

No. 698,597.

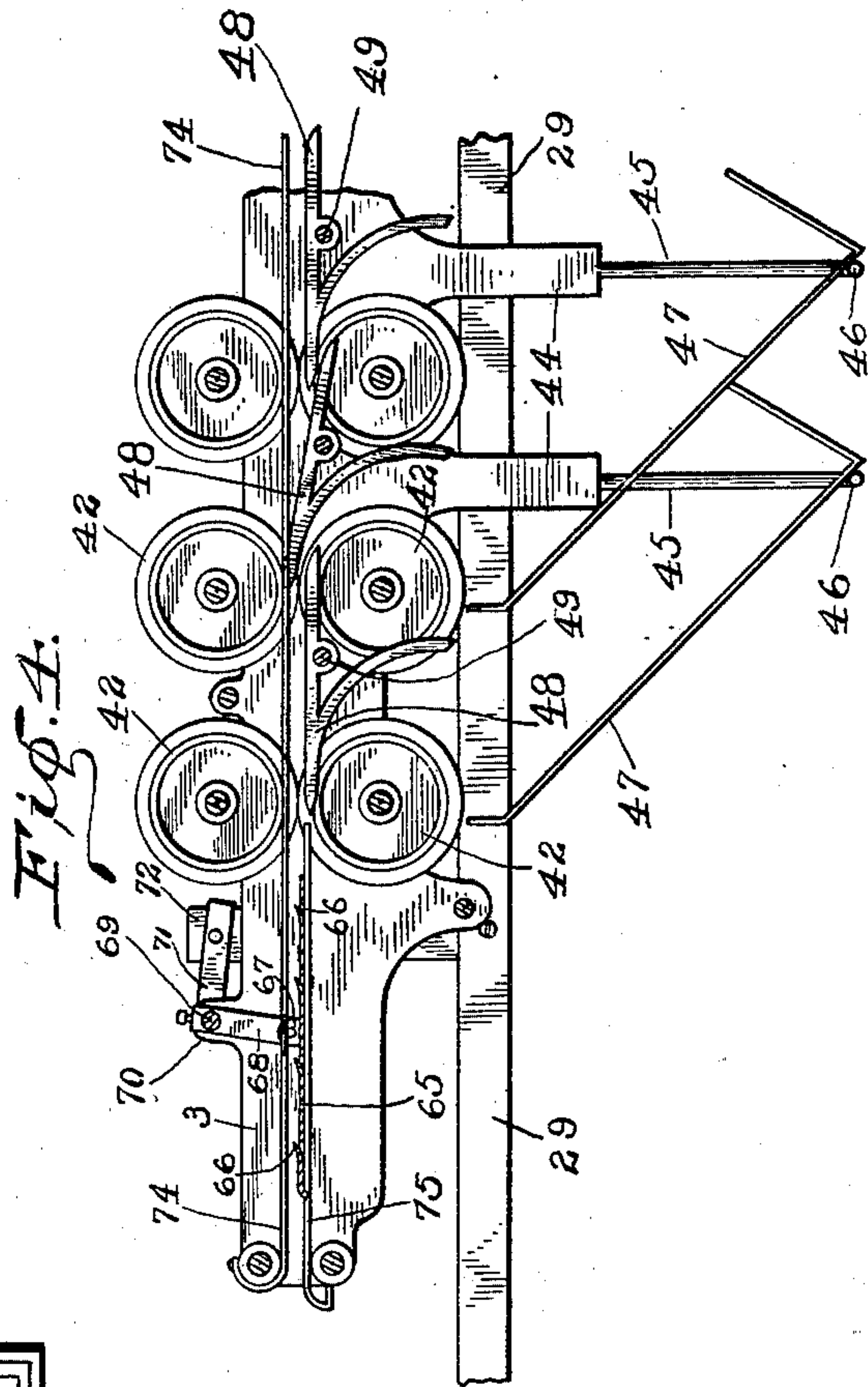
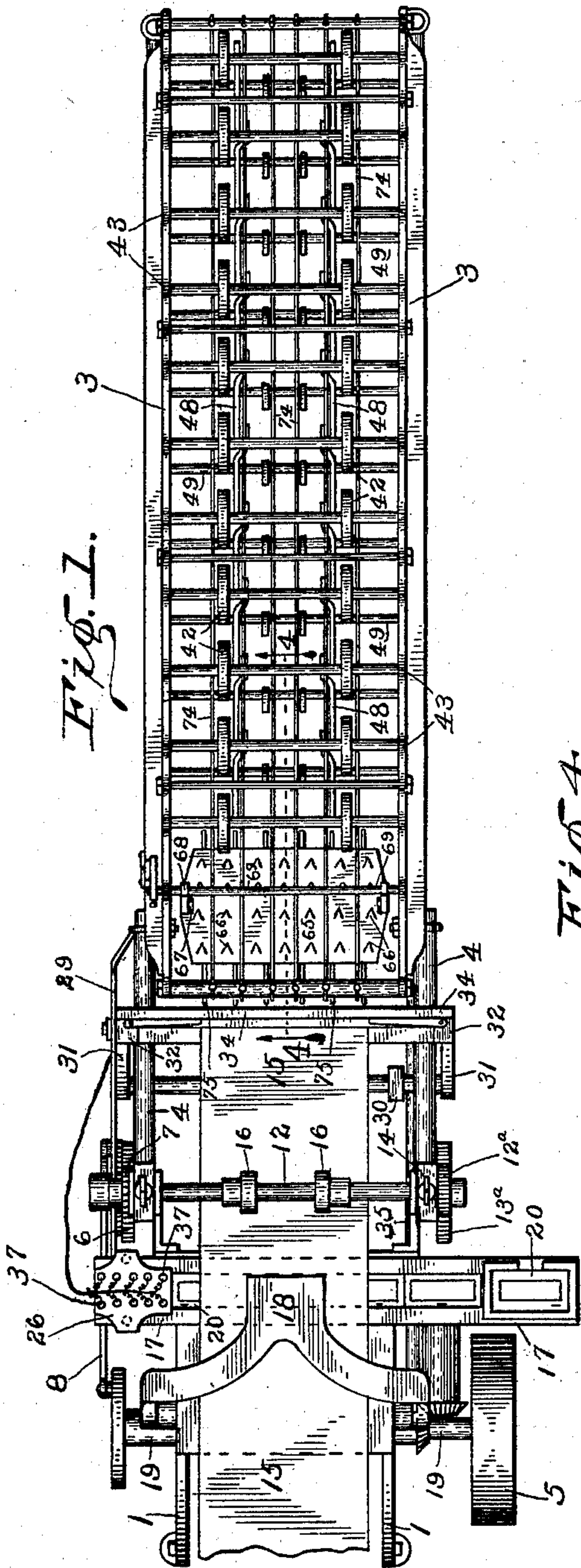
Patented Apr. 29, 1902.

C. E. VOTAW.  
WRAPPER OR LABEL ASSORTING MACHINE.

(Application filed July 20, 1901.)

(No Model.)

4 Sheets—Sheet 1.



WITNESSES:

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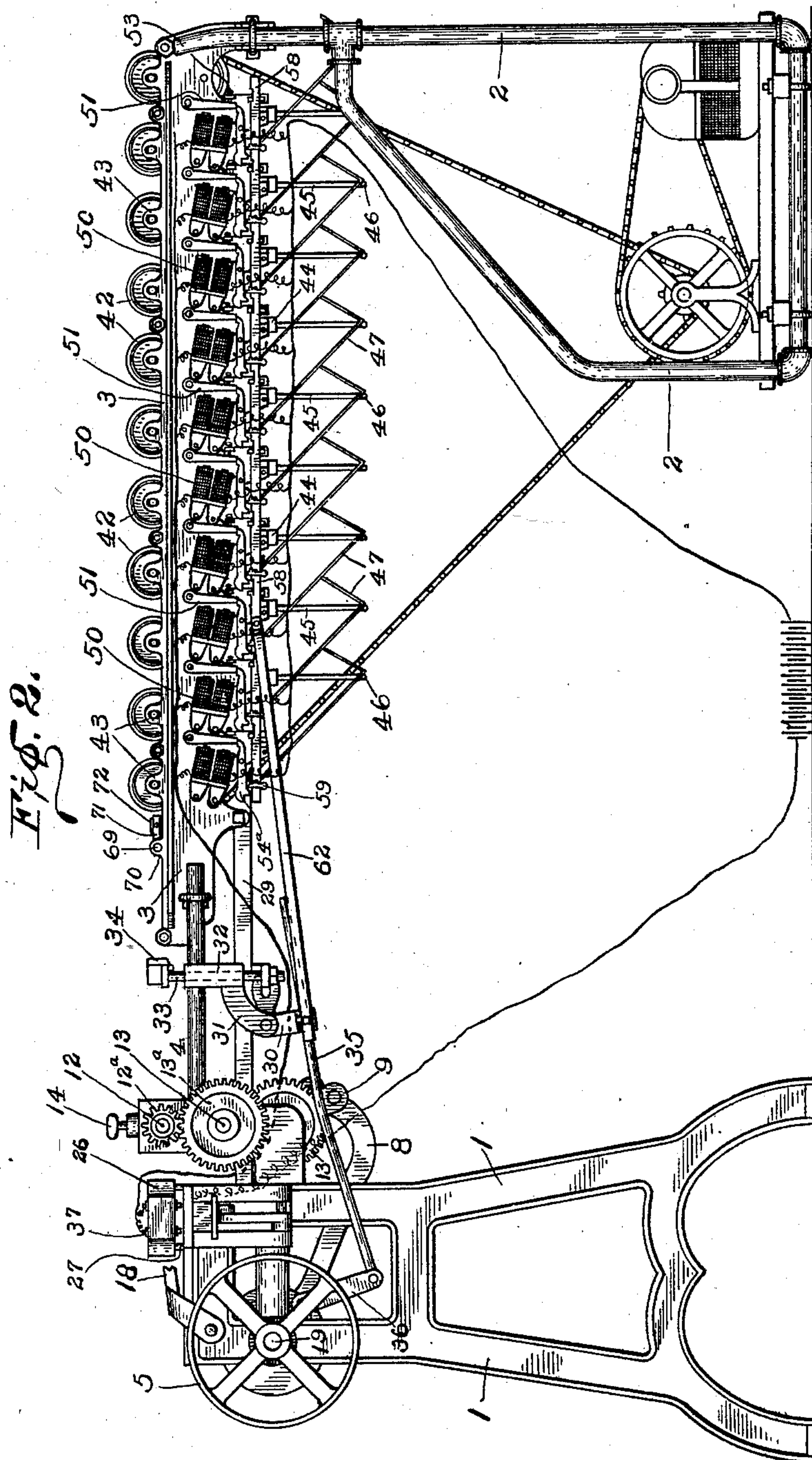
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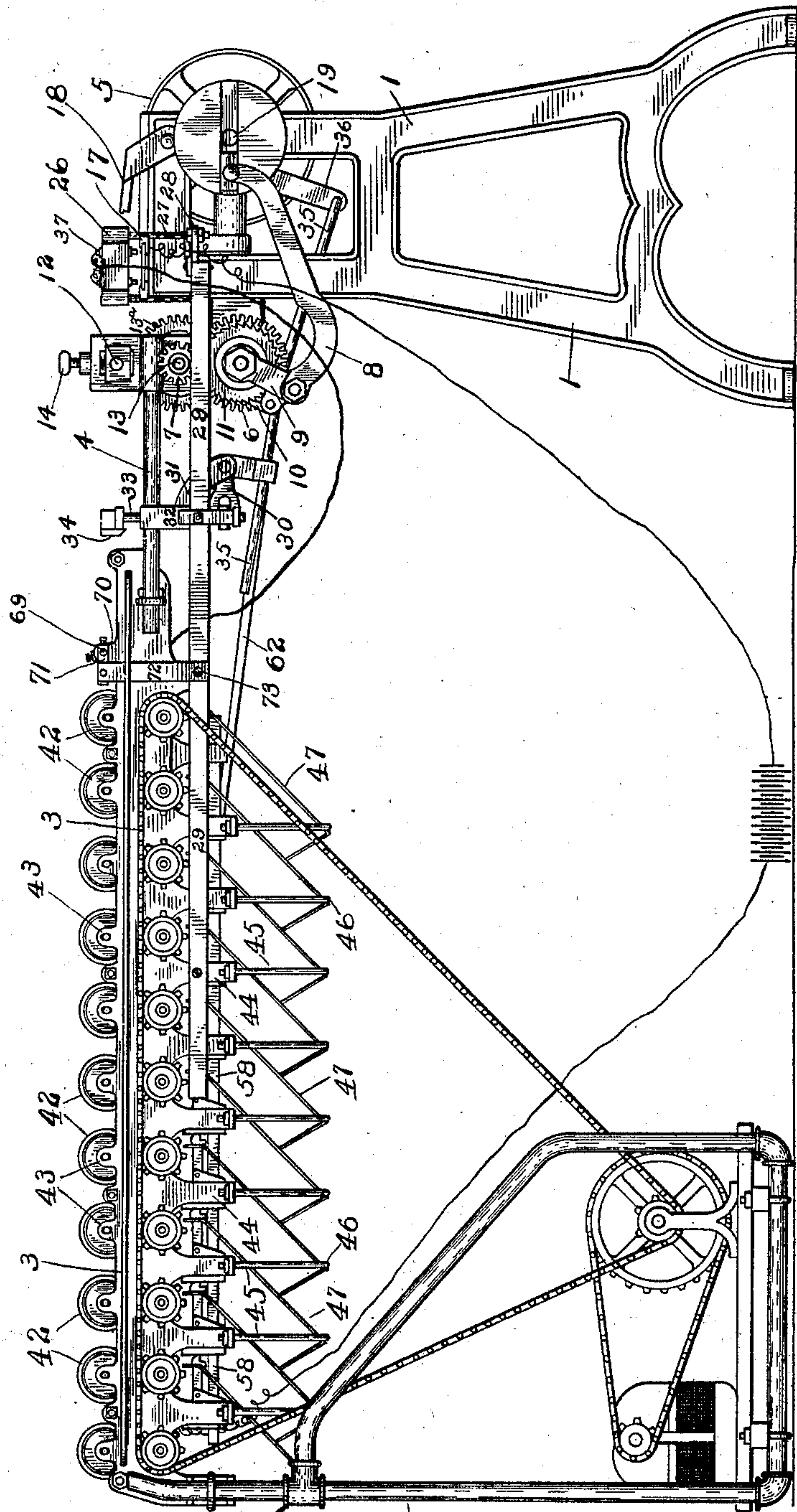
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4 Sheets—Sheet 3.

Fig. 3.



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4 Sheets—Sheet 4.

Fig. 5.

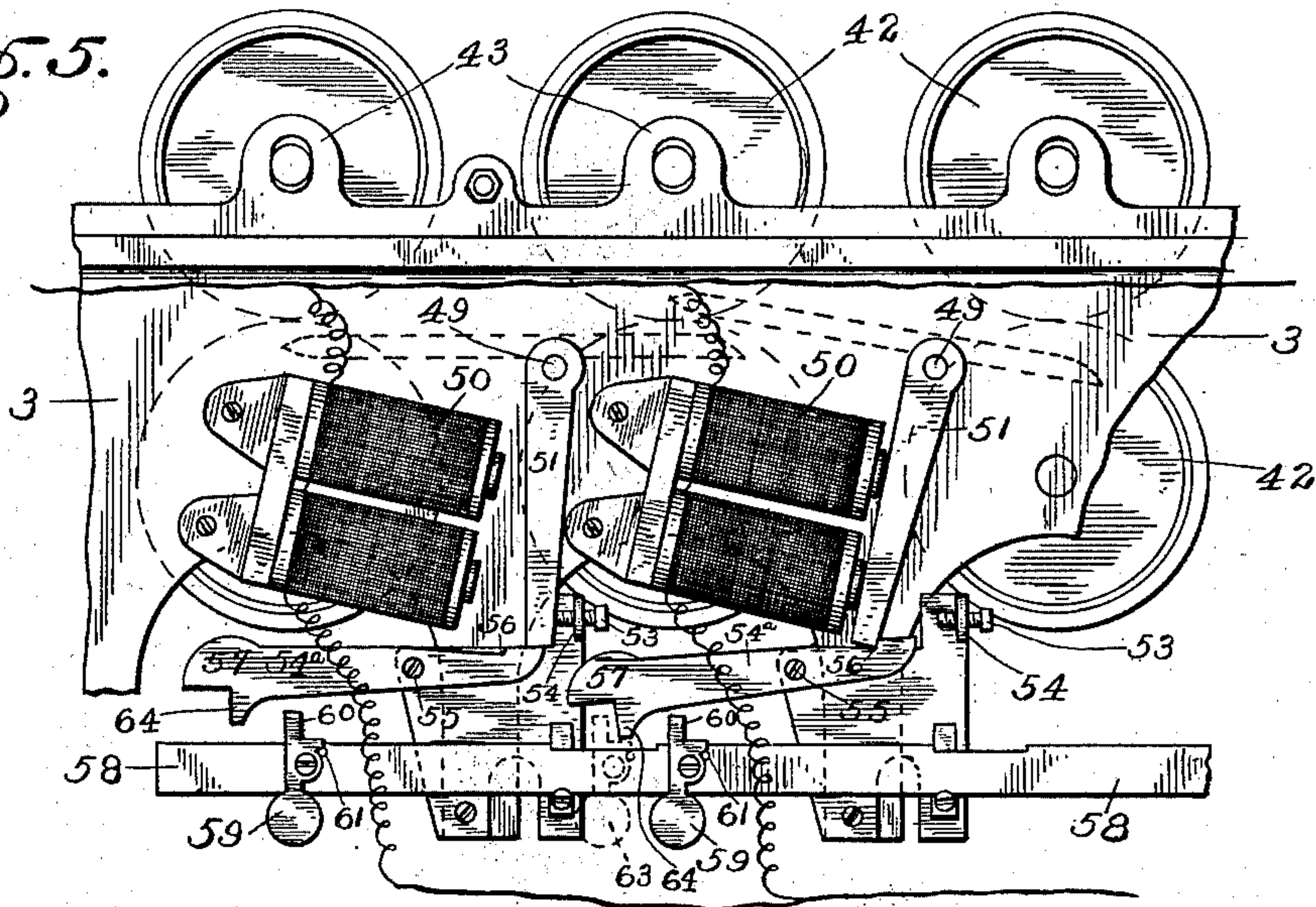


Fig. 6.

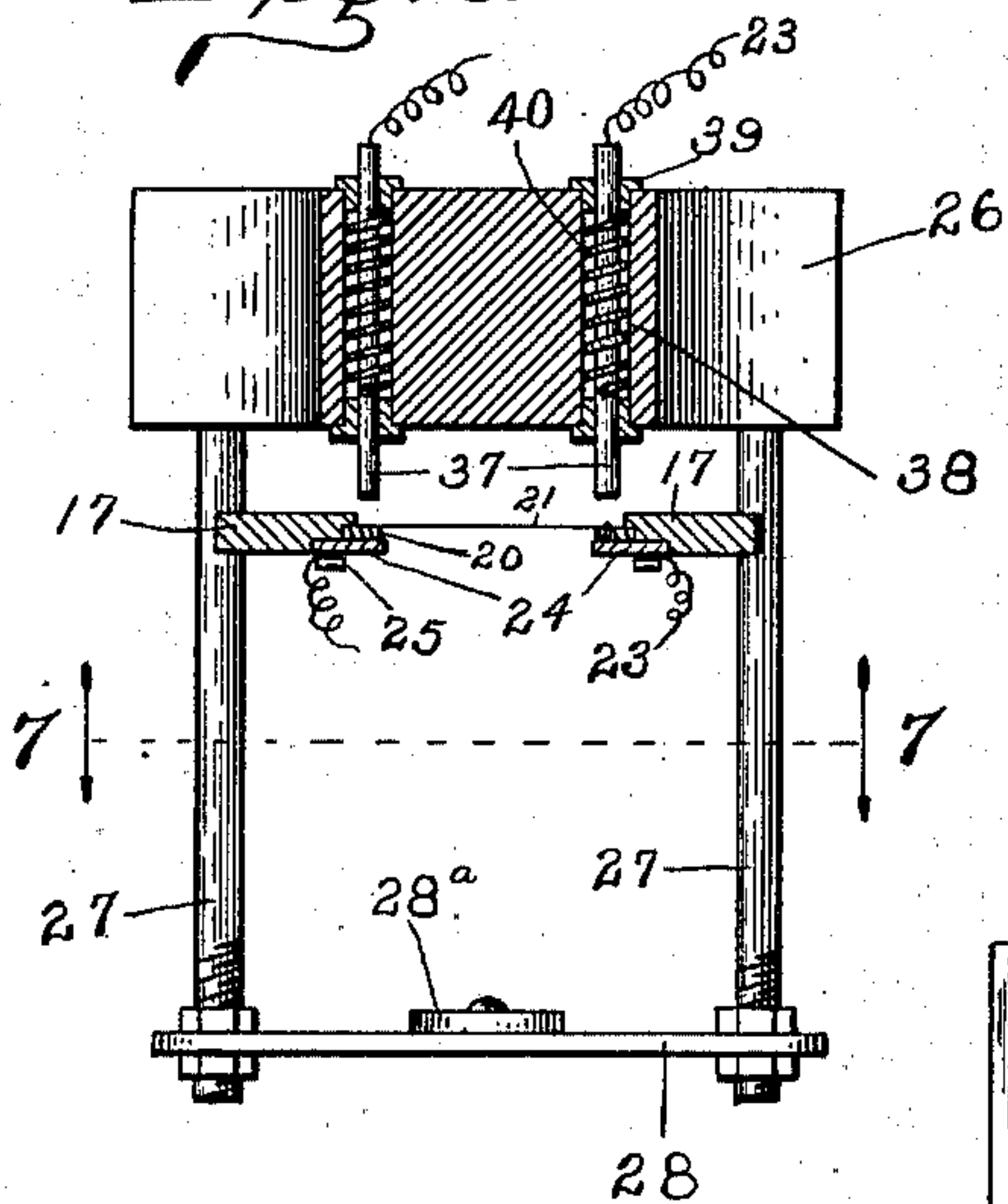


Fig. 7.

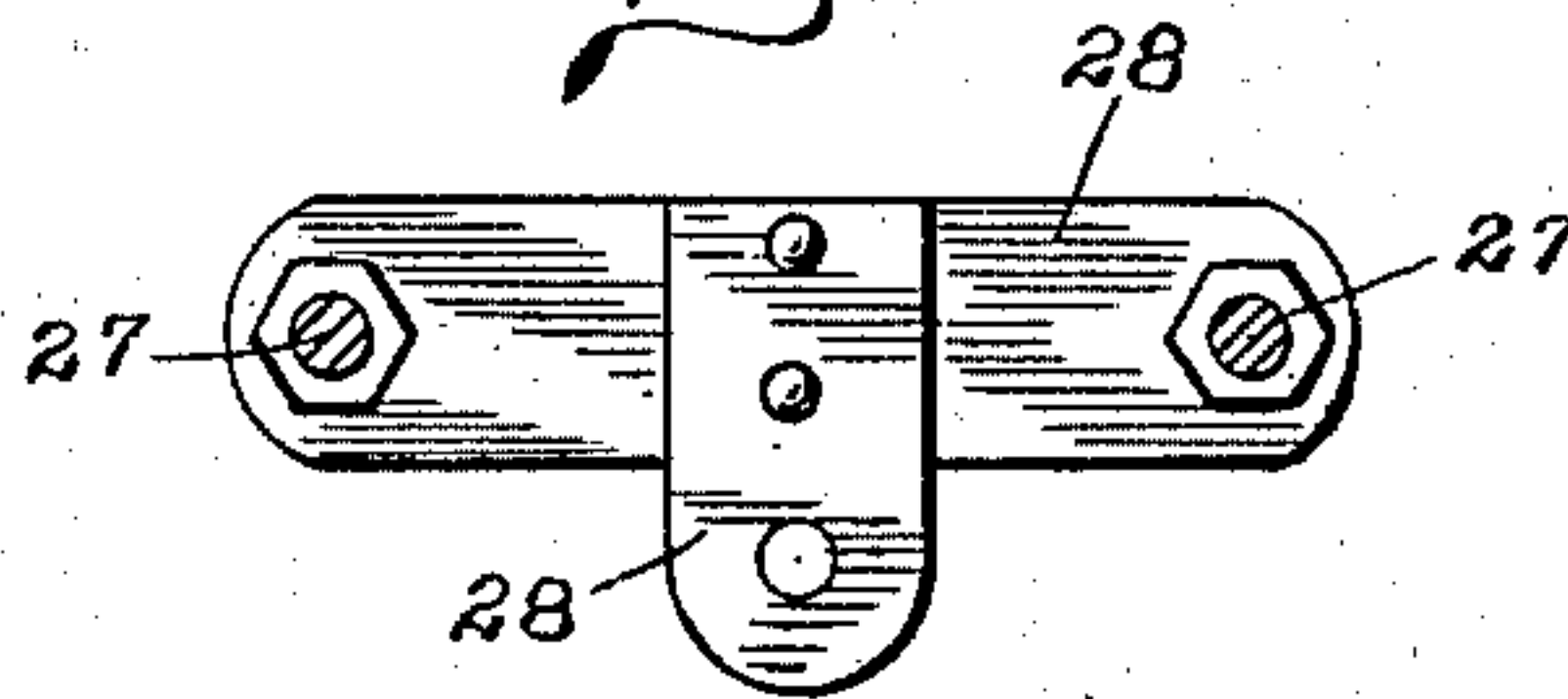
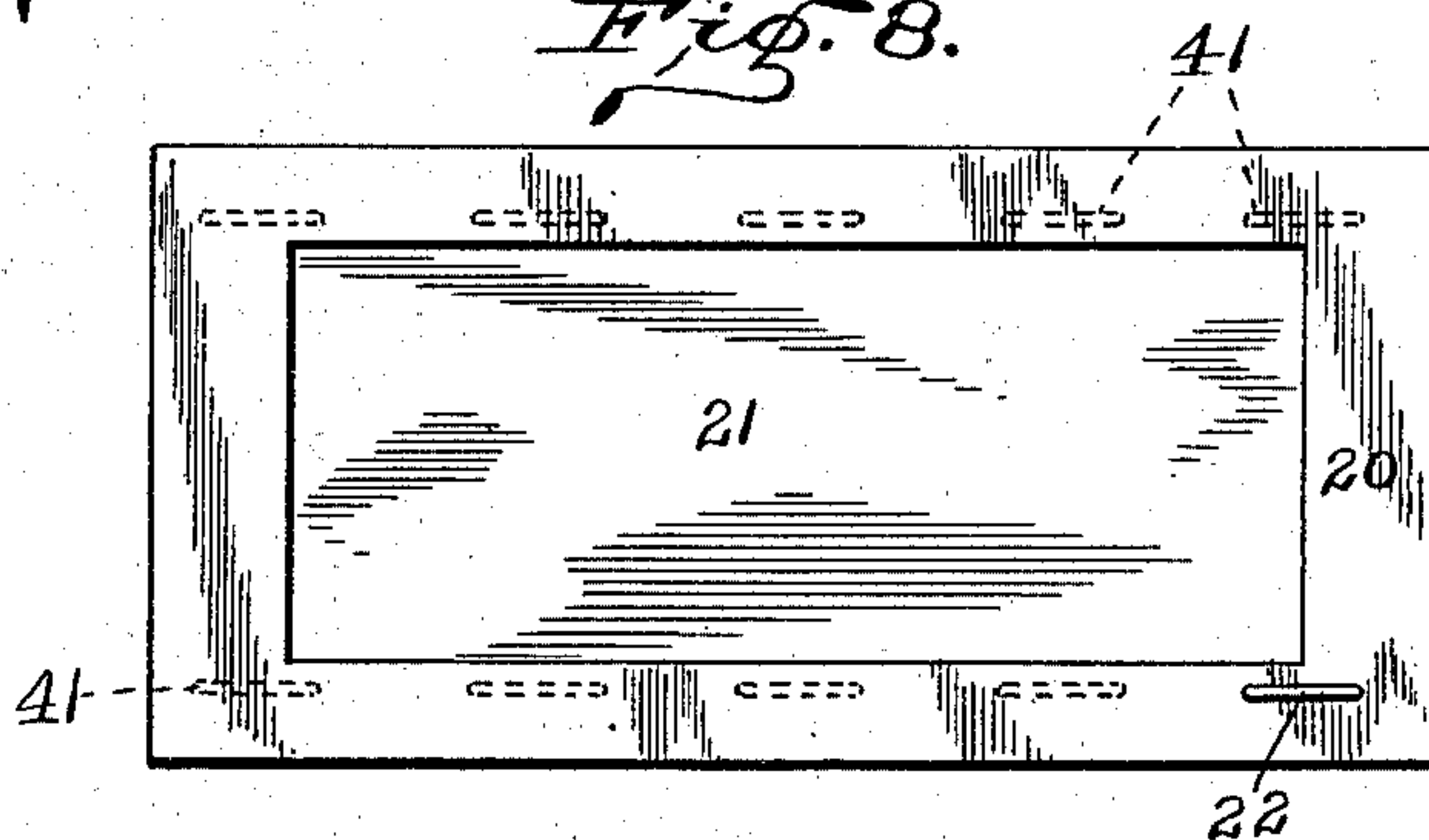


Fig. 8.



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# UNITED STATES PATENT OFFICE.

CLARENCE E. VOTAW, OF INDIANAPOLIS, INDIANA, ASSIGNOR OF ONE-HALF TO NEWTON H. KEISTER, OF INDIANAPOLIS, INDIANA.

## WRAPPER OR LABEL ASSORTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 698,597, dated April 29, 1902.

Application filed July 20, 1901. Serial No. 69,082. (No model.)

*To all whom it may concern:*

Be it known that I, CLARENCE E. VOTAW, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Wrapper or Label Assorting Machines; and I do hereby declare the following to be 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.

My invention relates to labeling-machines, and more particularly to that variety thereof designed to be used in connection with wrappers for newspapers, &c.; and it consists, essentially, in the construction and arrangement of parts hereinafter described and claimed, with such equivalents and substitutes as fall fairly within the purview of the intent and purpose of the invention.

The preferred construction to be adopted in the production or materialization of what I will for the purpose of brevity denominate as my "label or wrapper classifying or assorting machine" and the accessories deemed necessary to illustrate a practical application thereof to use are exemplified in the accompanying drawings, in which—

Figure 1 is a top plan view of my invention complete. Figs. 2 and 3 are side elevations thereof, taken from opposite sides. Fig. 4 is a central longitudinal section of a portion of my machine, taken on line 4 4 of Fig. 1, illustrating one of the doors in an open position. Fig. 5 is a detail view showing a portion of the frame of the machine on an enlarged scale from that presented in Fig. 2 and illustrating the position of the armature when the magnet is energized. Fig. 6 is a vertical section taken through the contact-head and contiguous parts of the stencil-guideway. Fig. 7 is a detail view on line 7 7 of Fig. 6, showing connection between the contact-head and operating devices. Fig. 8 is a plan view of the preferred form of stencil.

It may be briefly stated that my invention comprehends a machine designed to automatically assort or classify a miscellaneous lot or quantity of wrappers, and thus so assemble the classified labels that they will be ready for immediate use.

It is well known to those in the service that railway mail agents have so systematized their work that they have classified their field into different mail-routes, each route comprehending certain sections of the country, and it therefore becomes desirable and important that newspapers sent from the point of publication to the post-office shall be classified to correspond with the classification of the territory covered by said routes; and with this object in view the use of my wrapper-assorting machine will be found very desirable and important for publishers of newspapers, periodicals, &c., in order that each newspaper to be distributed may be promptly forwarded to its destination, thereby relieving the route agent of the work of arranging this general classification upon the mail-car, thus leaving only the work of specific separation of the newspapers or classifying the same according to the post-office address to be performed by mail clerks having charge of the different routes.

While as above set forth the use of my invention will prove desirable and important to publishers of newspapers, it will prove especially important and valuable to the railway mail service, inasmuch as it saves a large amount of time and excessive arduous labor, since the mail-matter will be delivered to said agents of the Government classified practically ready to be delivered in bulk directly to the mail clerks having charge of a designated route, leaving to said route agents only the work of specific distribution. The use of my invention will not only economize the time and service of publishers, but will also make it possible to greatly reduce the force of route agents or mail clerks after the classified publication has been delivered to the postal authorities by the publishers.

As will be hereinafter specifically set forth, my invention comprehends the employment of stencils each bearing an individual name and address and also having means to cooperate with certain devices whereby an electric circuit is closed and a local magnet energized and employed to direct the travel of individual wrappers.

For convenience in referring to the several parts of my invention and the cooperating



accessories numerals will be employed, of which—

1 designates suitable supporting-standards comprising the end section or support of the framework designed to carry the cooperating elements hereinafter specifically designated, the opposite end of the frame being properly supported by the legs or posts 2. The supports 1 and 2 are properly connected at their upper ends with the main or body section 3, as by the extensions 4, connected to the upper ends of the standards 1 in any suitable way, and it is by means of said parts that the cooperating devices employed by me are suitably mounted and sustained in their operative positions.

The source of power is applied to the driving-wheel 5, properly mounted in suitable bearings in the upper ends of the standards 1, and actuates the gears 6 and 7 by means of the arm 8, pivotally attached to the crank 9, which latter is provided with the detent 10, designed to engage the ratchet-wheel 11, and it is by said means that the paper-feeding rollers carried upon the shafts 12 and 13 are actuated, said shafts being relatively adjusted by means of the regulating-screws 14, as is common. Upon the opposite ends of the shafts 12 and 13 I have mounted the intermeshing gears 12<sup>a</sup> and 13<sup>a</sup>, as it is by said means power is communicated to the upper rollers.

I employ a continuous strip of paper, as indicated by the numeral 15, which is passed between the paper-feeding rollers above referred to, said rollers or paper-engaging devices being designated by the numeral 16. Before passing between the rollers 16 the paper is disposed over the stencil-chute 17, which extends transversely with respect to the longitudinal plane of the machine, and each stencil is designed to be engaged by the intermittently-operating head 18, which latter is actuated or controlled by means of suitable cooperating devices intermediate said head and the driving-shaft 19, the downward movement of the head 18 being so timed with respect to the movement of the stencil that each stencil will be squarely engaged by it, while the contiguous part of the strip of paper interposed between the head and the stencil will receive an impression from the stencil, said impression constituting the address upon the wrapper, inasmuch as the continuous strip of paper is severed at proper intervals to leave the address intact. It therefore becomes a problem to preserve and classify according to mail-routes or in other ways the severed portions of the strip of paper each containing an individual name and address; and with this object in view I will now call attention to certain details of combination and construction of parts.

It will be understood that each stencil is preferably formed with a suitable frame 20

of cardboard or other non-conducting material, the interior portion of the frame being occupied by the stencil proper, 21, of thin paper or the like bearing the name and address to be duplicated. The frame 20 is of proper width to be received by the chute comprising the guiding members 17, it being understood that suitable longitudinally-disposed recesses or grooves are formed in the inner edges of the guiding-sections or chute 17 designed to receive the edges of the frame 20 and hold it against casual upward movement, inasmuch as the stencils contained in the chute are forced to travel therethrough by any suitable feeding mechanism, and I therefore deem it unnecessary for the purpose of this application to refer specifically thereto. Each stencil-frame is provided with a metal rivet or the equivalent thereof, as it may, for instance, take the form of an eyelet or a staple, as indicated by the numeral 22. A plurality of said rivets or the equivalent thereof are properly located near the edge of said frame, it being understood that they shall extend entirely through the frame, and are designed to provide a necessary link for closing an electric circuit, one of said circuits being indicated by the numeral 23.

The guiding-sections 17 are rigidly supported in any preferred way by the standards 1 and are formed of some non-conducting material, while each of said sections is provided, preferably, upon its under side with a metallic contact-plate 24, held in position in any preferred way and is designed to be connected with the electric circuit, as by the binding-post 25.

Above one end of the chute formed by the guiding-sections 17 I have disposed what I will term my "contact-head" 26, which is provided upon its under side with the downwardly-extending posts 27, the lower ends of which are connected to the cross-bar 28, attached near its middle portion to the lever 29 by means of the inwardly-extending ear or bracket 28<sup>a</sup> or the equivalent thereof, said lever being controlled by the bell-crank 30, said crank being attached to the depending arm or bracket 31, comprising an extension of the head 32, within which head vertically reciprocates the shaft 33, carrying the paper-cutting knife 34. The bell-crank 30 is intermittently operated by the shaft 35, operatively connected to a suitable crank 36. The contact-head 26 is provided with a plurality of contact pins or terminals 37, each pin being properly insulated within suitable vertically-disposed apertures 38, formed in said head, as by extending the pins laterally through insulating-retainers 39, a compression-spring 40 being disposed around each pin 37 and connected thereto in such a manner as to dispose said pins normally downward for a purpose hereinafter made clear. Inasmuch as the contact-head 26 is vertically reciprocated through the mediation of the controlling-lever 29, as above set forth, the movement of



said head is so timed that it will be brought fairly in engagement with each individual stencil as the latter passes under said head in its travel through the guiding-chute provided therefor. In the present instance I have shown the contact-head 26 as being provided with ten terminals or pins 37 and have also illustrated the stencil-frame as having the capacity of carrying ten rivets, eyelets, staples, or the equivalent, it being understood that the position of each rivet or the like is such that each contact-pin will engage its respective rivet and no other. It may also be stated that each stencil carries but one rivet or link 22, and it follows that the position of said rivet determines which electric circuit of the series of circuits connecting with the contact-pins shall be controlled by the individual stencil. In the present instance, as will be seen by reference to the drawings, I have shown a stencil-frame provided with a single rivet, the relative position of the rivets in other stencils being indicated by dotted lines, as designated by the numeral 41.

As previously set forth, it will be understood that any number of mail-routes may be adopted, according to the requirements of each case; but for the purpose of illustrating the application of my invention to use we will assume that ten routes are fixed, and it therefore follows that the contact-head shall be provided with ten terminals or pins 37, while there shall be ten separate arrangements for the rivets 22, and as each rivet controls an electric circuit within which is located a local magnet at the point desired I am enabled to unerringly provide that a gate shall be opened by said magnet at the proper time to receive the sheet of paper containing the address corresponding to the stencil controlling the electric circuit of said magnet, it being understood that the operation of the paper-carrying devices hereinafter specifically referred to or the equivalent thereof shall be so timed that the severed end of the sheet of paper bearing the impress of the stencil will unerringly reach its destination at the instant the stencil giving said paper the impression shall have reached the gap in the electric circuit and closed said gap by the mediation of the pins 37 and the link 22. After the continuous strip of paper has been printed by the pressure-head 18 it is moved inward by the paper-engaging devices 16 and extended under the knife 34, the movement of the paper being so timed that it will be severed at points between the printed impressions placed thereon by reason of its contact with the stencil, as above described, and in order that I may properly classify and preserve the severed pieces of paper or individual wrappers thus formed I provide a series of paper-engaging wheels or disks 42, disposed in pairs one above the other and provided upon their peripheral faces with a suit-

able covering of rubber or the like, said wheels being properly journaled at suitable points in the frame-section 3, the upper series of wheels being carried by the ears or extensions 43 in order that the weight of the side section 3 may be reduced without impairing the rigidity and efficiency thereof. In like manner the lower edge of one of said side sections 3 may be provided with integral depending brackets 44, adapted to receive the threaded end of the depending rod 45, which latter is extended at right angles to form the branch 46, said branch being adapted to sustain the pocket or wrapper-receptacle 47, a series of said pockets being disposed beneath this portion of the machine, each pocket communicating with the floor proper of the machine by an individual door, as hereinafter specifically set forth. It may be stated that the entire floor proper located between the side sections 3 is formed of a series of gateways or doors 48, each pivotally mounted upon a shaft 49, extending transversely through the machine, said shafts being connected in any suitable manner to the side sections 3.

Preferably upon the opposite side of the machine from that occupied by the controlling-lever 29 I attach a plurality of local magnets 50, each magnet being secured in any suitable manner to the side sections 3 and each being designed to cooperate with its respective gate or door 48, inasmuch as the shaft 49 extends loosely through a suitable aperture provided in the side section 3 and has rigidly attached thereto the armature 51. Each armature is disposed normally in a true vertical position when the door with which it cooperates is in a closed position, and it therefore becomes necessary that I shall obliquely dispose each magnet with respect to the normal plane of said armature in order that the door with which the armature is cooperating will be held in an open position when the magnet is energized, each of the magnets being located within its individual circuit 23, and as each circuit is provided with a terminal pin 37 and connected with one of the contact-plates 24 it is clearly obvious that the circuit will be closed when the contact-head is lowered by interposing a metal rivet or the equivalent between said plate and pin, thereby insuring that the magnet will become energized and the armature attracted unto it, the result being that one of the gates will be opened to receive the wrapper as the latter is moved along by the carrying disks or wheels 42.

Any suitable device may be provided to limit the sweep of the armature assuring that it will be at all times reliably within the field of the magnet, said checking device in this instance being exemplified by the set-screw 53, extending through a threaded aperture in the ear or lug 54, carried by a contiguous part of the side section 3 or otherwise.



In order that the door which has been opened to receive a wrapper shall remain in an open position even after the magnet has become deenergized, I provide the pivoted member 54<sup>a</sup>, held in place by the screw 55 and provided at one end with the recess 56, so formed and located that it will engage the lower end of the armature 51 when the latter is attracted by the magnet, the opposite end of the member 54<sup>a</sup> being slightly enlarged, as indicated by the numeral 57, to insure that the armature-engaging end thereof shall be held normally elevated, and in order that the armature may be disengaged from contact with the member 54<sup>a</sup> I provide the controlling-bar 58, which is reciprocatingly mounted in any suitable manner in such position that it will lie in a plane substantially parallel with the floor of the machine, and I provide said bar at proper intervals with the pivoted counterpoised members 59, each having the upwardly-extending fingers 60. It will be observed that each of the members 59 is so mounted by reason of the post 61 that it may swing freely in one direction, but cannot pass the vertical plane in the opposite direction, and I utilize this mounting of said member to elevate the enlarged end of the member 54<sup>a</sup> and incidentally depress the outer end thereof, so that it will pass out of engagement with the armature 51 and release said armature and permit the door 48 to close by gravity, it being seen that the pivot-point of the door is upon one side of the center thereof.

The controlling-bar 58 is operatively connected to the source of power by the link or shaft 62, as it is by means of said link that said bar is reciprocated within its bearings, the movement of the bar being properly timed so that the door will be reliably closed after the wrapper designated for said door has passed into its receptacle.

I have shown by dotted lines, as indicated by the numeral 63, the position of one of the members 59 when the bar 58 has been withdrawn sufficiently to bring the finger 60 into engagement with and past the downwardly-curved extension 64, it being understood that the member 59 will yieldingly move upon its pivot-point when the bar 58 is moved in an opposite direction, so as to bring the finger 60 in engagement with said extension 64.

It will be understood that the several wires forming the plurality of circuits may be readily incorporated with each other as by disposing the same within a suitable covering or tube in order that the wires may be more conveniently and safely disposed out of the way.

In order to facilitate the movement of the severed pieces of paper or individual wrappers as they pass from the knives to the paper-engaging disks, I provide the delivering table or member 65, formed of any suitable material, as sheet metal, and provided upon its upper surface with a plurality of inwardly

and upwardly inclined teeth or corrugations 66 and also provided upon each end with a suitable ear 67, which is pivotally connected to the depending arm 68, the upper end of which is rigidly secured to the rock-shaft 69, extending across the machine and mounted in suitable bearings 70. In order that the shaft 69 may be actuated, I rigidly connect to the outer end thereof the crank-arm 71, which is pivotally connected at its outer end to the link-section 72, the lower end of which is connected to the controlling-lever 29, as by the bolt or rivet 73, it being understood that said lever is pivotally attached to one of the members 44, whereby it may have at its opposite end the requisite upward and downward movement necessary to operate the contact-head 26. By thus pivotally connecting the member 65 to the rock-shaft 69 it is obvious that said member will be reciprocated laterally, its movement being properly regulated or timed, whereby it will move toward the knife as the latter severs an individual wrapper from the continuous sheet of paper, the said wrapper falling upon said table, and as the table is moved away from the knife it will be delivered into engagement with the disks 42. The length of the wrapper being greater than the width of the table insures that one edge of the wrapper will project beyond the table sufficiently to permit the same to be engaged by the first pair of feeding-disks 42, said disks being so mounted that they will engage the edges of the wrapper and pass the same from pair to pair of said disks until an open door is reached. I further facilitate the movement of the individual wrappers and prevent undue curling or buckling thereof by a series of wires or the equivalent 74, extending from end to end of the machine slightly above the surface of the series of doors or gateways 48. The floor-section of the machine intermediate the first gateway and the knife is formed of a plurality of fingers 75, firmly secured at their inner ends and directed outward, lying immediately beneath the member 65.

While I have described the preferred combination and construction of the parts deemed necessary in materializing my invention, I desire to comprehend in this application all substantial equivalents and substitutes thereof, inasmuch as various modifications and changes may be made without materially departing from the spirit of my invention.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a machine of the character specified, the combination with a suitable frame, paper-feeding rollers and driving mechanism therefor, of a knife adapted to sever the continuous strip of paper into predetermined lengths and suitable cooperating mechanism to receive the individual labels and deliver them into a receptacle according to a desired classification, a plurality of stencils and electrical



devices all substantially as specified and for the purpose set forth.

2. In a machine of the character specified, a suitable frame, paper-feeding rollers and driving mechanism therefor, a stencil-chute and a plurality of stencils coöperating therewith; a knife adapted to sever said strip of paper into individual labels and carrying mechanism designed to pick up and convey each label to the first pair of rolls, and means for delivering the labels into a receptacle designed especially to receive the same, all substantially as specified and for the purpose set forth.

3. In a machine of the character specified, the combination with a suitable frame, of a stencil-guiding chute; a circuit-terminal carried by said chute, in combination with a stencil having a frame fitting said chute, and provided with a metal rivet or the like; a local magnet in said circuit and a contact-head having a plurality of pins forming the other terminal of said circuit and means to cause the registration of an individual pin with its respective rivet whereby a circuit will be closed and said magnet energized, all combined as specified and for the purpose set forth.

4. In a label or wrapper assorting machine, the combination with a suitable frame, a plurality of stencils, and electrical devices of a paper-cutting blade; means to operate said blade and additional means to engage the individual labels formed by the knife and convey the same to a receptacle designed to receive it as and for the purpose set forth.

5. In a label printing and assorting machine, a suitable frame; a plurality of stencils; means to force said strip of paper in engagement with each stencil; a local magnet; a conveyor-chute; means to engage each individual label or wrapper and additional means carried by the stencil-frame adapted to open and close an electric circuit, all combined as and for the purpose set forth.

6. In a wrapper or label printing and assorting machine, a suitable frame; a plurality of stencils of non-conducting material having an electric conducting portion; a guideway for said stencils; a contact-plate carried by said guideway; a movable contact-head having a plurality of circuit-terminals and means to cause the registration of an individual pin with the metallic part of said stencil-frame whereby an electric circuit will be closed and a local magnet will be energized all combined substantially as specified and for the purpose set forth.

7. In a machine of the character specified, a suitable frame; paper-feeding mechanism; a stencil-chute and a plurality of stencils and means to feed said stencils through said chute, in combination with additional means to press a part of said paper in engagement with an individual stencil; a contact-head having a plurality of circuit-terminals; means car-

ried by the stencils to form an electric connection between said terminals and said contact-plate; suitable means to sever said strip of paper into suitable lengths and label-receiving devices designed to take each individual label and deliver the same within a receptacle especially designed to receive it, all substantially as specified and for the purpose set forth.

8. In a machine of the character specified, the combination with a suitable supporting-frame, of paper feeding and printing mechanism; a knife adapted to sever the paper into individual labels; means to operate said knife; label-carrying devices; a plurality of compartments and suitable selecting mechanism coöperating with said label-carrying devices adapted to open the door of the receptacle designed to receive a specified label, all combined as specified and for the purpose set forth.

9. In a label or wrapper printing and assorting machine, a suitable frame; a plurality of electric circuits and magnets; a series of receptacles each provided with a door; a series of stencils of non-conducting material having a metallic portion; a plurality of pins each forming the other terminal of the electric circuit and means to force an individual pin into engagement with the metal part of the stencil-frame whereby the circuit will be closed between said pin and said contact-plate and thereby energize said magnet and open a door in one of said receptacles to receive a specified label, all combined substantially as specified and for the purpose set forth.

10. In a machine of the character specified, a stencil-chute having a metallic contact-plate comprising one terminal of an electric circuit and a plurality of pins comprising the other terminals of the circuits, combined with a stencil having a frame of non-conducting material and provided with a metallic part and means to force said pins downward in engagement with said frame whereby one of said pins will be brought into registration with said metallic portion and thereby close one of the electric circuits represented by said pin and thus energize a magnet located therein all combined as specified and for the purpose set forth.

11. In a label-assorting machine, a suitable frame; a plurality of receptacles, each having a door, all of which when closed will form the floor of the machine; a plurality of stencils, a contact-plate and pins carried thereby and electrical connections; a plurality of local magnets; means to operatively connect said door with its individual magnet and means to close the circuit of the magnet controlling the door of the receptacle designed to receive a specified label when said label approaches said door all combined substantially as specified and for the purpose set forth.

12. In a machine of the character specified,



the combination with a suitable frame, paper-feeding rollers and driving mechanism therefor, of cooperating mechanism to receive the individual labels and automatically ; deliver them into a receptacle according to a desired classification, all substantially as specified and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

CLARENCE E. VOTAW.

Witnesses:

LOUIS GREEN,  
SETH HOWARD.