(No Model.) 5 Sheets—Sheet 1.

L. K. JOHNSON.

TYPE SETTING APPARATUS.

No. 539,948. Patented May 28, 1895.

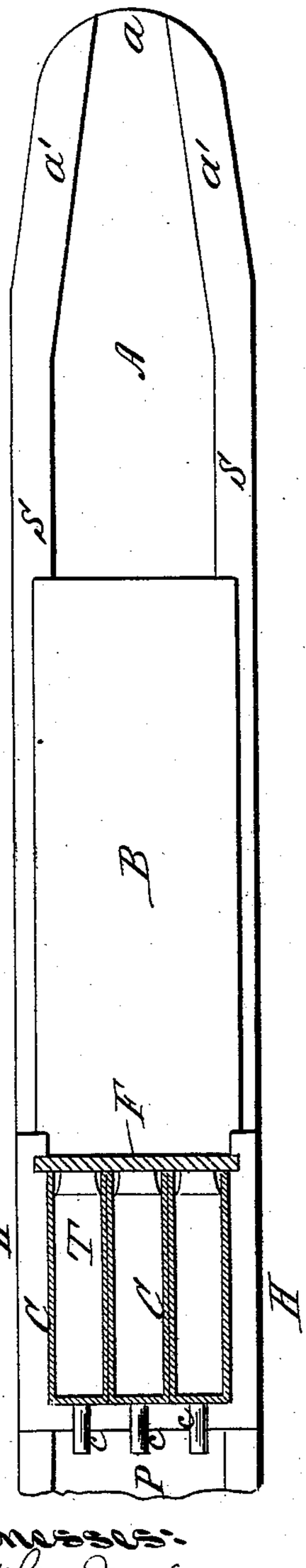


Fig. 1.

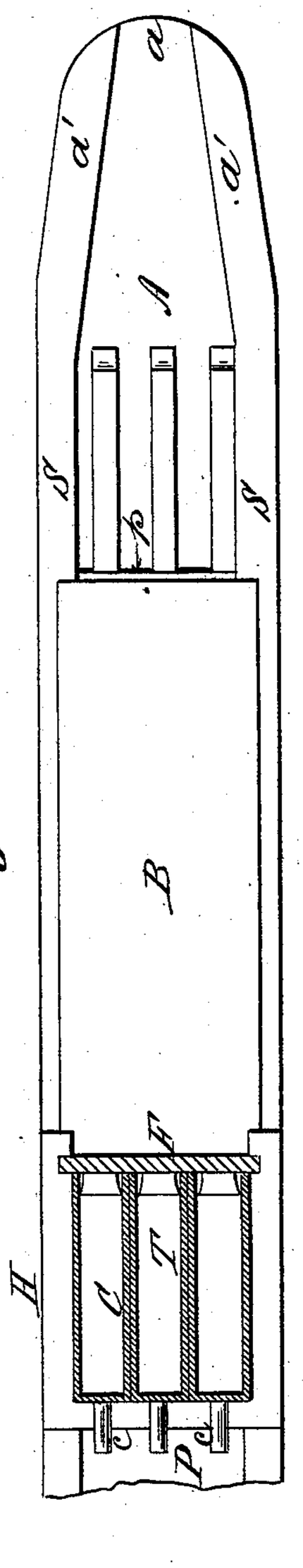


Fig. 2.

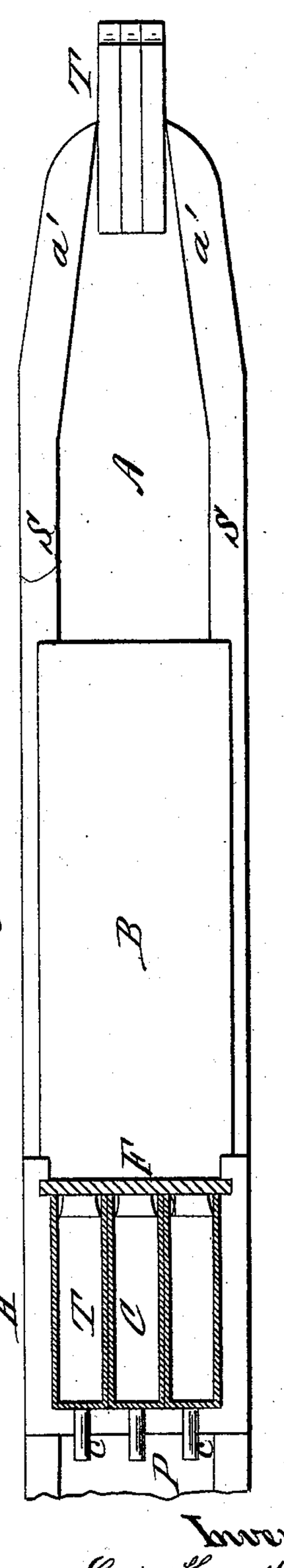


Fig. 3.

Witnesses:
D. W. Gardner.
August Hofmann

Inventor:
Louis Kossuth Johnson
By his Attorney
George William Meath

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 5 Sheets—Sheet 2.

L. K. JOHNSON.

TYPE SETTING APPARATUS.

No. 539,948. Patented May 28, 1895.

Fig. 5.

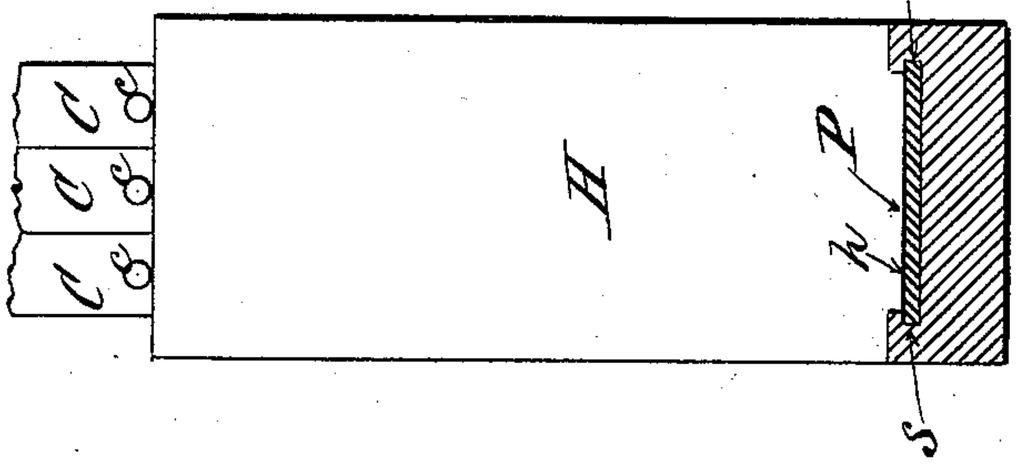


Fig. 4.

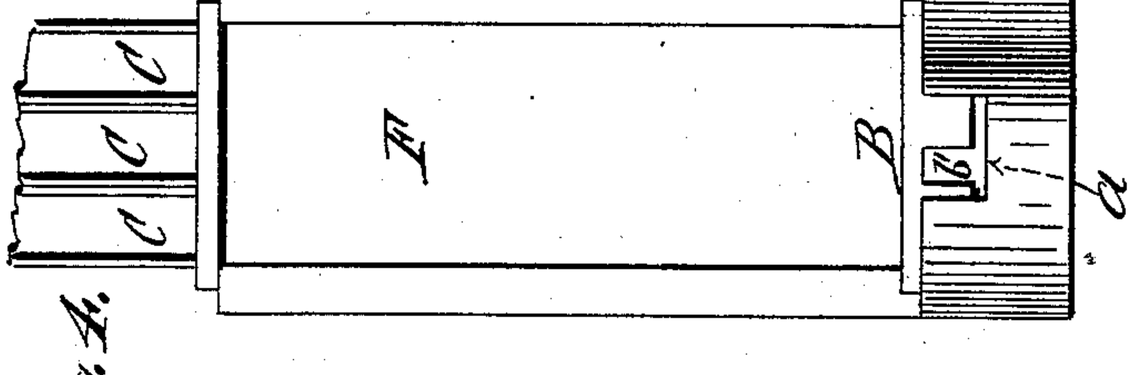
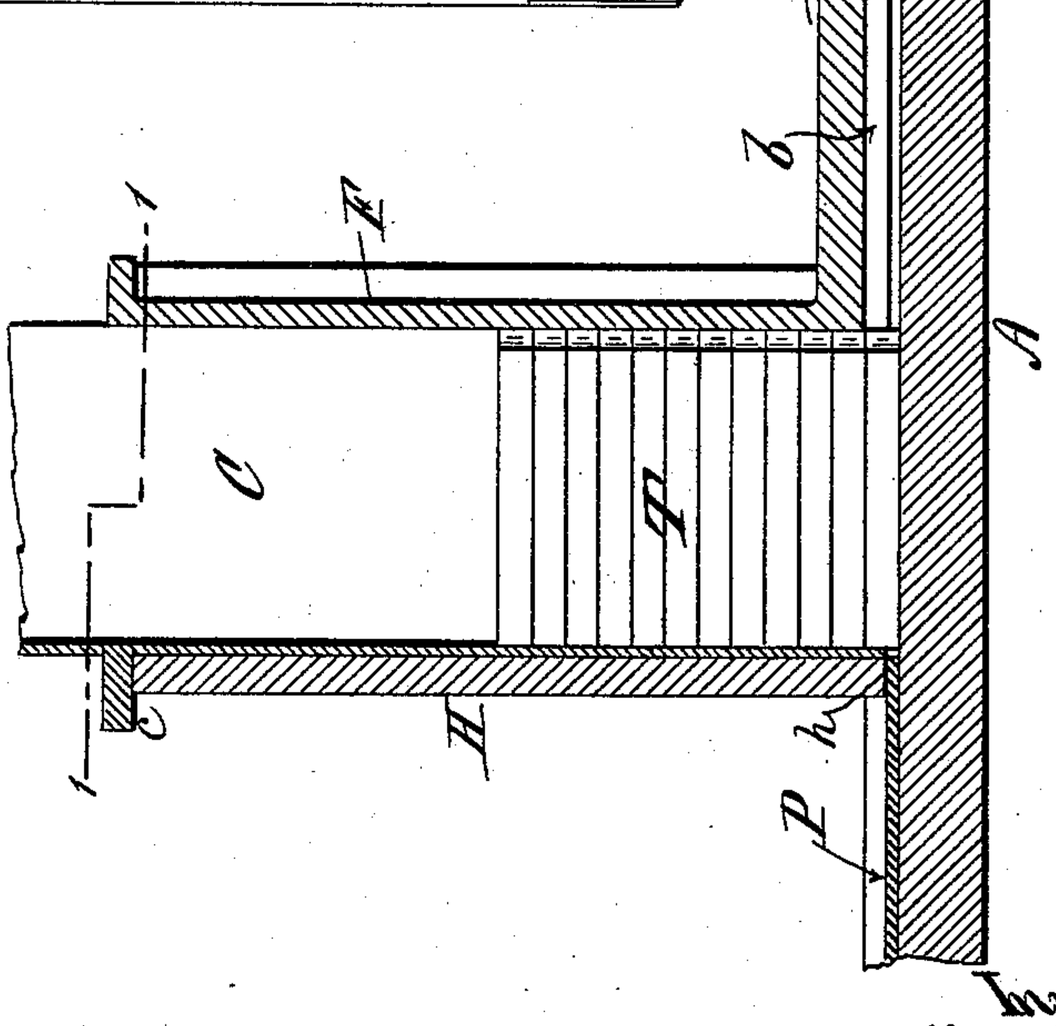


Fig. 6.



Witnesses:
R. W. Gardner.
August Hapmann

Inventor:
Louis Kossuth Johnson
By his Attorney
George William Meath

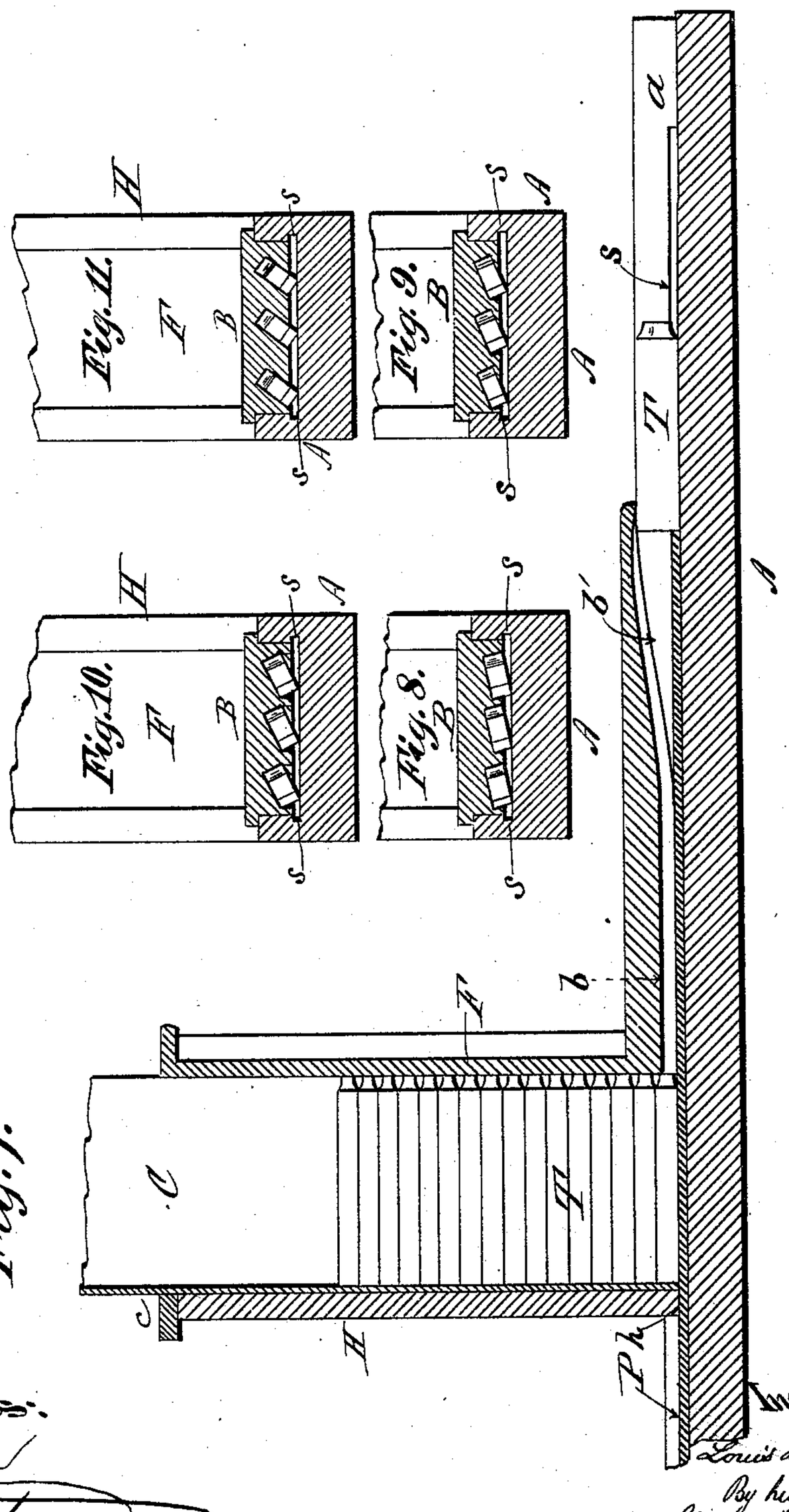
THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 5 Sheets—Sheet 3.

L. K. JOHNSON.

TYPE SETTING APPARATUS.

No. 539,948. Patented May 28, 1895.



Witnesses:
D. C. Gardner
August Hofmann

Inventor:
Louis Kossuth Johnson
By his Attorney
George William Stiatt

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 5 Sheets—Sheet 4.

L. K. JOHNSON.

TYPE SETTING APPARATUS.

No. 539,948. Patented May 28, 1895.

Fig. 13.

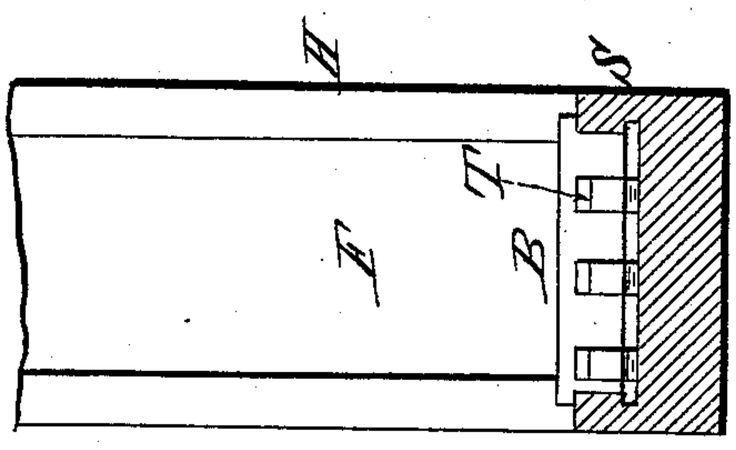


Fig. 12.

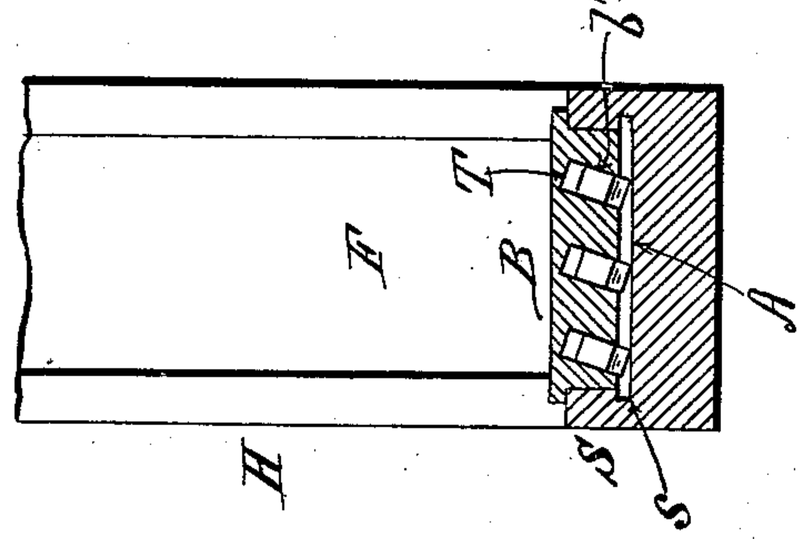
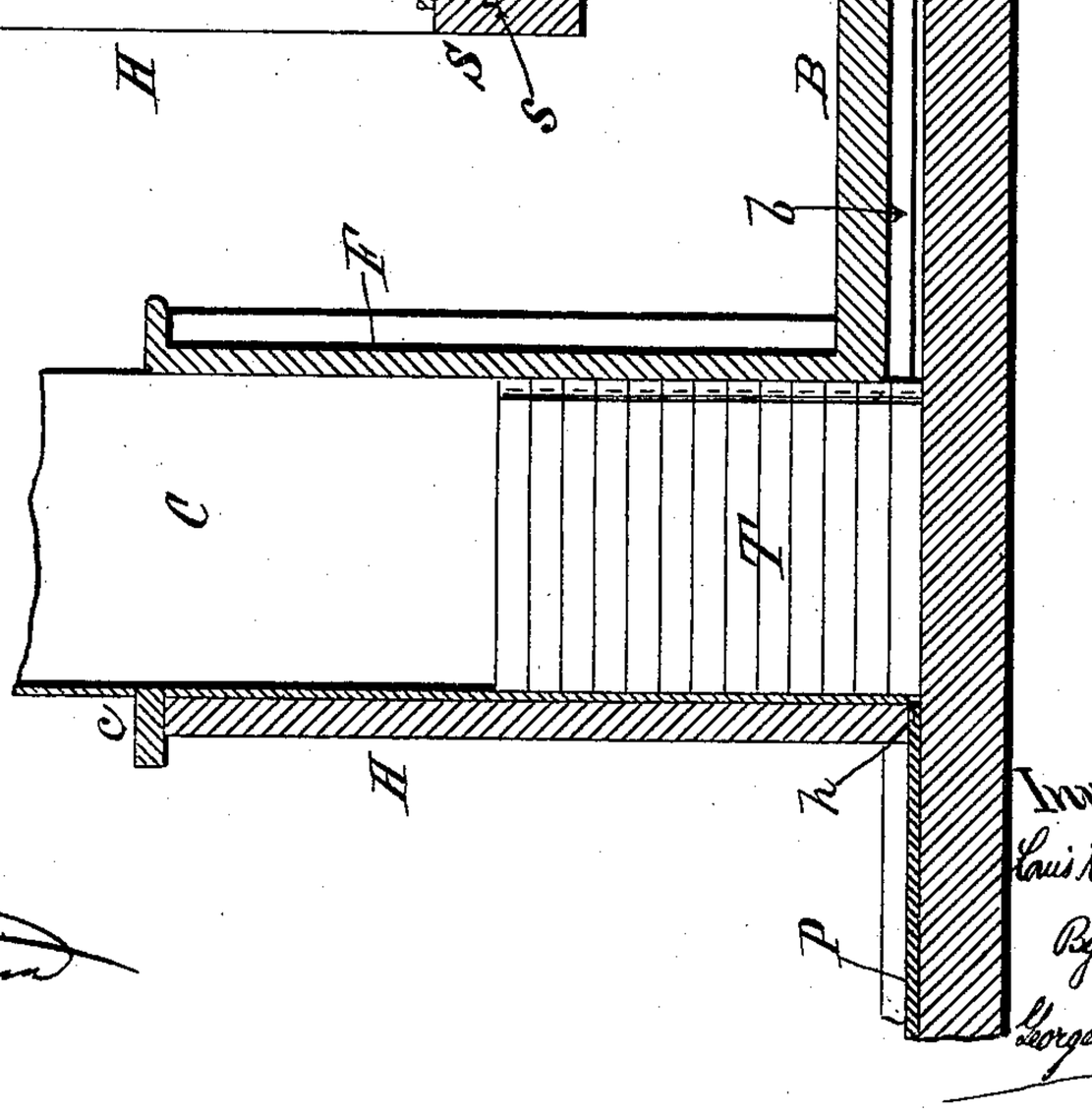


Fig. 14.



Witnesses:
D. W. Gardner
August Hofmann

Inventor:
Louis Kossuth Johnson
By his Attorney
George William Miatt

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 5 Sheets—Sheet 5.

L. K. JOHNSON.

TYPE SETTING APPARATUS.

No. 539,948. Patented May 28, 1895.

Fig. 18.

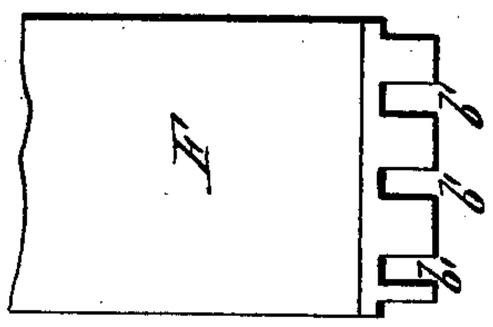


Fig. 16.

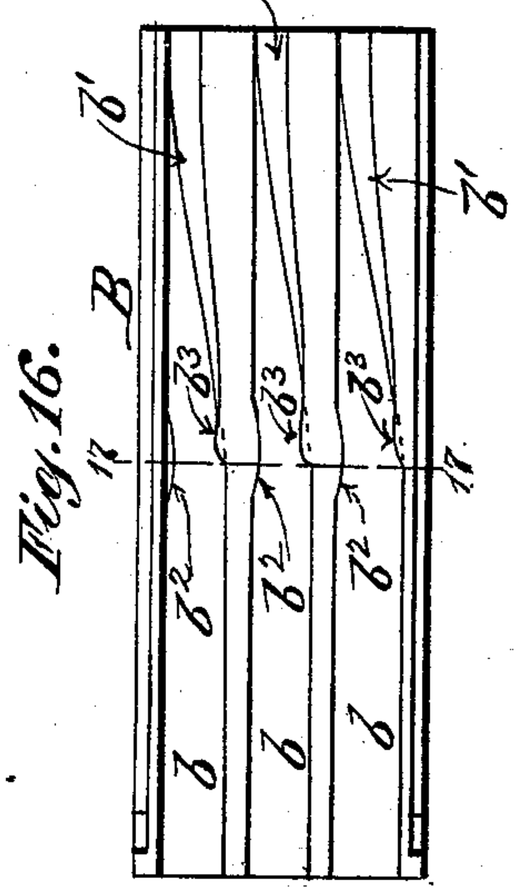


Fig. 17.

Fig. 15.

Witnesses:
D. W. Gardner.
August Hasmann

Inventor:
Louis Kossuth Johnson
By his Attorney:
George William Miatt

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

LOUIS KOSSUTH JOHNSON, OF BROOKLYN, ASSIGNOR TO THE ALDEN TYPE MACHINE COMPANY, OF NEW YORK, N. Y.

TYPE-SETTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 539,948, dated May 28, 1895.

Application filed November 16, 1894. Serial No. 528,969. (No model.)

To all whom it may concern:

Be it known that I, LOUIS KOSSUTH JOHNSON, a citizen of the United States, residing in the city of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Type-Setting Apparatus, of which the following is a specification sufficient to enable others skilled in the art to which the invention appertains to make and use the same.

My improvements relate to the class of type setting apparatus in which the types are arranged in prescribed positions with relation to each other in type containing channels from the lower ends of which they are successively forwarded into position to be grasped by the fingers for removal to the stick. Heretofore these channels have been arranged in groups representing short words, &c., the letters for which are forwarded simultaneously into position for removal. In accomplishing this it is essential that the types rest on the type platform on their edges so that they may be brought together in proper relation for insertion in the stick. This has been effected by arranging the types on their edges, one upon the other, in their respective channels; but this method is inconvenient and wasteful since special care has to be exercised in distributing the types into the channels which latter hold comparatively few types and need replenishing frequently.

In my concurrent application, Serial No. 522,982, filed September 14, 1894, I provide for the use of types arranged on their flat or broad sides in the channels by forwarding them through quarter turn grooves or guides formed in the type platform, the pusher passing over said grooves and finally leaving the types upon their edges at the front of the type platform in position for removal by hand.

In my present application I accomplish the same result by type grooves or guides in the under side of a top plate or lateral extension of the face plate. By this means I attain the desired result without altering the structure of the type platform, which is preferably smooth and of one plane.

In the accompanying drawings, Figures 1, 2, and 3 are horizontal sections through the type-containing channels on line 1 1, Fig. 6, showing the types before, during, and after the forwarding action of the pusher. Fig. 4 is a front view. Fig. 5 is a sectional elevation at the rear of the channel-holder; Fig. 6, a vertical longitudinal section showing the pusher in its retracted position; Fig. 7, a similar view showing the pusher in the act of forwarding the types. Figs. 8, 9, 10, 11, 12, and 13 illustrate the turning of the types from their flat sides to their edges as they pass through the quarter-turn twist in the top plate during the forwarding action of the pusher. Fig. 14 is a central vertical section showing the types forwarded into position for removal by hand, the type-forwarder having again returned to its normal position. Fig. 15 is a longitudinal section showing the pusher at the end of its forward stroke; Fig. 16, a view of the under side of the type-turning plate; Fig. 17, a cross-section thereof upon the plane of line 17 17, Fig. 16; Fig. 18, a front edge view of the type-turning plate.

The type containing channels C, are supported in the common holder H, as heretofore. The types T, are supported independent of their containing channels upon the type platform A, which in the present case has a perfectly plain, smooth upper surface. The front of the platform A, is formed with the usual converging side walls a', a', which guide the types up to and partially through the port a, under the action of the pusher P, as heretofore.

The pusher P, consists of a thin flat blade having a straight front edge p, said pusher P, being reciprocated intermittently by any suitable means, as by automatic mechanism set in operation by the removal of types already forwarded, as set forth in prior applications. This pusher P, runs in grooves s, s, formed in the side walls S, S, or may be otherwise held in proper relation to the type platform.

A top plate B, is situated above the type platform A, supported parallel thereto, and having type grooves b, b, formed in its under side, the inner ends of which coincide with the type containing channels. Only sufficient space is left between the upper surface of the type platform A, and the lower surface of the type turning plate B, to admit of the passage of the comparatively thin pusher P. Hence, as the types pass out of the channels

they pass into the control of the side walls of the grooves *b*. The side walls of the grooves *b*, *b*, run parallel to each other and to the type platform for a short distance (but little more than the length of a type) so as to allow the types to pass clear of the pressure of the type columns before they commence to turn upon their longitudinal axes. At the entrance to the twists *b'*, *b'*, a slight protuberance b^2, b^2, upon one side of each groove may be formed to insure the crowding of the type over against the opposite walls and into engagement with the beginnings b^3, b^3, of the lifting walls b^4, b^4, by which the types are raised from their flat sides so that they are projected from the twists *b'*, with their edges resting upon the type platform. In any case while a certain amount of play may be allowed the types in the grooves *b*, *b'*, the latter should hold the types snugly, in which case they are bound to conform to the changes in inclination presented by the side walls of the grooves. It is obvious that this top plate, or type turning plate B, may be supported independently above the type platform A, although it may conveniently form a part of the face plate F, as indicated in the drawings.

All but the lowest types in the type containing channels are retained within the latter by the front plate F, which extends down to the top of the grooves *s*, *s*, as do also the sides and rear walls of the channels C, the shoulder *c*, being so gaged in position to effect this result when they rest against the top of the holder H. The rear wall of the holder H, is formed with a slot *h*, through which the pusher blade P, plays.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a type case, the combination of a type containing channel supported independent of the column of type, a type supporting platform, a type forwarder, and a plate above the type platform formed with a groove having a quarter-turn twist by which the types are turned upon their longitudinal axes under the action of the type forwarder, substantially in the manner and for the purpose described.

2. In a type case, the combination of a plurality of type containing channels supported independent of the columns of type, a common type supporting platform, a common type forwarder, and a plate above the type platform formed with a plurality of grooves each having a quarter-turn twist by which the types are turned upon their longitudinal axes under the action of the type forwarder, substantially in the manner and for the purpose described.

3. In a type case, the combination of a plurality of type containing channels supported independent of the columns of type, a common type supporting platform, a common type forwarder, a plate above the type platform formed with a plurality of grooves each having a quarter-turn twist by which the types are turned upon their longitudinal axes under the action of the type forwarder, and converging side walls at the front of the type platform for assembling the types, substantially in the manner and for the purpose set forth.

4. In a type case, the combination of a plurality of type containing channels supported independent of the columns of type, a common type supporting platform, a common type forwarder, and a face plate for holding the types in the channels formed with an extension parallel to the type platform, the under side of said extension having type grooves formed with a quarter-turn twist by which the types are turned upon their longitudinal axes upon the type platform under the action of the type forwarder, substantially in the manner and for the purpose described.

LOUIS KOSSUTH JOHNSON.

Witnesses:

GEORGE WILLIAM MIATT,

D. W. GARDNER.