

No. 662,297.

Patented Nov. 20, 1900.

W. N. PALMER.

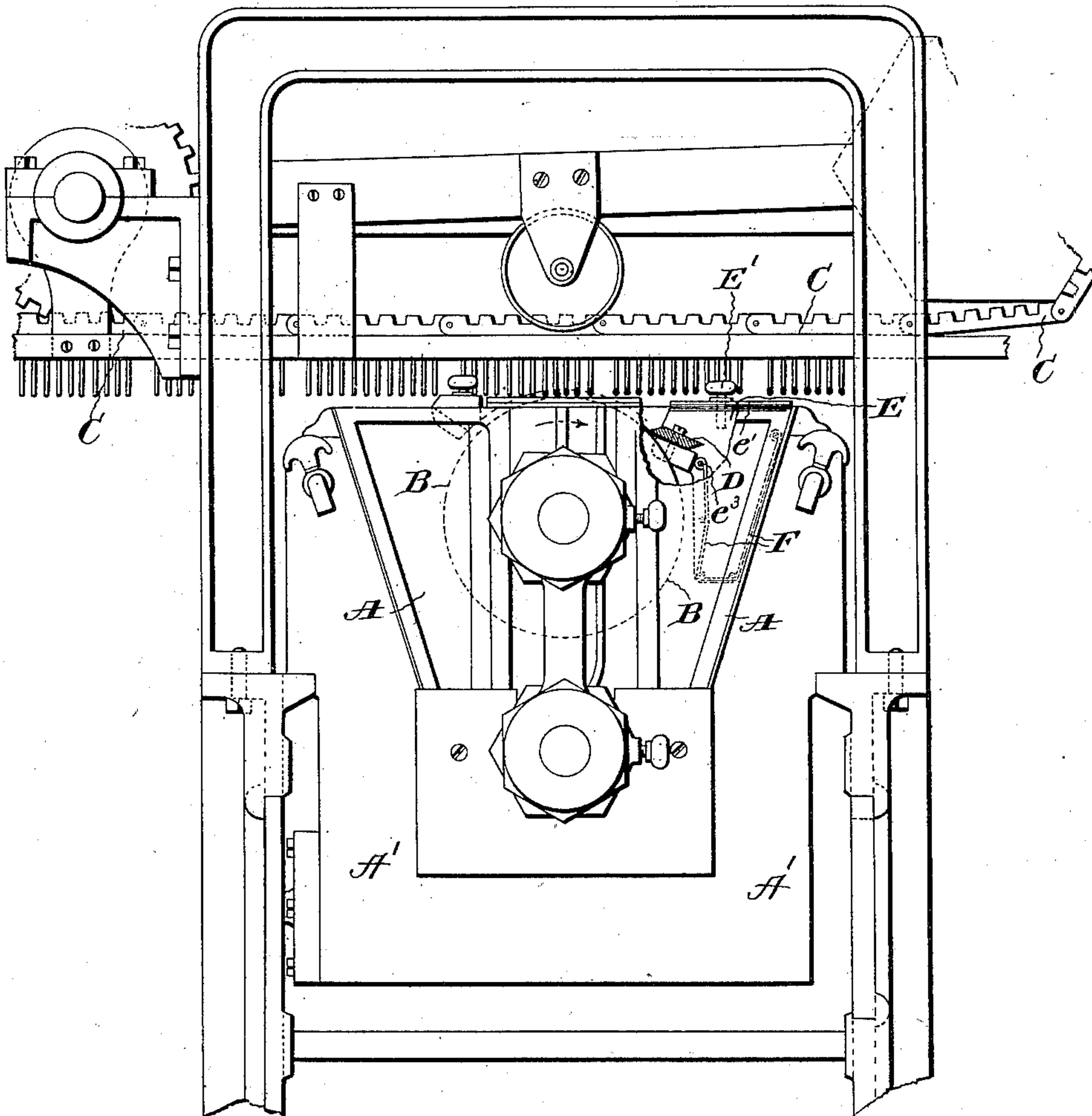
COMPOSITION APPLYING MECHANISM FOR MATCH MACHINES.

(Application filed July 23, 1898.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



Witnesses:
Jas. C. Hutchinson.
Henry C. Hazard.

Inventor.
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2 Sheets—Sheet 2.

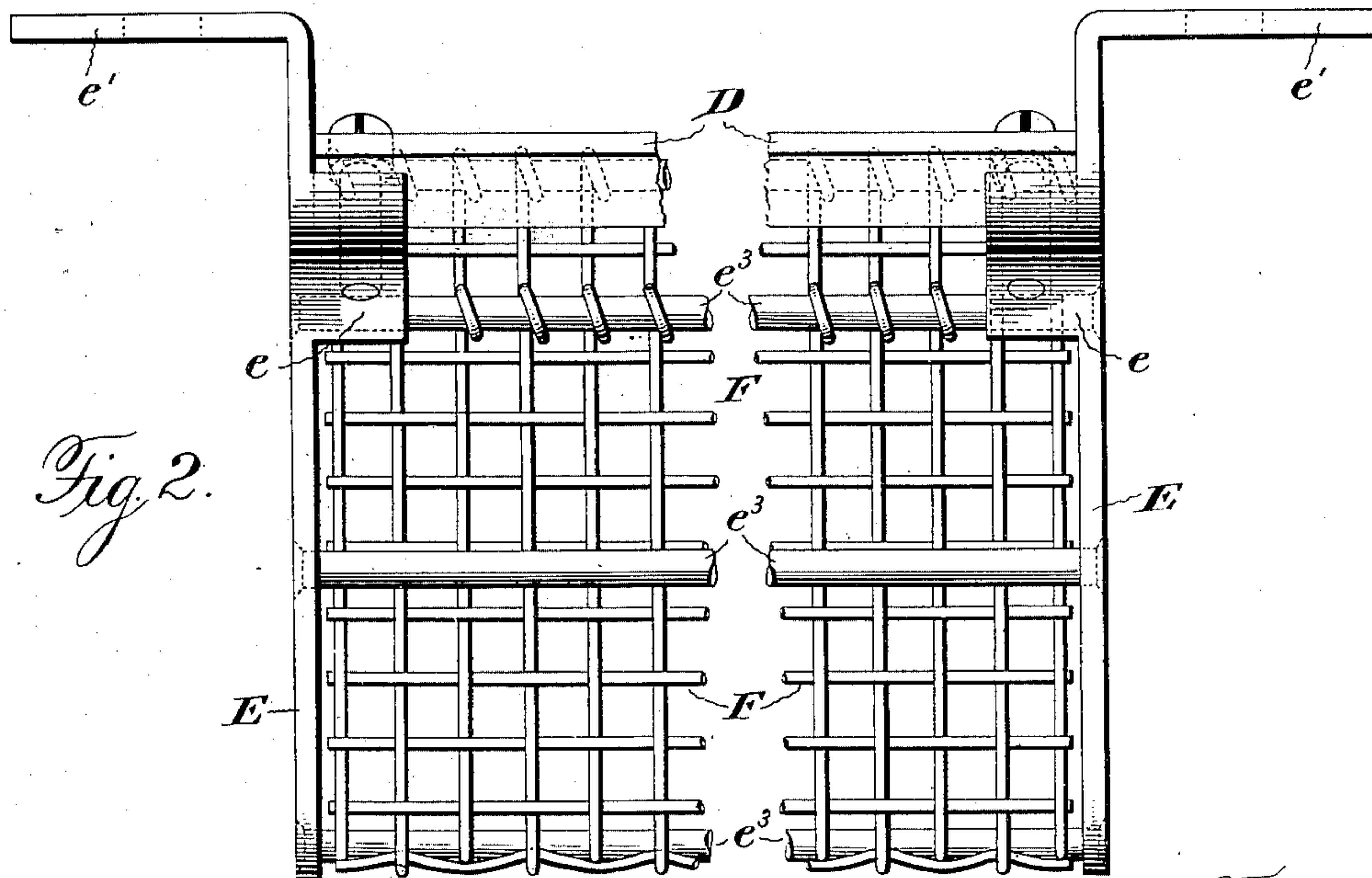


Fig. 3.

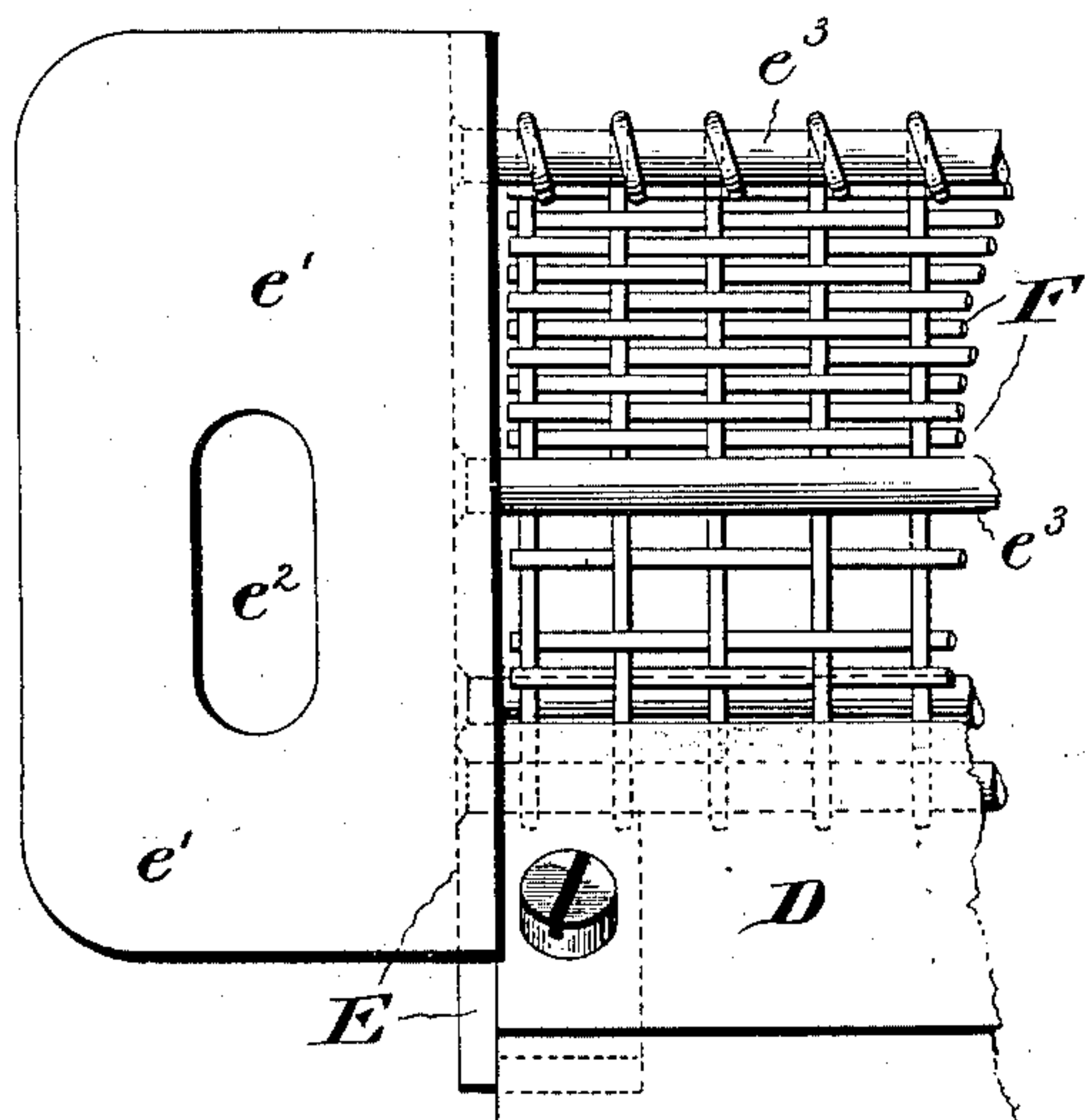
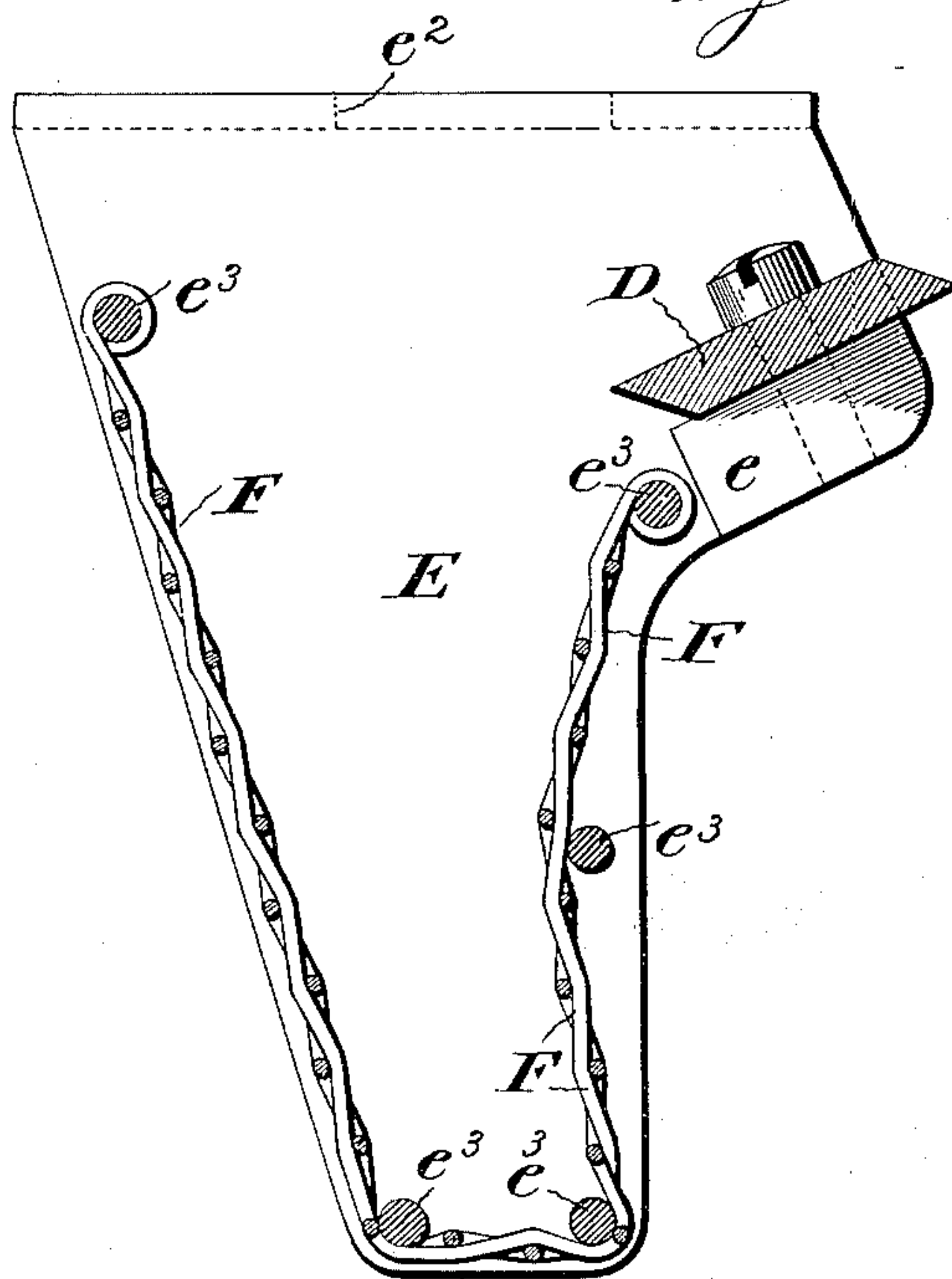


Fig. 4.



Witnesses:
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UNITED STATES PATENT OFFICE.

WILLIAM N. PALMER, OF AKRON, OHIO, ASSIGNOR TO THE DIAMOND MATCH COMPANY, OF CHICAGO, ILLINOIS.

COMPOSITION-APPLYING MECHANISM FOR MATCH-MACHINES.

SPECIFICATION forming part of Letters Patent No. 662,297, dated November 20, 1900.

Application filed July 23, 1898. Serial No. 686,671. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM N. PALMER, of Akron, in the county of Summit, and in the State of Ohio, have invented certain new and useful Improvements in Composition-Ap-
5 pling Mechanism for Match-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in
10 which—

Figure 1 is a side elevation of a composition-applying mechanism embodying my invention, with a portion of the side of the chest or vat broken away. Fig. 2 is a detail en-
15 larged view in elevation of the end portions of the composition scraper and strainer. Fig. 3 is a top plan view of one of such end portions, and Fig. 4 is a vertical cross-section of the scraper and strainer.

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

The object of my invention is to free or remove from the dipping composition or material used in the manufacture of matches
25 pieces of wood or other foreign substance that may fall or get into the composition chest or vat, so that when the sticks or splints are dipped the formation of clean and perfect heads will be assured and a means of forming
30 "double headers" obviated; and to this end said invention consists in the means employed, substantially as hereinafter specified.

The composition-holding vat or chest A, having the revolving, feeding, or applying
35 roller B, (shown in the drawings,) is of familiar construction and need not be specifically described, nor is it necessary to show and describe the means by which the roller B is re-
40 volved, which roller, partially submerged in the composition, takes the latter on its periphery upward into the path of the lower ends of match splints or sticks held in and moved
45 along through the match-machine by a carrier C of well-known construction—that is, composed of a series of perforated plates hinged or pivoted together. The composition
50 vat or chest A is heated to keep the composition contained therein hot and liquid by a heating-jacket A', which can be of any de-
sired construction, but, as shown, is one like that shown and described in United States

Patent No. 528,457, issued October 30, 1894, on the application of E. B. Beecher and J. P. Wright, having a cavity or recess to receive the vat or chest, with its sides in contact with
55 those of the latter, so that the heat from the heating fluid contained within the jacket will be directly transmitted and applied to the composition-vat and its contents. The jacket is to be kept hot in the same manner as that
60 set forth in said patent—that is, by passing a heating fluid, as steam or hot water, into and through its interior chamber.

In the absence of means to prevent it fragments of splints or pieces of wood or other dirt
65 that may fall into the composition in the vat are carried by the roller into the path of the splints as they are moved by the carrier C to and through the coating of composition on the
70 roller B and either adhere to the splints with the composition the latter takes up or prevent the proper application of the composition, so that defective or imperfect matches result. If the particles of wood or other ma-
75 terial adhere to the splints, they are objectionable either as spoiling their appearance or, if they be long enough to reach between two adjacent splints, they cause the formation of double-headers—that is, two matches
80 whose heads are united. Such matches as these are a loss and sometimes ignite when being ejected from the carrier. For preventing injury to the matches from the presence of such foreign bodies in the com-
85 position in the vat I remove the same from the composition by passing the latter through a sieve or strainer after it has been scraped, as usual, from the roller at a point beyond
90 that where the splints come into contact with the composition on the roller. The scraper shown consists of a bar D, that lies parallel with the axis of the roller, that is fast-
95 ened at opposite ends by screws to lugs e and e', respectively, on plates E and E', that are in the vat at opposite sides thereof, having, re-
spectively, flanges e' and e', that rest upon the top edges of the vat sides. A thumb-
100 screw E', passing through each flange e' into the vat side, removably secures the plate in the vat. The roller-engaging edge of the scraper-bar is beveled off, and to enable dou-
ble service to be gotten from said bar both

edges thereof are beveled, so that by reversing it the two edges can be used in succession. To enable adjustment of the scraper-bar relative to the roller, the opening e^2 in the flange e' of each side plate E is elongated.

The sieve or strainer F shown, into which the composition passes from the scraper, is formed of woven or meshed wire that is shaped in the form of a receptacle, the ends being composed of the two plates E and E, to which the wire fabric is attached, and the two sides and the bottom being formed by said fabric. The plates E and E are connected by several parallel rods e^3 and e^3 , to which the screen is attached and by which it is supported. The mesh of the fabric is of such size as not to impede the free passage of the composition, but to prevent the passage of foreign substances large enough to be injurious to the match-heads. The strainer, having the form of a pocket-like receptacle with inclosing ends, extends, as shown, down into the composition-vat well below the top of the heating-jacket, so that it is in position to be kept hot by heat from the jacket and will extend down into the heated composition. With this construction and arrangement the composition scraped from the roller B and falling down within the strainer cannot come in contact with any cold or cool part of the latter, which by diminishing the heat of such composition would tend to cause it to become less liquid or harden, so that it would not pass freely through the strainer or would cling to the wires of the same. As is well known by those familiar with match-making, the composition in the vat usually fills the latter up to or near the level of the top of the heating-jacket, but is not allowed to rise above such level, where it would not be subjected to the full direct heat from the jacket. The strainer is extended well down into the composition in the vat, so that the part into which the composition scraped from the roll B falls will be immersed in the composition in the vat and so be always kept hot by the surrounding heated composition and be kept always supplied with hot liquid composition, with which that falling from the scraper will mingle at once without growing hard or caking. This arrangement insures that the composition within the interior of the strainer shall always be hot enough when it reaches the inner side of the strainer or sieve to pass freely through the meshes thereof into the body of the vat and to part easily with the sticks, chips, or other foreign materials which may be in it and will be held back by the sieve or strainer.

The strainer can be of any other construction than that shown, provided it is reticulated or perforated and so interposed in the path of the composition passing from the scraper-bar that foreign substances removed from the roller by said bar cannot again pass to the composition in the vat, where they may be caught up by the roller.

It will be observed that such pieces of wood, &c., as fall into the strainer are kept from entering the composition where it is taken up by the roller and that when desired the strainer can be readily removed from the vat to permit the clearing from the strainer of whatever may be accumulated in it. As the strainer is located so that it coöperates with the scraper-bar and does not itself act on or require any special part to act on the periphery of the roller, it is apparent that the operation of the roller in feeding out the composition is in no degree interfered with. The strainer being in the form of a pocket-like receptacle, with both sides and ends adapted to inclose the strained-off sticks, chips, or other foreign substance, will when it is lifted out of the composition-vat remove all the strained-off material without any danger of portions of such material dropping down into the vat or tank, as would be the case were the strainer merely in the form of a slotted plate or a trough without unclosed ends.

Having thus described my invention, what I claim is—

1. In a composition-applying mechanism, the combination of a composition-containing vat, a suitable heater for heating the contents of the vat, a moving feeder for taking composition from the vat, means for removing the composition from the feeder, and a strainer in the form of a pocket, with one or more of its sides adapted to permit the passage of the composition, while holding back sticks, pieces of sticks, or other foreign material, such strainer being arranged to extend well down into the vat to a point below the top of the heater, so as to project into the composition when in the vat, substantially as and for the purpose described.

2. In a composition-applying mechanism, in combination with a composition-containing vat, and a heating device for heating the vat and contents, a moving feeder to take the composition from the vat, means for removing the composition from the feeder, and a pocket-like strainer to receive the composition removed from the feeder, extending down into the vat close to one of the heated walls thereof, to a point well below the top of the heating device, so that its lower portion will be submerged in the heated composition when in the vat, and having one or more of its sides adapted to permit the passage of the composition, while holding back any sticks, pieces of sticks, or other foreign material which may be mingled with the composition within the strainer, substantially as and for the purpose described.

3. In a composition-applying mechanism in combination with a composition-containing vat, and a heating device for heating the same and its contents, a moving feeder to take the composition from the vat, means for removing the composition from the feeder, and a removable pocket-like strainer to receive the

composition removed from the feeder and extending down into the vat, close to one of the heated walls thereof, to a point well below the top of the heating device, so that the lower
5 portion of the strainer will be submerged in the composition when in the vat, such strainer having its front side, rear side, and bottom formed of screening material adapted to allow the free passage of the composition through
10 them while straining off and holding back from the composition sticks, or pieces of stick, which may be therein, substantially as and for the purpose described.

4. In combination with a composition-containing vat, and a heating-jacket for heating
15 the same and its contents, a pocket-shaped strainer for composition to be passed into such vat, extending down to the vat close to one of the heated sides thereof, to a point below

the top of the heating-jacket, such strainer 20 consisting of two end plates detachably supported from the vat or its frame, rods extending between the end plates, and a netting supported from such rods and forming the
25 sides and bottom of the strainer, adapted to allow of ready passage of the composition through it, and to screen off and retain within the strainer, foreign material which may be in the composition, substantially as and for
30 the purpose described.

In testimony that I claim the foregoing I have hereunto set my hand this 20th day of July, 1898.

WILLIAM N. PALMER.

Witnesses:

O. D. EVERHARD,
G. A. SHAW.