust.

A further object of the invention is to provide in the construction of a sawdust-burning stove an effective arrangement of air-conduits, whereby the combustion of the sawdust is greatly promoted.

With these and other objects in view, which will appear as the nature of the improvements is better understood, the invention consists, substantially, in the novel construction, combination, and arrangement of parts, as will be hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the appended claims.

In the drawings, Figure 1 is a side elevation of a sawdust-burning stove constructed in accordance with the present invention. Fig. 2 is a vertical longitudinal sectional view thereof. Fig. 3 is a front elevation of the stove. Fig. 4 is a rear elevation thereof. Fig. 5 is a detail elevation of one of the air-conduits arranged within the magazine.

Referring to the drawings, the numeral 1 designates the body of the described stove, said body being substantially rectangular and having its forward end of greater height than its rear end, and arranged upon the rear end of said body is a pyramidal magazine 2, the latter being of greater diameter at its bottom than at its top. Arranged within the magazine 2 is an inclined feed-slide 3, said slide extending throughout the entire width of the magazine 2, and formed at the lower end of said slide 3 is a series of angular abutments 4, said abutments being formed by folding the lower edge of the slide 3 in substantially inverted V shape. The abutments 4 lie in parallel relation and are designed to retard the downward movement of the sawdust on the slide 3. Connected to the slide 3 and extending to the rear of the body 1 is a series of air-tubes 5, the inner ends of said tubes opening through the slide 3 and the outer ends of said tubes opening to the atmosphere through the back of the body 1 and being closed by means of a horizontally-arranged damper-slide 6. The slide 6 is provided with a series of perforations 7, corresponding to the number of pipes 5, and it is obvious that by means of said perforations the tubes 5 may be brought into communication with the atmosphere, or communication therewith may be effectually cut off by properly manipulating the slide 6.

It will be observed by referring to Fig. 2 that the top of the body 1 extends into the magazine 2 to provide a supporting-plate 8, having an upwardly-extending inclined flange 9, and mounted upon the flange 9 is a gate formed of an upper stationary section 11 and a lower movable section 12. The latter is slidably arranged in relation to the upper section 11 and is adapted to be held in adjusted positions through the medium of a set-screw 13, passing through the flange 9. The section 12 is thus capable of adjustment toward and away from the slide 3 for regulating the size of the throat between said slide and the support 8, through which throat the sawdust passes. For the purpose of promoting the combustion, and more particularly at the starting of the fire, a transversely-arranged air-inlet pipe 14 is employed, said pipe being arranged at the bottom of the magazine 2 and having a series of discharge-openings 15, through which the air is introduced into the magazine. The pipe 14 communicates with the atmosphere at the sides of the body 1, and, if desired, the ends of said pipe may be closed to cut off the entrance of the air through the medium of the hinged covers 16.

Arranged upon the forward end of the body 1 and rising vertically therefrom is a series of

heat-conducting pipes 17, and mounted upon the upper ends of said pipes is a horizontally-disposed heating-drum 18, the latter being in communication with the pipes 17. Connected to the upper portion of the drum 18 is a chimney-pipe 19, and arranged within the pipe 19 at its lower end is a damper 20 for the purpose of controlling communication between the drum 18 and the pipe 19. Extending from the pipe 19 to the upper portion of the magazine 2 is a smoke-pipe 21, and through the medium of said pipe 21 the smoke and other vapors arising from the combustion of the sawdust may be effectually carried off from the magazine 2 into the pipe 19. It will be observed, however, that the pipe 21 discharges into the pipe 19 at a point above the damper 20, so that free communication is always afforded between the pipe 19 and the interior of the magazine 2.

The body 1 at one of its sides and at a point below the heating-pipes 17 is provided with a door 22, and by means of the door 22 communication is afforded to the interior of the body 1 for the purpose of removing the accumulated ashes at the bottom of the slide 3. The body 1 may also be provided at the underside of its forward end with a cinder-pan 23 for the reception of ashes when wood or coal is employed with the stove.

With the parts assembled as illustrated and described the operation is as follows: The magazine 2 is filled to the desired extent with sawdust, the lower section 12 of the grate 10 having been previously adjusted to provide the desired size of opening to the throat between the slide 3 and the support 8, and it will thus be seen that when the sawdust is placed within the magazine the same will be conveyed by the feed-slide 3 to the throat. The sawdust being ignited the desired quantum of air flows through the perforations arranged in the pipe 14, and if the discharge by the openings 15 is not sufficient to promote combustion the slide 6 may be adjusted to open the tubes 5. It will of course be understood that the dust in its descent will come in contact with the abutments 4 and be retarded thereby, so that the point of combustion is really at and from the abutments 4 to and surrounding the inlet-pipe 14. The smoke arising from the combustion of the dust will be carried off through the pipe 21 and discharged into the chimney-pipe 19, while the heat generated by the combustion of the dust will pass in the pipes 17 and be conveyed thereby to the heating-drum 18. The latter causes a radiation of the heat, and after having served this purpose in the drum 18 the heat is discharged into the pipe 19, the flow of the heat from the drum 18 to the pipe 19 being regulated by the damper 20. When it is desired to remove the ashes, it is simply necessary to open the door 22, when access may be readily had to the ashes and an easy removal thereof effected.

While the form of the invention herein shown and described is what is believed to be a preferable embodiment thereof, it will of course be understood that the same is susceptible of various changes in the form, proportion, and minor details of construction, and the right is therefore reserved to modify or vary the invention as falls within the spirit and scope thereof.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a stove of the class described, the combination with the body thereof, and a magazine carried thereby, of a feed-slide arranged within said magazine and extending into the body for conveying the sawdust from the magazine to the body, abutments carried by said feed-slide for retarding the movement of the sawdust, a gate arranged within the magazine, air-inlets arranged within the body and communicating with the interior thereof, a heating-drum carried by the body and communicating therewith, a chimney-pipe communicating with said heating-drum, and a smoke-pipe arranged between the chimney-pipe and a magazine for conveying the products of combustion from the latter to the chimney-pipe.

2. In a stove of the class described, the combination with the body thereof, and a magazine carried thereby, of a feed-slide in said magazine and body, abutments thereon for retarding the movement of the material fed upon the slide an air-inlet pipe extending across the slide and having outlets into the interior of the stove, a heating-drum communicating with the body, a chimney thereto, and a pipe connecting said chimney and magazine.

In testimony whereof we affix our signatures in presence of witnesses.

MILLARD FILLMORE CANODE.
CHARLES FREDRICK WOOLEY.

Witnesses as to signature of Millard Fillmore Canode:

GLEN BROCKERMAN,
J. L. ANDREWS.

Witnesses as to signature of Charles Fredrick Wooley:

GLEN BROCKERMAN,
W. L. MORSE.