

No. 768,583.

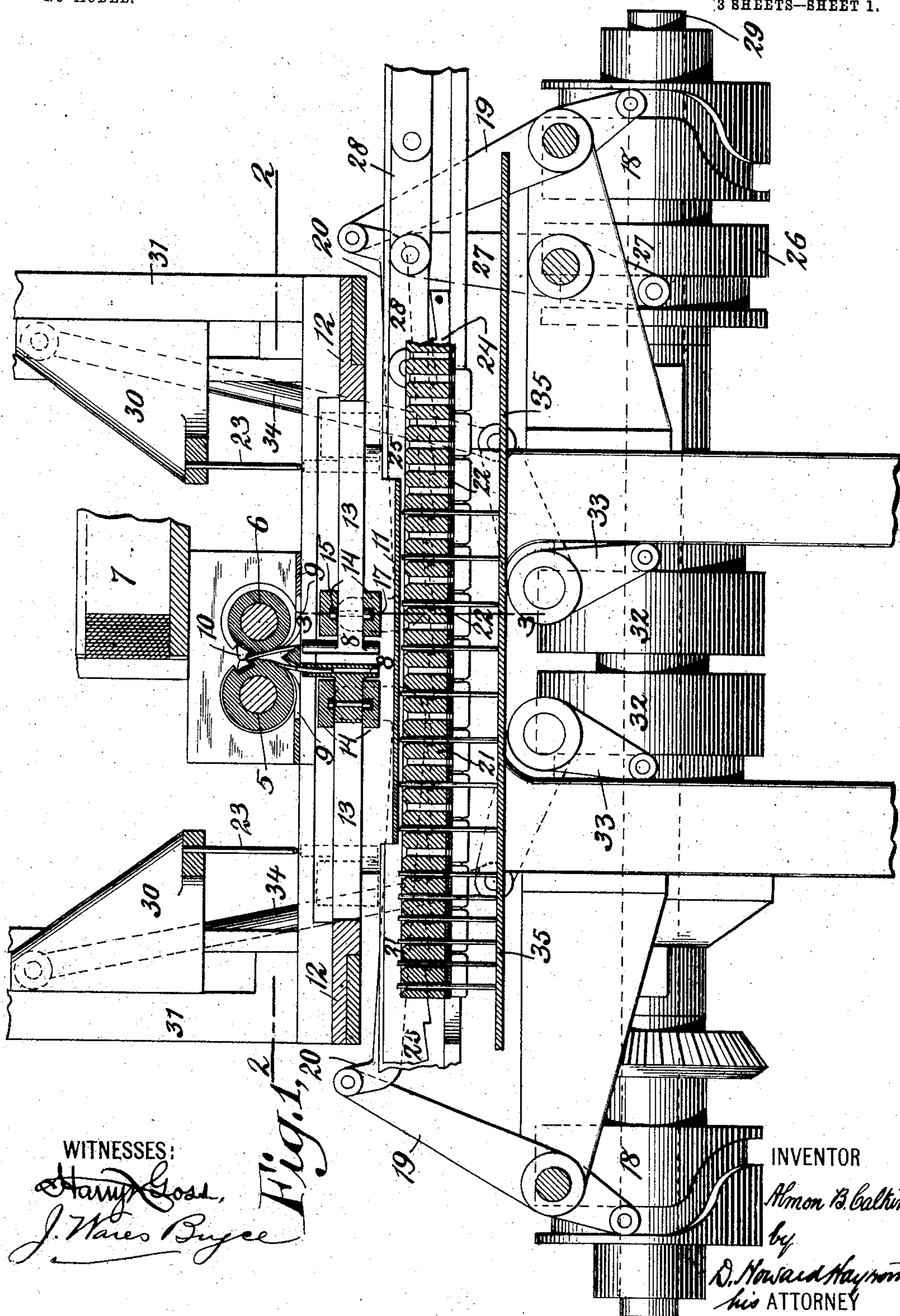
PATENTED AUG. 30, 1904.

A. B. CALKINS.
MATCH MAKING MACHINERY.

APPLICATION FILED DEC. 8, 1900.

NO MODEL.

3 SHEETS—SHEET 1.



WITNESSES:

Harry Goss,
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Fig. 1.
Aug. 20, 1904

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3 SHEETS—SHEET 2.

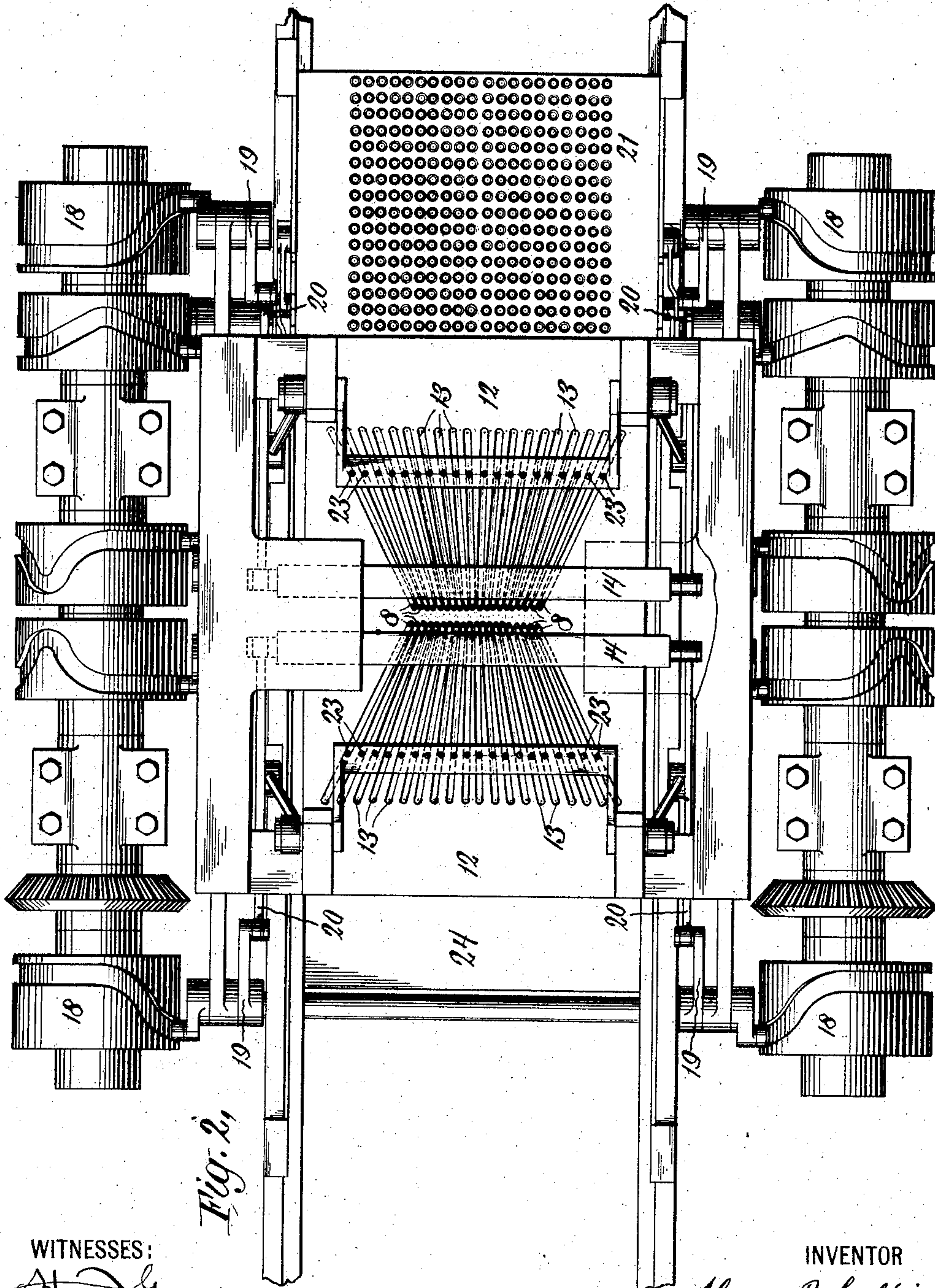


Fig. 2.

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3 SHEETS—SHEET 3.

Fig. 3,

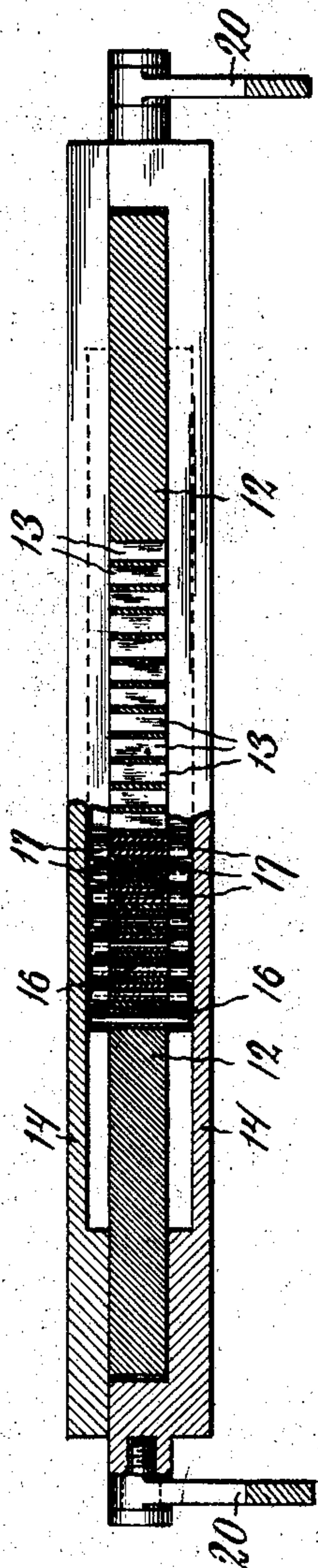
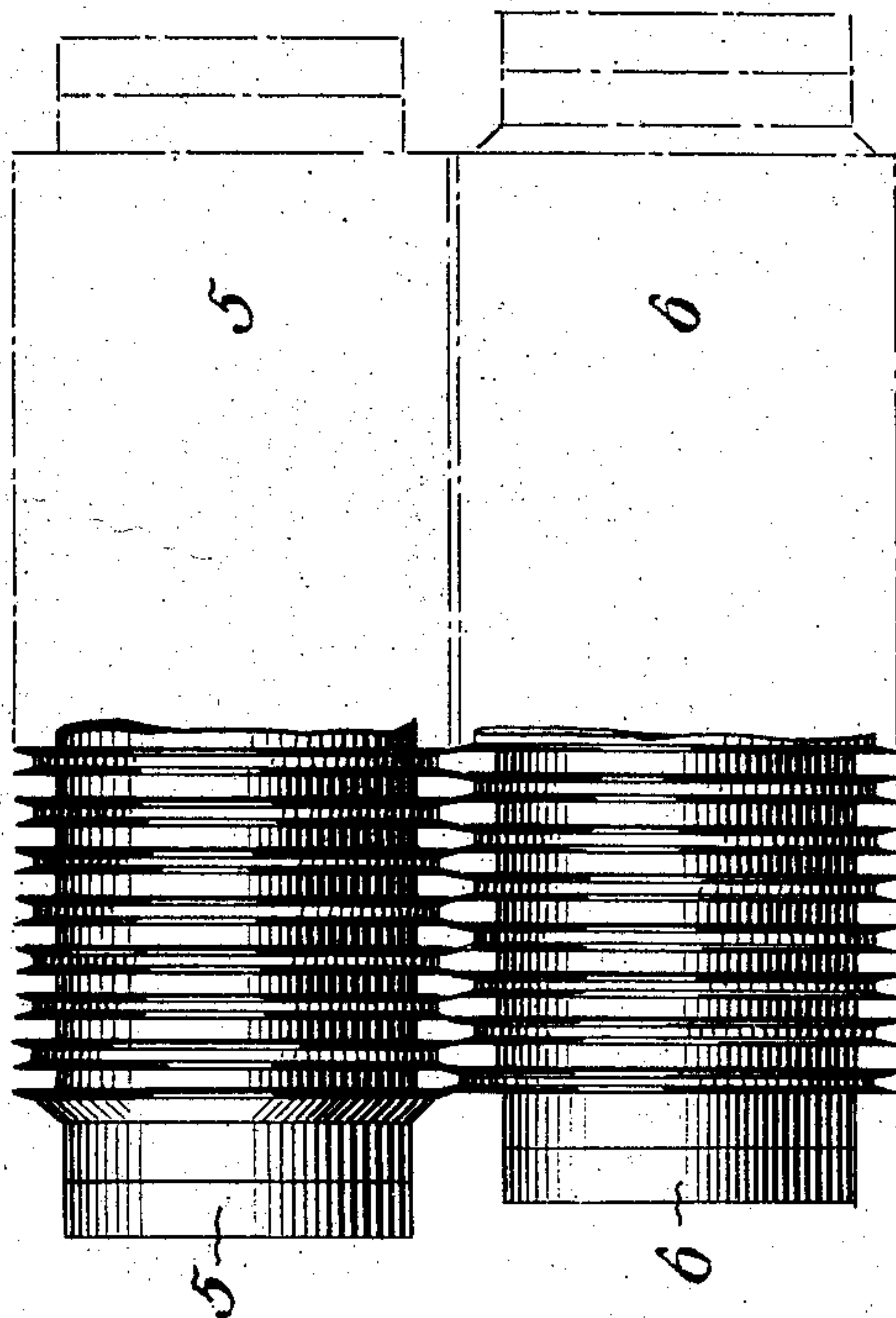


Fig. 4,



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UNITED STATES PATENT OFFICE.

ALMON B. CALKINS, OF FRANKLIN, NEW JERSEY, ASSIGNOR TO THE
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MATCH-MAKING MACHINERY.

SPECIFICATION forming part of Letters Patent No. 768,583, dated August 30, 1904.

Application filed December 8, 1900. Serial No. 39,199. (No model.)

To all whom it may concern:

Be it known that I, ALMON B. CALKINS, a citizen of the United States of America, and a resident of Franklin, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Match-Making Machinery, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to improvements in match-making machinery, and particularly in means, in combination with cutting mechanism, for spacing apart the splint received therefrom.

My invention consists in the provision of separable receivers adapted to receive the splints from the cutting mechanism and means for separating the receivers.

My invention further consists in certain features of construction and combination of novel parts to be hereinafter more fully set forth.

The main object of my invention is to provide an improved means whereby splints may be taken from the cutting mechanism in the close order in which they are cut, and separated for the purpose of inserting them into carriers, in which they are held and in which condition they are ready to receive treatment, such as dipping, heating, drying, and the like, to form complete and finished matches.

I will now proceed to describe mechanism embodying my invention and will then point out the novel features in claims.

In the drawings, Figure 1 represents a central vertical section through match-making machinery, showing devices embodying my invention and such other parts as are necessary for the full understanding thereof. Fig. 2 represents a horizontal section on the plane of the line 2 2 of Fig. 1. Fig. 3 is a detail view of certain parts in section, the plane of section being taken on the line 3 3 of Fig. 1. Fig. 4 is a detail view of certain cutters employed.

I have illustrated in the drawings forming a part of the specification herewith such parts of match-making machinery as are necessary

for the proper understanding of my invention.

Similar parts in the several views will be found designated by the same reference characters.

The cutting mechanism I have shown as comprising two sets of rotary cutters 5 and 6, having circumferential and oppositely-arranged overlapping cutting edges.

The cutters receive sections of veneer, or "veneer cards," as they are known in the trade, from a feed-trough 7, a portion of which is shown in Fig. 1 of the drawings. The veneer cards are fed to the cutting mechanism by any well-known or desired means. The cutters deliver the splints into which the veneer cards have been separated thereby in two parallel lines, such splints being delivered substantially in the line perpendicular to the axis of the cutters in which it has been cut.

A plurality of receivers 8 are arranged beneath the points at which the splints are delivered, each receiver being adapted to receive and hold a single splint.

In the present example of my invention the splint-receivers are arranged in two parallel rows, the successive receivers in each row being arranged to receive alternate splints. Suitable stripping-combs, as 9, and expelling means, as 10, are employed to insure the correct delivery of the splints to the receivers, such stripping-combs and expelling means being described and shown more clearly in a co-pending application filed December 8, 1900, Serial No. 39,200, of which they form the subject-matter of the claims. Suffice, for the purposes of this specification, to say that the arrangement and construction of the circumferential and overlapping edges of the cutters give the alternate splints a tendency to follow the path of the cutting edges of the alternate cutters, that the stripping-combs apply pressure transversely of the longitudinal axes of the splints thereto, and hence force them radially away from the cutters, and that the expelling means 10 apply pressure against the ends of the match-splints to force them

clear of the cutters and into the receivers. A plate 11, arranged below the receivers, prevents the match-splints from falling completely through the receivers until it is desired that they shall do so.

The splint-receivers are mounted in a suitable frame 12, the said frame having two series of divergent guideways 13. Each receiver is mounted in a separate guideway, the said receivers having each a suitable extension in order to obtain a good bearing-surface. The relative arrangement of the two series of divergent guideways will best be understood by reference to Fig. 2, in which they are shown in top view.

Each of the two series of receivers are engaged by a suitable carriage. The carriages in this instance comprise each two bars 14, arranged above and below the frame 12 and secured together at their ends. The bars 14 are longitudinally channeled, as at 15, and receive within their channeled portions lugs or projections from the receivers. The lugs or projections herein shown comprise pins 16, carrying antifriction-rollers 17 at their ends. Such engagement of the receivers, with their carriages, permits movement of the receivers lengthwise of the carriages. If now the carriages be moved in opposite directions away from the cutting mechanism, the receivers will be gradually separated by reason of their engagement with the divergent guideways 13. In the present form of my invention I have shown suitable cams 18, which actuate levers 19, connected by links 20 to the carriages. The cams will give the required reciprocating movement to the receivers, and they will be so timed with regard to the cutting mechanism that the said receivers shall always be in their positions beneath the cutters while the said cutters are discharging their splints, but will be moved away therefrom after they have received their splints and while the cutters are receiving a new veneer card.

It is the purpose of the receivers 8 to deliver the splints to suitable carriers by which they may be held and in which condition they may be further treated in carrying out the process of match-making. The carriers shown herein are designated by the reference character 21. Suitable locking-plates 22 are arranged in conjunction therewith and operate to lock the splints in the carriers. The carriers may be fed forward by any suitable mechanism. Herein the said carriers are provided at each side with bars 24, having rack-teeth, and feed-racks 25, adapted to engage therewith, are provided. The said feed-racks are given a reciprocating movement by cams 26, which engage levers 27, secured to said feed-racks 25 by links 28. The cams 26 are mounted upon shafts 29, of which there are two, one on each side of the machine, and the said cams are so timed as to cause an intermittent step-by-step movement forward of the carrier-frames, so that they

will always be ready to receive splints from the receivers.

The receivers are shown at their delivery-point in dotted lines in Fig. 1 of the drawings. When in such positions, the splints carried therein will be discharged into the carriers 21. The plate 11 is of such width that at the delivery-point it will not impede the movement of the said splints and they will tend to drop by gravity into the openings in the carriers 21, which are ready to receive them. To further insure their delivery, means, such as plungers 23, may be employed, which will be arranged to reciprocate at the right moment and will positively force the splints from the receivers into the carriers. Said plungers are carried by reciprocating plunger-bars 30, mounted to reciprocate in guides 31, secured upon the frame of the machine. The plungers are operated by cams 32, which engage bell-crank levers 33, connected to the plunger-bars 30 by connecting-links 34 for such purpose. The cams 32 are so timed as to cause a downward movement of the bars 30 and the plungers carried thereby at the moment the receivers 8 are beneath them. The reciprocation of the plungers will positively force the match-splints out of the receivers without dependence upon gravity for such movement. A suitable guard-plate 35 is arranged below the plane of movement of the carriers, which plate will act as a guard to prevent the splints from accidentally falling clear through the carriers prior to the time they are securely locked therein against such movement.

The cams 32 and the cams 18, which operate the receivers 8, are arranged in duplicate at opposite sides of the machine and upon the same two shafts 29 29 that carry the cams 26. These shafts will be arranged to rotate in unison by any suitable means. The effect of providing such duplicate operating mechanism for the carrier-feed, the receivers, and the plungers will be to cause a very much easier and more uniform operation of the moving parts.

I wish it to be understood that I do not desire to be limited to the precise form of construction of parts as herein shown and described, as the same may obviously be varied within wide limits without departing from the spirit and scope of my invention.

What I do claim, and desire to secure by United States Letters Patent, is—

1. In match-making machinery the combination with splint-cutting mechanism, of two sets of splint-receivers, each set comprising a plurality of separable splint-receivers, each receiver adapted, without coöperation with any of the other said receivers, to independently receive and support, a single match-splint, whereby each individual receiver and match-splint therein may be independently operated, the receivers of the two said sets adapted to receive alternate match-splints.

2. In match-making machinery the combination with splint-cutting mechanism, of two sets of splint-receivers, each set comprising a plurality of separable splint-receivers, and adapted to receive alternate splints, and means for separating the receivers in each set.

3. In match-making machinery the combination with splint-cutting mechanism, of two sets of splint-receivers, each set comprising a plurality of separable splint-receivers, and adapted to receive alternate splints, of means for separating the receivers in each set.

4. In match-making machinery the combination with splint-cutting mechanism, of two sets of splint-receivers, each set comprising a plurality of separable receivers, and means for separating each set of such receivers from the other set and likewise for separating the several receivers of each set from each other.

5. In match-making machinery the combination with splint-cutting mechanism, of two sets of splint-receivers, each set comprising a plurality of separable receivers, and means for separating each set of such receivers from the other set and simultaneously separating the several receivers of each set from each other.

6. In match-making machinery the combination with rotary cutters having circumferential cutting edges, of two sets of splint-receivers, each set comprising a plurality of separable splint-receivers, and adapted to receive alternate splints, and means for separating the receivers in each set.

7. In match-making machinery, the combination with two sets of rotary cutters having oppositely-arranged and overlapping circumferential cutting edges, of two sets of separable receivers, and means for separating the receivers in each set.

8. In match-making machinery the combination with splint-cutting mechanism, of a set of separable splint-receivers comprising three or more such receivers arranged in one series, divergent guides for the said splint-receivers, and means for moving the said splint-receivers along said guides.

9. In match-making machinery the combination with splint-cutting mechanism, of two sets of splint-receivers, each set comprising a plurality of separable receivers, and adapted to receive alternate splints, divergent guides for the said splint-receivers, and means for moving the splint-receivers along such guides.

10. In match-making machinery the combination with splint-cutting mechanism, of a set of separable splint-receivers comprising three or more such receivers arranged in one series, a frame in which said splint-receivers are mounted, said frame having divergent guideways for said splint-receivers, and means for moving the splint-receivers along said guideways.

11. In match-making machinery the combination with splint-cutting mechanism, of two

sets of splint-receivers, each set comprising a plurality of separable splint-receivers and adapted to receive alternate splints, a frame in which the said splint-receivers are mounted, said frame having divergent guideways, and means for moving the said splint-receivers along said guideways.

12. In match-making machinery, the combination with splint-cutting mechanism of a plurality of separable splint-receivers, divergent guides for the said splint-receivers, and a carriage engaging the said splint-receivers, said carriage adapted to permit relative movement of the splint-receivers longitudinally thereof.

13. In match-making machinery the combination with cutting mechanism adapted to discharge the splints simultaneously in two parallel rows, of splint-receivers adapted to receive the splints as so delivered, and means for moving apart or separating the said receivers so as to separate, or increase the distance between, the said two rows after the splints have been so received.

14. In match-making machinery, the combination with rotary cutters adapted to discharge the splints in two lines substantially parallel with each other and with the axis of the cutters, and substantially in the lines perpendicular thereto in which they are cut, of a plurality of receivers adapted to receive the splints, and means for separating the said receivers.

15. In match-making machinery the combination with two sets of splint-receivers, each set comprising a plurality of separable splint-receivers and adapted to receive alternate splints, said receivers having reception and delivery points, the points of delivery of said splints being at a greater distance apart than the points of reception, of cutting mechanism adapted to deliver splints to the receivers at their points of reception, and means for moving the splint-receivers from their points of reception to their points of delivery.

16. In match-making machinery the combination with two sets of splint-receivers, each set comprising a plurality of separable splint-receivers adapted to receive alternate splints, said receivers having reception and delivery points, the points of delivery being at a greater distance apart than the points of reception, of cutting mechanism adapted to deliver splints to the receivers at their said points of reception, carriers adapted to receive the splints from the receivers at their said points of delivery, and means for moving the splint-receivers from their points of reception to their points of delivery.

17. In match-making machinery, the combination with cutting mechanism, a plurality of separable splint-receivers, and plungers for expelling the splints from the receivers, of two shafts, one each on opposite sides of the

machine, such shafts carrying duplicate cams for operating the said splint-receivers and the said plungers.

18. In match-making machinery, the combination with cutting mechanism, a plurality of
5 separable splint-receivers, plungers for expelling the splints from the receivers, and feeding mechanism for feeding forward carrier-frames for receiving splints so expelled
10 from the receivers, of two cam-shafts, arranged on opposite sides of the machine, said shafts provided with duplicate cams for operating the said splint-receivers said plungers and said feeding mechanism.

15 19. In match-making machinery, the combination with cutting mechanism, a plurality of

separable splint-receivers, plungers for expelling the splints from the receivers, and feeding mechanism for feeding forward carrier-frames for receiving splints so expelled 20 from the receivers, of two cam-shafts, arranged on opposite sides of the machine, and parallel with the direction of feed of the carrier-frames, said shafts provided with duplicate cams for operating the said splint-receivers said plungers and said feeding mechanism. 25

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Witnesses:

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