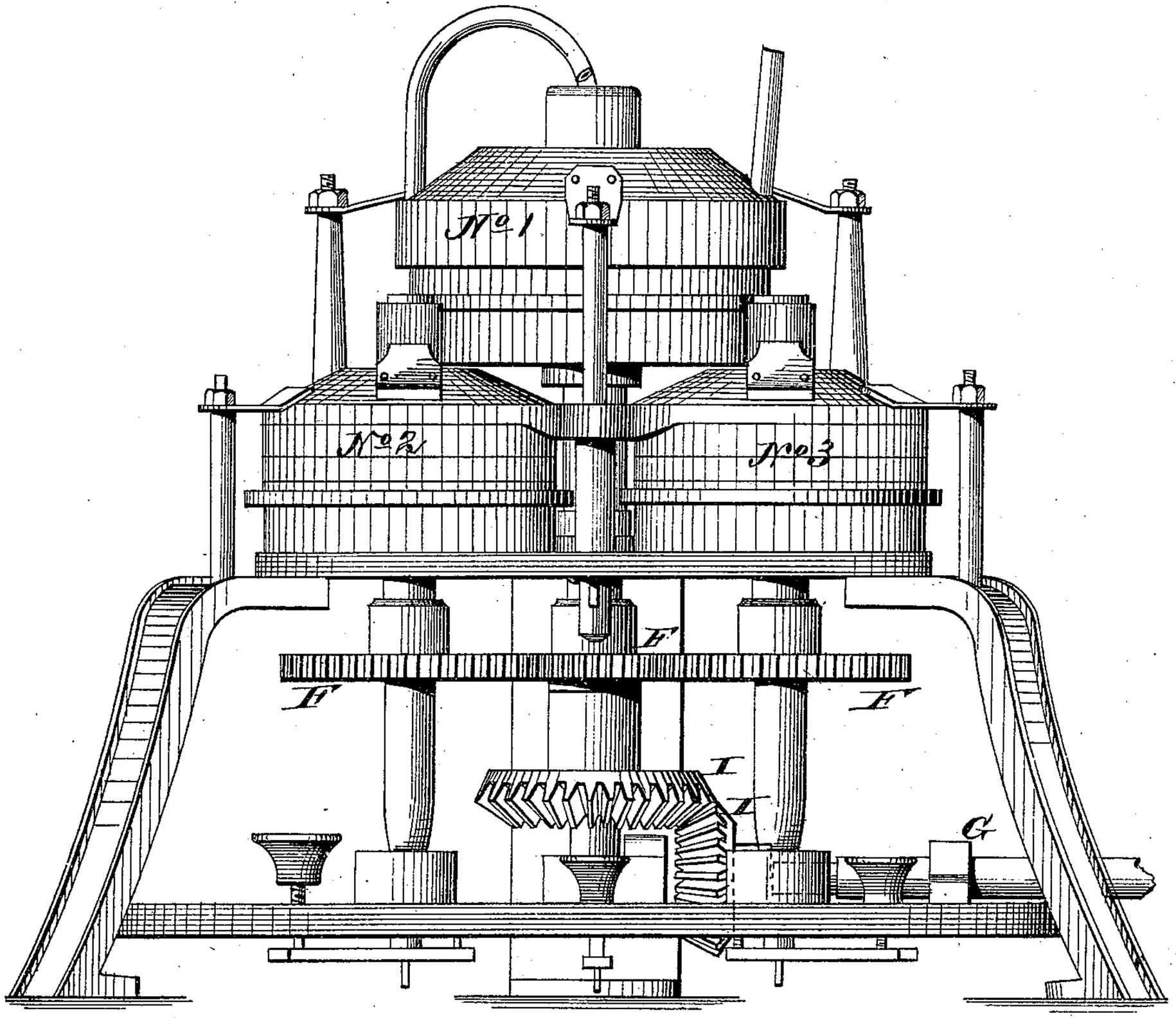
2 Sheets—Sheet 1.

W. DANIELS.
Paint Mill.

No. 229,973. Patented July 13, 1880.

Fig. 1.



WITNESSES

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2 Sheets—Sheet 2.

W. DANIELS.
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Fig. 4.

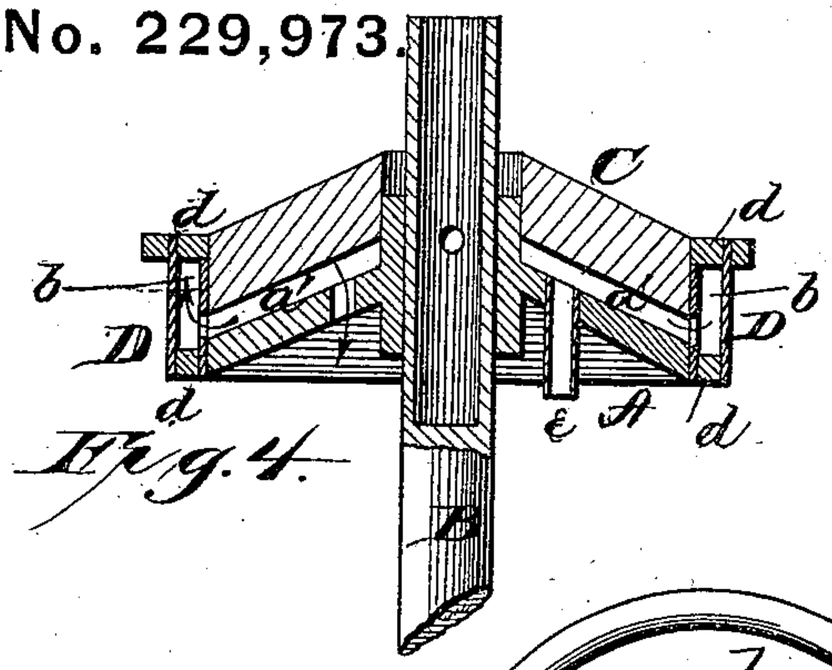


Fig. 2.

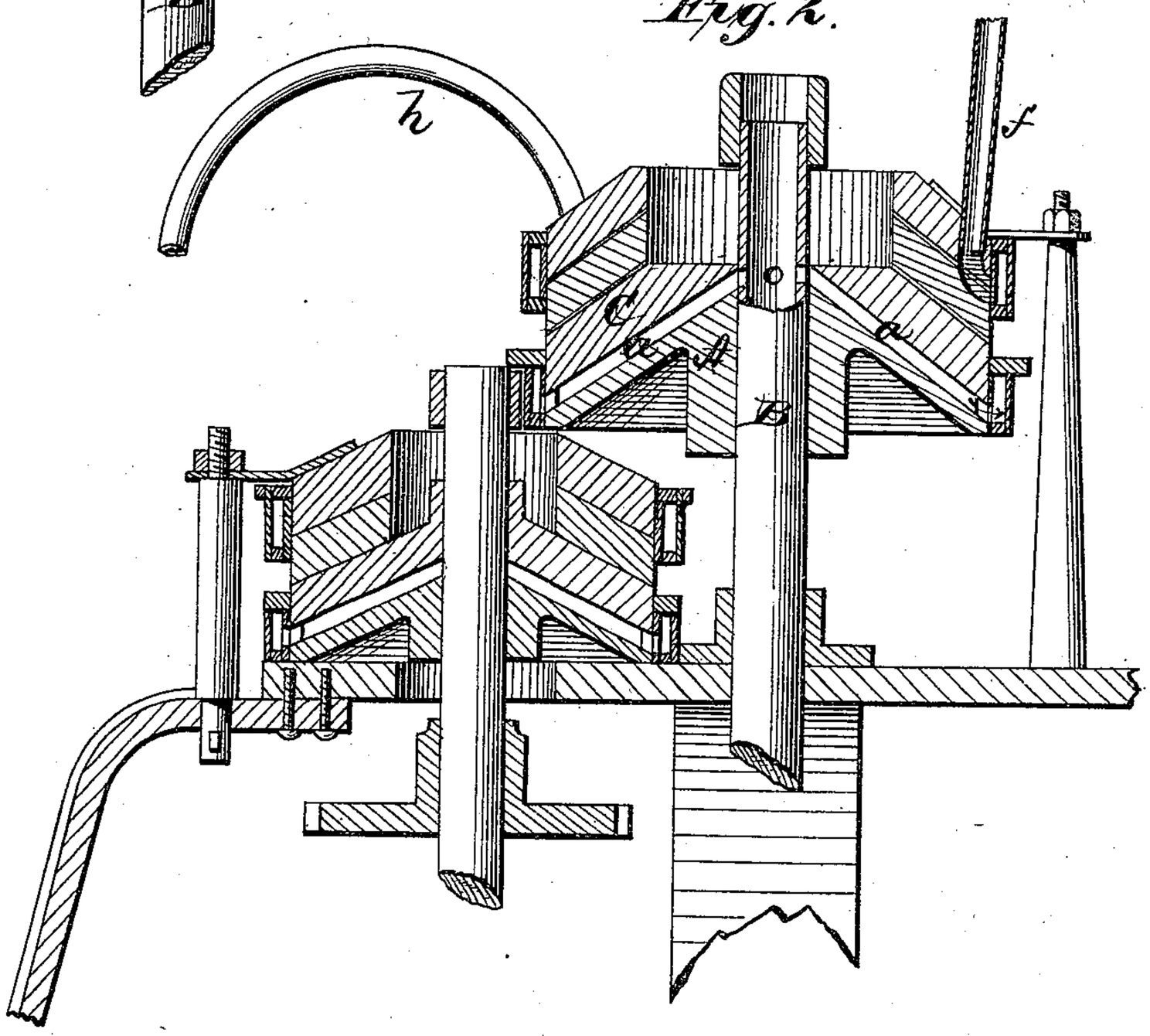
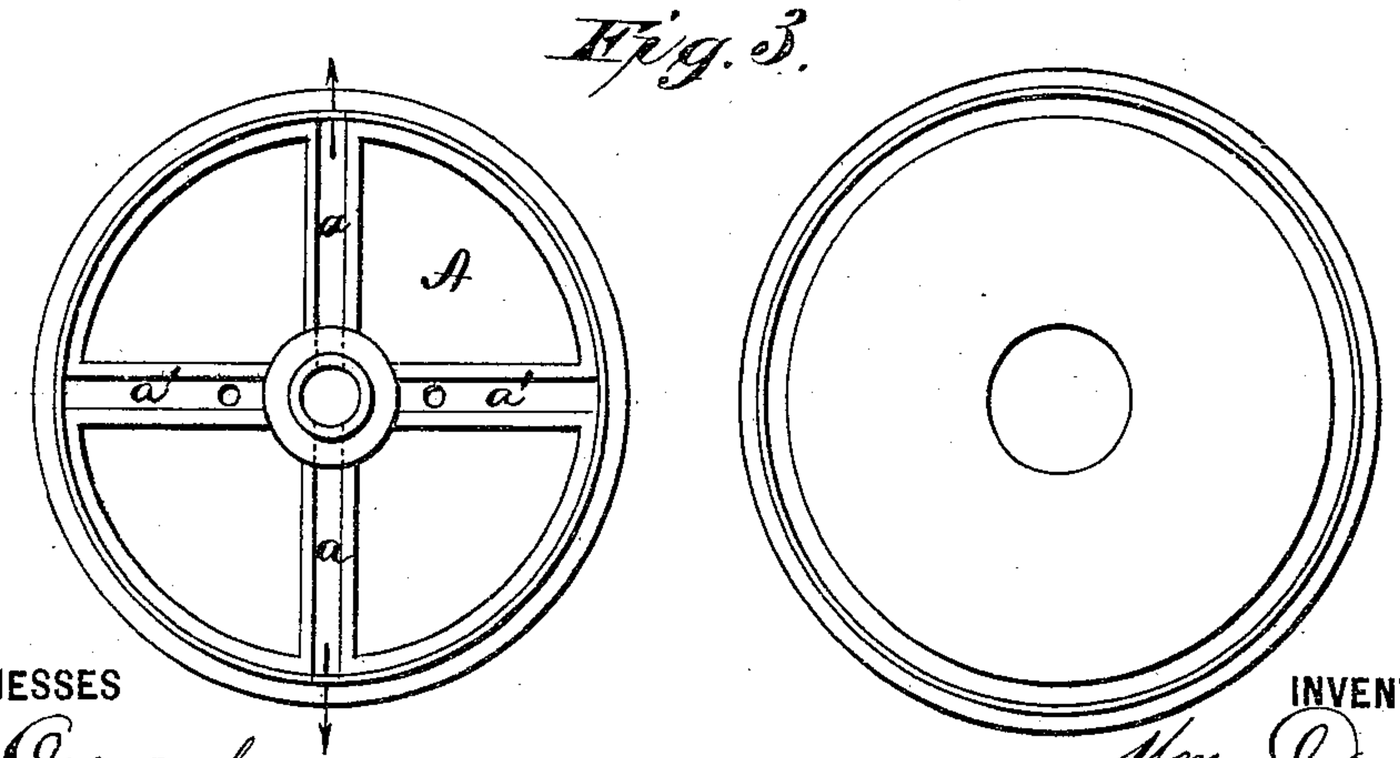


Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM DANIELS, OF BROOKLYN, NEW YORK.

PAINT-MILL.

SPECIFICATION forming part of Letters Patent No. 229,973, dated July 13, 1880.

Application filed September 17, 1879.

To all whom it may concern:

Be it known that I, WILLIAM DANIELS, of Brooklyn, in the county of Kings, and in the State of New York, have invented certain new and useful Improvements in Paint-Mills; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The friction of the stones, especially in grinding paints and other wet substances, generates a high degree of heat, which is in many cases injurious to both the stones and the material ground, for which reason it is highly necessary to control the temperature.

In all well-regulated mills the grinding is done near the skirt or edge of the surface of the stones or iron grinder, as the case may be; therefore the greatest amount of heat is produced near the skirt or edge of the grinding-surface.

My invention consists in the particular construction of the devices whereby the temperature of the grinders is regulated, as will be hereinafter more fully set forth, and pointed out in the claim.

In the annexed drawings, Figure 1 is a side elevation of my invention. Figs. 2, 3, and 4 are detail views of parts thereof.

A represents a cast plate, made rigidly fast to the hollow spindle B, the hole in the spindle extending down to the edge or back of the stone or iron grinder. This cast plate is provided with grooves or pipes *a a*, leading from the hole in the spindle underneath the runner-stone C to the hollow space at the edge of the stone or iron grinder, as shown in Fig. 2.

The stone C is made fast to the plate A by shrinking on a wrought-iron band, *b*. The hollow space is formed by shrinking on two square rings, *d d*, one ring on the stone near the grinding-surface, and the other on the casting below, and the two rings covered with a wide band, D, of some light metal, such as galvanized iron, brass, or copper, thus forming a passage at the edge of the stone for cold water, air, &c. The water or air is discharged from this space through similar grooves or pipes *a' a'*, as shown in Fig. 4, and out at *e*, under the mill.

The space on the top or stationary stone is formed in the same manner, the water being introduced by means of a pipe, *f*, in the top of the casting, discharging at opposite side through a pipe, *h*, and it may be conveyed to the runner or pass through all of the top or stationary stones, as desired. This same space may be formed on a stone or metal grinder without the cast plate by making the stone or metal grinder rigidly fast to the hollow spindle and conveying the water to the said space in pipes, same as described above.

All paints, nearly, are ground more than once, and the first grinding is usually done faster than the second or finishing. For this reason I have constructed a mill with three or more mills on one frame, as shown in Fig. 1, and marked, respectively, No. 1, No. 2, and No. 3. One mill is elevated above two or more, and one discharging into two or more. These mills are all connected together by spur-gear wheels F F, and one of them connected by bevel-gear wheels I I to a line-shaft, G, to which the power is applied, thus driving all the mills with one belt.

In a former patent granted to me June 4, 1878, No. 204,542, I show a chamber formed in the millstone extending from the eye to a certain distance from the edge or skirt. This is not applicable to paint-mills, as in such mills the grinding is done mainly at or near the skirt or edge of the grinder, and hence a chamber, as in my former patent, would do no good.

In my present case the chamber for the passage and circulation of cold water, air, &c., is formed at the edge or skirt of the grinder to keep the surface cool where the grinding is done.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a paint-mill, the combination of the hollow spindle B, plate A, having the radial passages *a a'*, as described, stone C, with the surrounding chamber formed of the band *b*, rings *d d*, and band D, and an outlet, all substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 25th day of August, 1879.

WM. DANIELS.

Witnesses:

IRA A. KIMBALL,

J. W. DANIELS.