

(No Model.)

2 Sheets—Sheet 1.

A. A. LOW.

TYPE DISTRIBUTING APPARATUS.

No. 363,836.

Patented May 31, 1887.

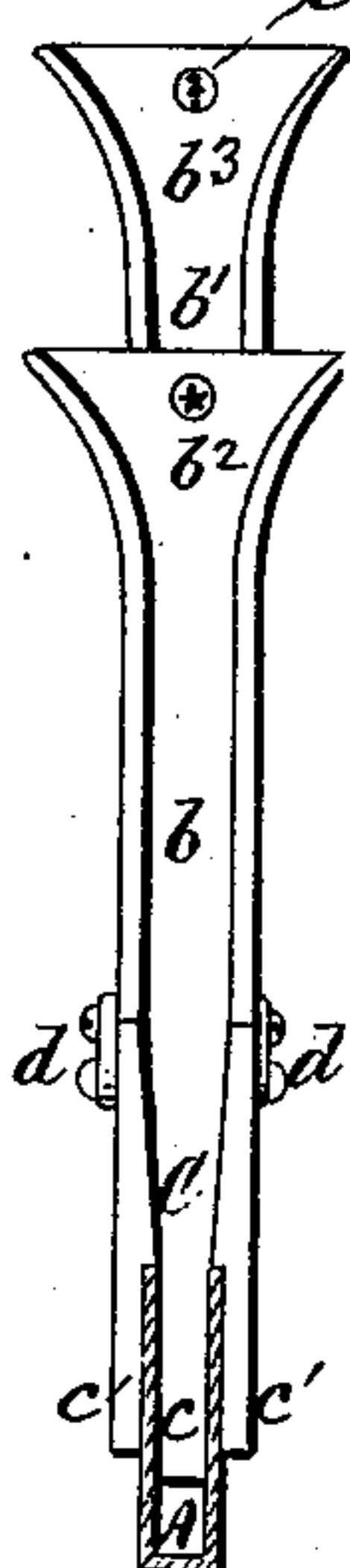
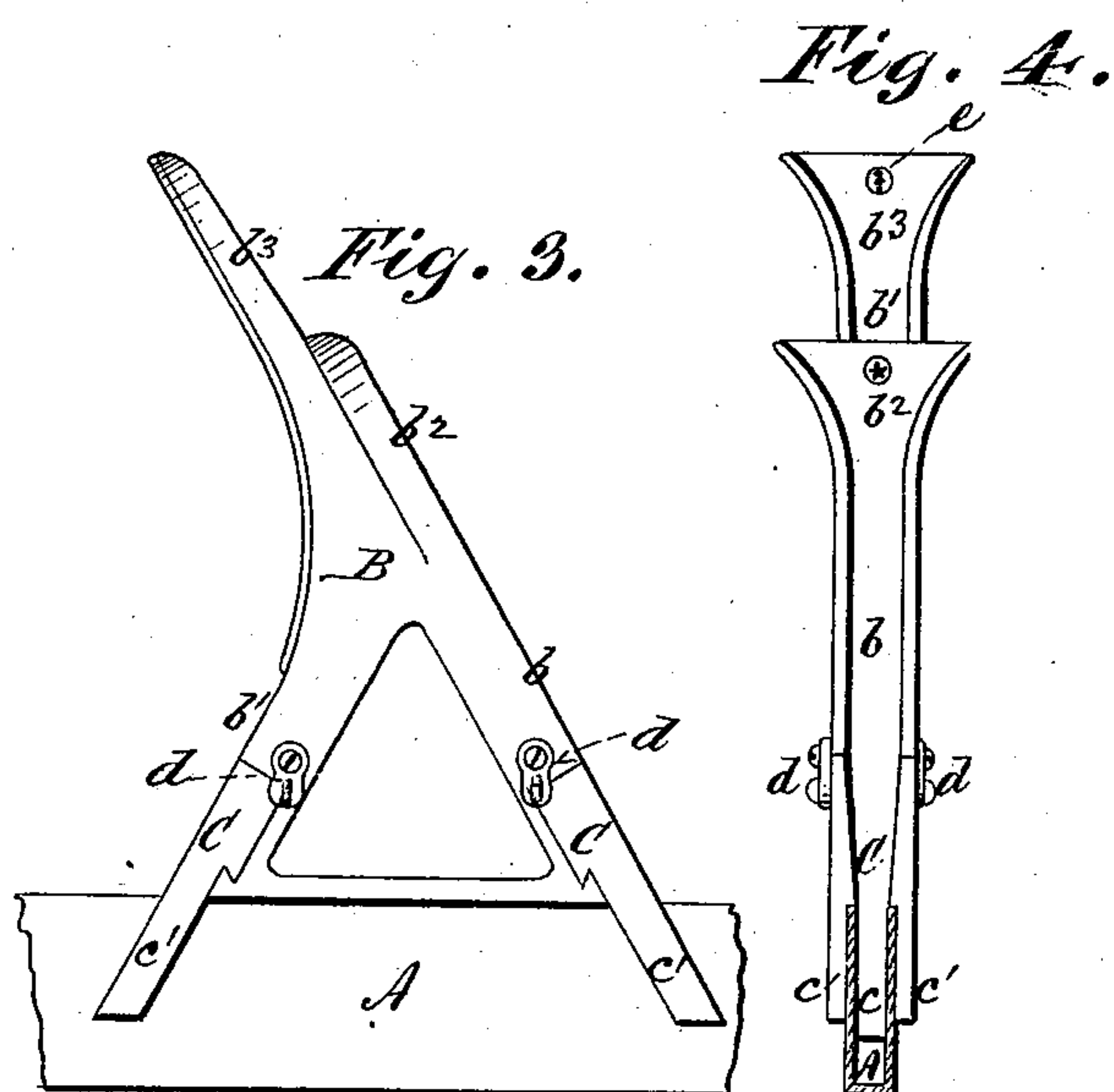
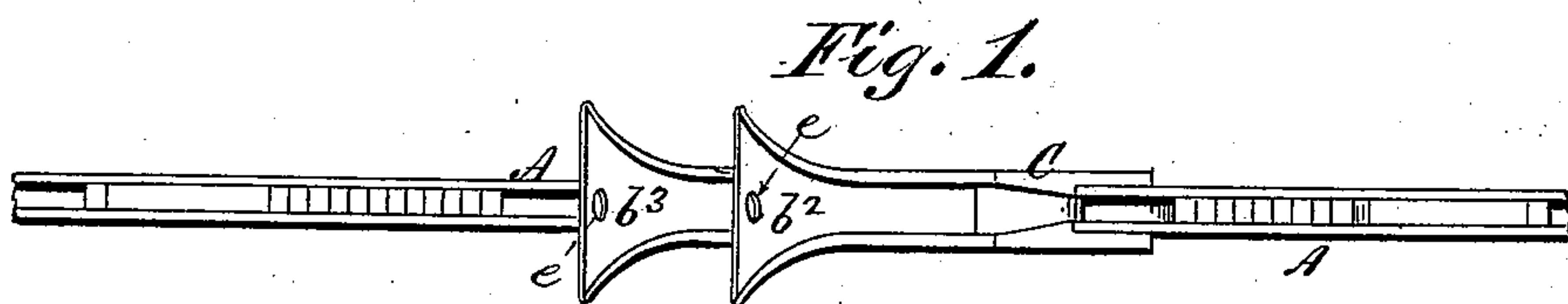
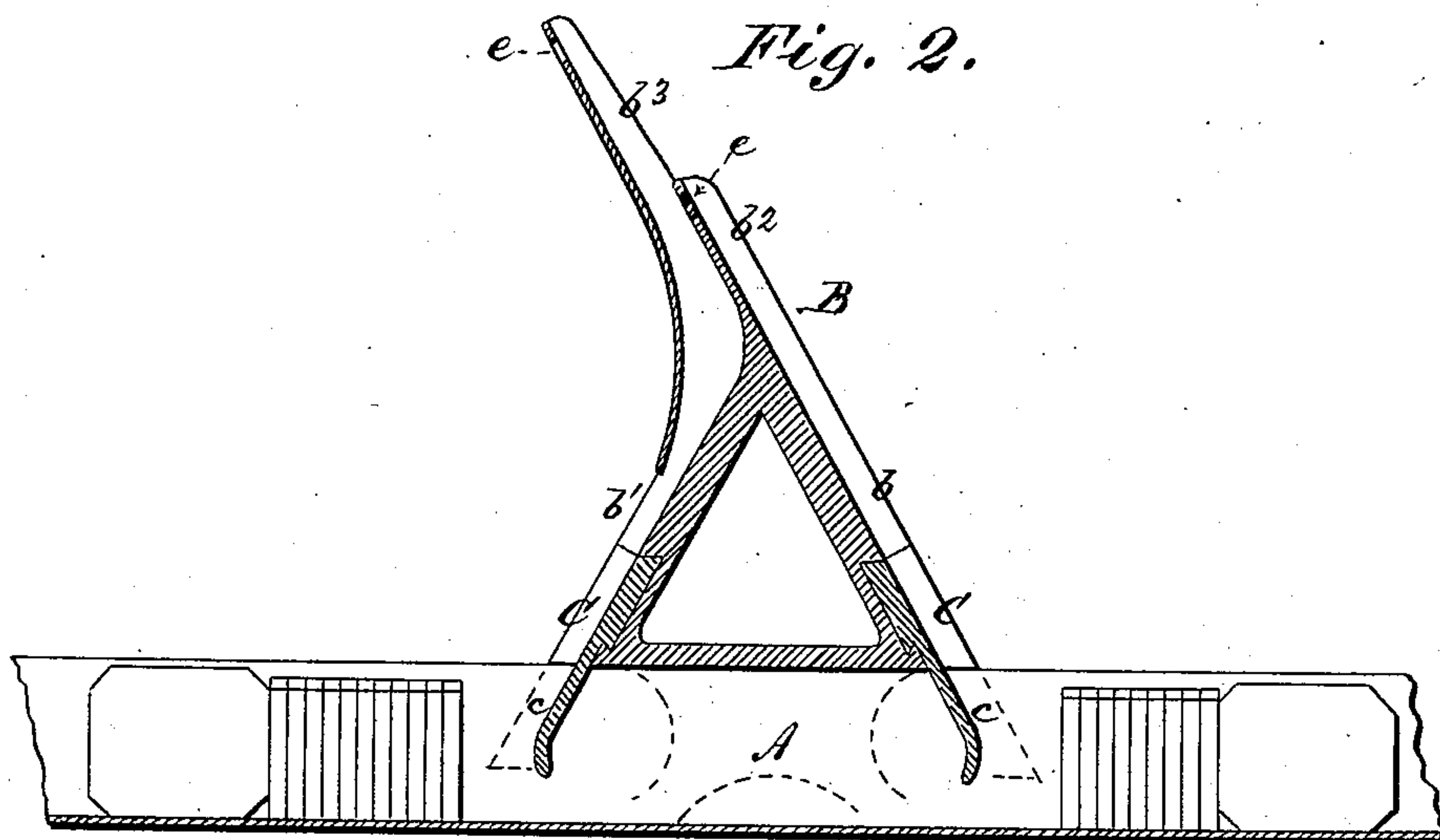
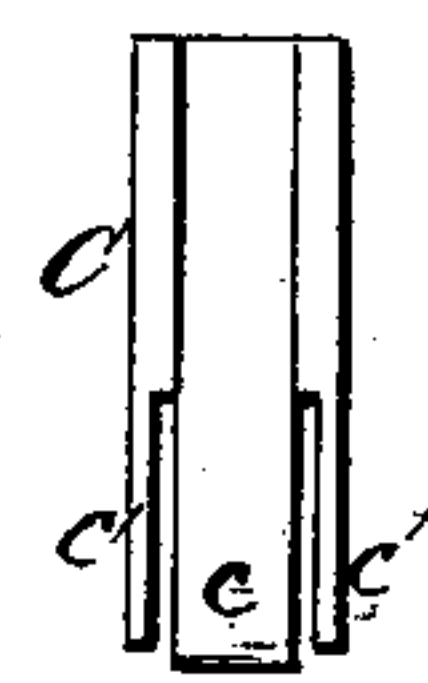


Fig. 5. Fig. 6.



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(No Model.)

2 Sheets—Sheet 2.

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Fig. 7.

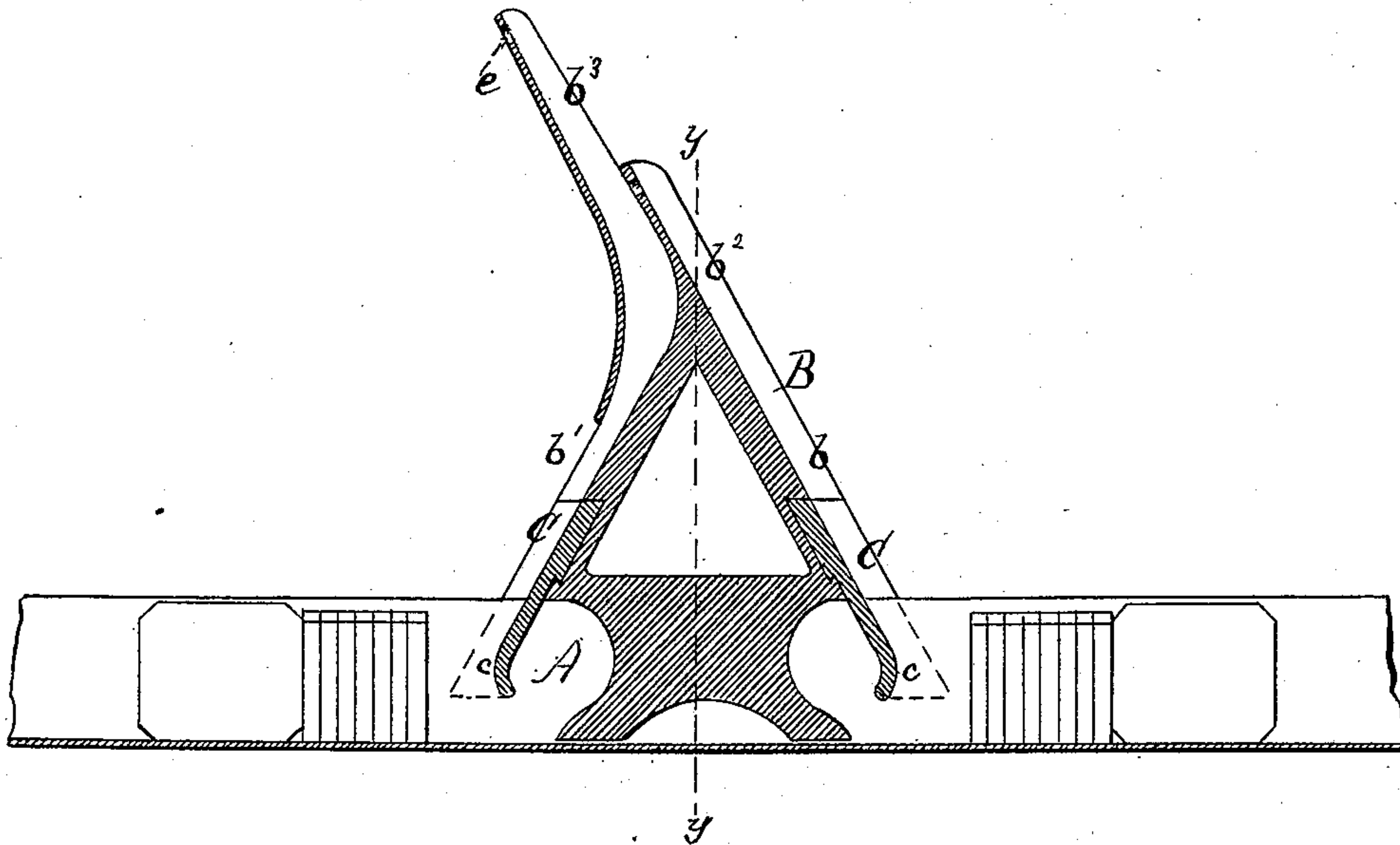
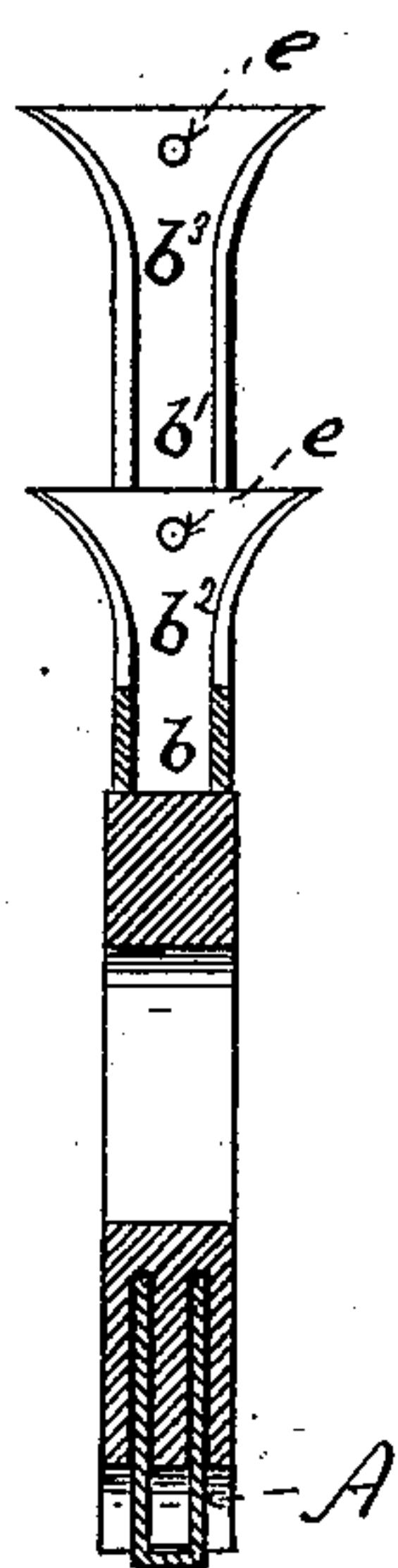


Fig. 8.



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UNITED STATES PATENT OFFICE.

A. AUGUSTUS LOW, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE ALDEN
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TYPE-DISTRIBUTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 363,836, dated May 31, 1887.

Application filed March 21, 1885. Serial No. 159,693. (No model.)

To all whom it may concern:

Be it known that I, A. AUGUSTUS Low, a citizen of the United States, residing in the city of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Type-Distributing Apparatus, of which the following is a specification.

My invention relates to the distribution of type by hand into prescribed positions in type-containing channels, which latter may either be temporary or transfer channels, or type-channels adapted for use in the type-setter.

The main object of my invention is to produce an apparatus in which the use of auxiliary power for forwarding the types in the containing channels will be dispensed with and the result accomplished by hand. To this extent my invention is similar to that set forth in the application of L. K. Johnson and A. Augustus Low, (No. 157,862,) in which case a vibrating receiver is utilized to forward a column of type in a containing channel. In the present case I attain the same result by the use of a combined type-receiving and forwarding device, which may be reciprocated longitudinally in or upon the type-containing channel. This reciprocal movement is adapted to be effected by the left hand of the operator, thus devoting the right hand entirely to the operation of distribution. Since, owing to the use of the type-holder or "breaker," patented May 15, 1883, No. 277,740, from which the types are removed as wanted by the right hand, the left hand would otherwise be practically unoccupied, I am enabled to thus utilize the left hand to forward the types quickly and conveniently and in the most natural manner.

My reciprocating receiver and forwarder is designed to be transferable freely from one channel to another without direct attachment of any kind, and is intended more especially for use in connection with the distribution of odd sorts of types, which, owing to the infrequency of their use, it would not be desirable to provide for in the ordinary duplex receiving-bank apparatus described in application No. 156,604, filed February 24, 1885.

Another feature of my invention consists in

forming my reciprocating pusher and forwarder with two separate receivers and conduits arranged so as to receive and guide types into the containing-channels upon opposite sides, respectively, so that by placing such duplex receiver and forwarder at or near the center of a containing channel types of different denominations may be distributed into it and the respective columns alternately forwarded in opposite directions by the reciprocation of the receiver. This arrangement is especially desirable in connection with the distribution of the odd or infrequently-used sorts of types before referred to, owing to the smallness of the number to be accommodated, the type-channel in such case being used simply for transfer or storage purposes. The odd sorts of types used in ordinary composition being comparatively few, a very small number of type-channels thus provided with my duplex reciprocating receivers may be arranged to afford ample accommodation within a small area.

Another important feature of my invention consists in forming a reciprocating type receiver and forwarder such as herein described with interchangeable sections or nozzles at their lower ends, the floors of which project downward into and constitute the type-forwarding tongues or bearings within the containing channels, and the side walls of which are formed so as to coincide with and form continuations of the receiver-conduit walls above and the type-channel walls below, for the purpose of adapting the device to the distribution of types of different sizes. Thus, if the containing channel is of the full width (equal to that of the largest type to be distributed) of the type-receiving conduit, the side walls of the nozzle-pieces will be parallel, whereas if the containing channels are of less width the difference will be compensated for by using nozzle-plates whose side walls are flared or converge downward from the lower end of the receiving-conduit until they coincide with the side walls of the containing channels.

I am aware that in application No. 156,604 referred to variations in the width of the type-conduits and type-channels are compensated for by interchangeable channel-sections hav-

ing converging walls, and I do not seek to cover such construction broadly herein, my present invention in this respect being an improvement thereon adapted especially to the construction of apparatus herein claimed.

The accompanying drawings illustrate my improvements as applied to a single type-channel, although any number of the latter may be arranged and combined together.

Figure 1 represents a plan of the central portion of a type-channel provided with my duplex reciprocal type receiver and forwarder; Fig. 2, a vertical longitudinal section of the same upon plane of line $x x$, Fig. 1, the types and slugs being represented in elevation. Fig. 3 is a side elevation of the duplex receiver and the adjoining portion of the containing channel; Fig. 4, a transverse section of the containing channel, showing the duplex receiving and forwarding device in front elevation; Fig. 5, a front view of one of the contracted nozzle-pieces detached; Fig. 6, a similar view of a nozzle-piece having parallel side walls; Fig. 7, a vertical longitudinal section similar to Fig. 2, showing the projection of the central tenon or base of the receiver in the type-channel; Fig. 8, a transverse section upon plane of line $y y$, Fig. 7, showing the interior and exterior shoulders upon the under side of the receiver.

The type-containing channel A is of any ordinary construction, that represented in the drawings being made of sheet metal. One or a series of such containing-channels may be supported horizontally upon a bed plate or frame in any suitable manner.

The combined receiver and forwarder B is preferably made in the duplex form shown, although a single receiving-conduit, b , may with equal facility be thus arranged to conduct type into and forward it within a containing channel.

When two receiving conduits, $b b'$, are combined, their respective receiving-surfaces $b^2 b^3$ are preferably arranged in line, one slightly above the other, as shown, although they may, if preferred, be arranged side by side. In either case one of the conduits, b' , is so formed as to conduct the types deposited therein into the portion of the containing channel upon the left, while the other conduit, b , conducts types deposited therein into the portion of the containing channel upon the right. The floors of the receivers $b^2 b^3$ are formed with the perforations $e e$ near their upper edges for the purpose of exposing denomination-marks pasted or otherwise attached to the back sides of the receivers. I do not claim, broadly, this duplex construction of the receiver, as it is substantially the same in principle as that of the duplex receiving-bank described in the applications of L. K. Johnson and A. Augustus Low, Nos. 78,535 and 131,261, and some of the special features of construction shown therein are equally adapted for use in the present device; but in the cases named the receivers are permanent and stationary, and the types from the

opposite conduits are distributed into separate containing channels and forwarded therein by an independently-reciprocating pusher. In the present case the duplex receiver B is formed so as to simply rest in, over, or upon a containing channel in such manner that it can be moved freely longitudinally in either direction. It may be thus supported in or upon the containing channel in a variety of ways, or, if preferred, it may be independently supported upon the bed or frame and simply straddle the channels. Where designed for a single size of containing channels only, it may be formed with a tenon or base to rest between the side walls of the containing channels, as indicated by dotted lines in Fig. 2, or with exterior shoulders or lugs to engage with and straddle the outer side walls of the channel; or both interior or exterior shoulders may be employed, if preferred, and the device be made to thus rest and slide upon the edges of the channel-walls. Substantially this last-named method of construction is shown in the drawings, except that the parts which constitute the interior and exterior shoulders are removable and interchangeable to adapt the device to different widths of containing channels.

Reference is here made to the nozzle-pieces C C, the central tongues, c , of which constitute the interior, while the side lugs, $c' c'$, constitute the exterior shoulders, it being understood that where the device is intended for a single size of channel only, such shoulders are formed permanently on the frame of the device.

When designed for use in connection with channels of different widths, the device is provided with a series of these nozzle-pieces C C to correspond to and compensate for such variations. The conduits $b b'$ are formed of a width sufficient to accommodate the largest types to be used down to the point of juncture with the removable sections or nozzles C C. The upper side walls of these removable sections C C coincide when in position with the side walls of the lower part of the receiving-conduits $b b$, while their lower side walls coincide with the inner side walls of the containing channels underneath.

Any variation between the width of the conduit-channels above and the containing channels below is compensated for, and the inner side walls of all three of the parts named rendered continuous and unbroken by converging the inner side walls of the movable sections to correspond to the particular size of channel for which it may be designed. All abrupt shoulders or impediments to the descent of the types are thus avoided, and the smaller types as well as the larger are guided gently and evenly into their containing channels.

In application No. 156,604, hereinbefore referred to, interchangeable transfer-channels having converging walls for the purpose of adapting the apparatus to different sizes of types are shown and described, and I do not here seek to cover such construction, broadly;

but in the application referred to such interchangeable transfer-channels are stationary upon the bed of the machine, forming enlarged mouths or continuations for the smaller widths of type-channels, while in the present application they are formed upon and move with the receiver, and are formed with forwarding-tongues *c*, which vary in width according to the width of the type-channels to be used.

The tongues *c*, the upper sides of which form continuations of the conduit-floors above, project into the containing channels sufficiently to enable them to bear against the bodies of the last types in the columns when the device is reciprocated longitudinally, and thereby alternately advance each column in proportion to the extent of motion imparted to the device. The width of the tongues *c* is equal to that of the interior of the containing channel, so that they are supported laterally by the side walls of the latter, and thus tend to support the device in its upright position. This result is also secured by the external lugs *c' c'*, which bear against the outer sides of the containing channels. Where these interchangeable sections are not used, such interior and external supports are formed directly upon the body of the device.

The body or frame of the device is suitably recessed or grooved at the lower ends of the conduits *b b'* for the reception of the removable sections *C C*.

One method of attachment is by means of a dovetail-joint, as shown in the drawings, the parts being centralized and locked in proper relative position by means of buttons or other similar securing devices *d d*.

Having thus described and shown a device illustrating the use and operation of my invention, it is to be understood that I do not limit myself strictly to the particular form and construction of parts shown; but

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

1. The combination and arrangement, with a type-containing channel substantially such

as designated, of a type receiving and conducting device adapted to be reciprocated longitudinally with relation thereto for the purpose of forwarding the types, substantially in the manner described.

2. In combination with a type-containing channel substantially such as designated, a duplex type receiving and conducting device adapted to be reciprocated longitudinally with relation thereto, constructed and operating substantially in the manner and for the purpose described.

3. The combination, with a type-receiving conduit, of a maximum width, and a type-containing channel of a less width, of an intermediate removable section or nozzle the side walls of which converge so as to connect the side walls of the said type-receiving conduit and the said type-containing channel, substantially in the manner and for the purpose described.

4. In combination with a type-containing channel, a reciprocating type-receiving conduit formed with a removable section at its lower extremity, the side walls of which section converge downward for the purpose described, and the floor of which section projects downward into and constitutes the type-forwarding tongue or bearing within the type-containing channels, substantially in the manner and for the purpose described.

5. In combination with a type-containing channel, a combined reciprocating type receiving and forwarding device consisting of an inclined type-channel terminating in a tongue which projects into the type-containing channel substantially in the manner and for the purpose described, and provided with external lugs or shoulders which embrace the exterior side walls of the type-containing channels, substantially in the manner and for the purpose described.

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Witnesses:

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