

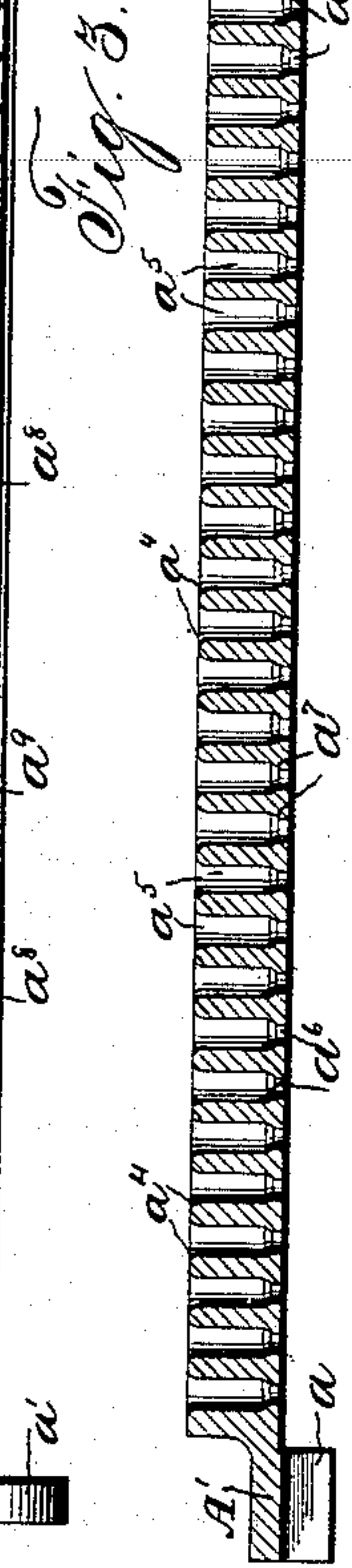
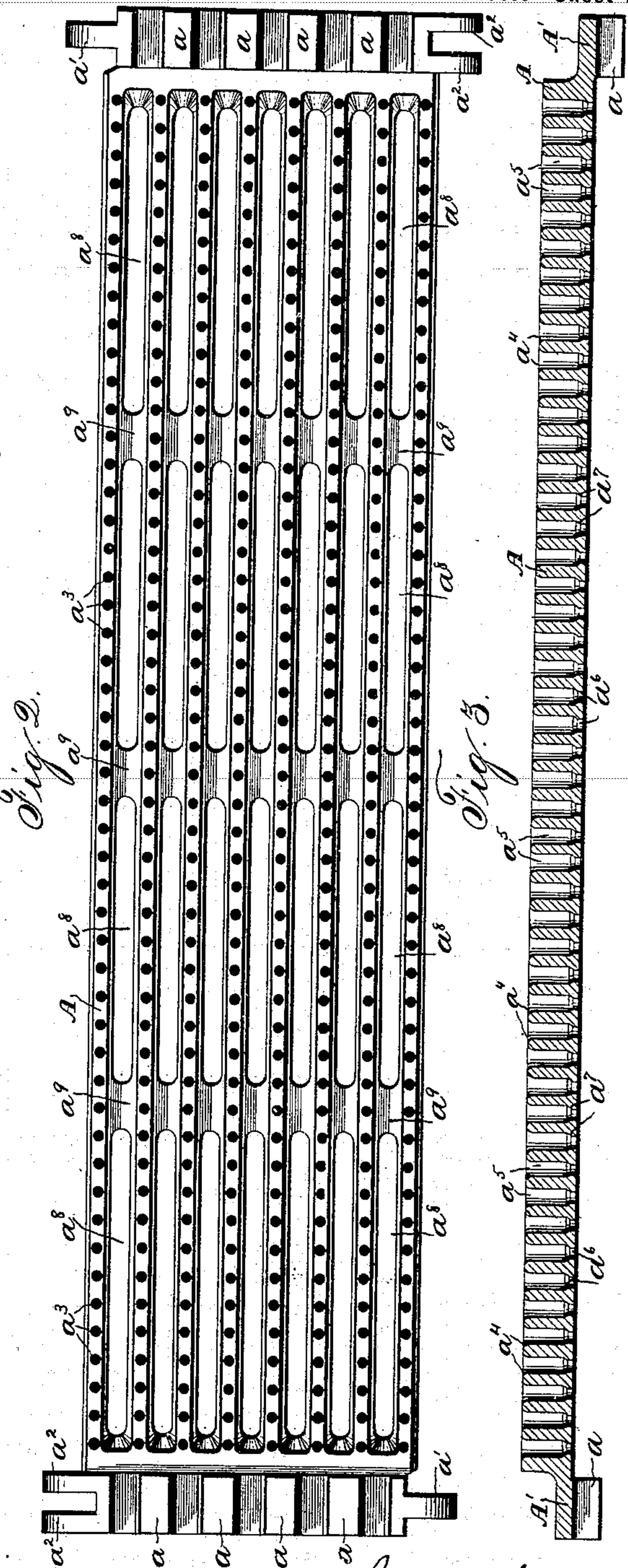
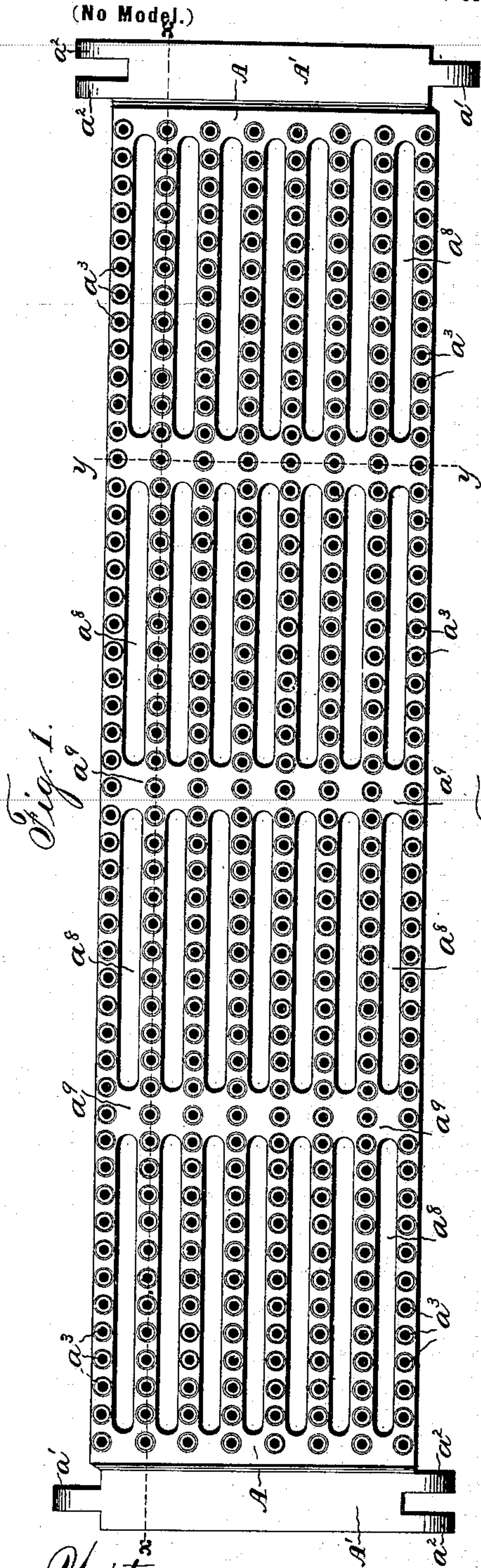
No. 612,084.

Patented Oct. 11, 1898.

J. P. WRIGHT.
CARRIER FOR MATCH SPLINTS.

(Application filed Sept. 21, 1897.)

2 Sheets—Sheet 1.



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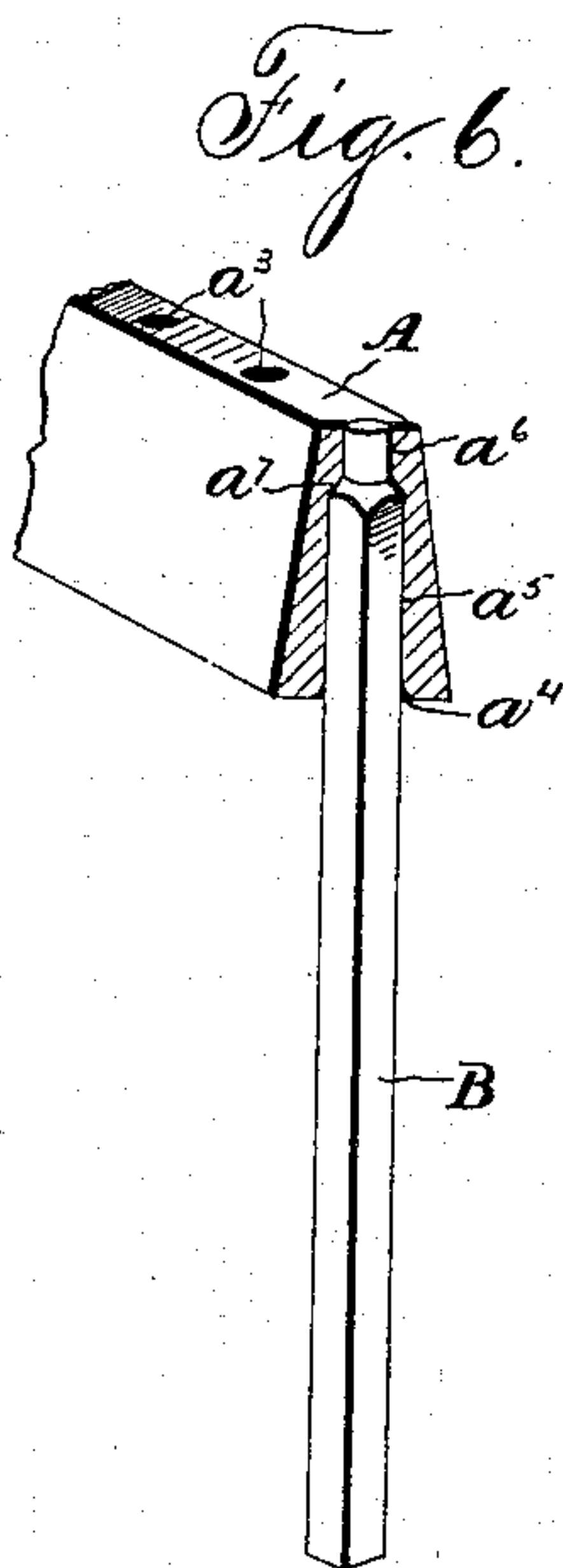
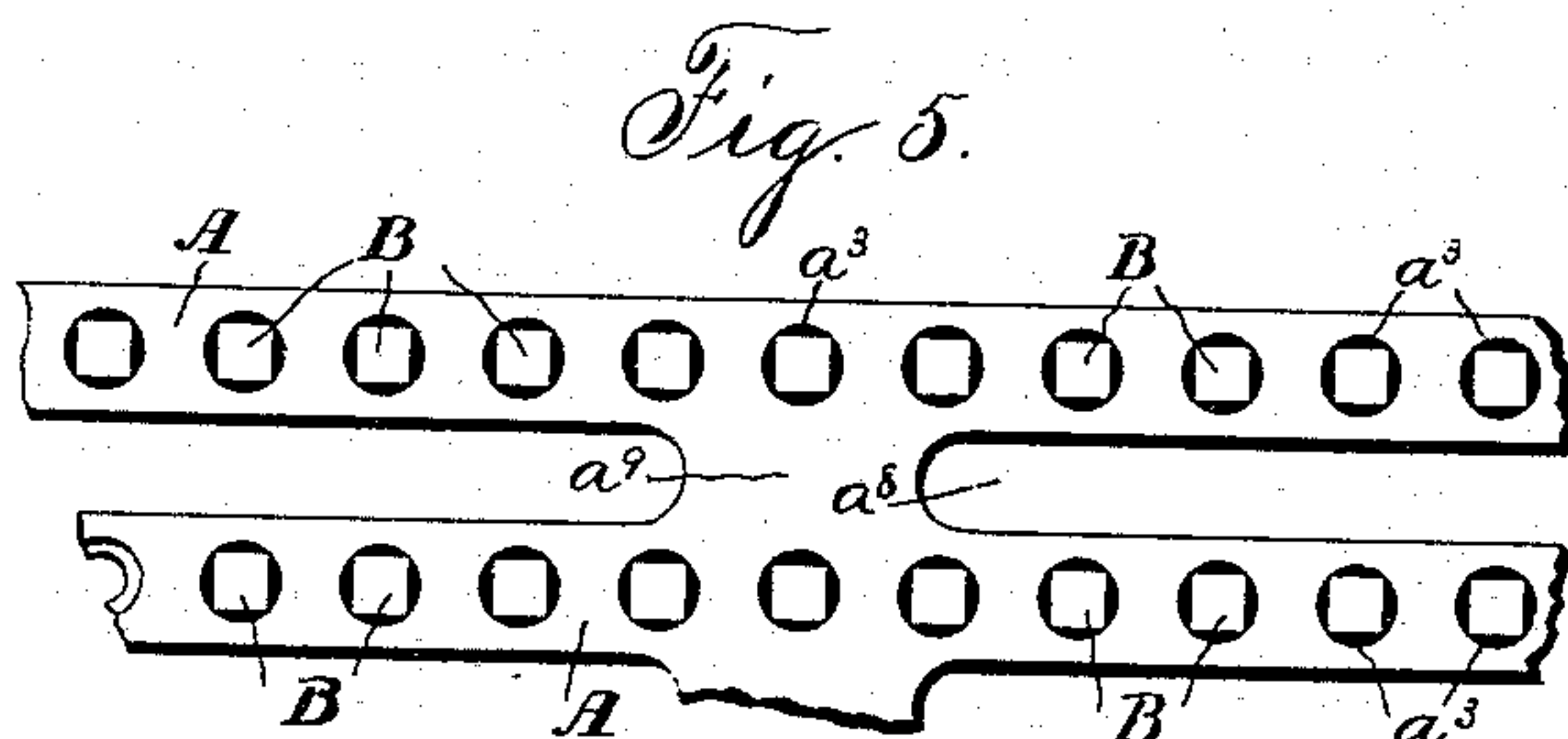
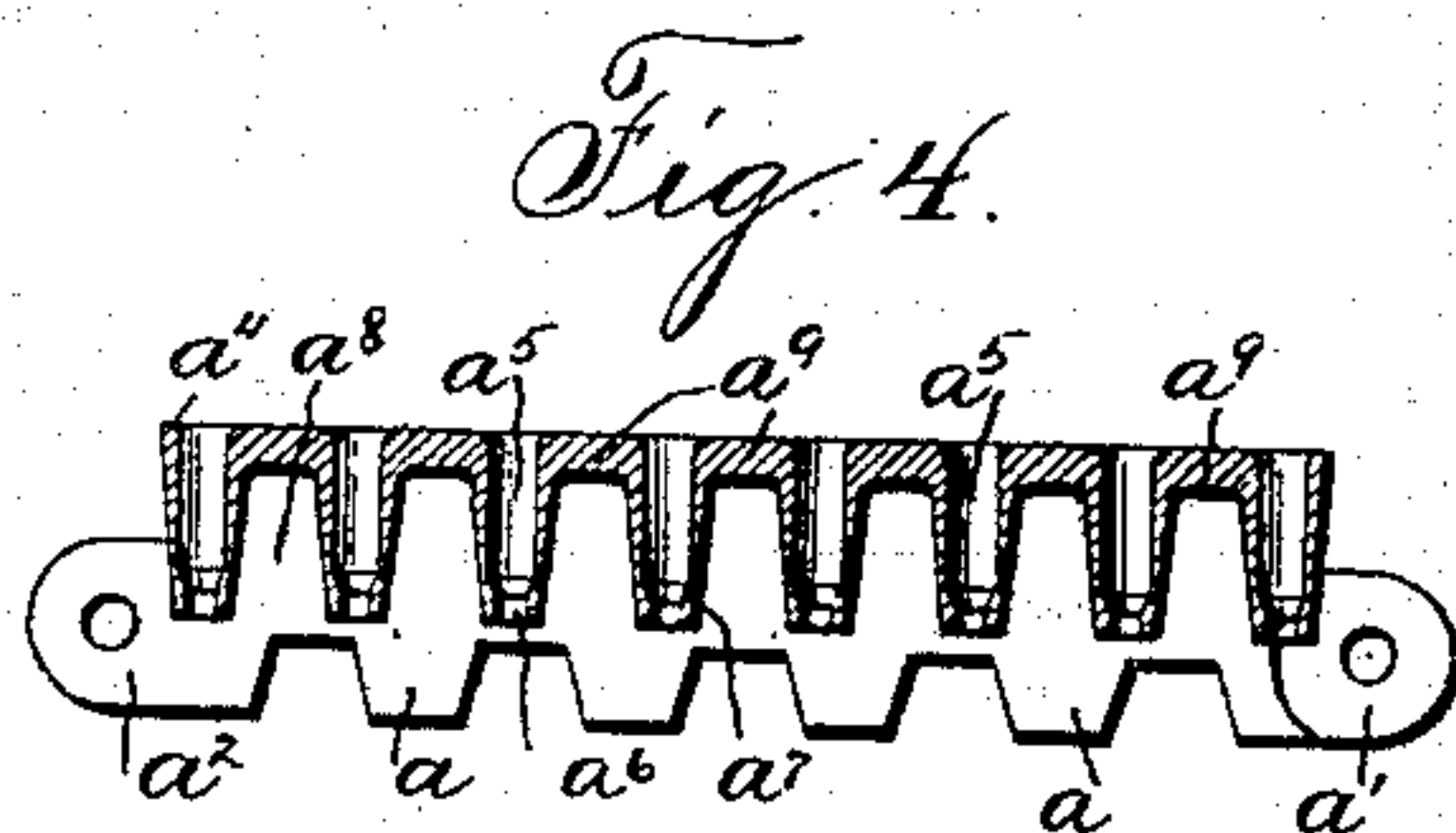
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CARRIER FOR MATCH SPLINTS.

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(No Model.)

2 Sheets—Sheet 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

JACOB P. WRIGHT, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO THE
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CARRIER FOR MATCH-SPLINTS.

SPECIFICATION forming part of Letters Patent No. 612,084, dated October 11, 1898.

Application filed September 21, 1897. Serial No. 652,461. (No model.)

To all whom it may concern:

Be it known that I, JACOB P. WRIGHT, of New Haven, in the county of New Haven, and in the State of Connecticut, have invented
5 certain new and useful Improvements in Carriers for Match-Splints and the Like; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 shows a front face view of one of my improved carrier-plates; Fig. 2, a rear face view of the same; Fig. 3, a view of a section of the plate on line *xx* of Fig. 1; Fig. 4,
15 a view of a section of the carrier-plate on line *yy* of Fig. 1; Fig. 5, a detail front face view showing, on an enlarged scale, a portion of the plate with match-splints inserted in the perforations; and Fig. 6, a detail view showing, on an enlarged scale, a section of a portion of the plate with a match-splint stuck in one of the perforations.

Letters of like name and kind refer to like parts in each of the figures.

25 The object of my invention is to provide an improved match-splint carrier for use in match-making machines to receive and hold the splints in position for dipping or other treatment; and to this end my invention consists in the carrier and in the construction, arrangement, and combination of the parts thereof, as hereinafter specified.

While my invention is shown in the drawings as applied to a carrier-plate intended to
35 form one of the links of the endless splint-carrier of a continuous match-making machine, I desire it to be understood that my invention is applicable for use to advantage in other forms of match-splint carriers, whether the latter are continuous or endless ones or not or consist of plates or bars with series of splint-receiving perforations in each or of blocks or small pieces each having a single one of such perforations. I desire it
45 also to be understood that while my invention has been especially intended to provide an improved carrier for use with splints which are square or rectangular in cross-section it is also applicable to carriers which are to receive and hold other shaped splints.

The essential idea of the invention as ap-

plied to a carrier for any-shaped match-splint is to have a part of each perforation adapted to surround the splint of such size with reference to the latter as to engage the same, so
55 as to form a steadying-support for it, and to have another short part of the perforation situated at the rear or farther end of the latter made smaller than the splint, so that the end portion of the splint when it is driven
60 into such smaller part of the perforation will be compressed thereby and firmly held therein. The narrower or smaller part of the perforation will serve then to firmly hold the
65 splint from falling longitudinally out of the perforation, and the larger part of the perforation, inclosing and engaging the splint, as described, at a point between the compressed end and the part which has not entered the
70 perforation, will serve to hold the splint steady against any swinging to one side or the other.

In the drawings, A designates the body of a match-splint-carrier plate which, as shown, is provided on its opposite sides with the
75 guide-bars A' A', provided with rack-teeth *a* to be engaged by the teeth of feed-wheels to be used to move the plate along through the match-making machine in which it may be used. To allow of hinging the plate to
80 another one, so as to make a chain of carrier-plates, there is at one end of each bar A' a perforated ear or lug *a'* and at the other end two perforated ears *a² a²*, adapted to receive between them the single perforated lug *a*, on
85 the next plate and to be connected therewith by a pivot-pin passing through such lug and the ears. Extending transversely across the body A of the plate are parallel series of match-splint-receiving perforations *a³ a³*,
90 adapted to receive and hold match-splints in parallel rows, with the main parts of the splints beyond the perforations held rigidly in position parallel to each other and at right angles to the face of the plate. The perfora-
95 tions in each row or series are arranged a sufficient distance apart to allow sufficient quantities of igniting composition to form the match-heads to be applied to the splint ends by dipping or otherwise without danger of
100 one head being in contact with an adjoining one, either when the composition is being ap-

plied or while the carrier-plate is being moved along after the dipping to allow the applied heads to cool, dry, and harden.

Each of the perforations $a^3 a^3$, besides the usual countersink a^4 used at the front ends of the perforations of perforated-plate splint-carriers for match-making machines—such, for instance, as are shown in machines of the kind shown in United States patent to Beecher and Wright, No. 528,457—has a portion a^5 to the rear of the countersink made of such diameter as to inclose and engage the one of the match-splints B to be operated upon, but not to compress the same. Beyond this portion a^5 the perforation is contracted to a size smaller than the splint, so that the end of the latter thrust into the contracted part of the perforation will be squeezed and compressed by the latter, as indicated in Figs. 3, 4, and 6, so as to be firmly held in the same against falling or working longitudinally out of the perforation. Between the contracted splint squeezing and grasping portion of the perforation, which is indicated by a^6 in the drawings, and the larger portion a^5 there is a short beveled shoulder or tapering passage a^7 , which serves to guide the end of splint B into the contracted part a^6 and facilitates the squeezing down or compression of such end to enable it to enter the part a^5 of the perforation.

Between the portions of the plate which contain the rows of perforations $a^3 a^3$ the plate-body is slotted, as shown at $a^8 a^8$, the slots extending nearly entirely across the plate-body and being cut through the same, except at $a^9 a^9 a^9$, where thin portions of the front of the plate are left for the purpose of securing stiffness and rigidity without adding materially to the weight of the plate, which the described slotting is designed to reduce as much as possible.

As shown, the slots $a^8 a^8$ are made flaring rearward toward the back of the plate A, while at the front of the plate they are made wider than the diameter of a match-splint. With the plate thus slotted, as shown and described, it is clear that great lightness is secured without unduly diminishing the strength and rigidity of the plate, and the plate can be readily kept clear of any broken splints or pieces of splints which otherwise might lodge against the face of the plate between the rows of good splints held in the plate-perforations.

The slots $a^8 a^8$ afford a ready passage for such broken splints or pieces through which the latter can fall or be drawn or forced by any desired air-suction or air-blast mechanism adapted to draw or force air through the slots.

The operation of my improved splint-carrier, which will be understood from the foregoing description and the drawings, is briefly as follows: The splints being thrust endwise into the plate-perforations by any desired means—as, for instance, by splint-sticking

mechanism of the same general construction as that shown in the Beecher and Wright patent hereinbefore referred to—will pass readily into and through the larger portions $a^5 a^5$ of the perforations $a^3 a^3$, being guided into the same by the countersinks $a^4 a^4$ if they should tend to get out of line with the perforations before they enter the latter. Being thrust inward through the larger parts of the perforations, they engage the annular beveled shoulders or tapering passages $a^7 a^7$, and being compressed thereby enter the narrow smaller portions $a^6 a^6$ of the perforations, in which the splint ends, being squeezed and compressed, will be held tightly and firmly. The splints thus compressed and held in parts $a^6 a^6$ of the perforations are securely held from dropping out of the plate until they are punched out by some ejecting means having pins or punches to push the splints forcibly out of the perforations. Being thus held, the splints are maintained in positions parallel to each other and at right angles to the carrier-plate by the surrounding walls of the larger front portions $a^5 a^5$, which portions are intended to be small enough to have their walls stand close to the splints without forcibly pressing upon or compressing the same.

With the splints having their rear or outer ends squeezed in the small rear or outer portions of the perforations and the parts forward of their squeezed rear ends steadied by the walls of the main larger portions of the perforations I am enabled to secure a most certain and steady holding of the splints in their required positions in the plate however such plate may be handled or moved during the operation of treating the splints for the manufacture of matches.

While I have described and shown my improved carrier as adapted to carry splints for matches, I desire it to be understood that I contemplate using it also for carrying other sticks than match-splints and rods, wires, or strips of any material which it is desired to carry in the same way as the splints.

If desired, the perforations in the plate instead of being made round can be of any other suitable shape in cross-section to suit the shape of the splint or other article to be operated upon.

Whatever the shape of the perforations may be the same essential idea of having one larger part to steady and a smaller part to squeeze and hold the end of the splint or other article can be carried out.

Having thus described my invention, what I claim is—

1. A carrier for match-splints and the like, having a splint-receiving cavity, with one part of a diameter to surround and steady the splint without compressing it, and another part made of less diameter than the splint and having unyielding walls, so that it will compress the portion of the latter which is forced into it, substantially as and for the purpose described.

2. A carrier for match-splints and the like, having a body provided with a splint-receiving perforation, which has a part to receive and hold the end of the splint, made smaller than the splint in diameter, and a larger part to surround and form a steadying-support for a portion of the splint, substantially as and for the purpose described.

3. A carrier for match-splints and the like, having a body provided with a series of splint-receiving perforations made smaller than the splint ends, so as to clasp and hold the same when such ends are thrust into them, and portions situated between the splint-receiving perforations and adapted to stand close to the splints, outside of the perforations, and prevent the splints with their ends thrust into the perforations from swinging sidewise to cause their outer ends to approach the corresponding ends of the adjoining splints, substantially as and for the purpose described.

4. A carrier for match-splints and the like, having a body provided with a splint receiving and surrounding cavity with a narrow part of less diameter than the splint, a larger part of a diameter substantially equal to or slightly greater than the largest diameter of the splint, and a tapering passage leading from the larger to the smaller part, substantially as and for the purpose described.

5. A carrier for match-splints and the like, having a body provided with a series of perforations, each having a part of less diameter than the splint to be operated upon, so that the part of the splint thrust therein will be compressed and held firmly in it, and a part of larger diameter, to surround and engage a portion of the splint, so as to form a steadying-support for the splint, against swinging to one side or the other, substantially as and for the purpose described.

6. A carrier for match-splints and the like, having a body provided with a series of perforations each of which has a portion adapted to surround a splint into and through which the splint can be easily passed, a tapering

passage at the inner end of such portion, and a contracted part at the farther end of such passage of a diameter less than that of the splint, substantially as and for the purpose described.

7. A carrier for match-splints and the like, having a body provided with a series of perforations each having a cylindrical portion through which a splint can be easily thrust, and a smaller cylindrical portion of a less diameter than the splint, situated beyond the larger portion, substantially as and for the purpose described.

8. A carrier for match-splints and the like, having a body provided with a series of perforations each having a cylindrical portion, of a diameter equal to or but slightly greater than the largest diameter of the splint to be received, a smaller cylindrical portion beyond the former portion, made of less diameter than the splint, and a tapering passage leading from the larger to the smaller portion of the perforation, substantially as and for the purpose described.

9. A carrier for match-splints and the like, having a body provided with a series of perforations each having a countersink at its front end, a portion just beyond such countersink having its walls adapted to surround and stand close to the parts of the splint which are of the largest diameter, so as to form a steadying-guide for the splints, a tapering passage at the inner end of such portion, and a contracted part at the farther end of such passage, made smaller than the splint, so that the latter will be compressed and firmly held therein, when it is pushed endwise into the same, substantially as and for the purpose described.

In testimony that I claim the foregoing I have hereunto set my hand this 18th day of September, 1897.

JACOB P. WRIGHT.

Witnesses:

L. A. BEECHER,
H. D. STANNARD.