

(No Model.)

R. F. SNOW.
METAL FABRIC.

No. 406,786.

Patented July 9, 1889.

Fig. 1.

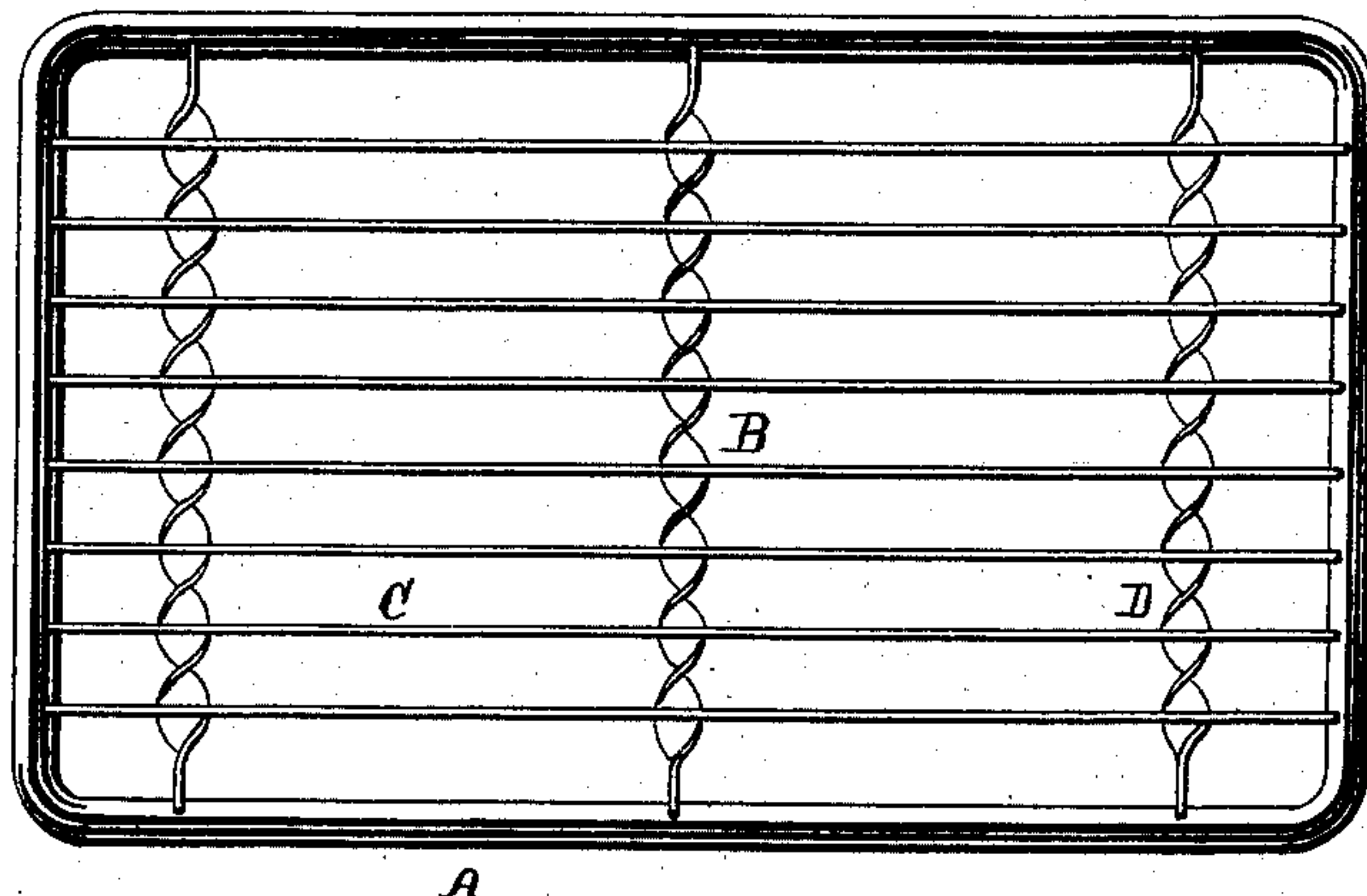


Fig. 2.

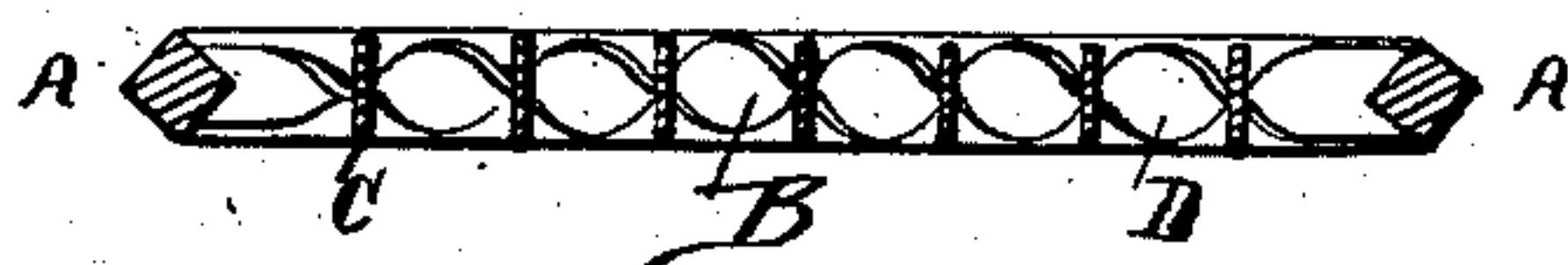
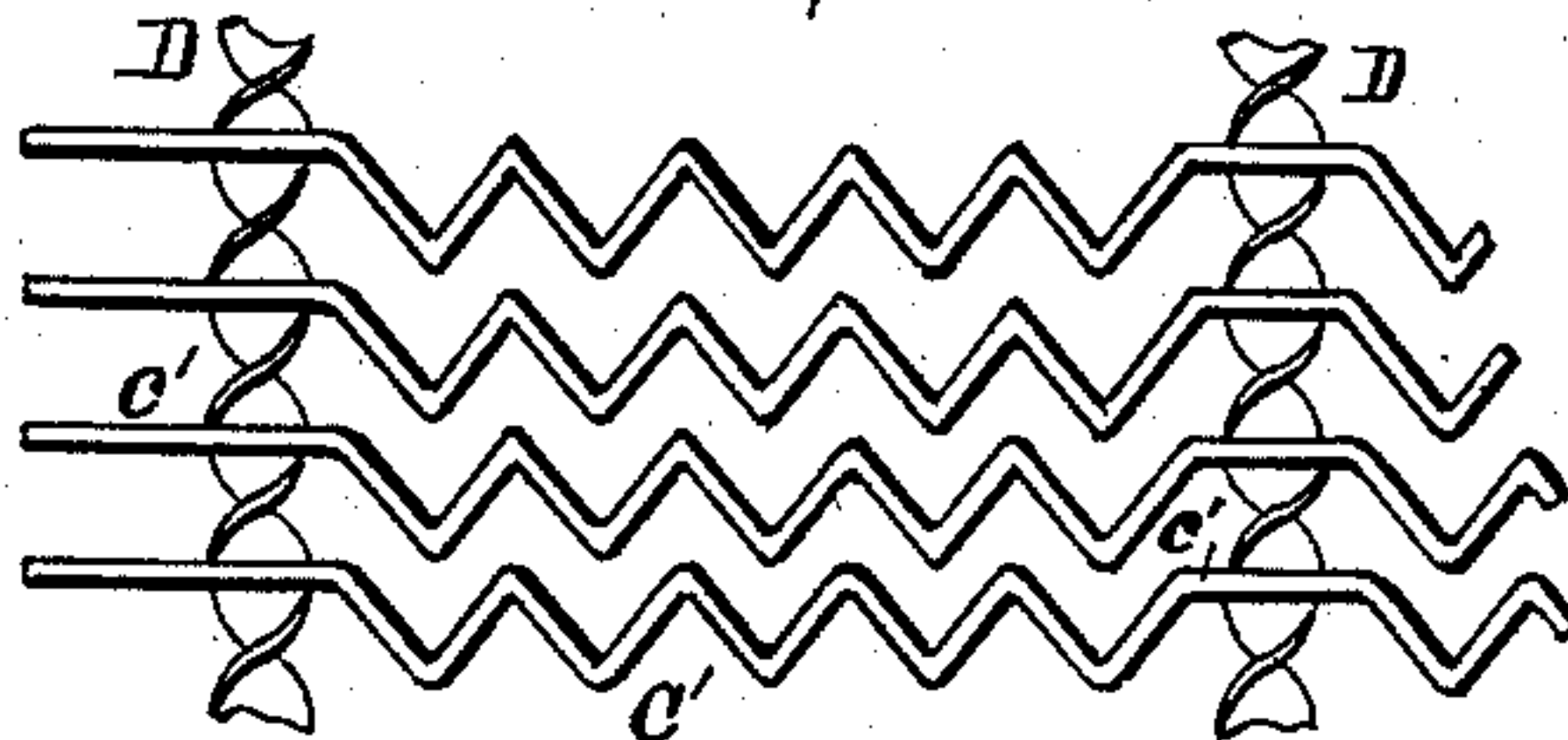


Fig. 3.



Fig. 4.



WITNESSES.

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METAL FABRIC.

SPECIFICATION forming part of Letters Patent No. 406,786, dated July 9, 1889.

Application filed March 19, 1888. Serial No. 267,649. (No model.)

To all whom it may concern:

Be it known that I, ROBERT F. SNOW, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Metal Fabrics; and I 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, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to certain new and useful improvements in metal working, the same being adapted to the construction of metallic mats and analogous articles; and it consists of the combinations of devices and appliances, hereinafter specified, and more particularly pointed out in the claims.

In the accompanying drawings I have illustrated my invention as applied to a metal-bar mat, and in which—

Figure 1 is a plan view of my invention as formed into a mat or grating. Fig. 2 is a cross-section along the line $x y$. Fig. 3 is a detail view of one of the bars. Fig. 4 illustrates a construction wherein the perforated series of bars is crimped or corrugated, and which I contemplate as a special feature of my invention.

The objects of my invention are, first, to provide an improved fastening means for various kinds of metal-work to which it may be found adapted; second, to provide an improved metal-bar fabric; third, to provide an improved metal-bar fabric and frames; fourth, my invention also contemplates the general construction, combination, and arrangement of devices and appliances, herewith shown and described; and, fifth, the corrugation of one series of the bars where found desirable.

Accordingly, A represents the inclosing-frame, preferably made of metal bar diamond-shaped in cross-section, as shown in Fig. 2.

B represents the metal-bar fabric located in said frame, the fabric being constructed of two series of metal bars extending substantially at right angles to each other. One of said series of bars C may consist of a desired number of flat bars, each of said bars provided at desired intervals with elongated slots

c. The other series of bars D consists of a desired number of twisted bars, said bars preferably twisted into regular spirals, and these are engaged with the bars C by being screwed or turned into the elongated orifices c , which may be accomplished in a very easy and expeditious manner. Thus, for instance, the series of flat bars C may be located in corresponding kerfs in a bed or table when the twisted wires D may each be passed through the elongated orifices in each of the bars C, said orifices intended for the reception of a given spiral bar being brought into line, so that the spiral bar may be simply screwed or turned through the various orifices consecutively and simultaneously from one side the series to the other. By constructing the orifices c of proper dimensions this interlocking of the two series may be accomplished without difficulty. At the same time when the twisted bars have been thus interlocked all liability of the spreading of the flat bars is effectually prevented, as when the twisted bars are held from rotating the curve of the spiral twist adjacent to the elongated slots on each side the bars C constitutes a positive stop, to prevent the lateral movement of the flat bar in either direction, this construction therefore furnishing an efficient fastening for the intersecting bars at every point of intersection whenever the twisted bar is held from turning. In this way the series of bars are sure to extend uniformly parallel and true in position, so as to constitute a neat and workmanlike metal fabric.

The bars may be held from turning the one upon the other by fastening their ends or engaging them in a frame or border in any suitable manner. I prefer, however, to accomplish this end in the following convenient and simple manner: The extremities of the various bars in both series may be cut with a V-shaped notch or recess, as shown in Figs. 2 and 3.

About the margin of the fabric I locate a border or frame A, made of metal, preferably diamond-shaped in cross-section, as already described. In this construction, when the border is engaged about the fabric, an acute angle of the border-bar is snugly fitted into each V-shaped notch at the extremities of

each of the bars in the fabric, affording a positive lock and safeguard against the turning of the bars one upon another. I do not, however, limit myself alone to the use of a
5 bar diamond-shaped in cross-section for the border.

In certain kinds of articles of manufacture this fastening will be all that will be required. In other forms of light work or of large dimensions the border might be liable to spread intermediate the corners thereof, unless additional precautions were employed to guard against such a result. For this reason I contemplate wherever such a construction is demanded the extension of the forked ends of
10 the bars on either side the V-shaped notches, as shown in Fig. 3, and when the border has been located about the margin of the fabric these extremities may be clinched inward
20 against the border, as shown in Fig. 3 at *a a*. This will effectually prevent the border from spreading away from the fabric. The bars of the fabric may be thus clinched upon the border continuously or at desired intervals
25 and upon any side or sides desired. Moreover, by galvanizing or electroplating the fabric the interlocking is made still more effectual and durable, and this I contemplate also.

A fabric embodying the principles of my invention is adapted for various purposes,
30 as for mats, window-guards, railings, fencing, area-gratings, malt-floors, and other analogous uses, all of which come within the scope of my invention.

Instead of having the series of bars C of flat wire or band metal, I have found that it may also be crimped or corrugated with facility, and as so constructed, when used for gratings, mats, and the like, will have a strong
35 tendency to prevent the slipping of the foot thereon, as well as providing a neat appearance, when it is desired to use the fabric elsewhere. Such a construction is shown in Fig. 4, the bars C' being crimped or corrugated in
40 any desired manner where the points of intersection come. These bars may have a straight shoulder *c'*, if desired, to receive the elongated slot. The use of the corrugated bars in metal fabrics I believe to be new with
50 cross-bars of any construction, or whatever

may be the manner of interlocking, and is therefore a feature to which I desire to lay claim broadly. Nor is it essential to my invention to twist the bars D into regular spirals, as I contemplate any such turning of the
55 bar out of a straight plane as will form a shoulder on either side the perforated bar to hold the two in an interlocked position. Thus the bar D, when passed through the bar C, might be given a fraction of a turn out of a
60 straight line. Nor do I limit myself to the construction of the elongated slot *c* to extend longitudinally in the bar, as, if desired, it might extend at any angle thereto. Nor do I limit myself to the interlocking of the bars
65 at right angles to each other or at right angles to the frame.

It is evident that the twisted bar forms a periphery of greater diameter than the width of the orifice in the slotted bar through which
70 it is passed. This construction spaces the slotted bars, and the one series is thus interlocked effectually with the other.

What I claim is—

1. A metal fabric consisting of a series of
75 slotted bars having in combination therewith a series of twisted bars, the width of the slots respectively being less than the diameter of the periphery of the twisted bar, substantially as described.
80

2. A metal fabric consisting of the combination, with a series of bars slotted at suitable intervals, of a series of twisted bars, the width of the slots being less than the peripheral diameter of the twisted bars, and a border located about one or more edges of the fabric,
85 substantially as set forth.

3. A metal fabric consisting of the combination, with a series of corrugated bars slotted at suitable intervals, of a series of twisted
90 bars, the width of the slots being less than the peripheral diameter of the twisted bars, substantially as set forth.

In testimony whereof I sign this specification in the presence of two witnesses.

ROBERT F. SNOW.

Witnesses:

N. S. WRIGHT,
GEORGE H. HIGGS.