

No. 682,228.

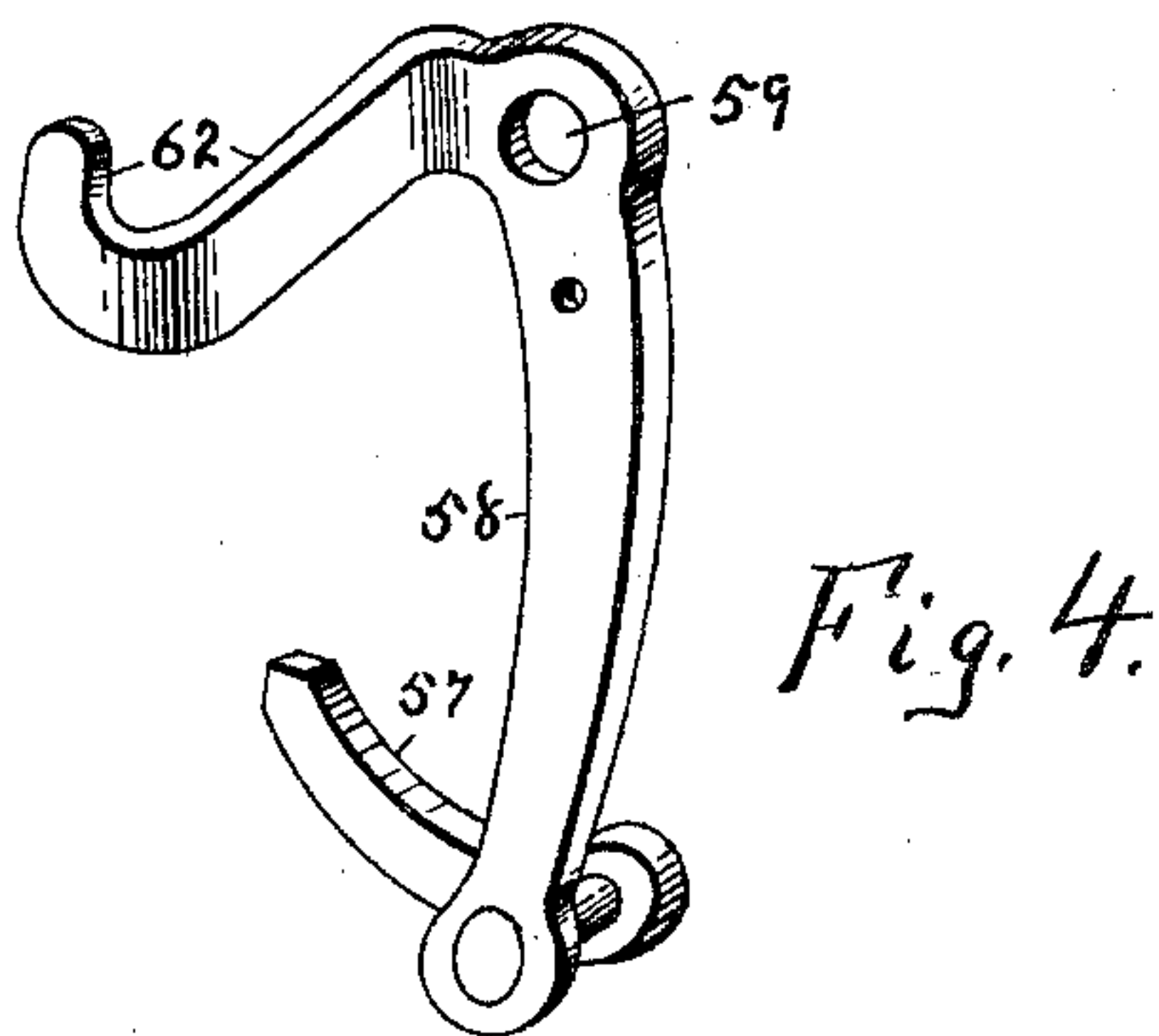
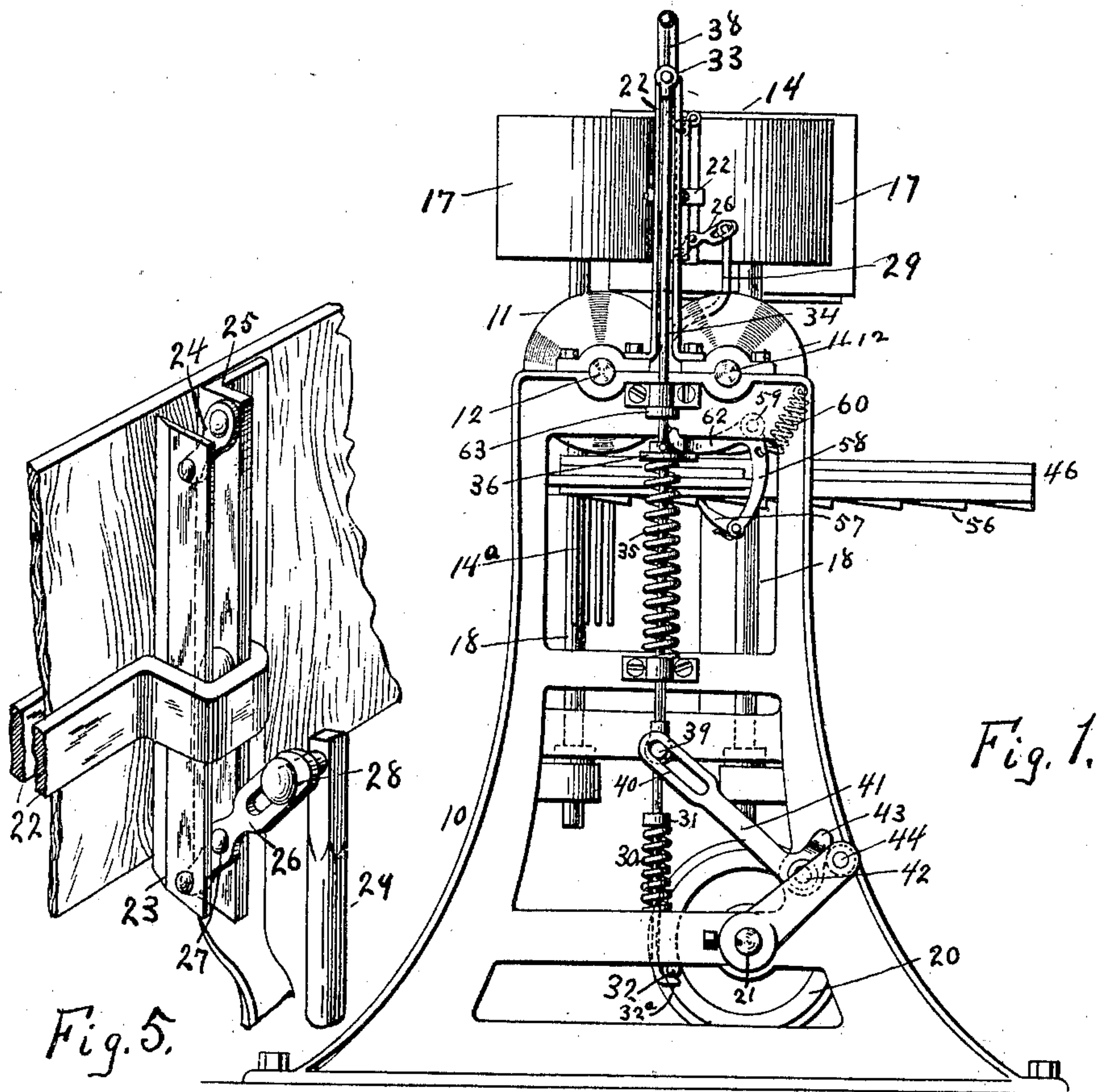
Patented Sept. 10, 1901.

W. H. PARKER.  
MATCH MACHINE.

(Application filed Aug. 15, 1900.)

(No Model.)

3 Sheets—Sheet 1,



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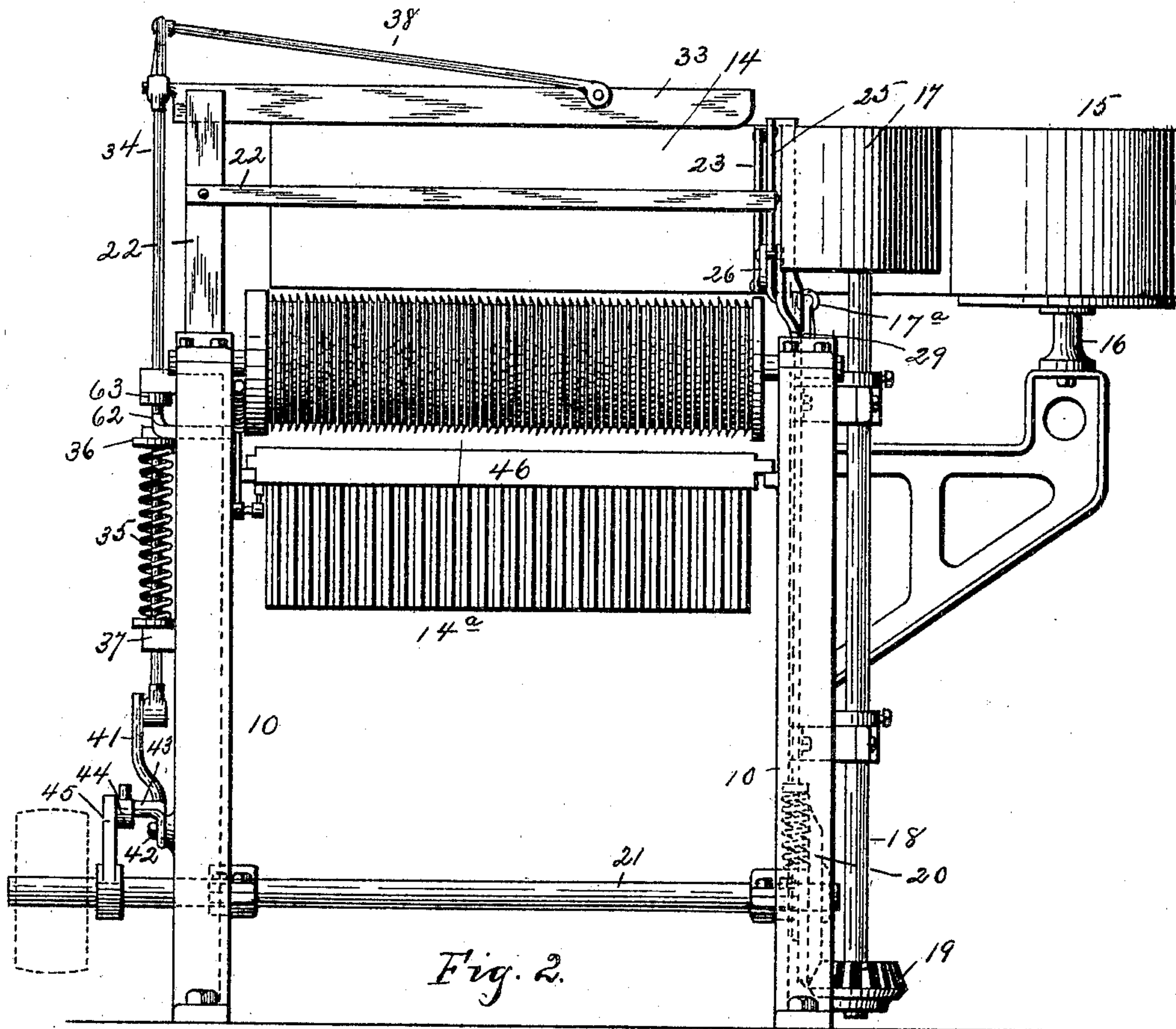


Fig. 2.

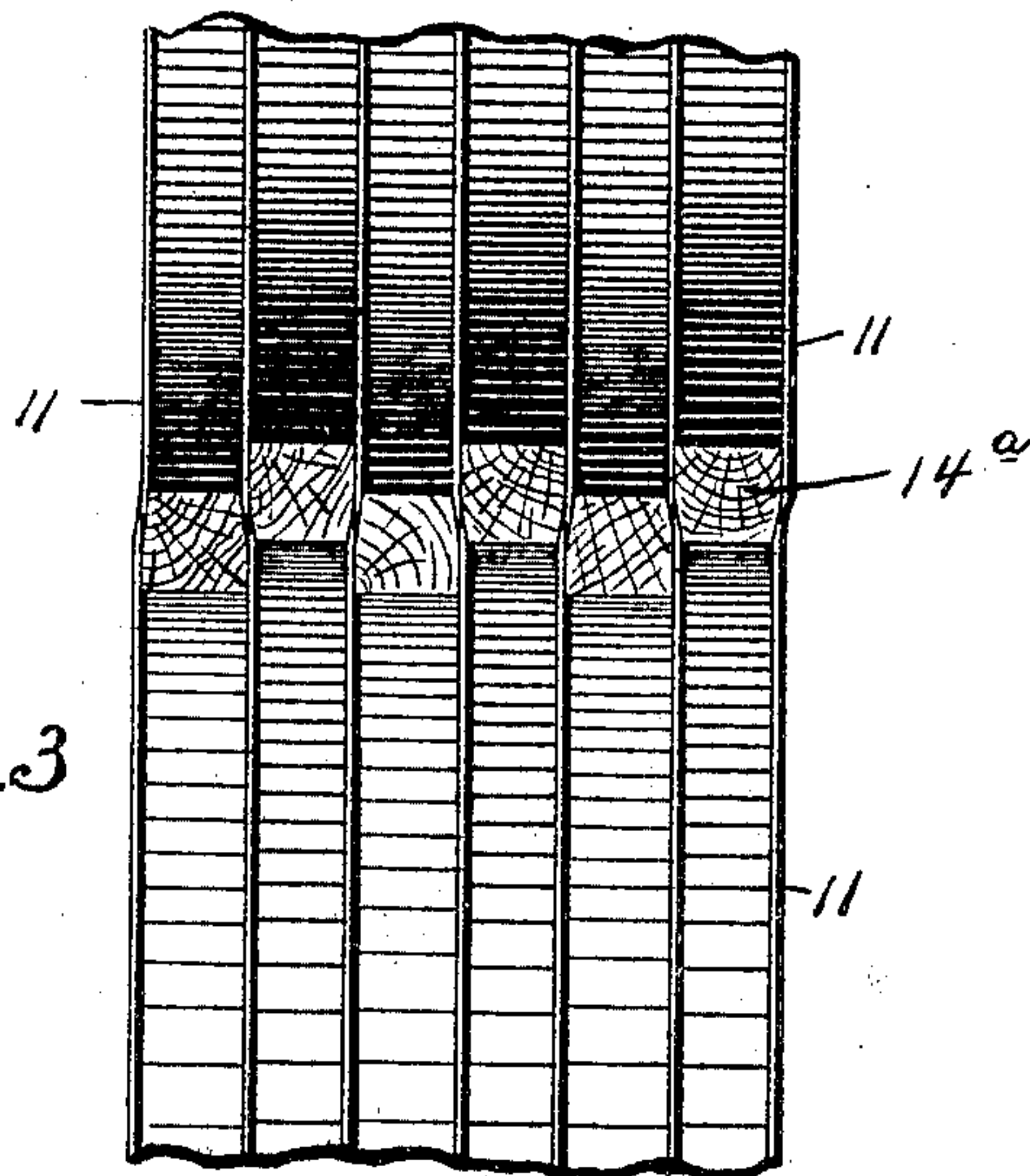


Fig. 3

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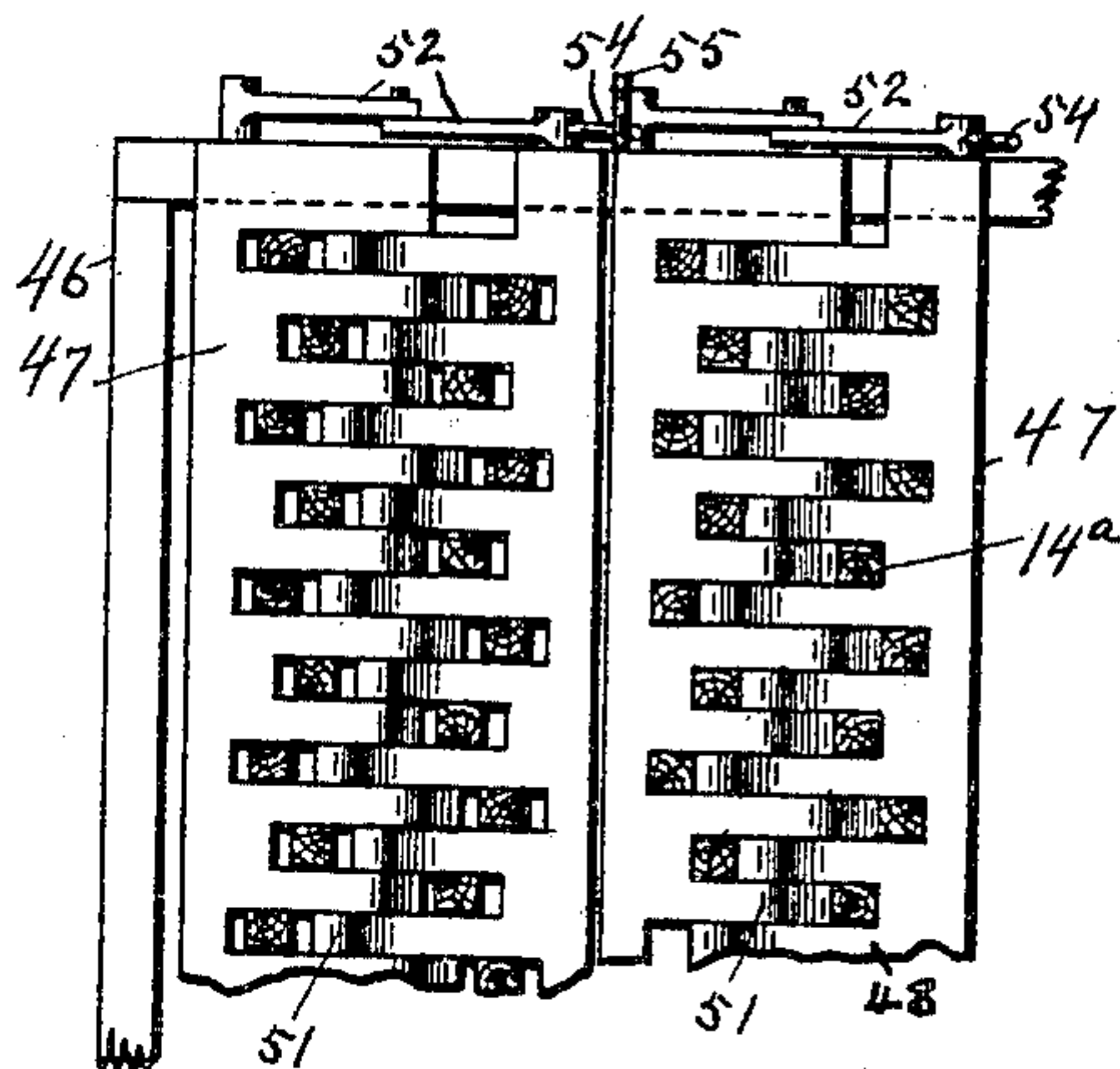
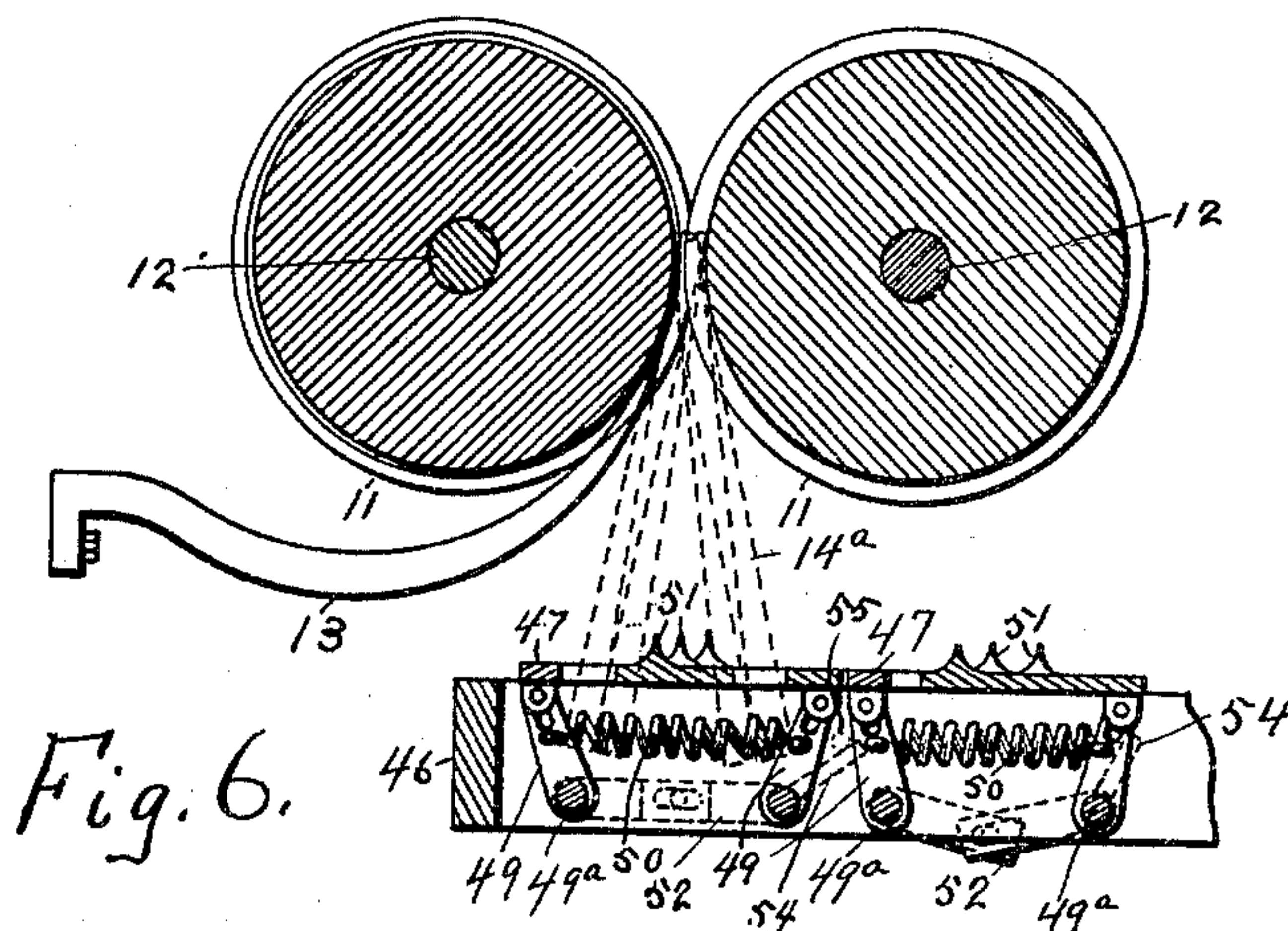
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3 Sheets—Sheet 3.



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# UNITED STATES PATENT OFFICE.

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## MATCH-MACHINE.

SPECIFICATION forming part of Letters Patent No. 682,228, dated September 10, 1901.

Application filed August 15, 1900. Serial No. 26,917. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. PARKER, a citizen of the United States, residing at Boundbrook, in the county of Somerset and State of New Jersey, have invented a new and useful Improvement in Match-Machines, of which the following is a specification.

My invention relates to that class of match-machines in which the splints are cut from a strip of veneer and automatically placed in dipping-frames ready to be dipped either by hand or by machinery in the several usual compositions.

The object of my invention is to provide a simple and positive machine of this character which will work without waste, will take the veneer from a roll, and will cut it off at the right length and then cut the severed piece into splints and deliver the splints to the dipping-frame.

My invention can also be used in cutting short strips into splints and comprises a simple and efficient dipping-frame and mechanism for operating the frame.

With these ends in view my invention consists of certain features of construction and combinations of parts, which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar figures of reference refer to similar parts throughout the several views.

Figure 1 is a front elevation of the machine embodying my invention. Fig. 2 is a side elevation of the same; Fig. 3, a broken detail plan of the cutters; Fig. 4, a detail perspective view of the lever and pawl for advancing the dipping-frame; Fig. 5, a broken detail perspective view of the mechanism for cutting off the veneer; Fig. 6, a detail cross-section of the cutters and a part of the dipping-frame, and Fig. 7 a broken detail plan of the dipping-frame.

The machine has a suitable frame 10, in which is journaled near the top the cutters 11, these being of a well-known rotary kind spaced the width of a match-splint apart and with opposed cutters overlapping, so that if a strip of veneer is fed transversely to the cutters it will pass downward between them and be cut into a series of splints. The cut-

ters are carried by parallel shafts 12, which may be suitably driven, and the splints cut between the cutters may be prevented from sticking between the knives and passing too far around the cutters by ejectors 13, which can be supported in any convenient way and made to project between the several knives of each cutter. All the above mechanism is common, and I claim no novelty for it.

The veneer 14 is fed to a point above the cutters from a roll 15, which is held on a vertical spindle 16 at the front of the machine; but obviously short strips may be fed directly into the cutters, if desired. The veneer is fed by the rolls 17, which are carried by the vertical shafts 18, these being held in suitable bearings. I have shown one idle, but they may be geared together in the usual way of gearing feed-rolls. The veneer also runs over an antifriction-roller 17<sup>a</sup>. One shaft 18, as illustrated, has a pinion 19 near the bottom which is driven by a bevel-gear 20 on the driving-shaft 21. This shaft is journaled horizontally in the machine and has a suitable driving-pulley; but this or any shaft can be driven in any approved manner. As the feed-rolls 17 revolve they carry the veneer or stock 14 forward into a guide 22 above the meeting parts of the cutters 11, this guide being merely to hold the veneer in the right position, so that when pushed downward its lower edge will enter the cutters, and just as the veneer sheet is carried across the machine a strip of the right length is cut off by the knife 23, (see Fig. 5,) so that the severed piece may pass freely down between the cutters. This knife may be arranged in any convenient way to enable it to cut off the stock at the right time. As shown, it is hung near the top by a link 24 to an angle-iron or bracket 25, and near the bottom it is pivoted to an arm or lever 26. The lever 26 is pivoted at 27 to the bracket 25 and at its free end is slotted to receive the stud 28 of the rod 29, the latter being held to slide vertically on the machine-frame and being normally raised by a spring 30, which is coiled around the rod between a part of the frame and a collar 31 on the rod. At the bottom of the rod 29 is a foot 32<sup>a</sup>, which is struck by a stud 32 on the gear-wheel 20. When this occurs, the rod 29 is



pulled down, the lever 26 is tilted, and the knife 23 is caused to swing upward and forward against the stock or veneer 14, thus cutting off a strip. The veneer strip is pushed  
 5 downward to the cutters by the plunger 33, which moves into the guide 22 and is long enough to bear against the whole upper edge of the veneer strip. The plunger is at one end secured to a slide-rod 34, which is held  
 10 vertically on the machine, and a brace 38 also connects the plunger and rod 34. The rod 34 is held raised by a spring 35, which is coiled around the rod between a bearing 37 of the rod and a collar 36 on the rod. The  
 15 rod near the bottom has a stud 39, which engages the slotted end 40 of a bell-crank 41, which is pivoted at 42 to the machine-frame, and the short arm 43 of the bell-crank extends into the path of a roller or stud 44 on  
 20 the arm 45, which is secured to the shaft 21. It will be seen, then, that at every revolution of the shaft 21 the stud 44, striking the arm 43 of the bell-crank 41, will tilt the bell-crank and cause it to pull down the rod 34, and the  
 25 latter brings down the plunger 33, which pushes the veneer strip or stock between the cutters. In this connection attention is called to the fact that other devices may be used for actuating the plunger without departing  
 30 from the principle of the invention, and I do not limit the invention to any particular means of feeding the stock to the cutters. When the veneer strip passes down between the cutters, it is divided into a series of splints  
 35 14<sup>a</sup>, (see Fig. 3,) and these are delivered into a dipping-frame 46, which moves horizontally through the machine. There is nothing new about the cutting mechanism and nothing new  
 40 broadly in having such mechanism deliver the splints into a horizontally-moving frame; but the frame and the means adapting it to receive the splints are, I think, novel. I think, too, that the means for cutting off the stock is new. The frame 46 is of a conven-  
 45 ient size to be grasped by the hand and the splints therein dipped, though it will be of course understood that a series of the frames may be linked together and the splints dipped  
 50 by several of the well-known continuous or machine methods. Each frame has on top a series of opposed plates 47, arranged in pairs, and the plates 47 are movable back and forth in relation to each other. The plates of each  
 55 pair have interlocking fingers 48, and the splints 14<sup>a</sup> are delivered between the plates, so that a splint will pass down opposite each finger. The cutter-knives separate the splints one way sufficiently to cause them to enter the plates properly, and they are assisted in  
 60 the other direction by small inclined guides 51 on the fingers. These guides, however, are not absolutely necessary, for it is a peculiarity of the cutters shown that they not only separate the splints laterally, but that  
 65 they also push out alternate splints in opposite directions—that is, one splint will be pushed to the right when facing the machine,

the next to the left, and so on—so that by properly adjusting the ejectors 13 there is no difficulty in having the splints discharged  
 70 properly from the cutters into the plates of the dipping-frame. This peculiarity of the cutters described is well understood by those who have used that sort of cutter, and it is presumably because the overlapping knives  
 75 of the cutter cause first one splint to be pushed in one direction and the next in the opposite direction; but, whatever the cause, such cutters always act in this way. The op-  
 80 posing plates 47 are pivoted on the under side, near the ends, to arms 49, which are secured to the rods or shafts 49<sup>a</sup>, which are journaled transversely in the frame 46, and the arms 49 are pulled toward each other by a spring 50,  
 85 which thus normally closes the plates, so as to clasp the splints between the ends of the fingers 48 and the adjacent plate. The shafts or rods 49<sup>a</sup> of each pair are also connected by levers 52, so that when one is oscillated the other will be similarly moved. One of the  
 90 shafts 49<sup>a</sup> of each pair is also provided with a crank 54, which when brought to a certain point in the frame 10 strikes an abutment or trip, as 55, and in passing the trip the crank 54 and shafts 49<sup>a</sup> are tilted, thus moving  
 95 the arms 49 against the tension of the spring 50 and separating the plates 47 sufficiently to permit the splints 14<sup>a</sup> to enter between them. The trip 55 is located so as to open the plates 47 when they stop beneath the  
 100 cutters; but as the frame 46 advances the crank 54 passes the trip 55 and the spring 50 closes the plates 47, so that the splints are securely held. It will be of course understood that many ways may be devised for ac-  
 105 tuating the plates 47 and that they may be normally spring-opened instead of spring-closed without departing from the principle of my invention, as I claim, broadly, the arrangement of plates and interlocking fingers.  
 110 There is no novelty in the ratchet mechanism for moving the frame 46 through the machine; but I will describe it to make the operation clear.

The frame 46 has on the bottom a ratchet-  
 115 bar 56, (in a working machine there should be a ratchet on each side of the frame,) which is engaged and pushed tooth by tooth by a pawl 57 on the bell-crank 58. The bell-crank is pivoted to the frame 10, as shown at 59,  
 120 and is normally pulled back by a spring 60. A second arm 62 of the bell-crank extends outward and forward and terminates in a rounded end, which lies between the collars 36 and 63 on the rod 34. When, therefore,  
 125 the rod 34 goes down and the stock is going between the cutters, the bell-crank 58 is tilted so as to carry back the pawl 57, and the frame 46 remains stationary; but on the upstroke of the rod 34 the collar 36 tilts the  
 130 bell-crank in the opposite direction and the pawl 57 engaging a tooth of the ratchet-bar 56 advances the frame 46, so as to bring another pair of plates 47 beneath the cutters.



The operation of the machine will be fully understood from the foregoing description in connection with the drawings.

5 It will be noted that the mechanism described feeds the veneer to position above the cutters 11, that the stock is automatically cut off at the right length by the knife 23, that the severed strip is pushed into the cutters by the plunger 33, that the splints are  
10 delivered into the dipping-frame 46 direct from the cutters, and that the frame is fed automatically through the machine.

15 In practice the operator feeds the frames 46 one after the other into the machine; but there is nothing new about this.

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

20 1. The combination with the rotary cutters adapted to cut a series of splints, of means for feeding a veneer strip to position above the cutters, and a knife moving transversely to the strip to cut it off to the right length for the cutters.

25 2. The combination with the cutters, the stock-feed, and a guide located above the cut-

ters to receive the stock, of a cutting-off knife at one end of the guide substantially as described.

3. In a match-machine, the dipping or 30 splint-holding frame, comprising oppositely-arranged plates having interlocking fingers, a connection between the plates whereby they are movable in unison but in opposite directions, and means for moving the plates sub- 35 stantially as described.

4. The combination with the sliding plates of the dipping-frame, of the arms connected to the plates, parallel rods or shafts journaled parallel with the plates and connected 40 to the rods or shafts, a connection between the rods or shafts by which they are turned in unison, and a crank mechanism for turning one of the rods.

In testimony whereof I have signed my 45 name to this specification in the presence of two subscribing witnesses.

WILLIAM H. PARKER.

Witnesses:

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