

2 Sheets—Sheet 1.

No. 442,128.

Patented Dec. 9, 1890.

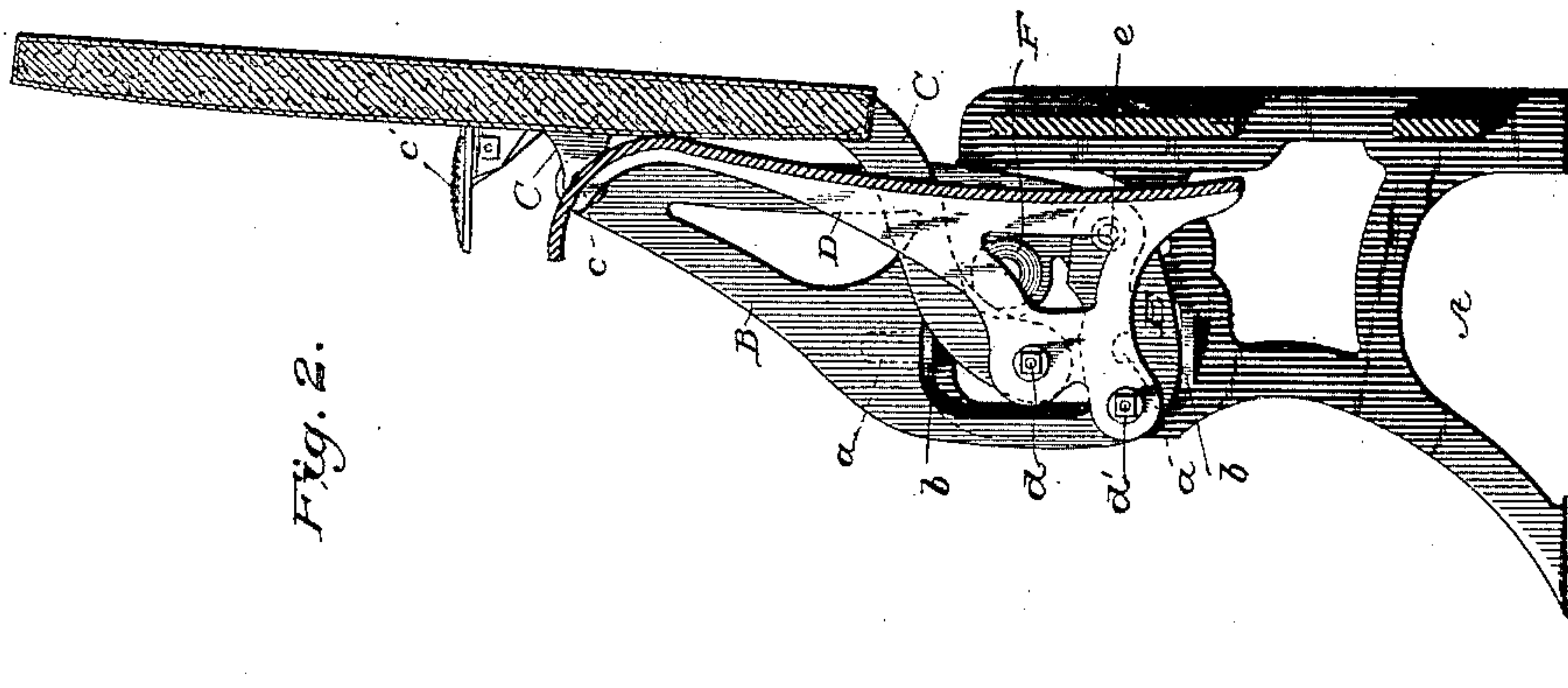


Fig. 2.

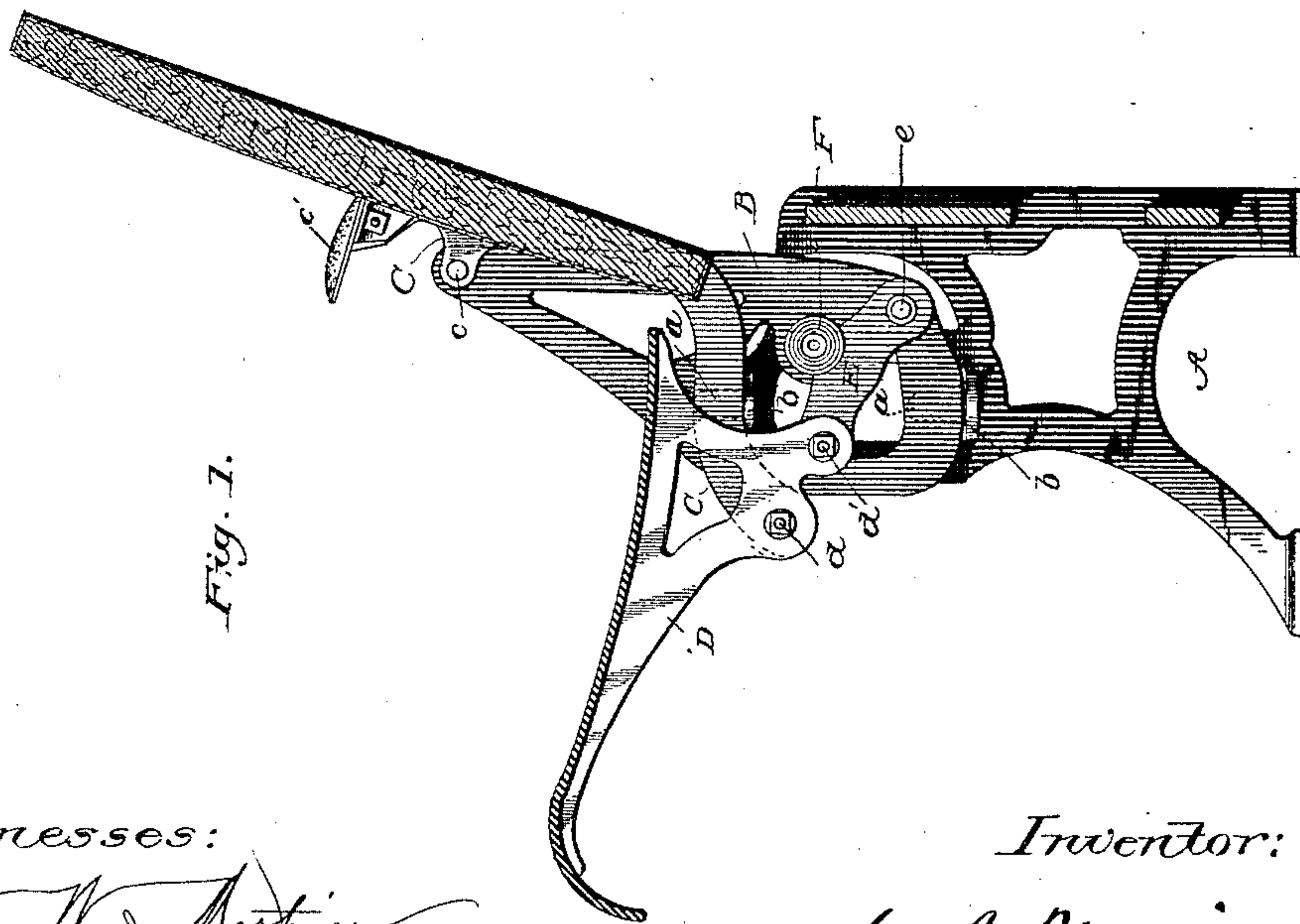


Fig. 1.

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(No Model.)

2 Sheets—Sheet 2.

C. A. MERRILL & A. D. LINN.  
FOLDING CHAIR.

No. 442,128.

Patented Dec. 9, 1890.

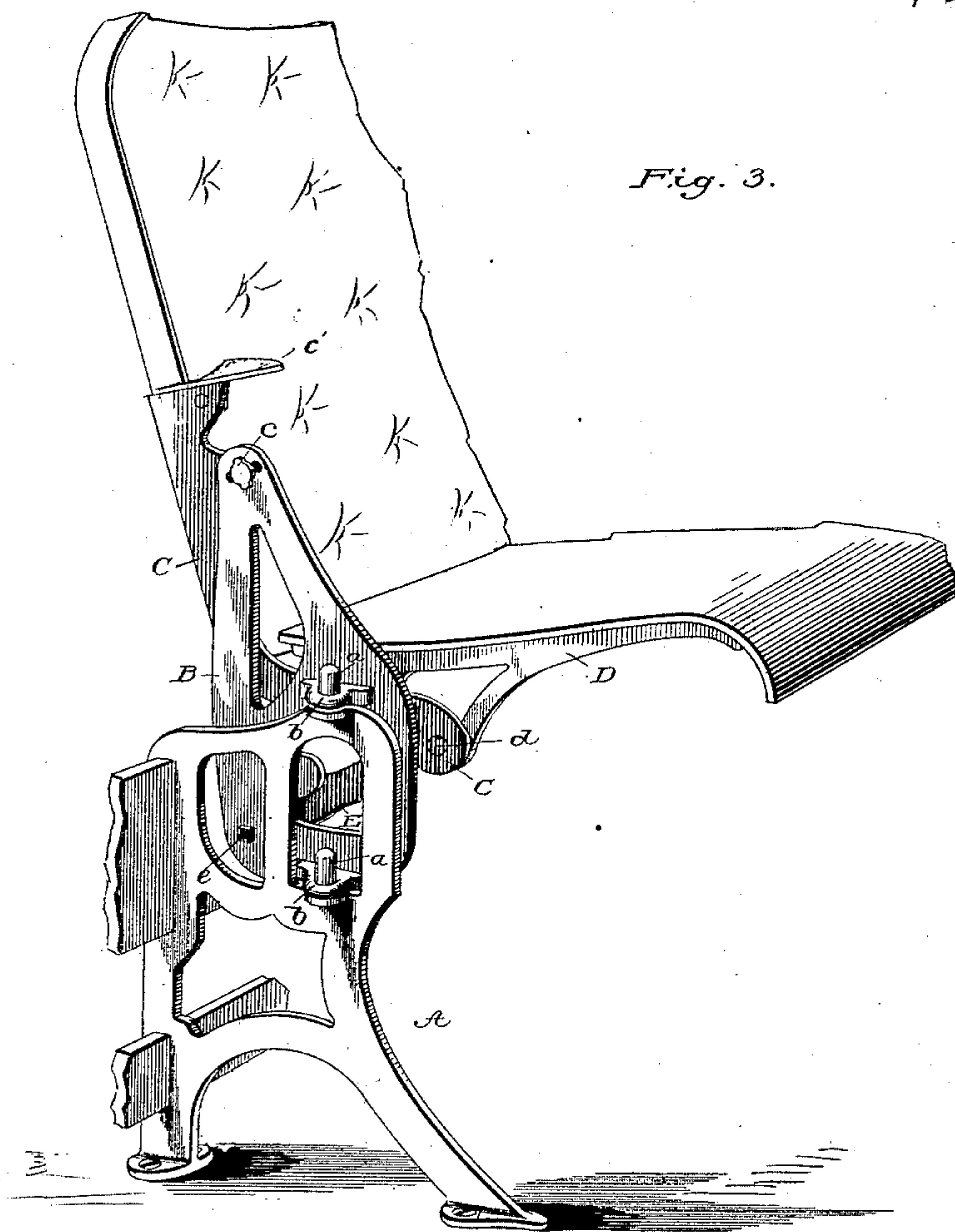
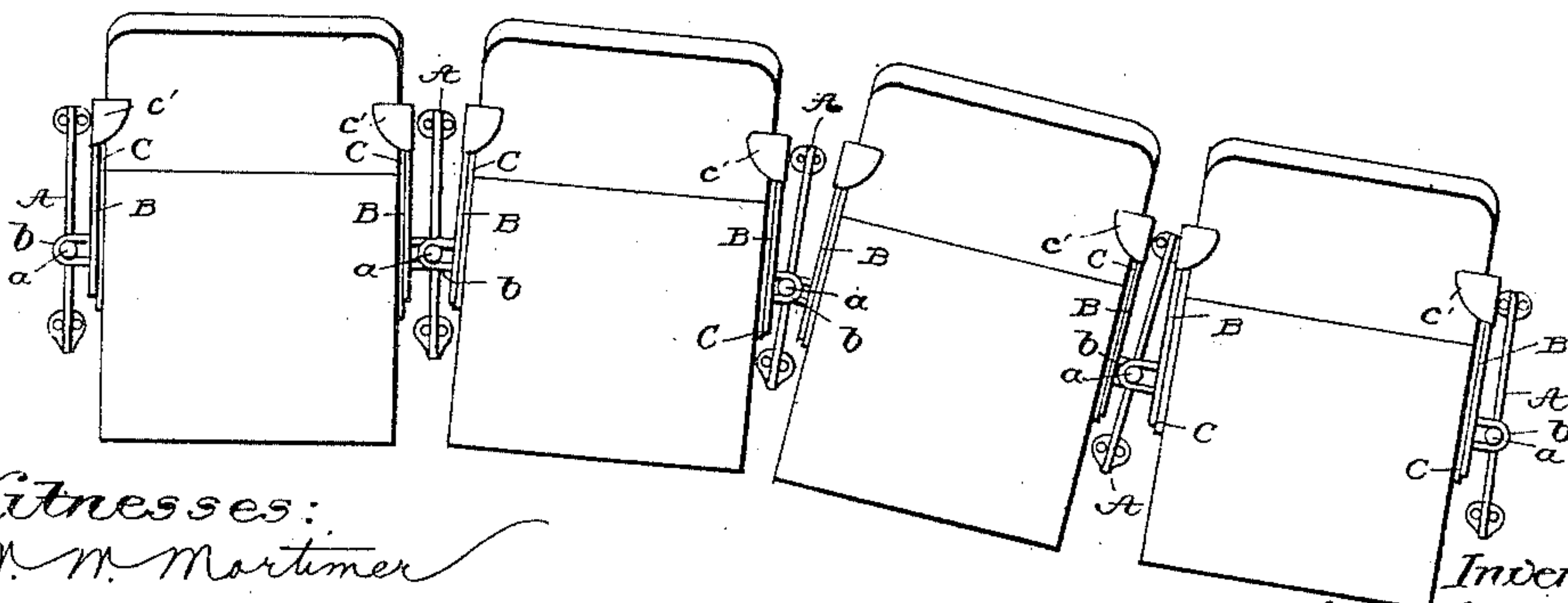


Fig. 3.

Fig. 4.



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# UNITED STATES PATENT OFFICE.

CHARLES A. MERRILL AND ALLEN D. LINN, OF GRAND RAPIDS, MICHIGAN.

## FOLDING CHAIR.

SPECIFICATION forming part of Letters Patent No. 442,128, dated December 9, 1890.

Application filed June 2, 1890. Serial No. 353,922. (No model.)

*To all whom it may concern:*

Be it known that we, CHARLES A. MERRILL and ALLEN D. LINN, of Grand Rapids, in the county of Kent and State of Michigan, have invented certain Improvements in Folding Chairs, of which the following is a specification.

Our invention relates to that class of chairs in which the seat and back are independently pivoted and connected in such manner that they may be turned to an upright position when not in use.

The aims of the invention are to secure a simple construction and an easy and noiseless action and to admit of the chairs being arranged in rows of any required curvature.

In the accompanying drawings, Figure 1 represents a vertical section through our chair in operative position from front to rear. Fig. 2 is a like view of the chair in its closed or folded condition. Fig. 3 is a perspective view looking from the opposite side of one of the standards and the parts sustained thereby. Fig. 4 is a top plan view illustrating the horizontal pivotal motion of the other parts in relation to the standards.

In our system we employ, as usual, a series of standards and intermediate seats, each standard sustaining the adjacent edges of two seats.

In the drawings, A A represent flat upright standards intended to be bolted to the floor, each provided with two vertical journals or pivot-pins *a*, one directly above the other.

B B are vertical plates provided with sustaining-ears *b*, mounted on the journals of the standards, so that the plate is permitted to swing or turn horizontally in relation to the standard to a limited extent. This motion is permitted solely for the purpose of allowing the chair to be arranged in irregular lines, and is in no way related to the folding action of the seat.

C C are back-sustaining arms, each connected by a horizontal pivot *c* to the upper end of one of the plates B, and curved thence downward and forward. D D are seat-sustaining arms, each connected by a horizontal pivot *d* to the lower end of the back-arm C, and also connected by a second horizontal pivot *d'* to the forward end of a link E, which

is extended downward and rearward, and connected to the plate B by a pivot *e*.

F F are rubber-covered studs formed one on each of the plates B, in position to form a rest for the top of the link when the seat is in an operative position.

When the seat is in position for use, as shown in Fig. 1, the seat-arm receives support directly from the lower end of the back-arm and the forward end of the link, both of which are in turn sustained by the plate B.

To fold the chair it is only necessary to place the feet upon the floor under the seat and then rise in the ordinary manner, when the limbs, acting against the edge of the seat, will cause it to swing upward. After the seat has risen a slight distance it assumes such relation to the pivots that it gravitates bodily rearward and downward while completing the folding action.

To open the chair for use it is only necessary to press the back rearward, whereupon it causes the seat to turn down to the position shown in Fig. 1. The stop or buffers F serve not only as rests for the links and to prevent noise when the chair is opened, but also as stops to encounter and noiselessly arrest the back-arms when the chair is closed.

It will be observed that the action of the seat and back-arms and link is not modified by or dependent upon their attachment to the pivoted plates B, but that they would operate in the same manner if mounted directly on a rigid standard or like support.

In placing the chairs in rows with a single standard between each pair of seats we hang two of the plates B on opposite sides of one standard and on the same journals, as shown in Figs. 3 and 4. This admits of the plates turning horizontally and independently of each other and of the standard as the chairs are being placed in position to suit the curvature of the line; or, in other words, it permits the two arms which carry each seat to retain their parallel positions without cramping or binding, although the standard may be placed in an angular relation to them.

In place of or in addition to the stop-stud, as shown, any equivalent stud to check the pivotal motion of the parts in like manner may be used. We have shown on the back



arms arm-rests *c'*; but these may be altered or omitted at will.

One of the advantages attending the use of our vertical journals is the fact that they permit the sustaining-plate B on one side of a standard to be raised above the level of that on the other side, and sustained by washers, in order that the chairs may be adjusted to curved, inclined, and irregular floors.

Having thus described our invention, what we claim is—

1. In combination with a series of standards provided with vertical journals, a series of backs and seats and a series of back and seat sustaining plates provided with lateral ears to fit over the journals, said plates arranged, except as to the end standards, two on each standard on opposite sides of the same and on the same journals.

2. In combination, two standards, each having two vertical journals cast thereon, one above the other, a back, a seat, and two back and seat sustaining plates provided each with two perforated ears mounted on the journals of the adjacent standard.

3. In a folding chair, two standards, two

plates jointed to the respective standards to turn horizontally, a back and a seat, two back-sustaining arms pivoted to the respective plates, two links, also pivoted to the respective plates, two seat-sustaining arms pivoted to the back-arms and links, and stops to limit the pivotal motion of the arms, said elements constructed and combined substantially as shown and described.

4. In combination with a supporting-plate B, the back-arm C, pivoted thereto, the seat-arm pivoted to the back-arm and sustained mainly thereby, the link E, pivoted to the rear extremity of the seat-arm and to the support B, and the fixed cushioned stop F, located on the support B between the link and the back arm and in position to be encountered by them alternately.

In testimony whereof we hereunto set our hands, this 29th day of April, 1890, in the presence of two attesting witnesses.

CHAS. A. MERRILL.  
ALLEN D. LINN.

Witnesses:

HENRY J. FELKER,  
LOIS L. FELKER.