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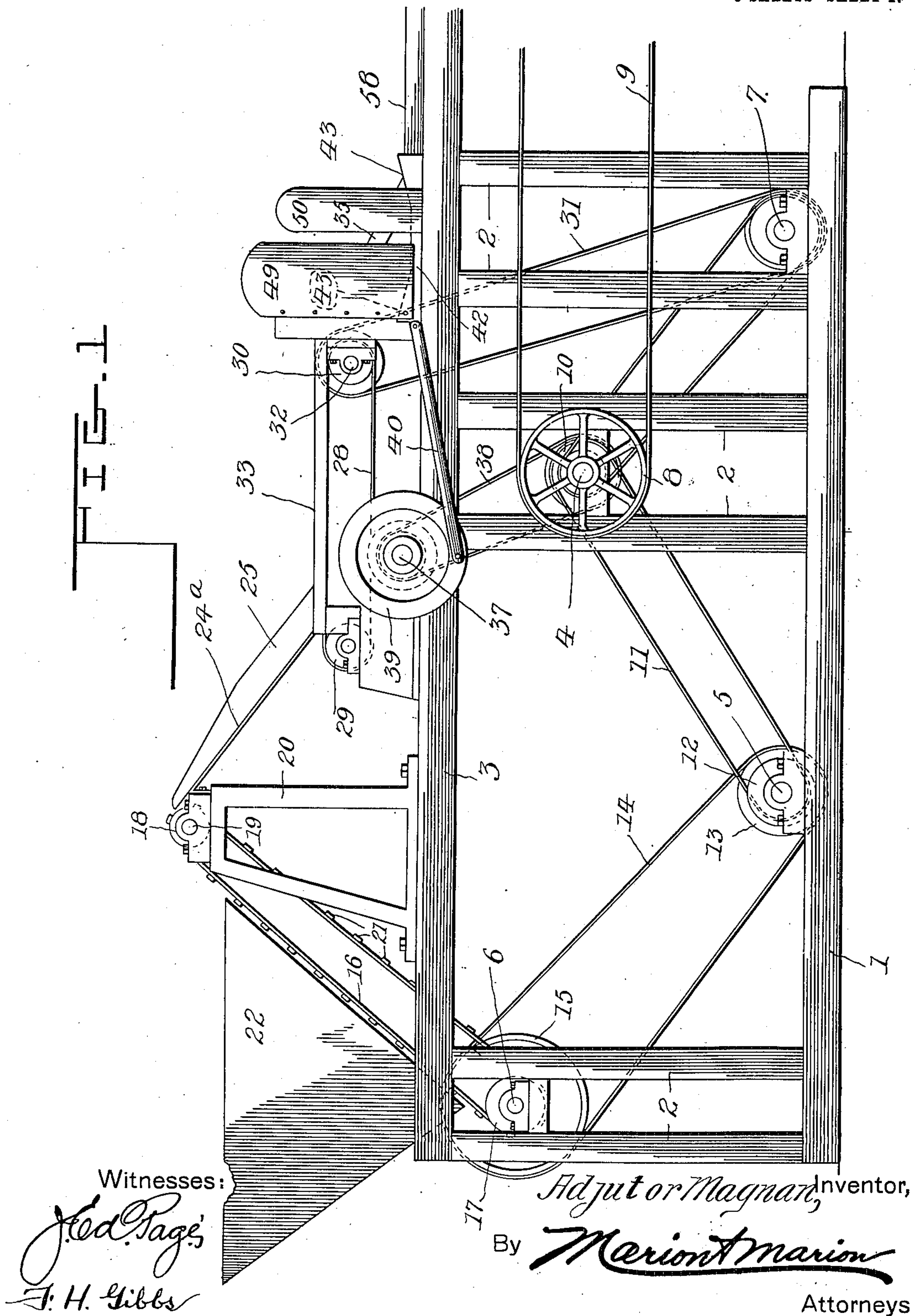
PATENTED FEB. 13, 1906.

A. MAGNAN.

MACHINE FOR USE IN PACKING BISCUITS.

APPLICATION FILED MAR. 13, 1905.

5 SHEETS—SHEET 1.



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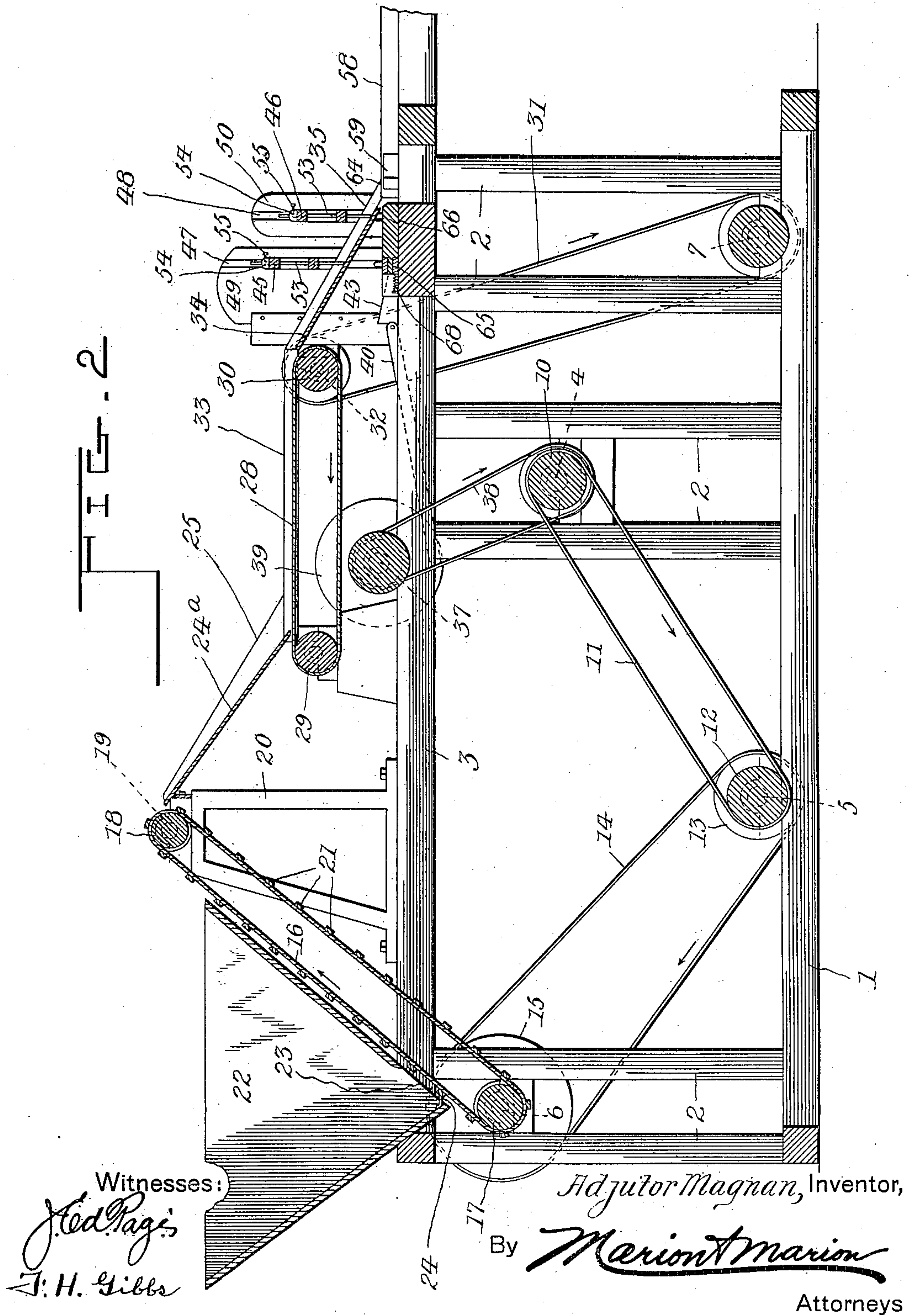
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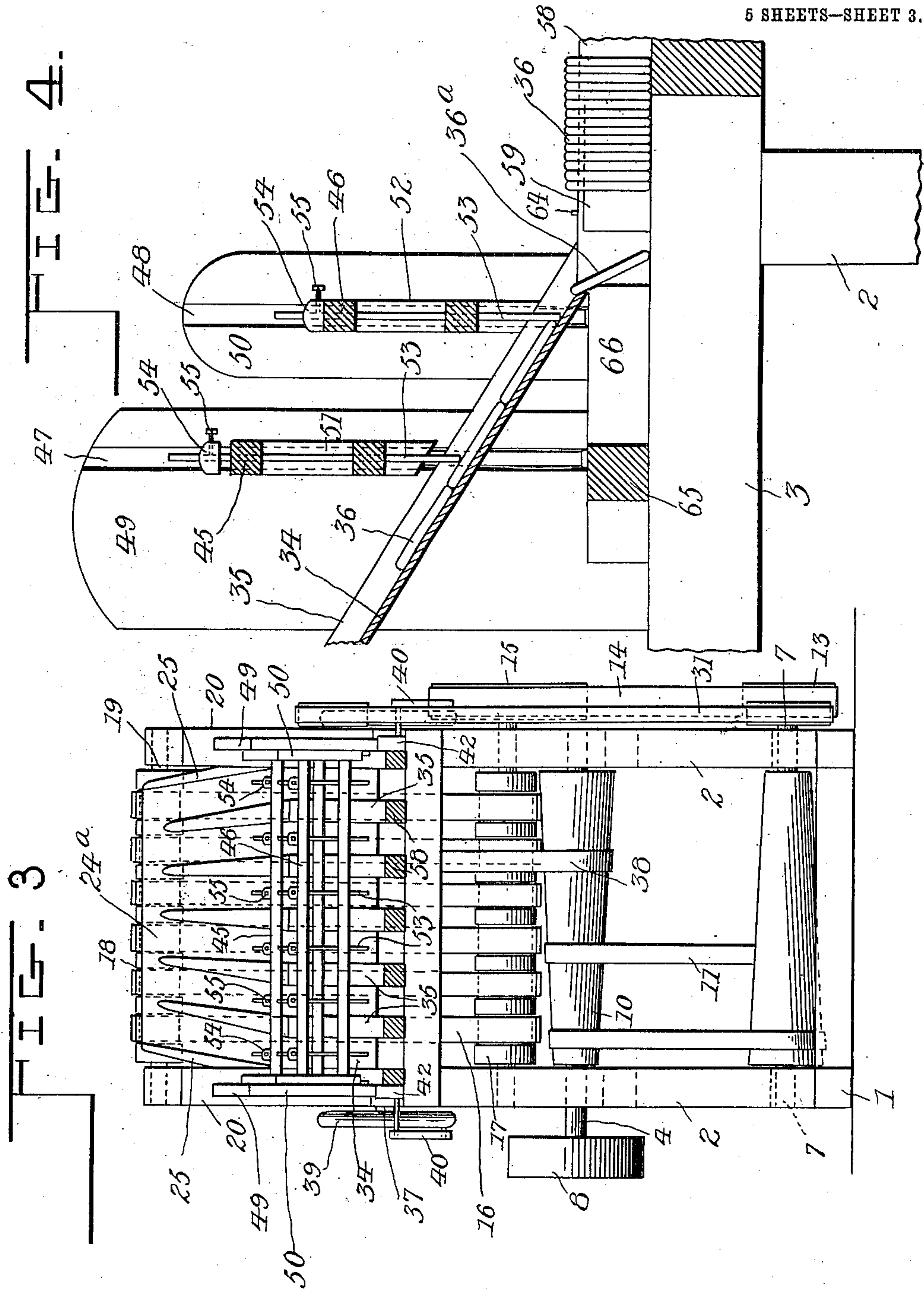
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Witnesses:

*J. Ed. Page's*  
*J. H. Gibbs*

*Adjutor Magnan, Inventor,*

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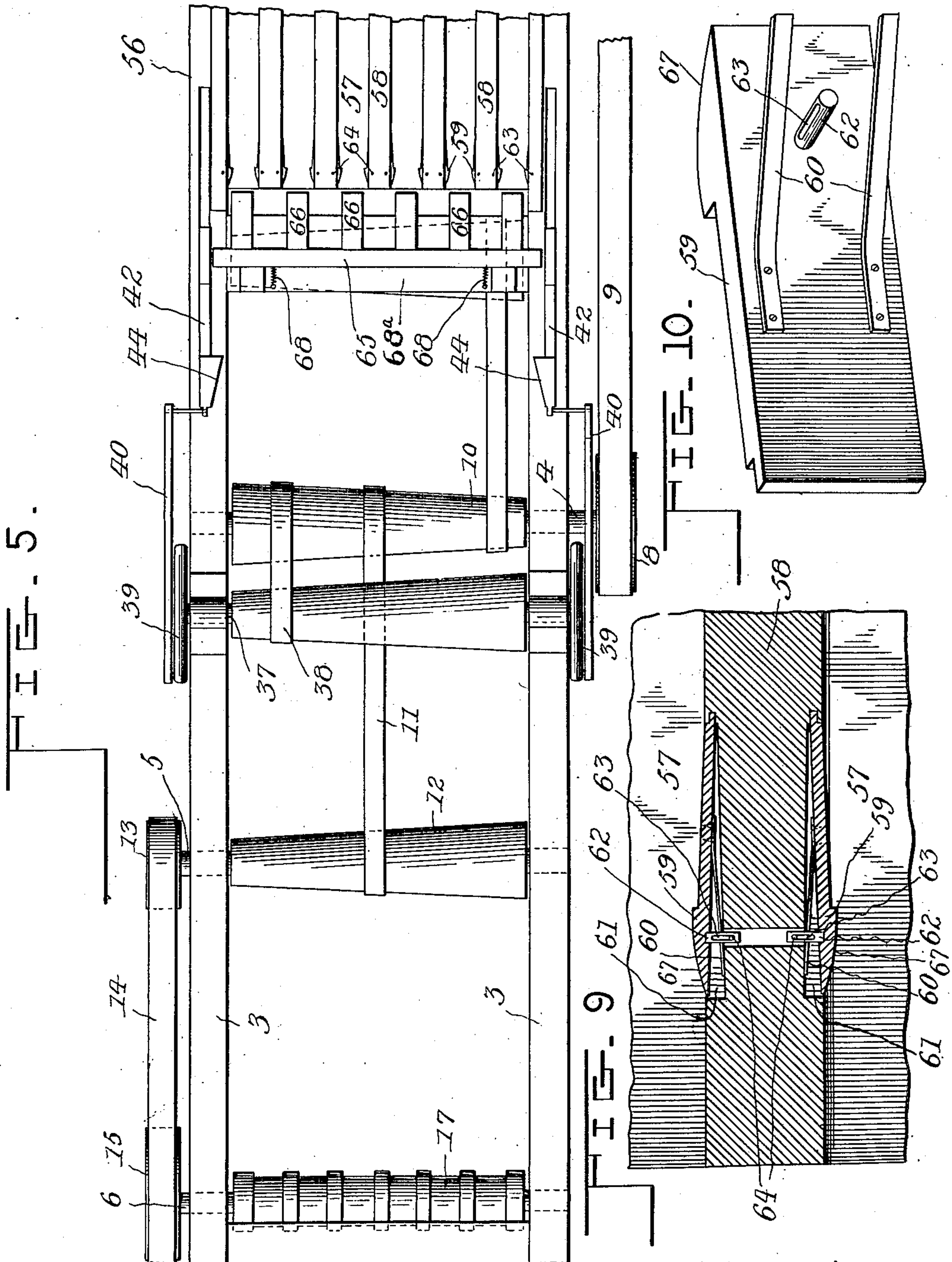
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Witnesses:

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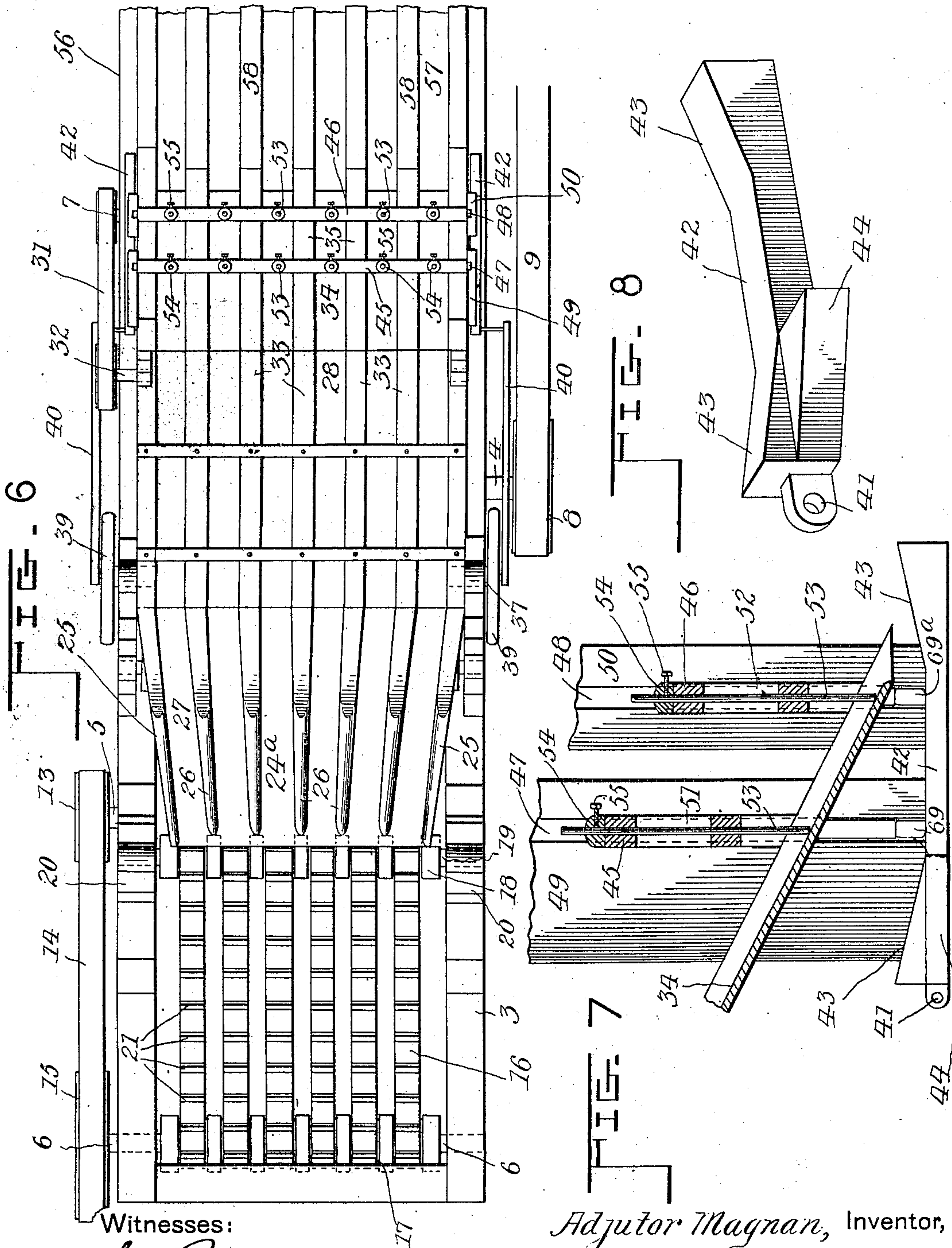
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5 SHEETS—SHEET 5.



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# UNITED STATES PATENT OFFICE.

ADJUTOR MAGNAN, OF MONTREAL, CANADA.

## MACHINE FOR USE IN PACKING BISCUITS.

No. 812,221.

Specification of Letters Patent.

Patented Feb. 13, 1906.

Application filed March 13, 1905. Serial No. 249,966.

*To all whom it may concern:*

Be it known that I, ADJUTOR MAGNAN, a subject of the King of England, residing in the city and District of Montreal, Province of Quebec, Dominion of Canada, have invented certain new and useful Improvements in Machines for Use in Packing Biscuits; and I do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to new and useful improvements in machines adapted to be used in conjunction with the manufacture of biscuits and similar articles, and is especially designed for use in arranging said biscuits in such manner that they may be easily lifted from the bed of the machine and be placed in packages such as are commonly used for vending commodities of this character.

The object of this invention is to produce a machine of the character referred to which is simple in operation and which will permit the dumping of biscuits into a common hopper or receptacle, from which such biscuits will be taken in the ordinary course of the operation of the machine and conveyed thence by suitable conveyers to racks in which the biscuits will be stacked by automatically-operated machines operated in conjunction with such conveyers, so that biscuits will be regularly arranged in such manner that they may be readily lifted from the bed of the machine by the operators who are engaged in packing such biscuits into their proper receptacles.

Referring to the annexed drawings, in which similar numerals of reference indicate corresponding parts, Figure 1 is a side elevational view of the operative portion of the machine. Fig. 2 is an approximately central longitudinal section of the same. Fig. 3 is an end view of the operative parts of the machine. Fig. 4 is a fragmentary enlarged vertical sectional view of the exit end of the machine. Fig. 5 is a plan view of the underframing with a portion of the feed-table. Fig. 6 is a plan view of the end of the machine, including a portion of the feed-table and the parts immediately adjacent thereto. Fig. 7 is a view similar to Fig. 4, showing details of construction not disclosed in that figure. Fig. 8 is a detail view of a slide hereinafter referred to. Fig. 9 is a fragmentary sectional view illustrating the spring-stops in the chan-

nels of the feed-table hereinafter referred to, and Fig. 10 is a detached enlarged detail view showing the construction of one of the stops.

Referring to the annexed drawings, 1 is a base from which rise suitable standards 2, supporting the bed-framing 3 of the superstructure. Mounted between the standards 2 are shafts 4, 5, 6, and 7, the shaft 4 being provided with a pulley 8, upon which runs the belt 9, and the said shaft being the main driving-shaft of the machine. Driven from a pulley 10 on the shaft 4 is a belt 11, passing over the pulley 12 on the shaft 5, while the pulley 13 on said shaft actuates the belt 14, which passes thence over the pulley 15 on the shaft 6, while a belt 16, passing over the pulley 17, also on the shaft 6, extends thence upwardly and over a pulley 18 on the shaft 19, which shaft is supported by means of the brackets 20, said brackets being connected with the framing 3. Upon the belt 16 are cleats 21, suitably spaced apart so as to provide a convenient distance between said cleats to permit biscuits to lie within such space and upon the belt 16. Supported upon the frame 3 and in convenient proximity to the belt 16 is a hopper 22, provided with a discharge-orifice 23 and with the movable flap 24 at the lower side of said discharge-orifice, said flap being normally projected downwardly and adapted to be engaged by the cleats 21 on said belt 16, as shown in the sectional view of Fig. 2.

In the following description of the machine it will be treated as if there were but one passage for the biscuits leading from a single hopper; but it is to be understood that the machine may be so constructed as to be of almost any predetermined capacity limited only by the size of the machine and the available power adapted to be applied for actuating same. However, as the increase of capacity of the machine is the result merely of the duplication of parts to a great extent, the passage of a single line of biscuits therethrough will be descriptive in detail of the operation of the machine. A duplication of parts, while adding to the manifold advantages thereof, will result in no substantial change in its construction, except as may be hereinafter specified. Hence the description of the operation will be confined to the passage of a single line of biscuits therethrough. In convenient position with relation to the shaft 19 and supported upon the brackets 20 is a chute 24<sup>a</sup>, provided with side walls 25, the



walls 25 forming divisions or partitions between a plurality of parallel or approximately parallel chutes, and the said walls being provided with beveled or rounded upper  
 5 faces 26, as shown in the plan view, Fig. 6, so that if biscuits may chance to fall upon the said partitions instead of within the chutes 27 therebetween said biscuits will by gravity fall off from the said partitions and onto  
 10 a chute at either side thereof. At the lower terminus of the chute 27 is a belt 28, traveling upon the pulleys 29 and 30, said pulley 30 being driven from the belt 31, passing over a pulley upon the shaft 7 and another  
 15 pulley upon the shaft 32. The said belt 28 travels in the direction indicated by the arrow in Fig. 2 and conveys biscuits which fall down on inclines 24<sup>a</sup> onto said belt 28 between the vertically-disposed partitions 33,  
 20 so that the said biscuits are projected upon the gravity-incline 34, which incline is provided with the partition-walls 35, so that the biscuits 36 (shown thereon in Fig. 4) will be guided between the said vertical partitions.  
 25 Upon said frame 3 is supported a shaft 37, which shaft is driven by means of the belt 38 from the main driving-shaft 4, while on the said shaft 37 is a crank-wheel 39, with which is connected the pitman 40, said pitman being connected at its opposite end with the loop  
 30 or eyelet 41 of the slide 42, which is shown in detail in Figs. 7 and 8, and said slide 42 is provided at opposite ends with the inclines 43 and has projecting laterally therefrom the angular extension 44. It will be evident that  
 35 as the shaft 4 rotates the crank-wheel 39 will be given a corresponding movement and as biscuits are conveyed to the gravity-chute 34 by means of the belts 16 and 28 and the intervening chute 24<sup>a</sup> that the slide 42 will be given a  
 40 horizontal reciprocatory movement. The object of this horizontal reciprocatory movement is to provide means for effecting the vertical reciprocatory movement of the gates 45 and  
 45 46, (shown, respectively, in Figs. 3, 4, and 7,) the said gates sliding in vertical ways 47 and 48 in the uprights 49 and 50, respectively, which uprights are supported upon the bed-frame 3, before referred to. The gates 45 and 46 com-  
 50 prise a plurality of transverse extending rods or bars which connect with the vertical members 51 and 52, which transversely-extending members are provided with vertical openings through which are projected rods 53. The  
 55 upper ends of said rods 53 are provided with caps 54, through which caps are projected the set-screws 55, which set-screws are adapted to bear upon said rods 53, whereby the said rods may be adjusted vertically with relation  
 60 to the transversely-extending bars through which they are projected. There are a number of these rods 53 projecting through the transversely-extending bars, and each of said rods 53 is independently adjustable of the se-

ries and is also independently movable with 65 relation to other rods in the series of each gate. Beyond the gravity-chute 34 and the gates described is a feed-table 56, provided with ways or channels 57 between the longitudinally-extending partitions 58, between which 70 partitions it is intended that the biscuits shall be stacked, as shown in the sectional view of Fig. 4. Suitably supported upon the partitions 58 are spring-actuated members 59,  
 75 which are normally held outwardly by means of the springs 60, which lie between said members and the partitions 58 within the angular offset 61, provided in said partitions, as shown in the sectional view, Fig. 9.

Connected with the members 59 are links 80 62, provided with longitudinally-projected openings 63, while pins 64 ride in said openings 63 and limit the outward thrust of said members 59 under the influence of said  
 85 spring. The object of the members 59 is to provide means for assisting in the vertical alinement of the biscuits 36. As shown in Fig. 4, the biscuits are fed through the said gates and drop by gravity to the position  
 90 shown at 36<sup>a</sup> in said figure, at which time the slide 42 will have been projected to a position so that the angular offset 44 thereof will impinge the ends of the transverse plunger-rods 65, which carry the reciprocatory plungers 66, said plungers being adapted to pass be-  
 95 tween the partitions 58, thereby riding up the inclined bevel-face 67 of the said members 59 and projecting forwardly the biscuit, as 36<sup>a</sup>, so that such biscuit will be stacked alongside of the others between the ways 58. 100  
 To retract the plungers 66, the springs 68 are provided, which springs 68 are connected to the transversely-extending rod 68<sup>a</sup>, supported by the bed-frame. To provide variable  
 105 speed for the machine, the cone-pulleys (shown in Figs. 3 and 5) are used, and the use of such cone-pulleys is so well understood that further description thereof is not necessary. The conveyer 16 and the belt 28 are  
 110 caused to travel at different speeds, the conveyer traveling at a relatively rapid speed and the belt 28 at a slower speed, whereby the said belt will be at all times supplied with a practically unbroken line of biscuits from  
 115 end to end during the operation of the machine, thereby insuring greater uniformity of feed than could otherwise result.

The operation of my improved machine is as follows: A supply of biscuits being dumped 120 into the hopper, it is evident that when the operative parts are set in motion from the driving-shaft 4 and connected pulleys, belt-  
 125 ing, &c., the conveyer 16 will feed biscuits from the said hopper to the chute 24<sup>a</sup> or a plurality of chutes arranged in parallelism across the machine and from thence will feed them onto the belt 28, from which belt they will be carried on to the gravity-chute



34, down which chute the biscuits will pass until they are stopped by the first gate till the slide 42 is projected to an extreme forwardly position—that is, a position in which the inclined face adjacent to the loop 41 will ride under the metallic bearing member 69, said member bearing upon the said inclined face and projecting the said gate vertically upward within its ways 47, thereby permitting the biscuits in alinement therewith to pass beyond said gate and drop to the space between the first and second gate, which space is preferably of sufficient length to permit, if desired, two biscuits to occupy such space. The gates will remain dormant until the slide has been projected to an extreme opposite movement, whereupon the incline 43 at the opposite end will actuate the metallic bearing-block 69<sup>a</sup>, which will ride up said incline, and thereby raise the gate 46 to release the biscuits held thereby and permit them to pass to positions shown at 36<sup>a</sup> in Fig. 4, whereupon the plungers 66 will project said biscuits forwardly and stack them in proper positions upon the feed-table 56, from which they may be removed for the purpose of placing them in convenient receptacles for transportation and storage. The table 56 is in the drawing shown broken off for the reason that it is preferred in practice that said table shall be of a considerable length, and as it is approximately the same from end to end no further illustration is required thereof than is already disclosed in the drawing.

While I have shown in the accompanying drawings the preferred form of my invention, it will be understood that I do not limit myself to the precise form shown, for many of the details may be changed in form or position without affecting the operativeness or utility of my invention, and I therefore reserve the right to make all such modifications as are included within the scope of the following claims or of mechanical equivalents to the structures set forth.

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

1. In a machine of the character described, a hopper, a conveyer, a gravity-chute, a plurality of successively-operable, gravity-stops, oppositely-beveled slides adapted to actuate said stops, and a reciprocatory plunger.

2. In a machine of the character described, a hopper, a conveyer, a gravity-chute, a plurality of intermittently-reciprocatory gravity-stops projecting into said chute, oppositely-beveled slides adapted to lift said stops, and a reciprocatory plunger.

3. In a machine of the character described, a hopper, a yieldable flap near the discharge-orifice thereof, a conveyer, a gravity-chute, a plurality of independently-reciprocatory

gates coöperating therewith, slidable and oppositely - beveled members adapted to lift said gravity-operable gates, and a reciprocatory plunger.

4. In a machine of the character described, a hopper, a conveyer, an inclined chute, a belt adapted to travel at less speed than said conveyer, a second chute, gravity-stops projecting into said second chute, oppositely-beveled slides for lifting said stops, and a stacker.

5. In a machine of the character described, a hopper, a conveyer, an inclined chute, a belt therebeyond, a second inclined chute, gravity-operable stops in said chute, reciprocatory means for intermittently lifting said stops, a feed-table, and a stacker operable in conjunction therewith.

6. In a machine of the character described, a hopper, a conveyer, an inclined chute, stops in said chute, means for reciprocating said stops, a feed-table, a stacker, and means operable from the stop-actuating means for actuating said stacker.

7. In a machine of the character described, a hopper, a conveyer, an inclined chute, a belt adapted to travel at a less speed than said conveyer, a second chute, reciprocatory stops operable in series, and independently adapted to project into said second chute, means for operating said stops, and plungers actuated by the stop-operating means.

8. In a machine of the class described, a hopper, a conveyer, an inclined chute, intermittently-operable gravity-stops, reciprocatory plungers, and slidable members adapted to impinge said plungers and to lift said stops.

9. In a machine of the class described, a hopper, a conveyer, an inclined chute, a belt adapted to travel at a less speed than said conveyer, a chute therebeyond, stops in said last-mentioned chute, a plunger, and a slidable member adapted to lift said stops and to actuate said plunger.

10. In a machine of the class described, a hopper, a conveyer, an inclined chute, a belt adapted to travel at less speed than said conveyer, an inclined chute therebeyond, stops in said last chute, a feed-table, spring-actuated grips on said table, and a stacker adapted to spread said grips.

11. In a machine of the character described, a conveyer, an inclined chute leading therefrom, a belt, a second chute therebeyond, a plurality of vertically-reciprocatory gates adapted to enter said chute, slides for actuating said gates, a feed-table divided into longitudinal channels, spring-actuated engaging members projecting into said channels, and plungers adapted to be projected into said channels, said plungers being actuated by said slides.

12. In a machine of the character de-



scribed, feeding means, an inclined chute, stops in said chute, means for reciprocating said stops, and a stacker comprising spring-actuated guides and reciprocatory plunger.

- 5 13. In a machine of the character described, feeding means, an inclined chute, stops operable in series in said chute, a stacker comprising spring-actuated guides and reciprocatory plunger, and a reciproca-

tory member adapted to operate said stops and said plunger.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

ADJUTOR MAGNAN.

Witnesses:

J. ED. PAGE,  
M. McALEER.