

June 5, 1934.

G. H. LITTLE.
COORDINATING MECHANISM FOR PACKAGING AND WRAPPING MACHINES
AND PACKAGE TRANSFER MECHANISM THEREFOR
Filed Feb. 10, 1931

1,961,697

7 Sheets-Sheet 1

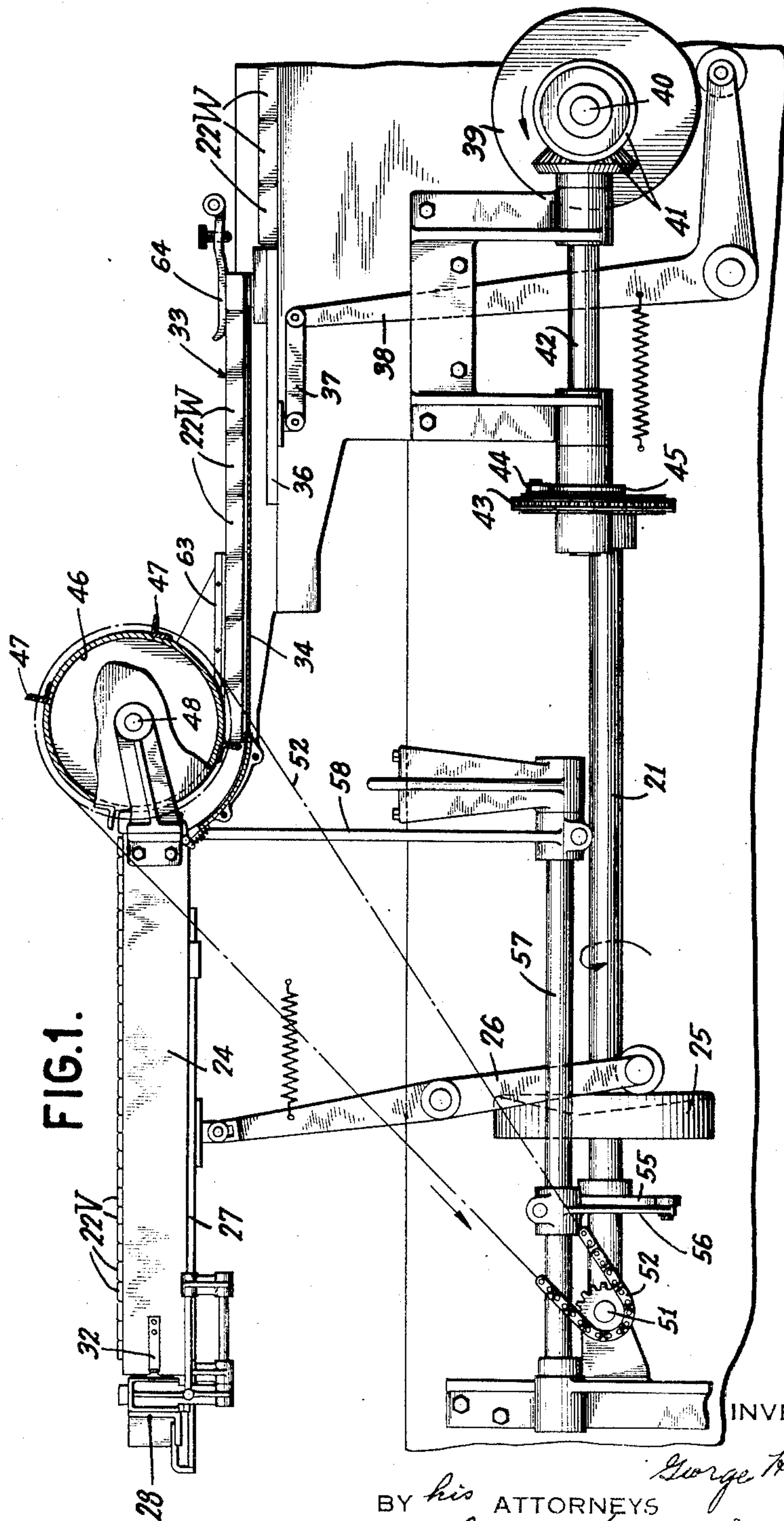


FIG. 1.

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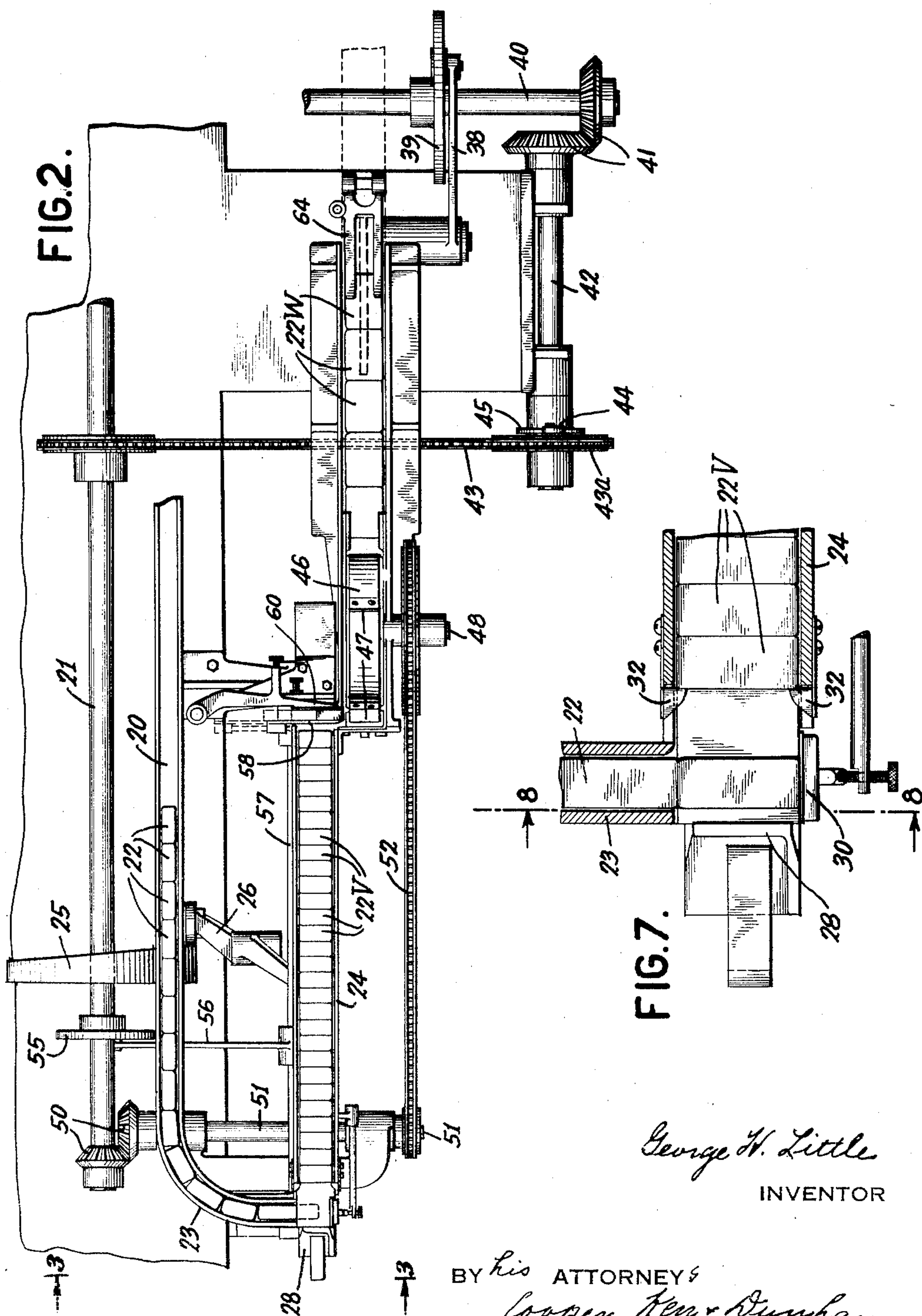
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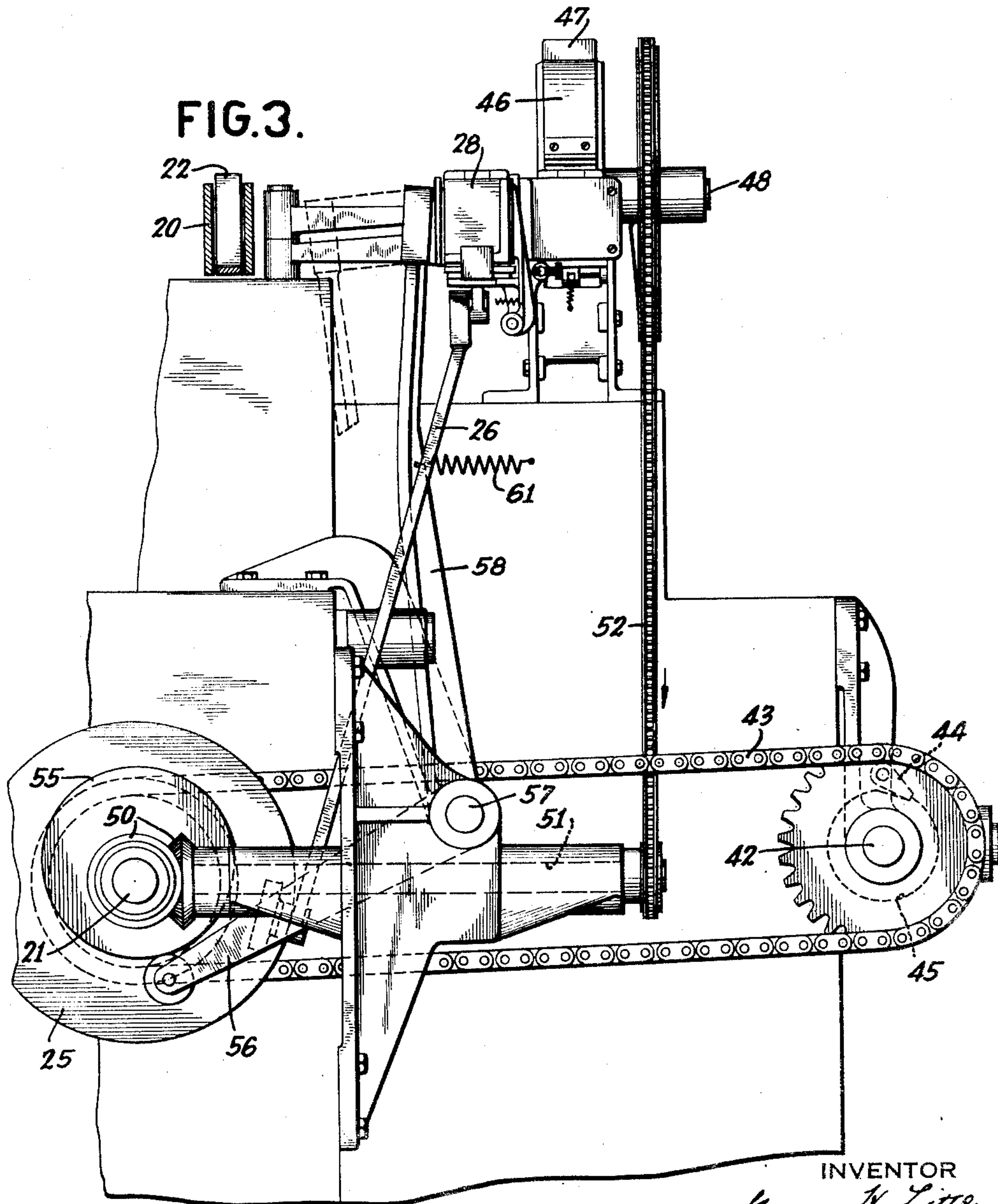


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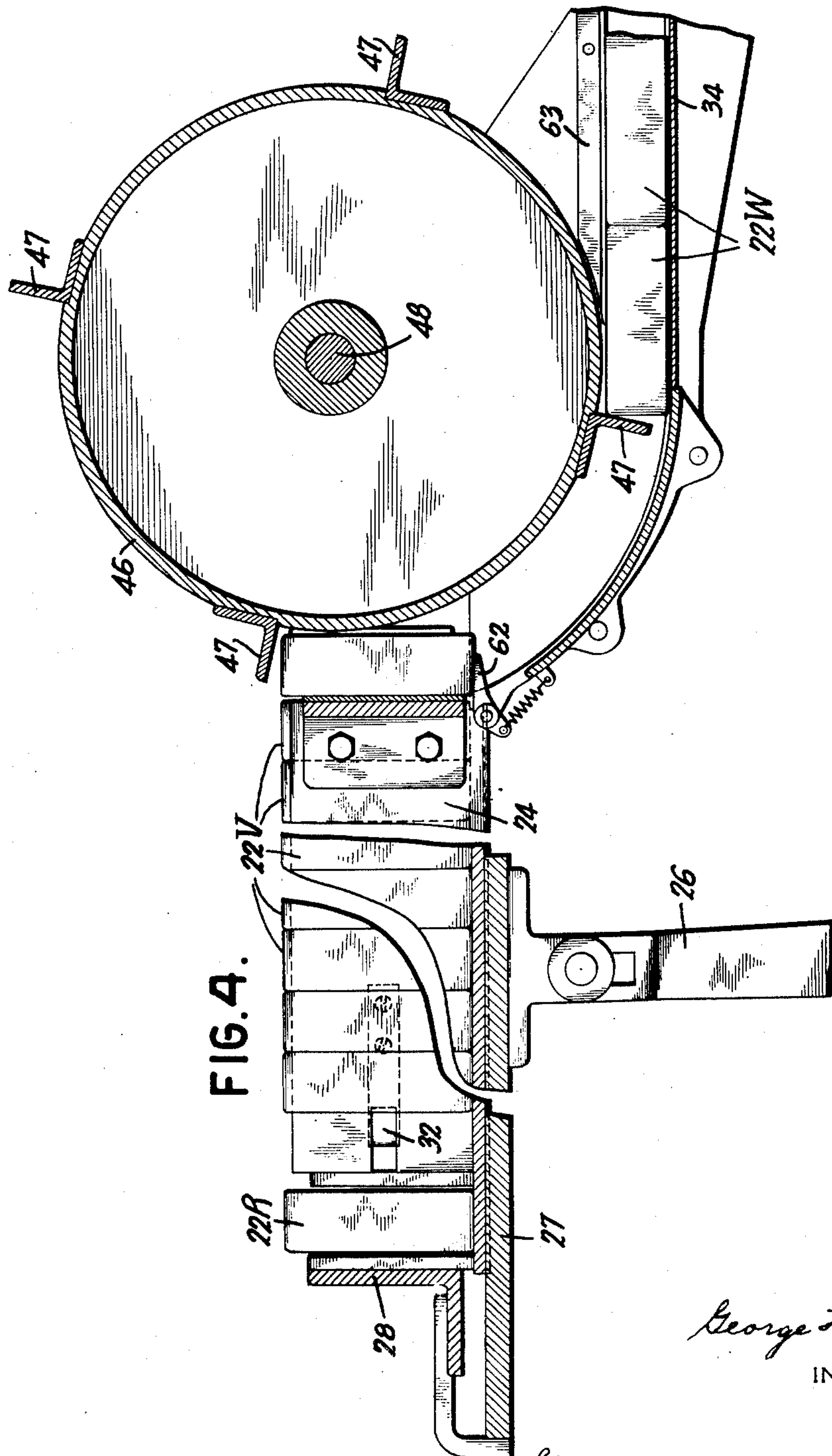


FIG. 4.

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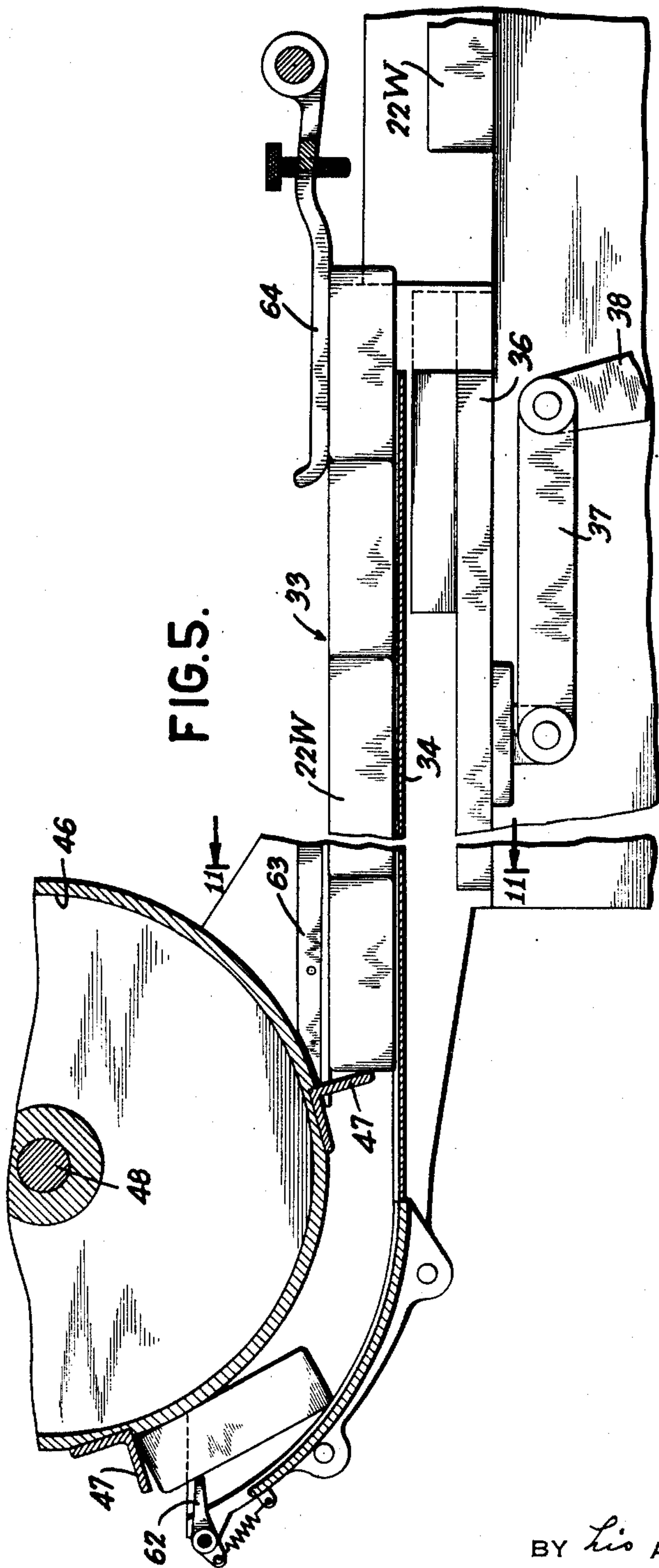


FIG. 5.

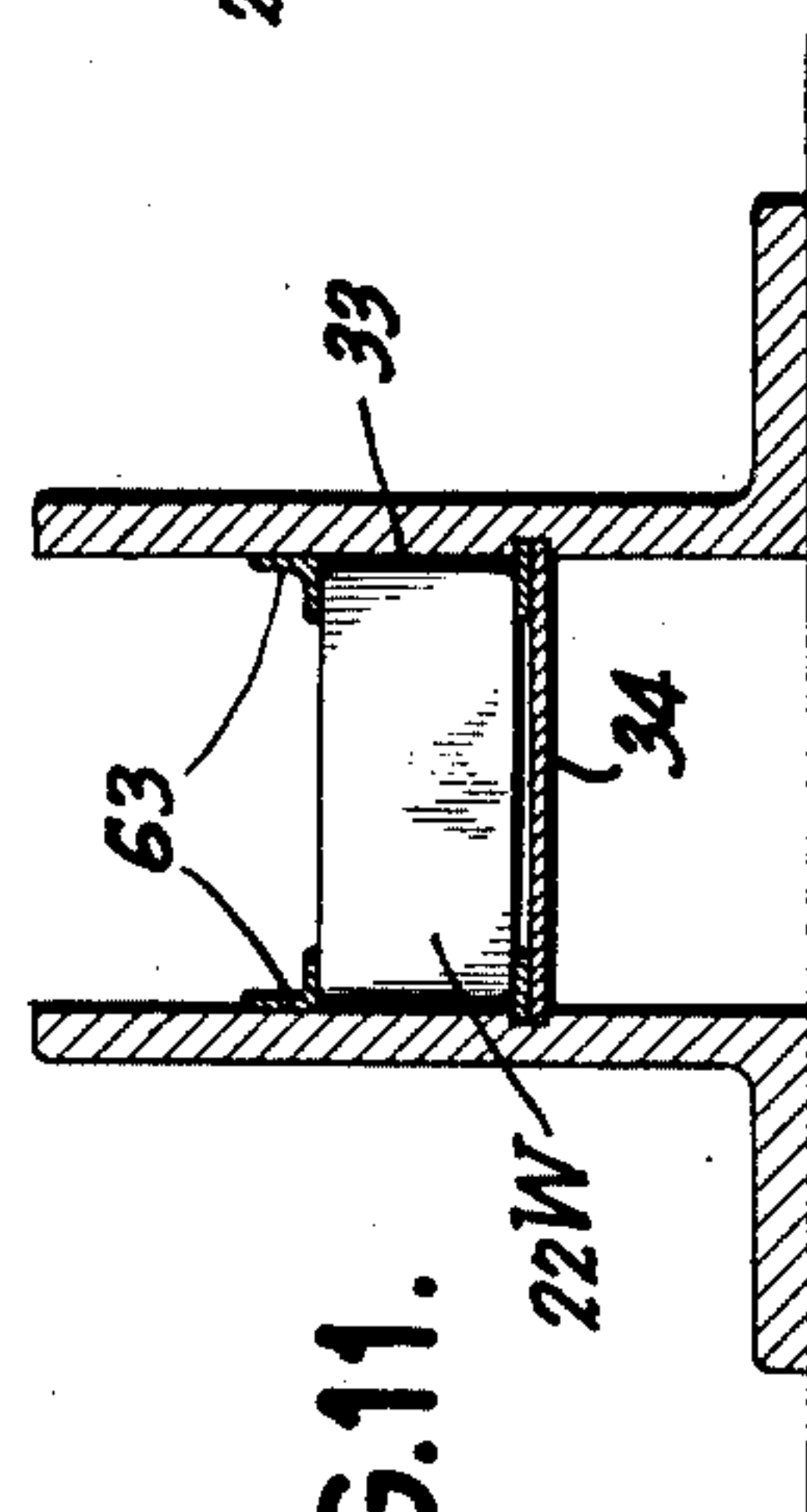


FIG. 11.

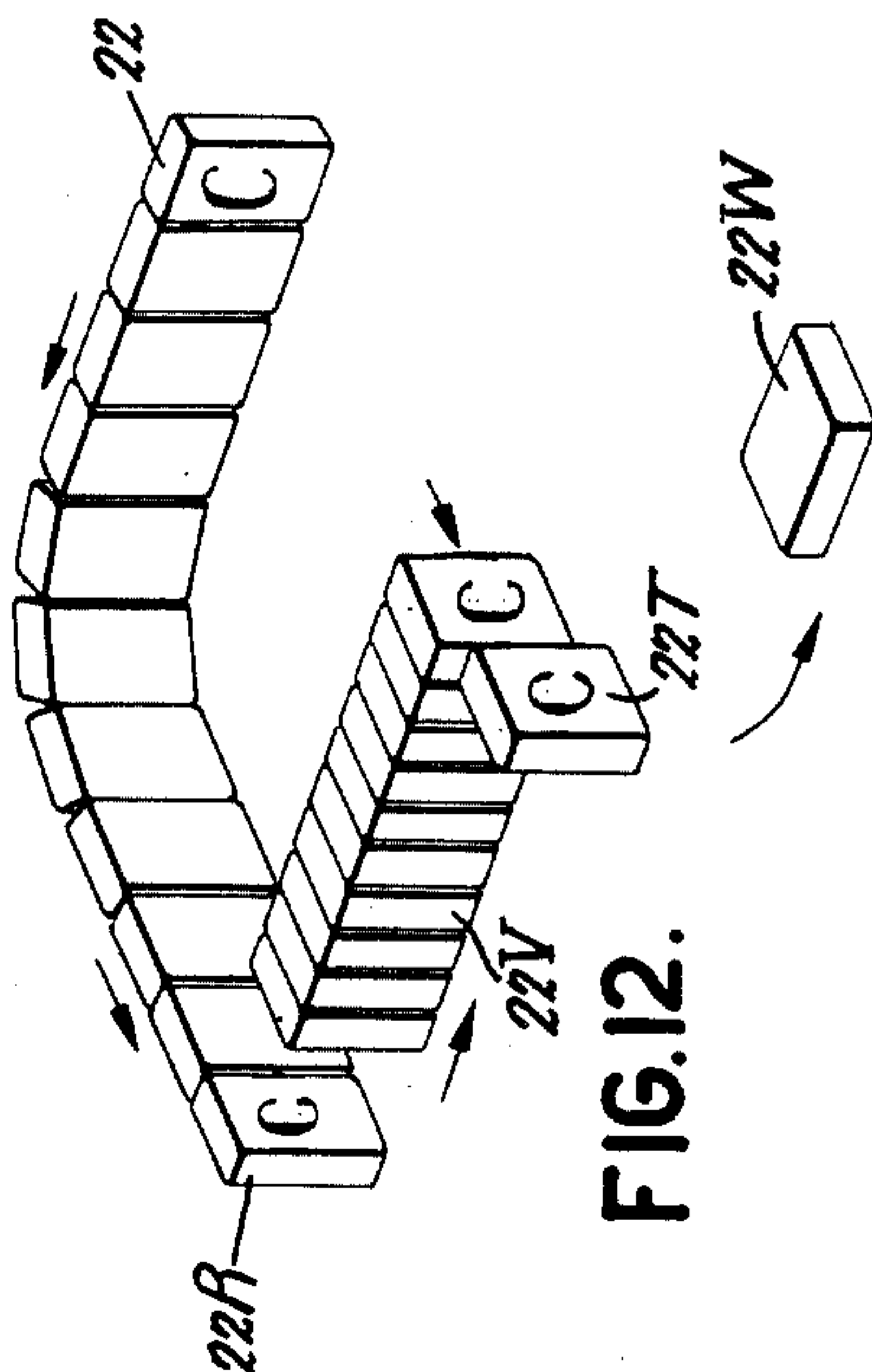


FIG. 12.

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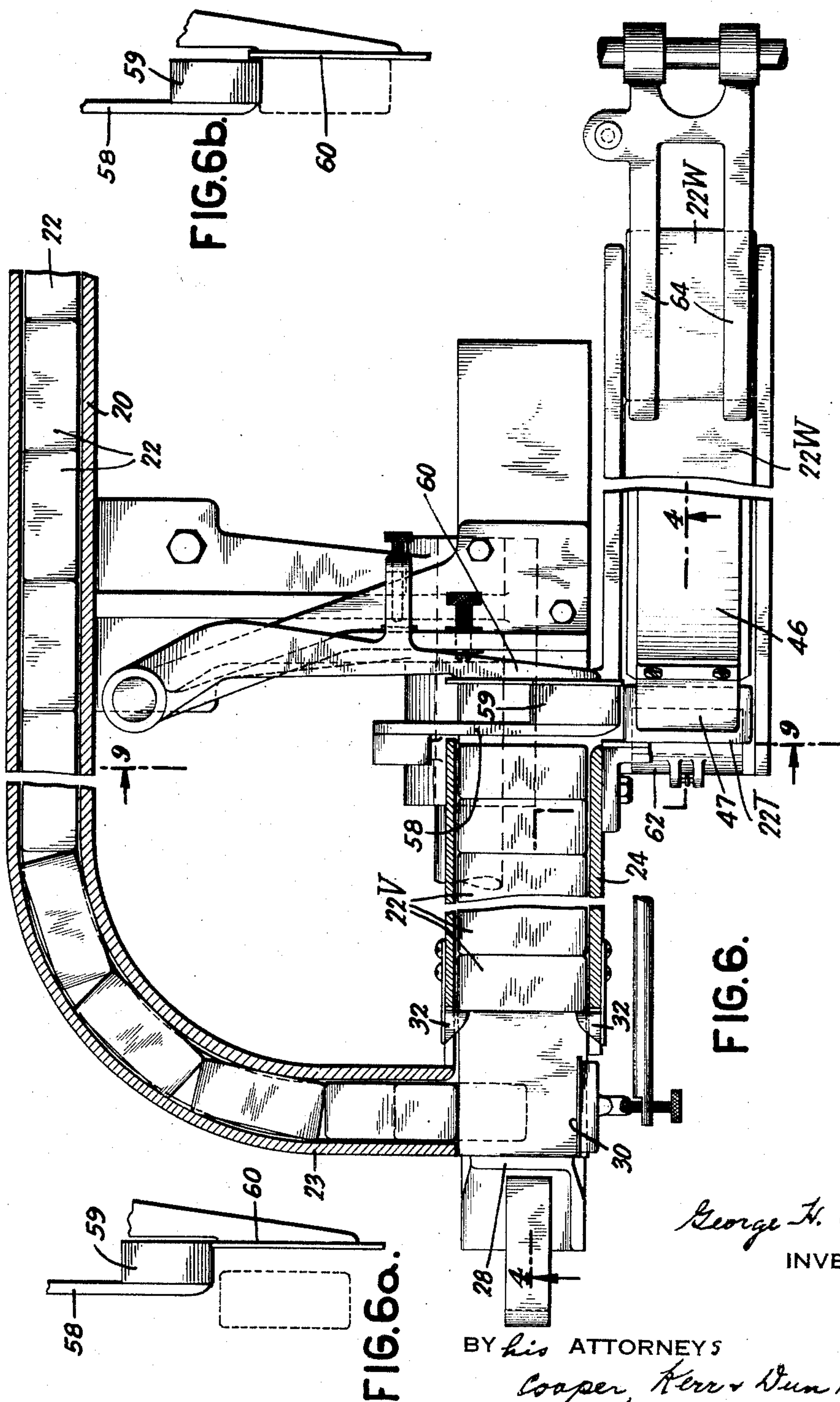
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FIG. 8.

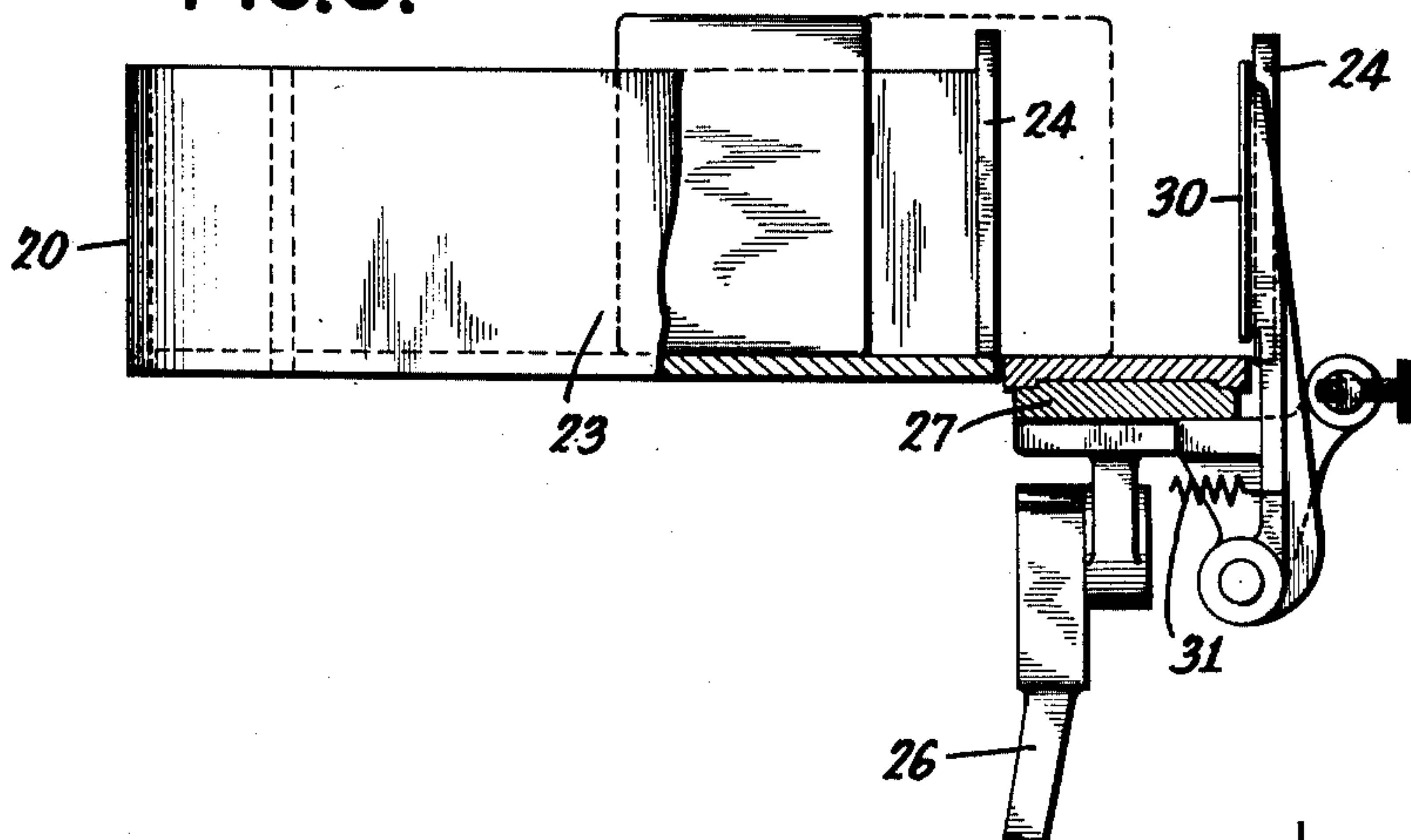


FIG. 9.

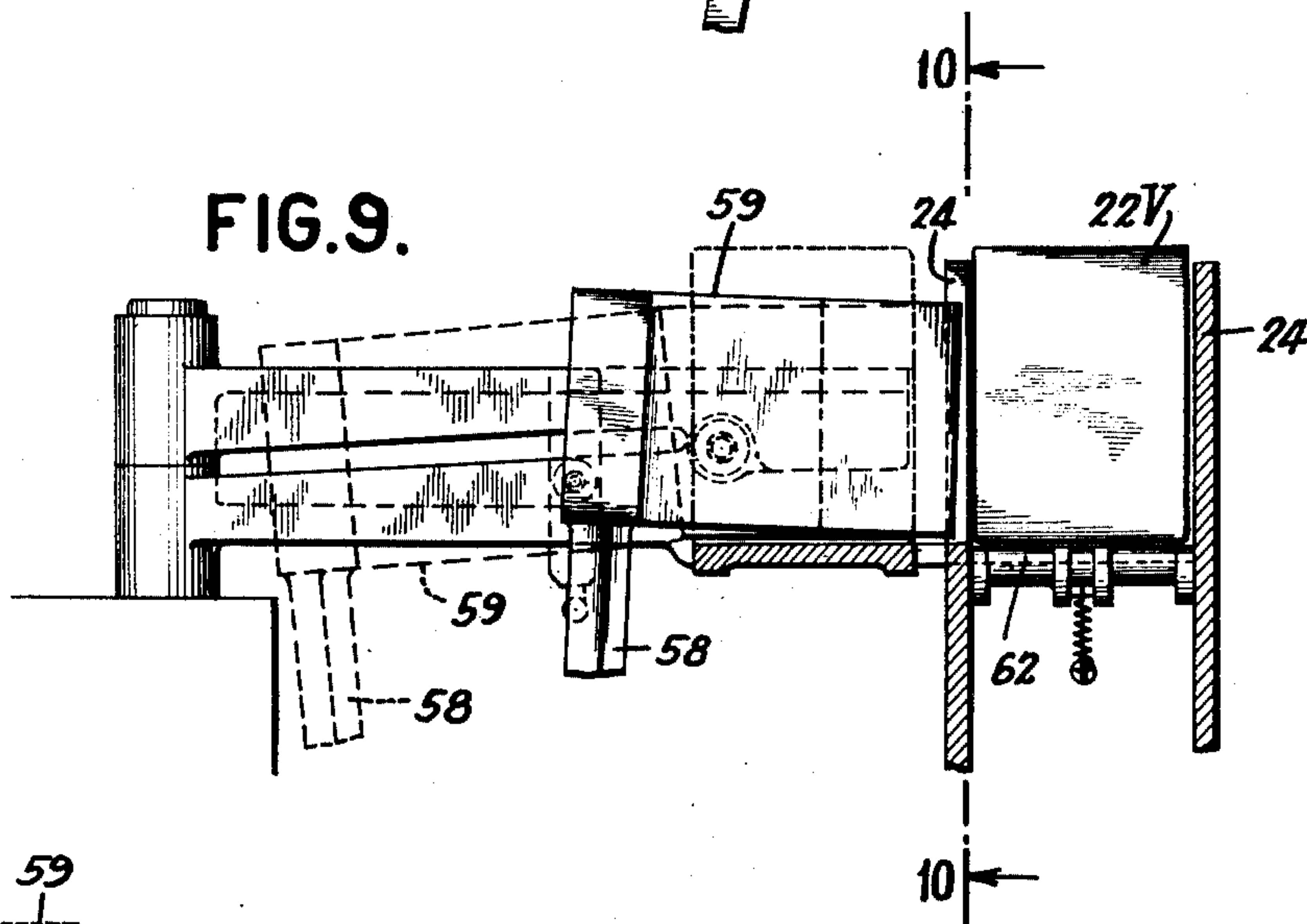
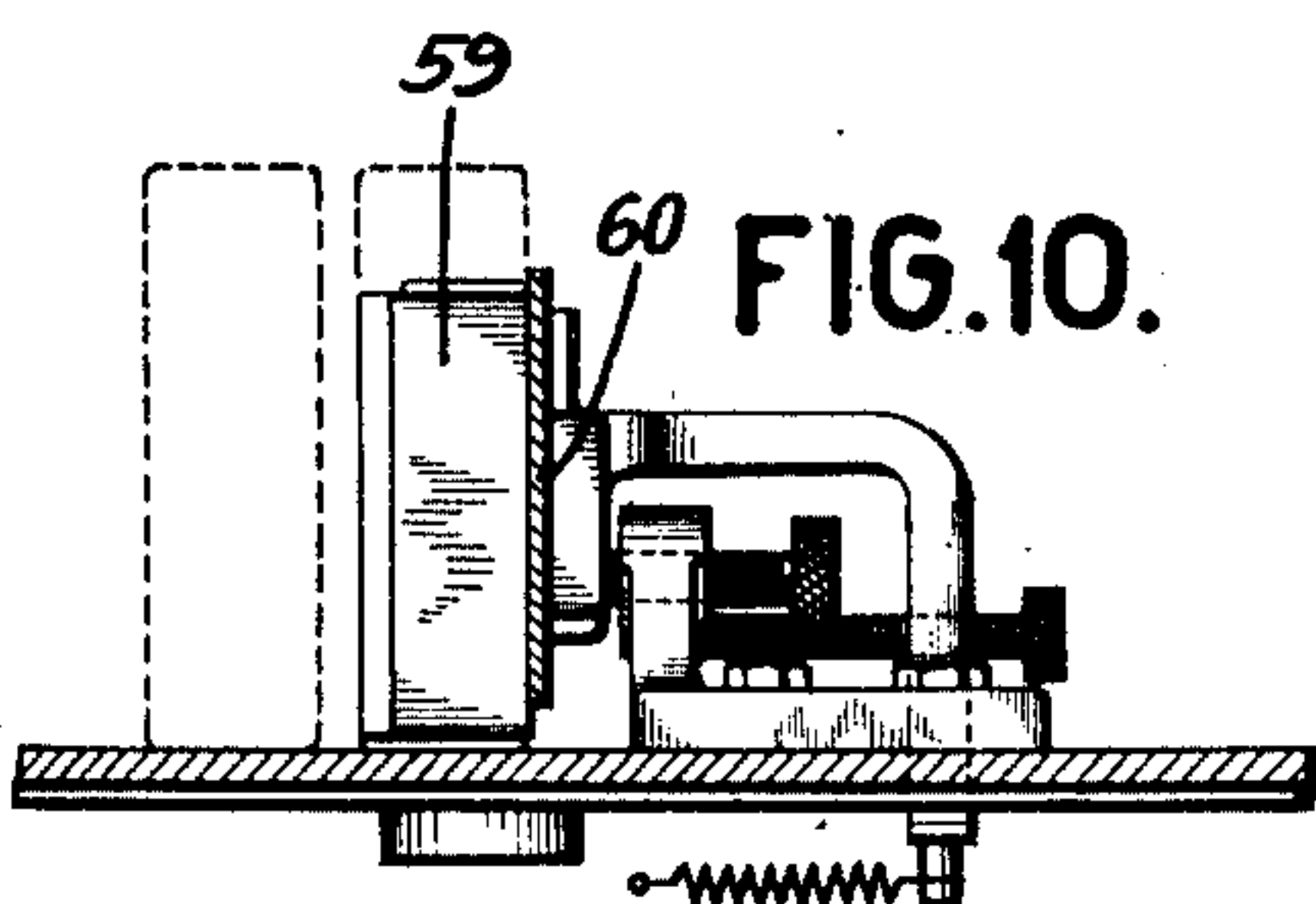


FIG. 10.



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UNITED STATES PATENT OFFICE

1,961,697

COORDINATING MECHANISM FOR PACKAGING AND WRAPPING MACHINES AND PACKAGE TRANSFER MECHANISM THEREFOR

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to R. J. Reynolds Tobacco Company, Winston-Salem, N. C., a corporation of New Jersey

Application February 10, 1931, Serial No. 514,723

17 Claims. (Cl. 198—25)

In the manufacture of cigarettes, it is the common practice at the present time to package the cigarettes in a so-called packaging machine. This packaging machine places the individual cigarettes in a package which the machine prepares and thereafter the package is sealed, revenue stamp affixed and the completely packaged cigarettes delivered from the machine via a suitable delivery chute.

It is a further practice in the manufacture of cigarettes to subsequently wrap the packages in a separate wrapping machine. This wrapping may be of various forms and at the present time such wrapping machines are adapted to provide a cellophane wrapping about each individual package.

Heretofore in cigarette manufacture the packaging machine and the wrapping machine have been distinct and separate machines and an operator's attention was required to load the packages into the wrapping machine after they were delivered into the delivery chute of the packaging machine.

In the operation of the packaging machine occasionally a package is improperly packed or the revenue stamp is improperly applied so that one or possibly several of the packages are withdrawn by an operator or otherwise, either during their passage through the machine or while they are in the delivery chute of the packaging machine. This withdrawal of packages from the ultimate delivery chute of the packaging machine or from preceding operating stations in the machine has heretofore prevented operating the wrapping machine with the packaging machine so that packages were directly delivered to the wrapping machine as they emerged from the packaging machine.

The present invention is directed to an improved mechanism for coordinating the driving actions of both a packaging and wrapping machine so that packages may be delivered by the packaging machine automatically to the wrapping machine without the necessity of manual intervention and manual loading of the wrapping machine.

A further object of the present invention resides in the provision of a novel package transfer mechanism for transferring packages from a packaging machine to a wrapping machine or the like and for controlling the transferring operation in such a way that variations in the delivery of packages from the packaging machine do not effect the proper transfer of packages to the wrapping machine.

A further object of the present invention resides in the provision of controlling means for a package transferring mechanism which will prevent damage to packages during the transferring operation.

A further object of the present invention resides in the provision of a mechanism for effecting a coordinated drive of a packaging machine and wrapping machine and for transferring packages from the packaging machine to the wrapping machine.

A further object of the present invention resides in the provision of mechanisms for coordinating the operations of a packaging machine and a wrapping machine and for transferring packages from one machine to the other in such a way that a package is timed as to its transfer into the wrapping machine so that it can be properly handled in such machine.

Further and other objects will be hereinafter set forth in the accompanying specification and claims and shown in the drawings, which by way of illustration show what I now consider to be preferred embodiments of the invention.

In the drawings:

Figure 1 is a side elevational view of a portion of the packaging machine and a portion of the wrapping machine and shows a side view partially in section of the transferring mechanism and coordinating drive mechanism;

Fig. 2 is a top plan view of the parts shown in Fig. 1;

Fig. 3 is an end elevational view taken on substantially lines 3—3 of Fig. 2 but with one delivery chute of the packaging machine shown in section;

Fig. 4 is an enlarged sectional view of the transferring wheel and of certain other parts shown in Fig. 1;

Fig. 5 is a view similar to Fig. 4 but showing the transferring wheel in displaced position and this figure also shows certain parts of the wrapping machine;

Fig. 6 is an enlarged view of certain parts shown in Fig. 2 and shows the position of the parts with the transfer plunger delivering a package to the transferring wheel;

Fig. 6a shows the position of the parts when a latch locks the transfer plunger against operation;

Fig. 6b shows a fragmentary view of the same parts with the latch released by an oncoming package;

Fig. 7 is an enlarged view of certain parts shown in Fig. 2 and shows the latch for the

first plunger, which latch is also controlled by the oncoming packages;

Fig. 8 is a detail sectional view of the parts shown on Fig. 7, the section being taken on lines 8—8 of Fig. 7;

Fig. 9 is a detail sectional view of certain parts shown on Fig. 6, the section being taken on lines 9—9 of Fig. 6;

Fig. 10 is a detail sectional view taken on lines 10—10 of Fig. 9;

Fig. 11 is a detail sectional view taken on lines 11—11 of Fig. 5; and

Fig. 12 is a diagrammatic view showing the path taken by the packages as they are taken from the packaging machine and transferred to the wrapping machine.

Before describing in detail the operation of the machine, the path of the packages from the packaging machine to the wrapping machine will be briefly described. This is best shown by reference to Fig. 12. In this figure at 22 the packages of cigarettes are shown as emerging from the packaging machine. They progress with a step by step movement to the left in edgewise abutting relation and the first operation is to turn the packages through an angle of 90 degrees. 22R indicates the packages so turned to an angle of 90 degrees. From the final 22R position the packages are advanced in flatwise abutting relation and standing up vertically as shown at 22V. In order to wrap the packages the packages must be advanced in the wrapping machine in the relation as indicated at 22W, that is each package must be lying down flat with the long dimension of the package conforming with the path and direction of travel of the package. To bring the packages from the 22V position to the 22W position, each package is transferred laterally as indicated at 22T. Suitable transferring mechanism then swings the package through an arc of approximately 90 degrees from the 22T position to the 22W position.

It may be also explained that delivery of the packages from the packaging machine to the wrapping machine may be suspended or interrupted. Packages may be removed at 22 or packages may not be delivered at 22 due to actions which occur in the packaging machine. Furthermore the operator may possibly remove packages when they are in the 22V position. Accordingly, certain latching mechanisms are provided in the machine which will be hereinafter described which insure that there is a package at the 22R position before transfer is effected from the 22R position to the 22V position.

Another interlock or latching mechanism is provided to insure a package being in position to be advanced from the final or right hand 22V position into the 22T position. These mechanisms will subsequently be described in detail.

Having generally pointed out the path of travel of the packages, the machine will now be described in detail.

In more detail in the drawings referring particularly to Figs. 1 and 2, 20 represents the delivery chute of the packaging machine. This packaging machine need not be further illustrated, it being of the conventional type adapted to package cigarettes or other commodities. After the articles are packaged in the packaging machine they are delivered by an intermittent motion into chute 20, Fig. 2, and then progress to the left in the chute 20 in edgewise abutting relation as shown. A suitable plunger mechanism (not shown) on the packaging machine

intermittently advances the packages to the left in chute 20 (Fig. 2).

The packaging machine is provided with a drive or cam shaft 21. The first operation which is performed upon the packages 22 (see Fig. 12) is to turn them through an angle of approximately 90 degrees. This is effected by providing a curved portion 23 on chute 20 at the left hand end of this chute. From the curved chute 23 the packages one by one are delivered to a transfer point at which point the individual packages are transferred and packed into a second delivery chute 24 in flatwise abutting relation.

The transferring mechanism for transferring the packages which emerge from the end of chute 23 to chute 24 will now be described.

Cam shaft 21 on the packaging machine is provided with a cam 25 (Fig. 2 and Fig. 1) and cooperating with this cam is a suitable spring pressed follower 26. This follower 26 at its upper end connects to a slide 27 (see Fig. 4) which slide has connected to it a plunger 28. This plunger will hereinafter be termed "plunger No. 1" or the first transferring plunger. It will be understood that the plunger 28 has a back and forth motion. Its backward motion to the left in Figs. 1 and 6 is imparted by the cam 25 and its forward motion is imparted by the spring on the cam follower 26. It will be understood that the plunger 28 advances to the right to deliver a package which is emerged from chute 23 into chute 24 at a time which is permitted by the configuration and timing of cam 25. It may be explained, however, that in the operation of the packaging machine, occasion frequently arises where there is a delay in the transfer of packages from the chutes 20 and 23. Packages may be removed for manual inspection or a defective package may be produced by the packaging machine which requires removal. Accordingly provision is made to latch the No. 1 plunger 28 until the package has fully emerged from chute 23 and in proper position to be delivered by the plunger 28 into chute 24. This latching mechanism will now be described.

Referring to Figs. 7 and 8, adjacent and opposite to the end of the chute 23, there is provided a pivoted plate-like member 30 which member is adapted to be displaced by a suitable spring 31 into a position in which the edge of the plate 30 will latch the edge of the plunger 28, see Fig. 7, and prevent its advance. When an oncoming package 22 has been advanced from the chute 23 into a position in which it is in proper alignment with chute 24, such oncoming package will displace the latch plate 30 out of latching relation with the plunger 28 and thereafter at the time permitted by the contour of the cam 25 the plunger 28 will be permitted to advance to the right in Figs. 7 and 2 and this movement will displace the package and pack it into the chute 24 in flatwise abutting relation to the other packages previously delivered into the chute. Retrograde movement of the packages in chute 24 is prevented by spring supported pawls 32 as shown in Fig. 7. As the operation of the machine proceeds, it will be understood that the packages are delivered one by one into chute 24 and advance down the chute 24 to the right as shown in Fig. 2.

Before describing the mechanism for transferring the packages from the packaging machine to the wrapping machine, certain parts of

the wrapping machine and the coordinating driving mechanism intermediate the packaging machine and the wrapping machine will be described.

5 Referring to Figs. 5 and 11, 33 represents the supply chute of the wrapping machine, which chute is provided with a false bottom 34. Under-
 10 neath the false bottom is disposed a plunger 36 of the wrapping machine. This plunger by its advancing motion is adapted to advance any package in front of it and which package may have been delivered into position in front of the plunger by advancing over the end of the false
 15 bottom 34. Other parts of the wrapping machine need not be further described or illustrated since they are of conventional construction. The plunger 36 which will also be termed the No. 3 plunger or delivery plunger of the wrapping machine is operated by a suitable link-work 37
 20 connected with a follower 38 which follower is in turn operated at proper timed relation by a cam 39 on a drive and cam shaft 40 of the wrapping machine. Shaft 40 is driven in proper timed relation with the shaft 21 of the pack-
 25 aging machine by the following train of mechanism. By bevel gears 41, through shaft 42 and via a chain and sprocket drive 43 to shaft 21 of the packaging machine. Preferably the drive from the sprocket 43a (Fig. 2) to the shaft 42
 30 is through a pawl 44 and a ratchet 45. 45 is provided with only one ratchet tooth. This pawl and ratchet drive is provided to permit the turning over of the wrapping machine by hand and to provide for the picking up of the wrapping
 35 machine drive in the proper timed relation to the packaging machine drive when the drive to the wrapping machine comes through the chain and sprocket mechanism 43.

40 In the wrapping machine it will be understood that the plunger 36 or the No. 3 plunger is adapted to advance packages one by one as they are placed in front of the plunger and advance the same into the wrapping machine where wrapping operations are carried out in the usual
 45 way.

50 In Fig. 1 several packages are shown enroute into the wrapping machine and forward of the plunger 36. As is shown in this figure the packages which are advanced to be wrapped in the wrapping machine are lying down flat (see 22W, Fig. 12).

Transferring mechanism

55 Adjacent to the exit or right hand end of the chute 24, Fig. 2, and laterally to the one side of the chute is disposed a transfer cylinder or wheel 46. This wheel is in the form of a hollow drum and at the periphery of the drum are a number of blades 47 equally spaced upon the
 60 drum, four of such blades being shown. The drum or wheel 46 is carried upon a shaft 48 which is suitably journaled. The drum or wheel is continuously driven from the shaft 21 of the packaging machine by the train of mechanism shown in Fig. 2 which comprises bevelled gears
 65 50 which drive the shaft 51, which shaft in turn drives the drum 46 through a chain and sprocket drive, the chain being indicated at 52, Figs. 2 and 3.

70 In order to transfer the packages laterally from the chute 24 to a position in which they may be picked up by the transfer wheel, the following mechanism is provided. The shaft 21 of the packaging machine carries a suitable cam 55
 75 (see Figs. 2 and 3). This cam cooperates with

a cam follower 56 which in turn connects to a rock shaft 57 which extends along beneath the chute 24 and at a point substantially below the right hand end of the chute 24 there is
 80 affixed to this rock shaft 57 an upstanding arm 58 which at its upper end is provided with a plunger 59 (see Figs. 6, 6a and 6b). When pack-
 85 ages are being advanced in flatwise abutting relation down the chute 24, the plunger 59 is in retrograde position to permit the leading pack-
 90 age to pass in front of it and contact with a pivoted latching member 60. This latching member 60 functions in the manner previously described for latching member 30, that is the member 60 latches the plunger 59 (see Fig. 6a)
 95 and maintains plunger 59 latched until the package has fully advanced. When the package is thus fully advanced, the plunger 59 is released (see Fig. 6b) and the action of the spring
 100 61 (Fig. 3) swings the plunger in forward direction and displaces the package laterally from the chute 24 over upon a spring held pivoted shelf 62 adjacent the transfer wheel. It will be understood that the time of movement of the plunger 59 for transferring a package from the
 105 chute 24 over upon the shelf 62 is dependent upon the configuration and timing of cam 55 previously referred to. This timing is preferably such that the package assumes its position upon the shelf, as shown in Fig. 6, just before the
 110 blade of the transfer wheel reaches the package (see Fig. 4). The package is now picked up by the blade of the wheel and is carried around an arc of substantially 90 degrees, the shelf
 115 tilting to permit the traverse of the package in the manner shown in Fig. 5. Eventually the package is delivered into the supplementary supply chute 33 of the wrapping machine. Preferably adjacent the end of this chute a pair of
 120 rails 63 are provided (see Figs. 5 and 11) which overlie the package to prevent it from rising in the chute. As successive transferring operations ensue, ultimately the chute 33 will become filled with packages. Thereafter the feeding in of one
 125 package into the chute will deliver the leading package in the chute in front of the plunger 36 of the wrapping machine. The parts are so timed and related that a package is placed in front of the plunger 36 at the proper time of the
 130 cycle in the wrapping machine; i.e. when the plunger 36 is in retrograde position. To aid in diverting the leading package down in front of the plunger, a pair of pivoted fingers 64 are provided adapted to lightly press the package
 135 down as it is forced over the leading end of the false bottom 34.

The operation of the machine will now be briefly summarized.

140 Packages are delivered from the packaging machine and by an intermittent motion progress towards the left in the straight chute 20, there-
 145 after the packages are turned by the curved portion of the chute and delivered to a position in front of the chute 24. At the proper time plunger 28 packs the packages in upstanding
 150 flatwise abutting relation in the chute 24. The packages progress with an intermittent precessional movement to the right in the chute 24 and when a package is in proper position to be transferred to the transfer wheel the plunger 59
 (the No. 2 plunger) transfers the package over to the shelf 62 to a position in which the pack-
 age can be picked up by the transfer wheel. The timing of the plunger 59 and the arrange-
 ment of the latch 60 insures that there will be

no transfer of a package towards the wheel until a package is fully advanced from chute 24 and in position to be properly transferred to the wheel. The time of transfer of a package to the wheel is furthermore coordinated with the timing of the wheel and in particular with the position of the blades on the wheel. The transfer wheel then swings the package through an angle of approximately 90 degrees and delivers it into the supply chute of the wrapping machine in lying down position and with the end edges of the packages in abutting relation to one another. The timing of the package movement by the wheel controls the time of the delivery of the package in front of the No. 3 plunger of the wrapping machine.

Accordingly it will be understood that the combined machine will properly operate and there will be no disturbance or improper delivery of packages into the wrapping machine notwithstanding the fact that there may be a temporary interruption of the delivery of packages by the packaging machine.

It will be appreciated that packages can be manually removed from chute 20 or from chute 24 or the feed of the packages down chute 20 may be temporarily suspended. When any of these actions take place, the latching mechanism 60 comes into action to prevent an advance of the plunger 59 until the package is in proper position to be picked up by this plunger. Even then the actual advance of the plunger 59 is timed and coordinated by its cam which cam is in turn timed and coordinated with the transfer wheel so that there will be a proper delivery of packages into the transfer wheel.

No further details of the wrapping machine need be given. It may be explained, however, that the wrapping machine is provided with devices to restrict the supply of the wrapping material in the event a package is not fed into the machine by plunger 36.

What I claim is:

1. A machine for transferring packages one by one from a packaging machine to a wrapping machine including in combination, a delivery chute which receives the packages from the packaging machine, a supply chute to deliver packages into the wrapping machine, a continuously rotating transfer wheel disposed to deliver into and feed packages to the supply chute of the wrapping machine, said wheel including a part adapted to directly engage a wall of each package in direct intercepting relation and by said direct intercepting engagement to positively urge and displace the package in the direction of rotation of the wheel, and means for delivering a package from the delivery chute of the packaging machine into the transfer wheel, for the aforesaid intercepting engagement and positive displacement by the aforesaid package-displacing part of the transfer wheel.

2. A transferring mechanism for transferring packages which emerge from a packaging machine into a wrapping machine, said transferring mechanism including a rotatable bladed transfer wheel, mechanism for delivering a package laterally and in a direction parallel with the axis of the wheel into the path of the blades of said wheel, said bladed wheel being adapted thereafter upon the rotation of the wheel to deliver the package on a path which is substantially tangent to the wheel.

3. A package transferring mechanism for transferring packages from packaging machine

apparatus from which the packages are delivered in upstanding flatwise abutting relation to a wrapping machine adapted to receive successive packages in lying-down endwise abutting relation, comprising in combination, a chute along which the packages are advanced in said flatwise abutting relation, a wrapping machine chute for conducting the packages in said endwise abutting relation to the wrapping machine, means for individually displacing packages in succession laterally from said first-mentioned chute, means receiving the laterally displaced packages including means for thereafter turning the successive packages through an arc of substantially 90 degrees and delivering and advancing them in said endwise abutting relation in said second-mentioned wrapping machine chute.

4. Package handling mechanism for delivering packages to a cyclically operating package handling device and in proper timed coordination with the operating cycle of the latter, comprising a supply chute for said device, package receiving and transferring means including a feeding device to which packages are advanced, and a rotatable bladed wheel receiving successive packages fed thereto by the feeding device, and adapted by its rotation to turn each package and deliver the same in the supply chute in proper relation for the cyclically operating handling device, and driving connections common to the latter device and to the feeding device and wheel for properly timing and coordinating package handling action of both said devices and said wheel with each other, said feeding device including means associated therewith for automatically suspending package feeding action thereof to the wheel when packages are not advanced to the feeding device and for automatically permitting a resumed package feeding action when a package is available and in proper position for such feeding action.

5. A machine of the class described for transferring cigarette packages from a cigarette packaging machine to a cigarette package wrapping machine, including a package handling mechanism for receiving the packages in upstanding edgewise abutting relation from the packaging machine and delivering the packages end to end and in flatwise relation to the wrapping machine, said mechanism having a package turning device adapted to turn and deflect successive packages from an upstanding position to deliver them one by one in end to end flatwise position, and package displacing means adapted to displace packages out of edgewise abutting relation and to feed them laterally in succession to the turning device in proper upstanding position for turning action thereof.

6. Transferring mechanism for transferring packages intermittently received from a packaging machine to the package feeding devices of a wrapping machine comprising a continuously rotatable wheel operating in timed coordination with the feeding devices of the wrapping machine, means for introducing packages individually into said wheel while the latter is rotating, and a supply chute leading from said wheel into which packages are delivered by said wheel and through which packages are advanced by the action of said wheel to the feeding devices of the wrapping machine, the aforesaid package-introducing means including devices which feed packages to the wheel in a direction which is parallel with the axis of rotation of the wheel.

7. A transfer mechanism for transferring packages which are received in upstanding relation and for delivering the same into a supply chute in lying down endwise abutting relation, said mechanism including a rotatable bladed transfer wheel, and a supply chute receiving the packages from said wheel, the blades of said wheel serving the dual purpose of transferring packages and for advancing the same in said supply chute in said endwise abutting relation, said wheel further timing the movement of advance of the packages in said chute.

8. A package transfer mechanism comprising a rotatable bladed wheel, a yielding shelf upon which packages may be slid endwise in intercepting relation to the bladed wheel and a tangentially disposed chute receiving packages after they are turned through an angle by the wheel and through which the packages are advanced by said wheel.

9. A mechanism for transferring packages one by one from an advancing column of upstanding packages to deliver same in lying-down position to a cyclically operating package handling device in proper timed coordination with the operating cycle of said device, comprising a plunger package feeding device receiving packages from the advancing column of same, driving connections intermediate the cyclically operating handling device and the last-mentioned plunger device, a package-turning transfer device operated by said driving connections and receiving successive packages fed thereto by the plunger device and adapted by its action to turn each package and deliver the packages one by one in lying-down position for feed to the package handling device in the said timed coordination, and means associated with said plunger device for automatically suspending package feed to the transfer device on temporary suspension of advance of the column of packages and for automatically maintaining said feed in said proper timed coordination on resumption of package column advance to the plunger device.

10. A mechanism for transferring packages one by one as they advance and emerge from a packaging machine and for delivering the same to a wrapping machine with proper timed delivery to the wrapping machine to accord with the package feed of the wrapping machine and for maintaining the said delivery timing relations upon a resumption of package delivery by the packaging machine after temporary suspension of package delivery, said mechanism comprising driving connections intermediate parts of the packaging and wrapping machines and package transferring devices operated by said driving connections for transferring packages delivered by the packaging machine to the wrapping machine with their delivery thereto timed to accord with the package feed of the wrapping machine, and means also operated by the aforesaid driving connections for effecting delivery of packages one by one to the aforesaid transferring devices in proper timed relation for package transfer thereby, said last mentioned means having a means associated therewith to automatically suspend package delivery to said package transferring devices when packages temporarily are not delivered to said means by the packaging machine and for automatically permitting a resumed delivery when a package is available and in proper position for such delivery.

11. A machine for transferring cigarette pack-

ages from a cigarette packaging machine to the supply chute of a cigarette package wrapping machine, comprising in combination, a delivery chute on the packaging machine along which packages advance by a step by step advancing movement, which movement may be temporarily suspended upon removal of the packages from the chute or by temporary failure of the chute to receive a package, package transfer means receiving packages from said chute and delivering the same successively to the supply chute of the wrapping machine and also adapted to advance packages endwise in said supply chute in proper timed coordination with the operation of the wrapping machine, and means operating in proper timed coordination with the package transfer means to eject packages from the delivery chute in accordance with their advance therein and to deliver the same to the transfer means, said last mentioned means including devices to properly time the reception of packages by the transfer means upon resumption of delivery of packages in the delivery chute of a packaging machine after temporary suspension of delivery of such packages.

12. Package transfer means for disposition between a packaging machine and a wrapping machine, comprising a rotatable transfer bladed wheel, means for supplying packages to said wheel in upstanding relation, and a chute receiving the packages from said wheel after the wheel has turned each package from its upstanding received position to a lying down delivery position.

13. A machine for transferring packages one by one from a packaging machine to a wrapping machine, comprising in combination a delivery chute upon the packaging machine through which the packages advance in upstanding flatwise abutting relation and from which packages may be manually removed, a timed package advancing device at the entrance end of said chute, a second timed package displacing device at the exit end of said chute, said last mentioned device being disposed to effect edgewise ejection of packages one by one out of said chute, package transfer means disposed laterally of said chute receiving packages by edgewise delivery thereinto, said transfer means having provisions for turning said packages to deliver the same successively in endwise lying abutting relation to the supply chute of a wrapping machine, said package displacing device being constructed for ejecting action only in proper timed coordination with the package transfer means and only on disposition of a package into proper relation therewith for said ejecting action, and said package advancing device being adapted to resume and maintain proper timed coordination with the displacing device in advancing successive packages into said proper relation after temporary suspension of package advance into said relation due to absence of one or more packages from the chute.

14. A machine for transferring packages from a packaging machine to a wrapping machine, including in combination a continuously rotating transfer wheel, means for individually delivering the packages thereinto, said means including devices for advancing an individual package by a movement which is in a direction parallel to the axis of the wheel, and a supply chute for a wrapping machine disposed to receive the packages from said transfer wheel in such relation that the packages are advanced in said chute

in lying down endwise abutting relation by the action of the said wheel.

15. A machine for transferring packages from a packaging machine to a wrapping machine, comprising in combination, a supply chute of a wrapping machine in which a series of packages are to be advanced in lying down endwise abutting relation, a package transfer means for both delivering a package into said chute and for advancing other packages previously delivered into said chute, said transfer means including provisions for turning said packages from an upstanding position to said lying-down relation as an incident to the transferring operation, and means for individually delivering packages in upstanding position to said transfer means.

16. A machine for transferring packages from a packaging machine to a wrapping machine, comprising in combination, a supply chute for the wrapping machine in which a series of packages are advanced in lying down endwise abutting relation, a delivery chute upon the packaging machine through which packages are advanced in upstanding flatwise abutting relation, transfer means intermediate the aforesaid delivery chute of the packaging machine and the supply chute of the wrapping machine for re-

ceiving packages from the exit end of the second mentioned chute and for delivering the same into the first mentioned supply chute, and for advancing other packages previously delivered into said supply chute by said transfer means, said transfer means including provisions for turning each package from an upstanding position in which the package is received to a lying down position in which each package is delivered.

17. The invention set forth in claim 16 in which package advancing means are provided for advancing packages through the delivery chute and in which package eject means are provided for ejecting a package from the exit end of the delivery chute and for delivering the same to the transfer means, means timing the package advancing means which advances the package through the delivery chute, the package eject means, and the package transfer means, each with the other, and means for preventing operation of the package eject means until a package advanced by the package advancing means is in proper position for ejection at the exit end of the said delivery chute.

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