

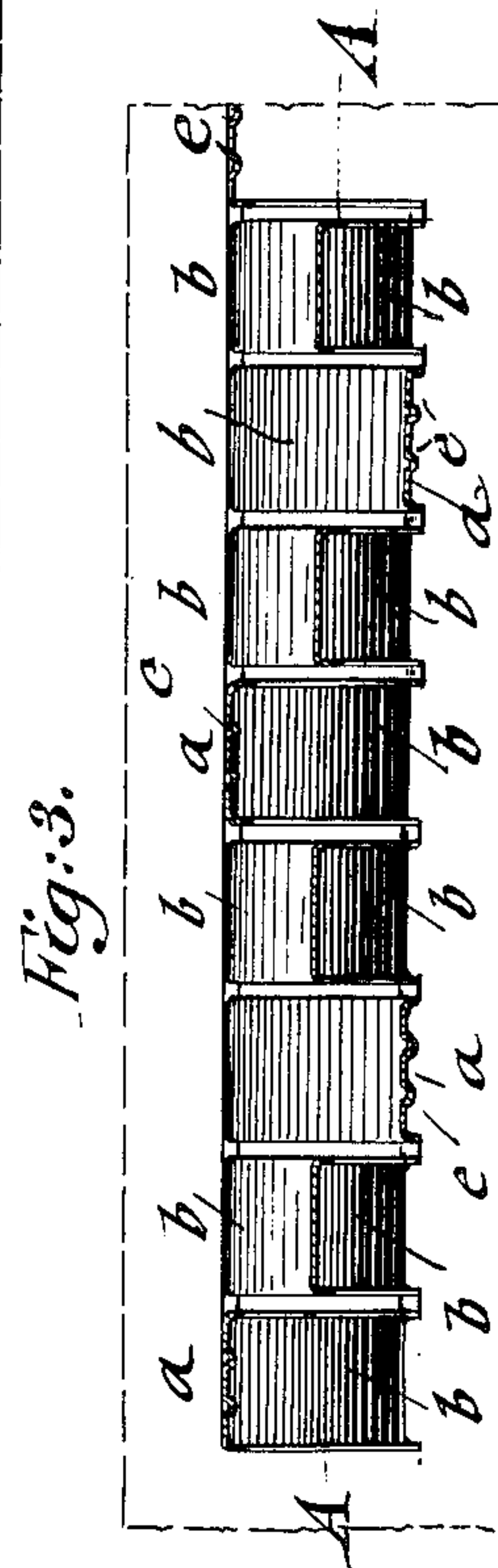
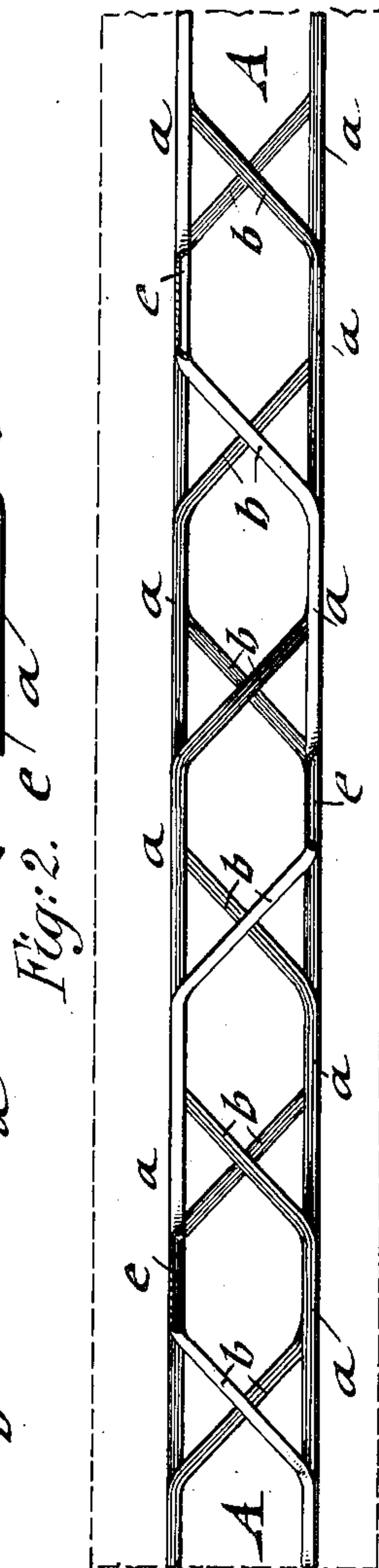
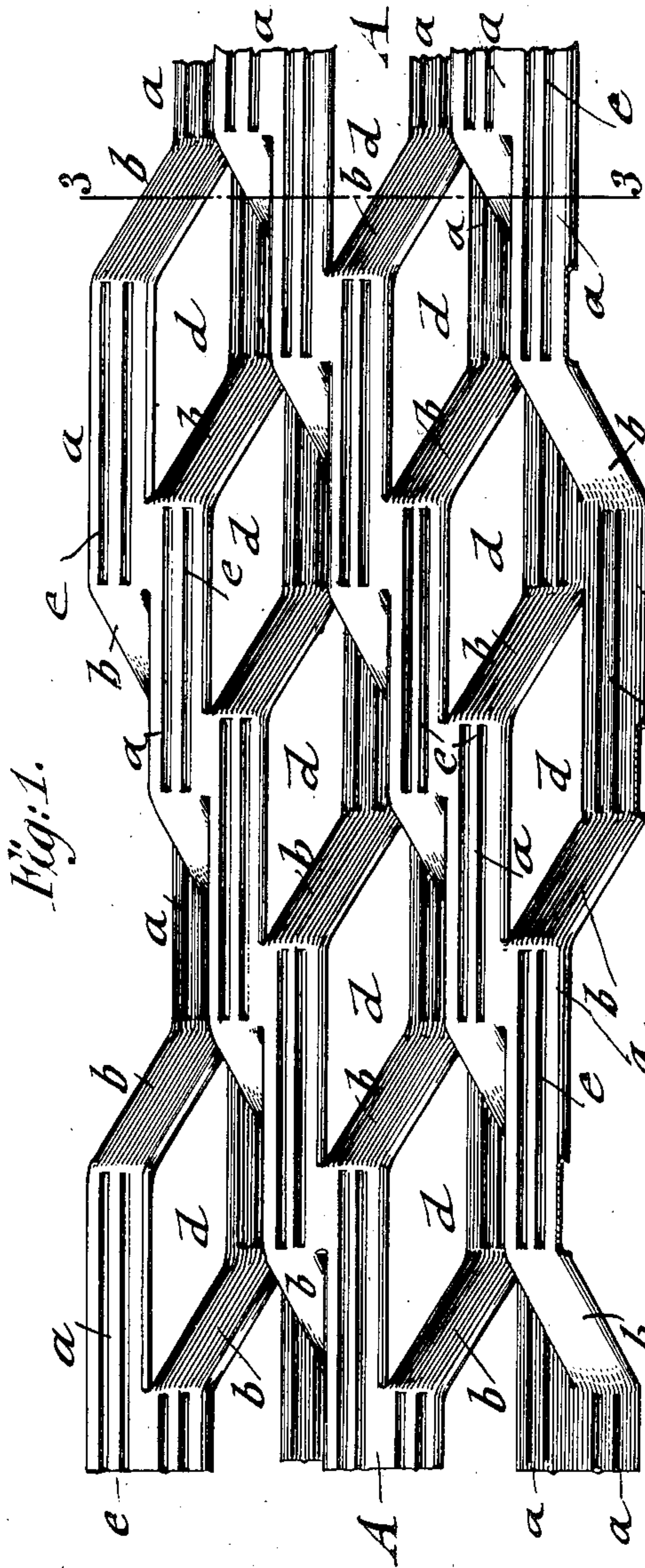
P. KÜHNE.

SHEET METAL STRUCTURAL ELEMENT.

APPLICATION FILED MAR. 1, 1907. RENEWED JAN. 15, 1909.

917,082.

Patented Apr. 6, 1909.



Witnesses:
David Heime
Henry J. Schrier.

Inventor
Paul Kühne
By his Attorney
James E. Goppel

UNITED STATES PATENT OFFICE.

PAUL KÜHNE, OF NEW YORK, N. Y.

SHEET-METAL STRUCTURAL ELEMENT.

No. 917,082.

Specification of Letters Patent.

Patented April 6, 1909

Application filed March 1, 1907, Serial No. 360,092. Renewed January 15, 1909. Serial No. 472,560.

To all whom it may concern:

Be it known that I, PAUL KÜHNE, a citizen of the United States, residing in New York, in the borough of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Sheet-Metal Structural Elements, of which the following is a specification.

This invention relates to an improved sheet-metal structural element for building purposes and is intended to be used in walls, floors, and partitions for holding the concrete or other body firmly in position; and the invention relates more specifically to an improvement on the sheet-metal structural element for which Letters Patent were granted to me on January 1, 1901, No. 665,117, so that it possesses increased strength and increased capacity for holding the concrete or plaster in position.

In manufacturing the sheet-metal structural element shown in the patent referred to, it was found that the machine by which the cutting of the slits and opening out of the structural element was produced could not form the angles between the flat face-
portions and inclined portions accurately enough, but that they became slightly buckled or rounded off transversely in its different portions, so that not only the capacity of holding the concrete or other body which was spread over both sides of the structural element was impaired, but also the appearance of the same rendered less attractive.

The object of this invention is to overcome the objections experienced in the manufacture of my improved structural element by means of a comparatively simple and effective improvement; and for this purpose the invention consists in the novel construction to be hereinafter described and claimed.

In the accompanying drawings, Figure 1 represents a perspective view of a sheet-metal structural element embodying my invention, Fig. 2 is a horizontal section of a wall construction showing the sheet-metal structural element embedded in the concrete body, and Fig. 3 is a vertical transverse section on line 3, 3, Fig. 1.

Similar reference characters indicate corresponding parts.

Referring to the drawings, A represents a piece of my improved sheet-metal structural element, the blank of which is cut by means of a suitably-conformed pair of rolls into par-

allel lines of slits, one line of slits being offset alternately with the adjacent line of slits. The rolls are provided with cutting-knives for producing the slits, and with cams for simultaneously opening up the slitted blank, and forming thereby the expanded sheet-metal structural element A which is provided with face-portions *a* at both sides, intermediate inclined or zigzag portions *b* and open portions or meshes *d* that determine the height or thickness of the structural element and that extend in parallel rows diagonally across the body A. The open meshes *d* are so made that the parallel face-portions *a* are formed which are connected by the inclined portions, one row of face-portions and inclined portions being offset with the adjacent rows of inclined portions. Each open portion or mesh *d* is formed by means of two face-portions *a*, *a*, both of one row, and by two inclined connecting-portions *b*, *b*, one being in the same row with the pair of face-portions *a* and the other in the same row with a pair of adjacent alternating face-portions *a*. As shown in Fig. 2, the alternating inclined connecting-portions *b* cross each other side-wise, when the body A is in side-elevation, so that any two of the so crossing inclined connecting-portions form a truss with the face-portions of the structural element, the truss serving to support the face and inclined portions *a* and *b*.

The face-portions *a*, instead of being flat, as heretofore, are provided with longitudinal corrugations *e* by which they are strengthened and by which their capacity for receiving and holding the concrete body is increased. The main-point, however, is that by the corrugations on the face-portions, the entire structural element is strengthened at each side and thereby the irregular buckling of the parts prevented and a more evenly-shaped element obtained. As the concrete is applied to the structural element first on one side and then on the other, the corrugated face-portions at one side carry the body of concrete applied to one side, while the corrugated parallel face-portions on the other side carry the body of concrete applied to the other side of the structural element, in connection with the inclined connecting-portions and the open meshes of the element.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

A structural element for partitions, walls

and floors of buildings, consisting of a sheet-metal plate composed of a series of similar longitudinal strips arranged side by side, adjoining strips being offset with respect to
5 one another and integrally connected with each other at a plurality of points, said strips consisting of a series of face-portions arranged alternately in two parallel planes and inclined portions connecting the edges of suc-

cessive face-portions, said face-portions being provided with longitudinal corrugations. 10

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

PAUL KÜHNE.

Witnesses:

PAUL GOEPEL,

HENRY J. SUHRBIER.