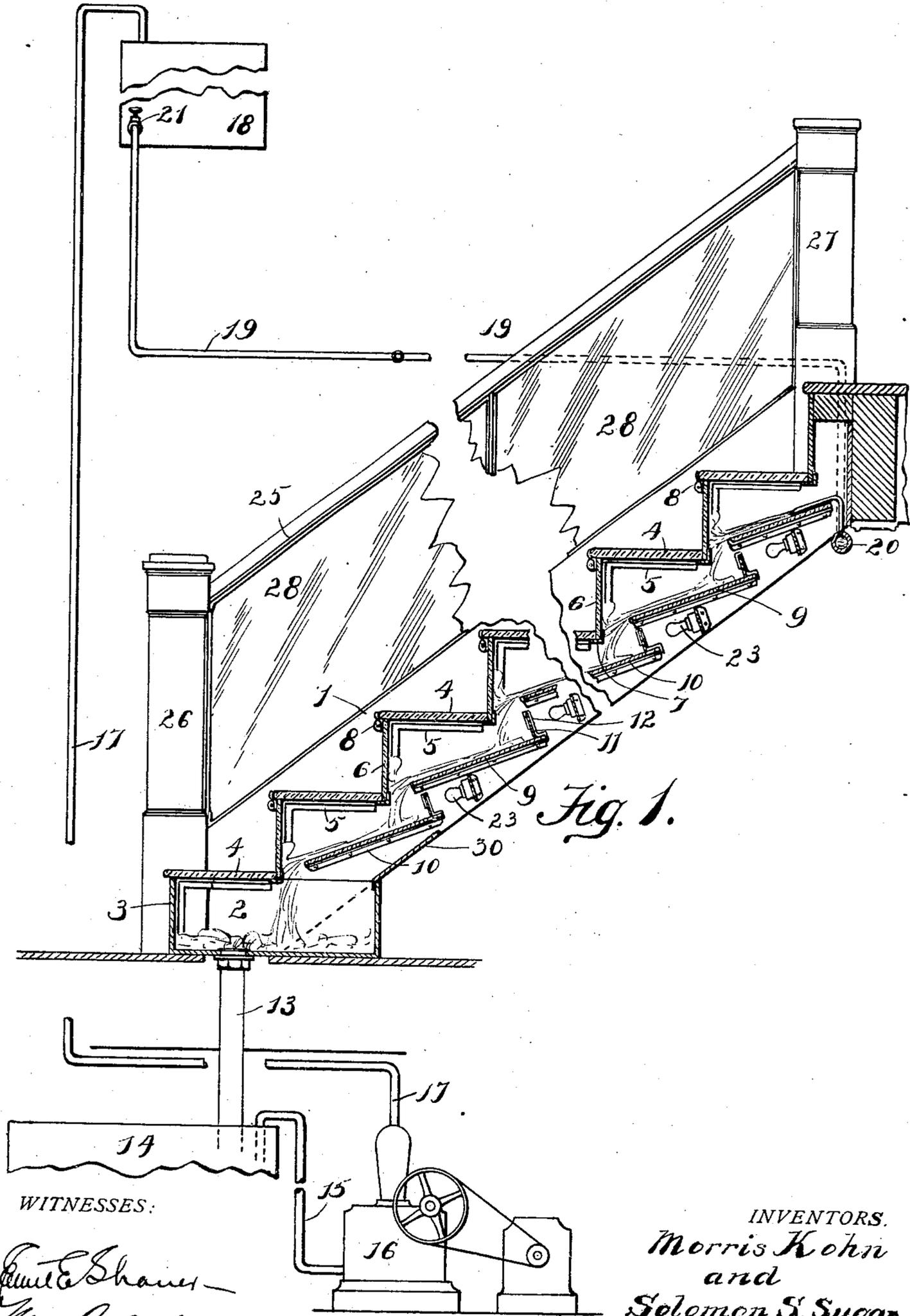


M. KOHN & S. S. SUGAR.
STAIRCASE.

APPLICATION FILED MAY 16, 1906.

Patented Nov. 10, 1908.
2 SHEETS—SHEET 1.

903,730.



WITNESSES:

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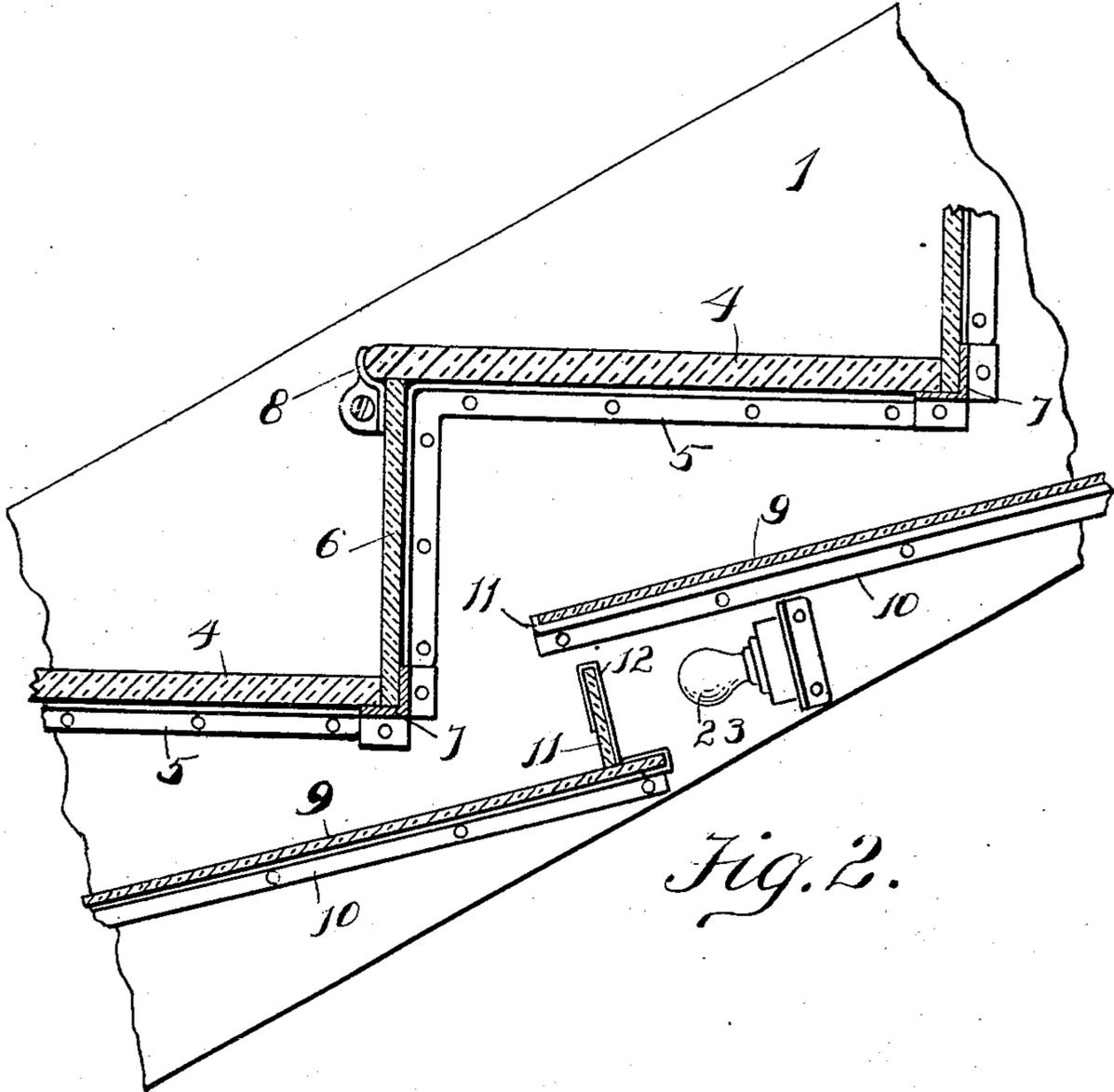


Fig. 2.

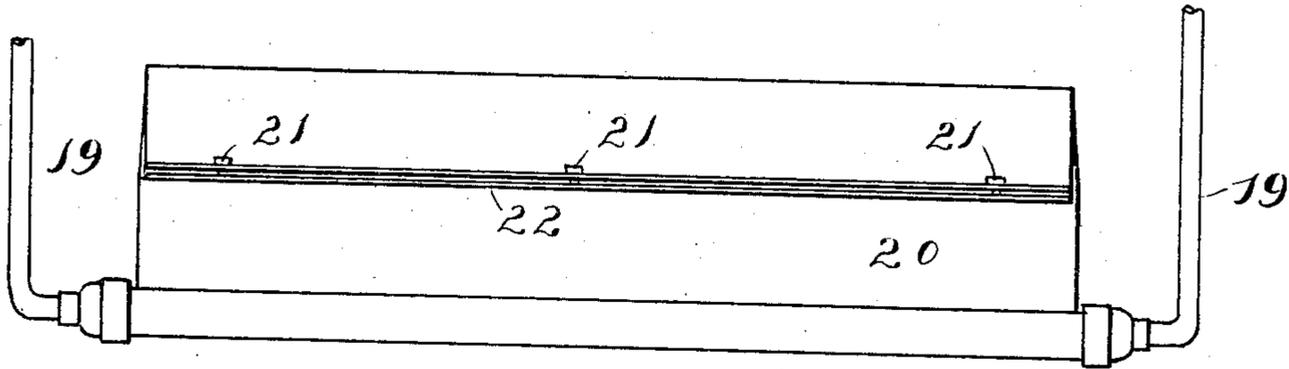


Fig. 3.

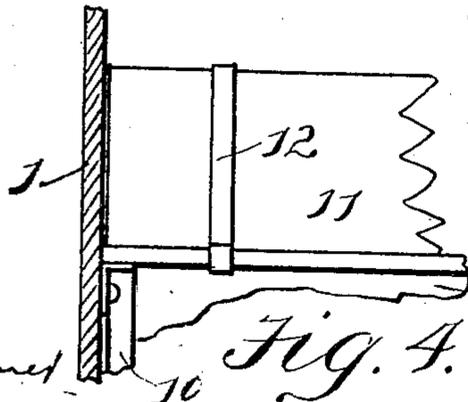


Fig. 4.

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UNITED STATES PATENT OFFICE.

MORRIS KOHN AND SOLOMON S. SUGAR, OF NEW YORK, N. Y.; SAID KOHN ASSIGNOR TO SAID SUGAR.

STAIRCASE.

No. 903,730.

Specification of Letters Patent.

Patented Nov. 10, 1908.

Application filed May 16, 1906. Serial No. 317,142.

To all whom it may concern:

Be it known that we, MORRIS KOHN and SOLOMON S. SUGAR, citizens of the United States, and residents of Manhattan borough, New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Staircases, of which the following is a specification.

This invention relates to an improvement in staircases and is particularly adapted for use in amusement places where attractive and spectacular features are desirable.

The device consists of a series of transparent treads and risers carried upon suitable stringers or supports and behind and below it, are arranged in regular order, a series of shelves or auxiliary steps which are preferably transparent. These shelves or steps form a guide or runway for water or other transparent liquid to flow. Behind the liquid are arranged a series of lamps, preferably electric, which are employed to project light into the liquid.

The object of this invention is to provide a staircase of the character described which will combine the elements of beauty, practicability and simplicity and produce the effect of a waterfall behind the treads and risers.

A further object is to provide a means for illuminating the liquid as it flows over the shelves.

These objects are attained by the apparatus illustrated in the accompanying drawings in which,

Figure 1 is a section through the staircase, with pump connections, Fig. 2 is an enlarged detail section, Fig. 3 is a detail view of one of the parts which will be hereinafter fully described and Fig. 4 is a detail view which will be hereinafter described.

Referring to the parts, 1 designates, one of the two stringers between the bases of which there is a basin or receiving tank, 2. The front portion or side 3 of the basin 2 forms the first riser. Between the stringers 1 are arranged, at regular intervals, transparent treads 4 which are preferably made of glass and which are supported upon the stringers by means of side flanges 5.

Transparent risers, 6, preferably made of glass, are arranged between the treads 4 and

are supported and held in place by the cross bars 7 and vertical leg of the flange 5. The said cross bars 7 also act to support the rear end of the treads 4. The treads are further held in place by means of the nose-piece or clamps 8. To prevent the leakage of water or the liquid used, through the joints, the treads and risers may be set in putty, cement or other similar substance.

The shelves or auxiliary steps 9 are arranged behind and beneath each set of transparent riser and tread and are carried upon suitable flanges 10, the ends of which are turned up at 11 to prevent the shelves from slipping. At the rear end of each shelf there is arranged a transparent plate 12 which is employed to stop any back splash and which is held in place by the clips 12 (see Figs. 2 and 4) one end of which engages the plate 11 while the other end engages over the rear of the shelves 9.

The basin 2 is provided with a drain pipe which discharges into a tank 14 located at any point below the level of the basin 2.

The water or liquid is drawn from the tank 14 through a pipe 15, by means of a pump 16 and is forced up through a pipe into a tank 18 which is located above the level of the uppermost riser.

A distributing pipe 19 supplies water to a distributing apron or spout 20. The pipe 19 is provided with a valve 21 which affords a means for regulating the flow of water or liquid used. The pipe 19 may lead to each side of the distributing apron or spout 20 as shown in Fig. 3. The said apron is provided with regulating screws 21 for adjusting the opening 22 and this apron is arranged to discharge upon the uppermost shelf as shown in Fig. 1.

Beneath the shelves 9 are arranged a series of lights 23, preferably electric, which are employed to illuminate the water or liquid as it flows. These lights may be colored or plain as desired.

In the drawings is shown a means for using the same water or liquid continuously but where water is abundant the pump and tanks may be dispensed with and the water fed from the supply, directly to the distributing drum and discharged into the sewer or otherwise disposed of.

In the drawings, the splash plates 11 do

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not entirely close the space between adjacent shelves but if desired, the plates may be made to fit closely between the shelves and the joints be made water-tight with any suitable substance.

The angle of the shelves may also be changed to a greater or lesser pitch if desired and the plates 11 may be held by side flanges upon the stringer 1 instead of by the clips 12.

To prevent a back splash at the tank 2, a shield 30 is placed above the edge of the tank and may extend up to or beyond the edge of the first shelf 9.

A hand rail 25 is provided on each side of stair case and is supported between the newels 26 and 27.

Glass panels 28 are preferably placed between the rails and stringers but any other form of balusters will answer.

It is obvious that various structural modifications may be embodied in this invention without departing from the spirit of same. We do not therefore, wish to be understood as limiting ourselves to the particular form shown.

What we claim as new and desire to secure by Letters Patent is:—

1. In a staircase of the character described, transparent treads and risers, consecutively arranged to form a series of steps, stringers supporting same, a guide or runway, for the passage of water, arranged below said steps and supported between said stringers and means for causing a flow of water or other liquid over said runway.

2. In a staircase of the character described, transparent treads and risers, consecutively arranged to form a series of steps, stringers supporting same, a transparent guide or runway for the passage of water, arranged below said steps and supported between said stringers and means for causing a flow of water or other liquid over said runway.

3. In a staircase of the character described, transparent treads and risers consecutively arranged to form a series of steps, stringers supporting same, a series of shelves or auxiliary steps arranged behind and below said risers and treads and supported between said stringers and means for causing a flow of water or other liquid over said shelves.

4. In a staircase of the character described, transparent treads and risers consecutively arranged to form a series of steps, stringers supporting same, a series of transparent shelves or auxiliary steps arranged behind and below said risers and treads and supported between said stringers and means for causing a flow of water or other liquid over said shelves.

5. In a staircase of the character described, transparent treads and risers consecutively

arranged to form a series of steps, stringers supporting same, a series of shelves or auxiliary steps arranged behind and below said risers and treads and supported between said stringers and means for projecting light into the water or liquid as it flows over the said shelves.

6. In a staircase of the character described, transparent treads and risers, consecutively arranged to form a series of steps, stringers supporting same, a series of transparent shelves or auxiliary steps arranged behind and below said risers and treads and supported between said stringers and means for projecting light into the water or liquid as it flows over the said shelves.

7. In a staircase of the character described, transparent treads and risers, consecutively arranged to form a series of steps, stringers supporting same, a series of shelves or auxiliary steps arranged behind and below said risers and treads and supported between said stringers, means for causing a flow of water or other liquid over said shelves and splash plates arranged upon said shelves.

8. In a staircase of the character described, transparent treads and risers consecutively arranged to form a series of steps, stringers supporting same, a series of transparent shelves or auxiliary steps arranged behind and below said risers and treads and supported between said stringers, means for causing a flow of water or other liquid over said shelves and splash plates arranged upon the said shelves.

9. In a staircase of the character described, transparent treads and risers consecutively arranged to form a series of steps, stringers supporting same, a series of shelves or auxiliary steps arranged behind and below said risers and treads and supported between said stringers, means for projecting light into the water or liquid as it flows over the said shelves and splash plates arranged upon said shelves.

10. In a staircase of the character described, transparent treads and risers, consecutively arranged to form a series of steps, stringers supporting same, a series of transparent shelves or auxiliary steps arranged behind and below said risers and treads and supported between said stringers, means for projecting light into the water or liquid as it flows over the said shelves and splash plates arranged upon said shelves.

11. In a staircase of the character described, transparent treads and risers, consecutively arranged to form a series of steps, stringers supporting same, a series of shelves or auxiliary steps arranged behind and below said risers and treads and supported between said stringers, means for causing a flow of water or other liquid over said shelves, splash plates arranged upon said shelves and clips adapted to engage the said splash plates

and the rear of the said shelves to hold the splash plates in position.

5 12. In a staircase of the character described, transparent treads and risers consecutively arranged to form a series of steps, stringers supporting same, a series of transparent shelves or auxiliary steps arranged behind and below said risers and treads and supported between said stringers, means for
10 causing a flow of water or other liquid over said shelves, splash plates arranged upon the said shelves and clips adapted to engage the said splash plates and the rear of the said shelves to hold the splash plates in position.

15 13. In a staircase of the character described, transparent treads arranged to form a series of steps, stringers arranged to form supports for the said treads, means for attaching said treads to said stringers and

means for producing the effect of a water 20 fall beneath said steps.

14. In a staircase of the character described, transparent treads arranged to form a series of steps, stringers arranged to form supports for the said treads, means for at- 25 taching said treads to said stringers, and means for producing the effect of a water fall beneath said steps; the said staircase forming a means for the passage of people to
30 or from a higher or lower elevation.

Signed at Manhattan borough, New York, in the county of New York and State of New York this 5th day of May A. D. 1906.

MORRIS KOHN.

SOLOMON S. SUGAR.

Witnesses:

ISAAC S. VOORHIS,

EMIL S. SHANER.