

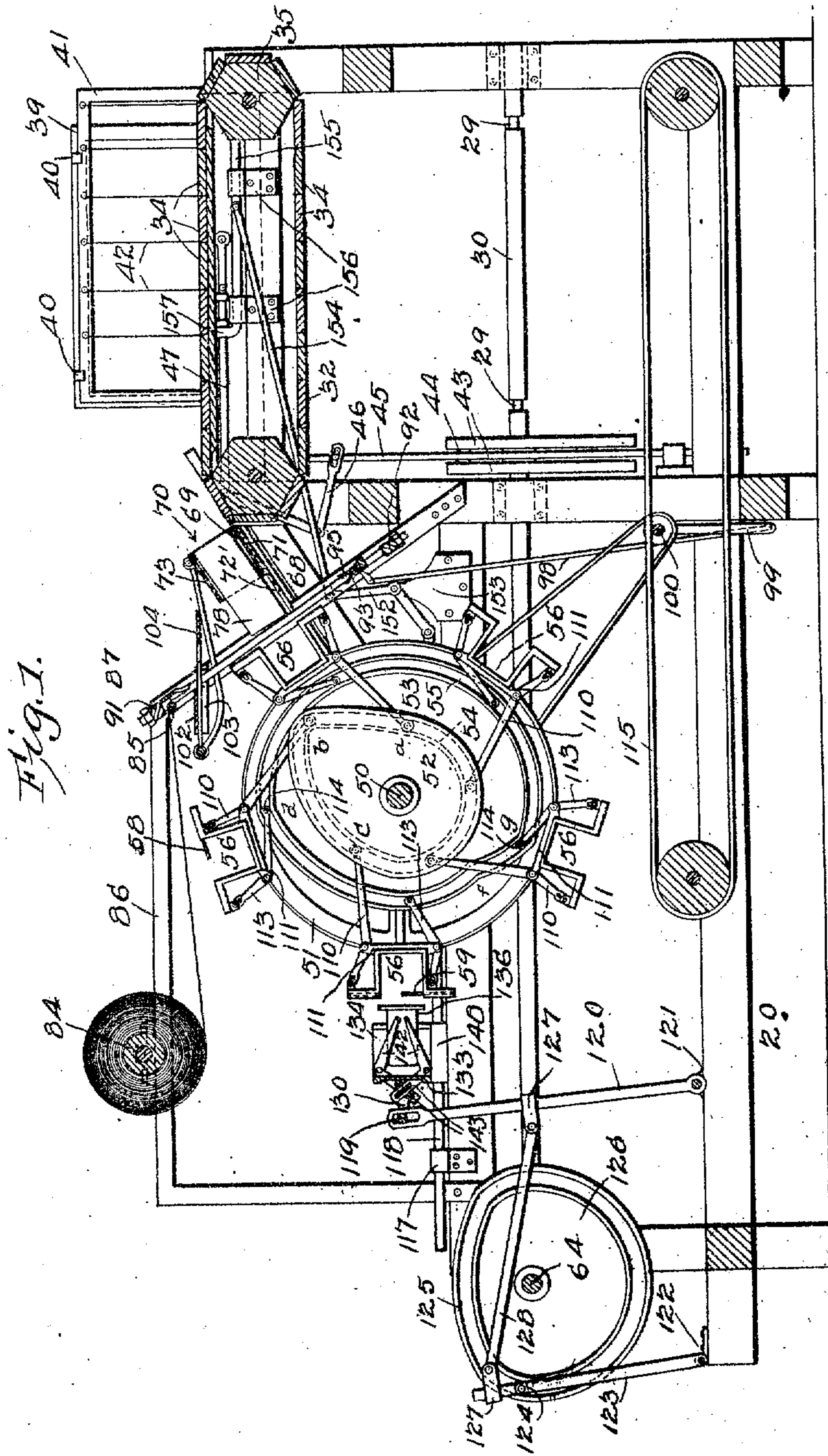
No. 857,466.

PATENTED JUNE 18, 1907.

J. N. JACOBSEN.  
WRAPPING MACHINE.

APPLICATION FILED NOV. 24, 1905.

6 SHEETS—SHEET 1.



Witnesses

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*Geo. E. Parker*

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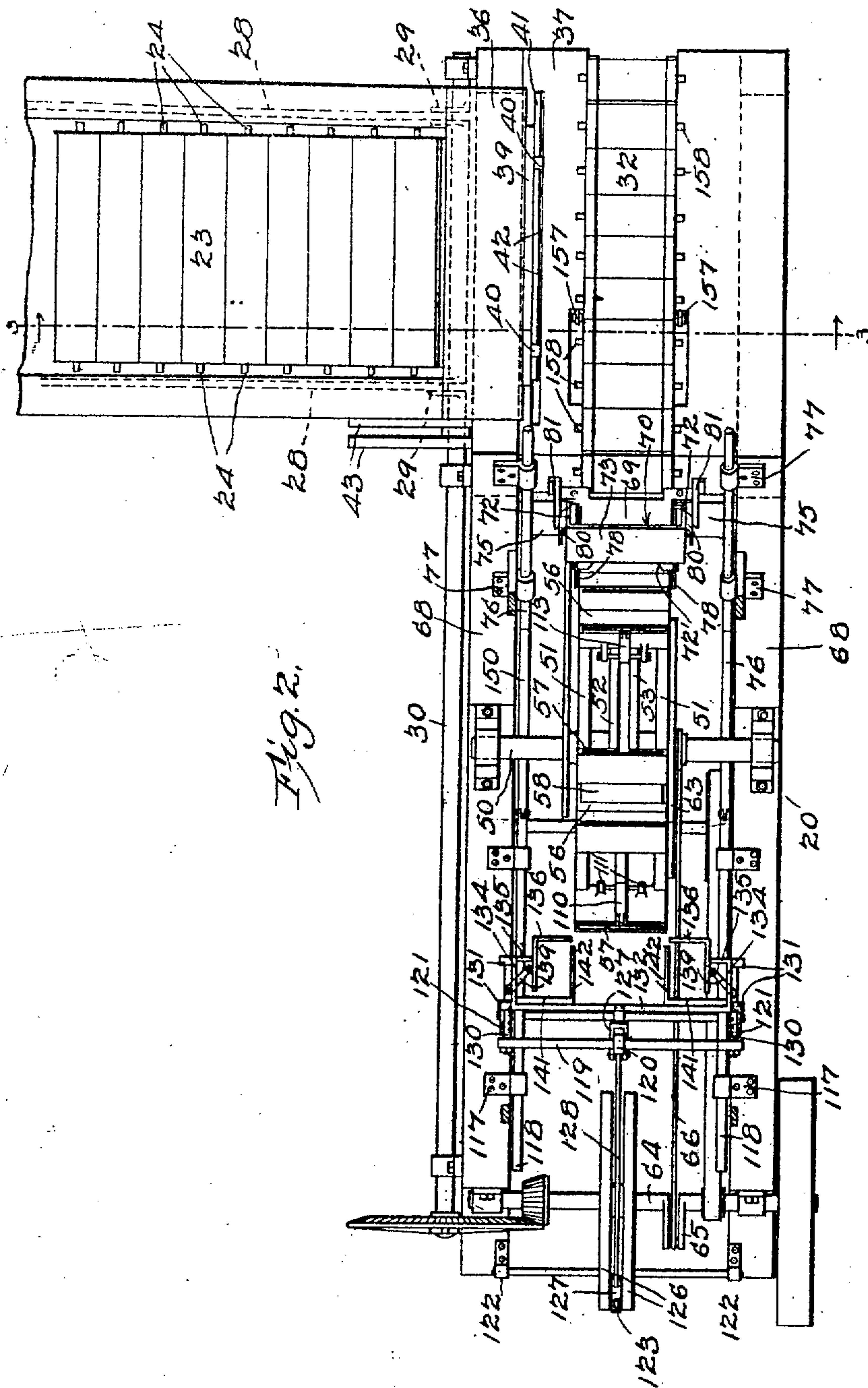
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6 SHEETS—SHEET 2.



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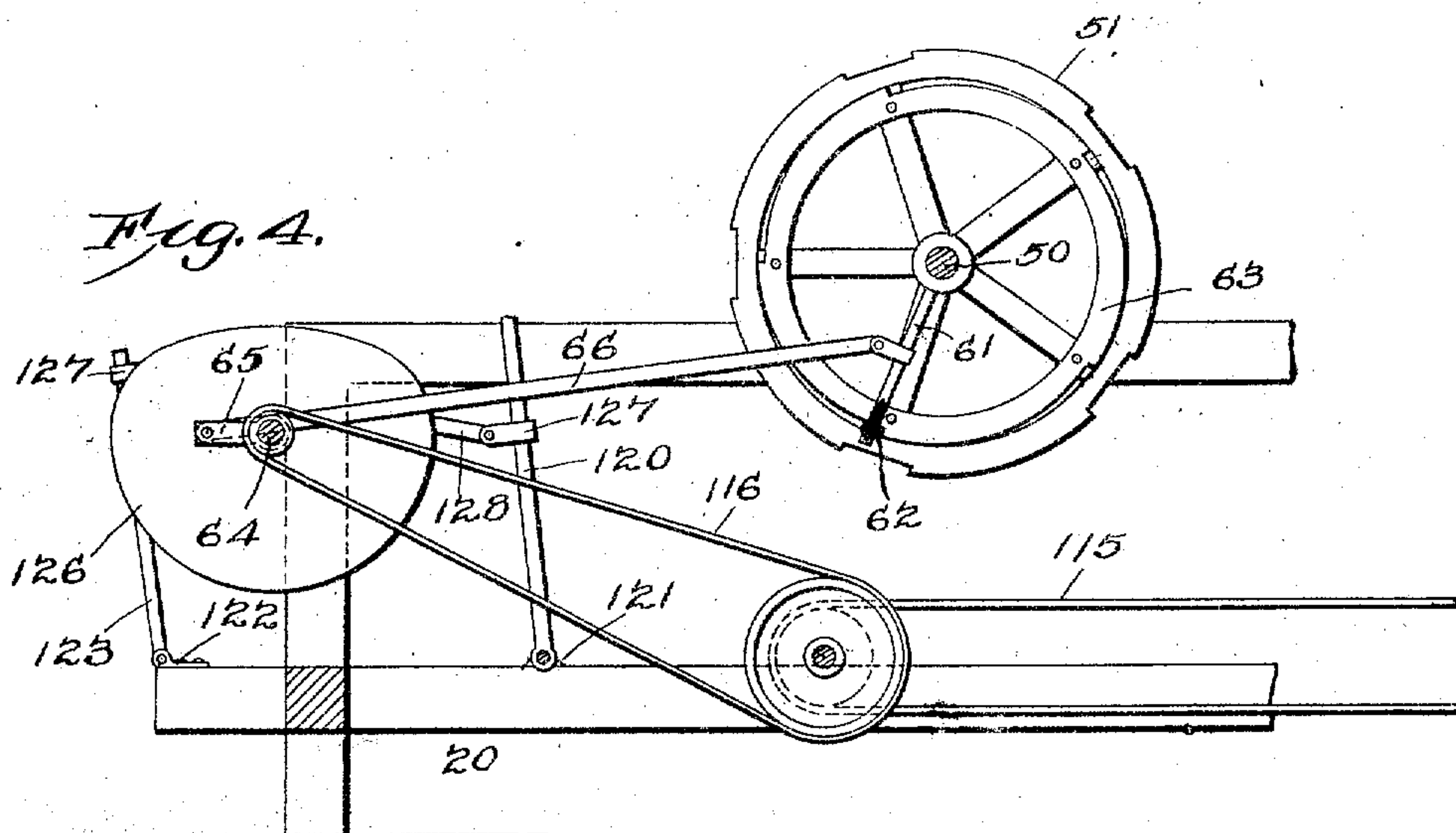
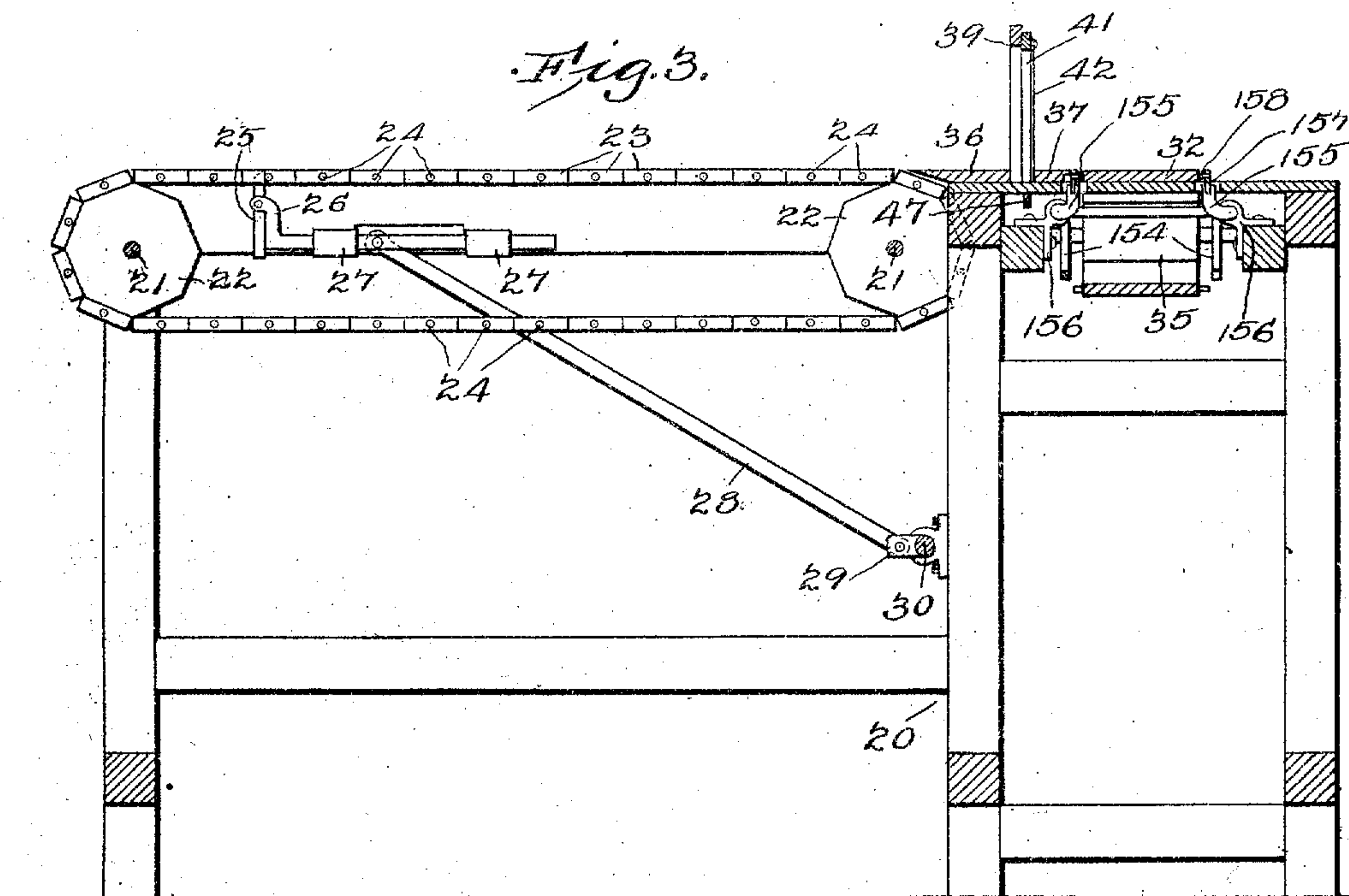
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6 SHEETS—SHEET 3.



Witnesses

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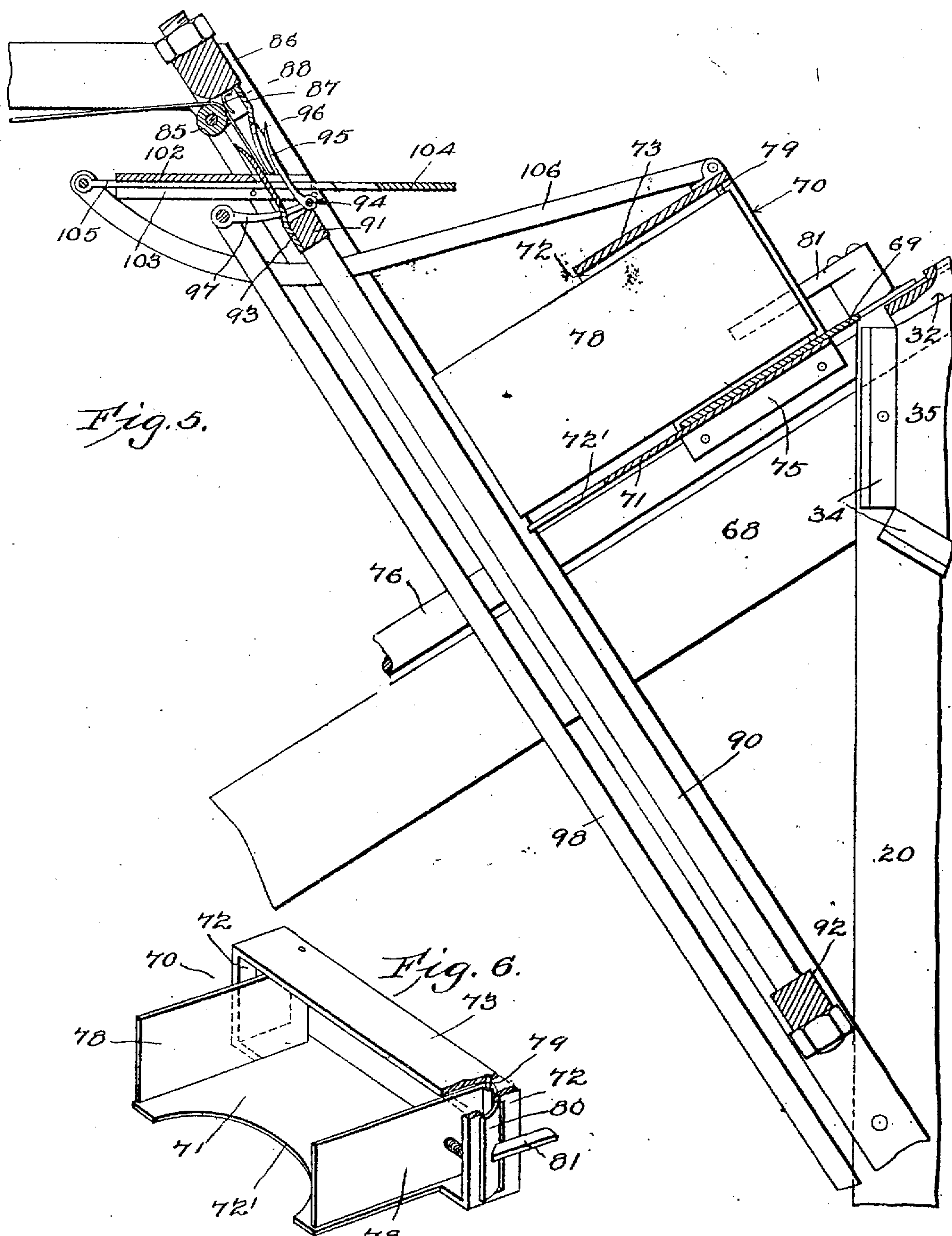
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6 SHEETS—SHEET 4.



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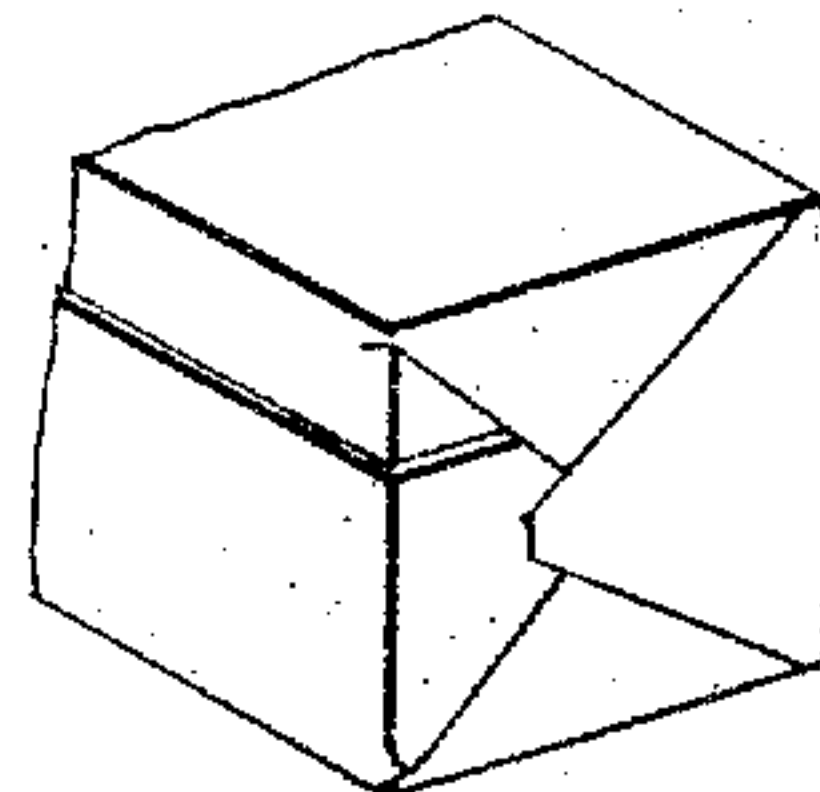
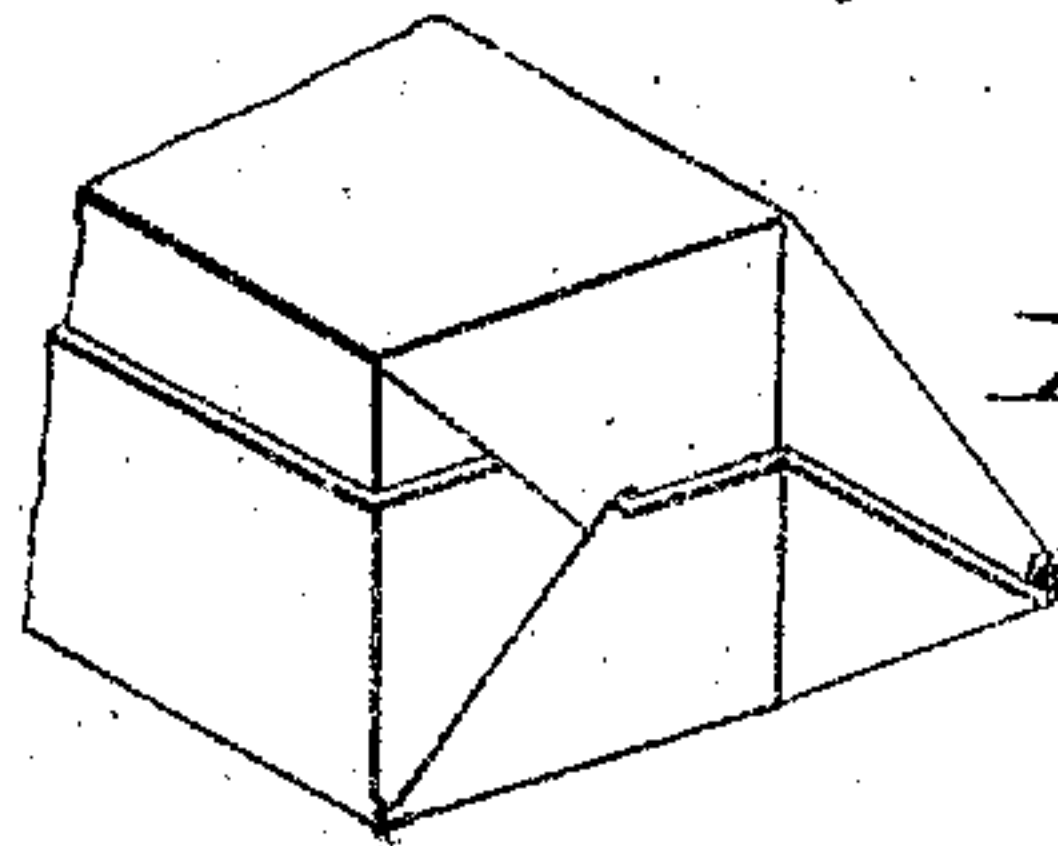
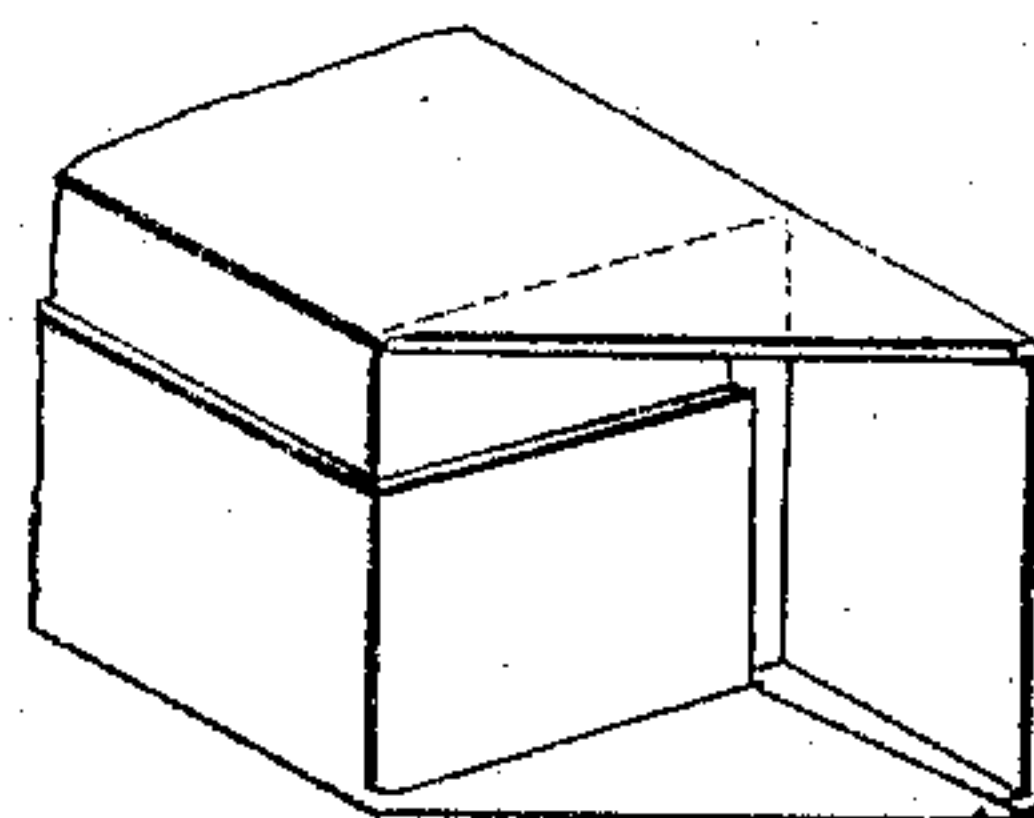
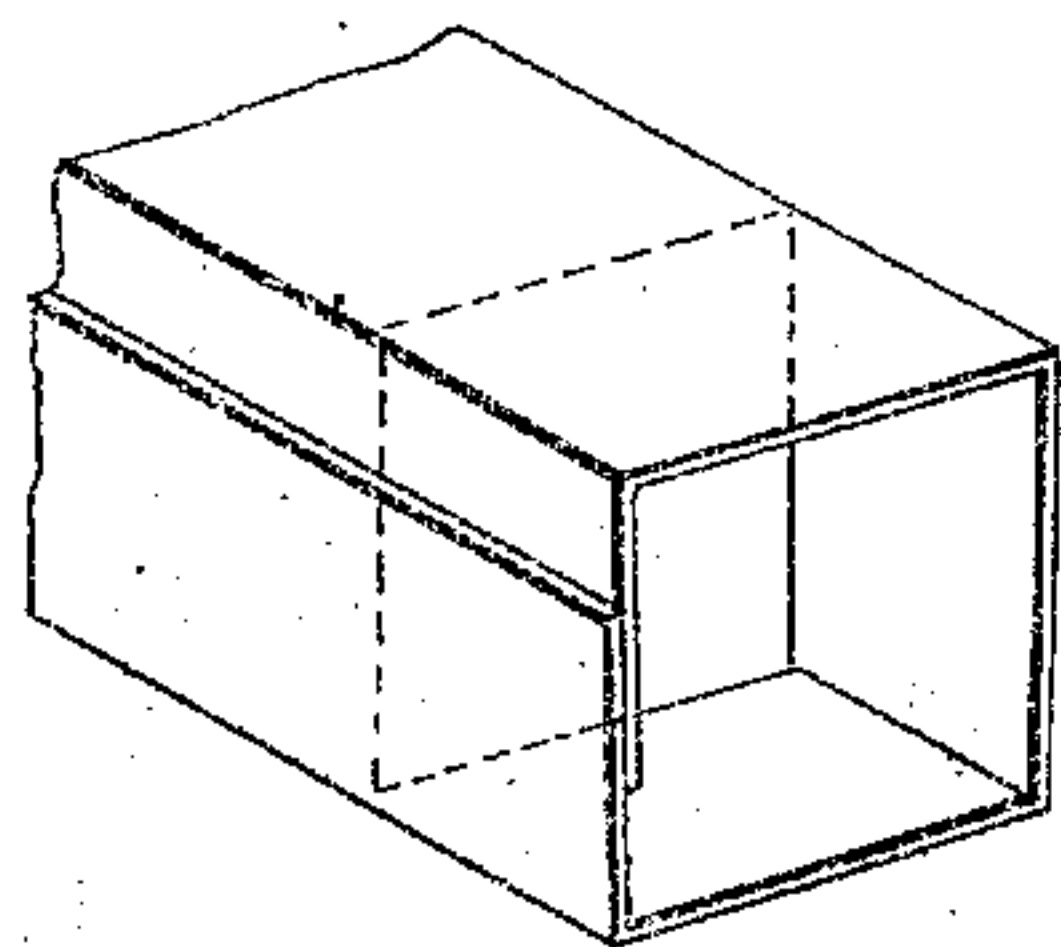
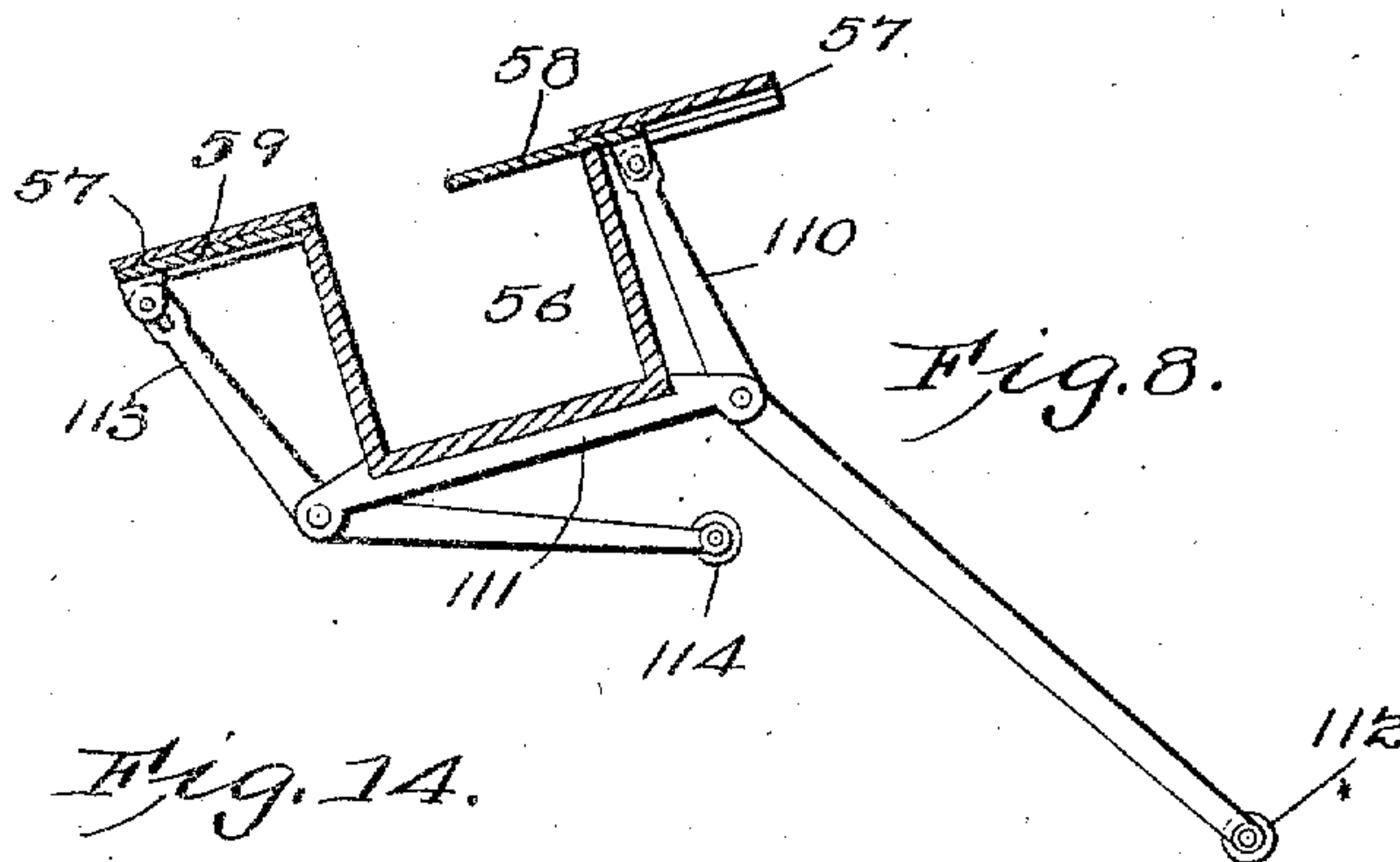
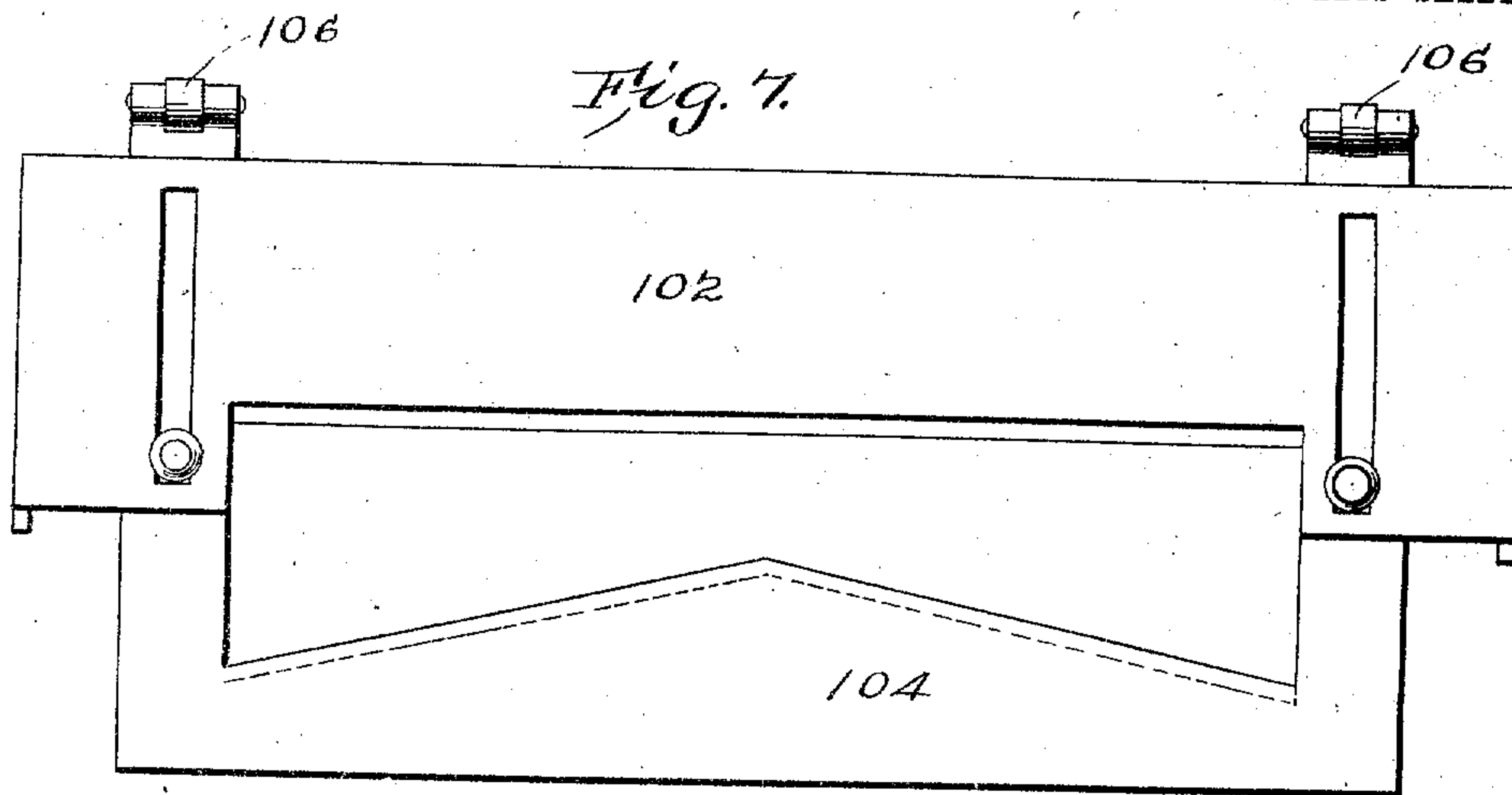
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6 SHEETS—SHEET 5.



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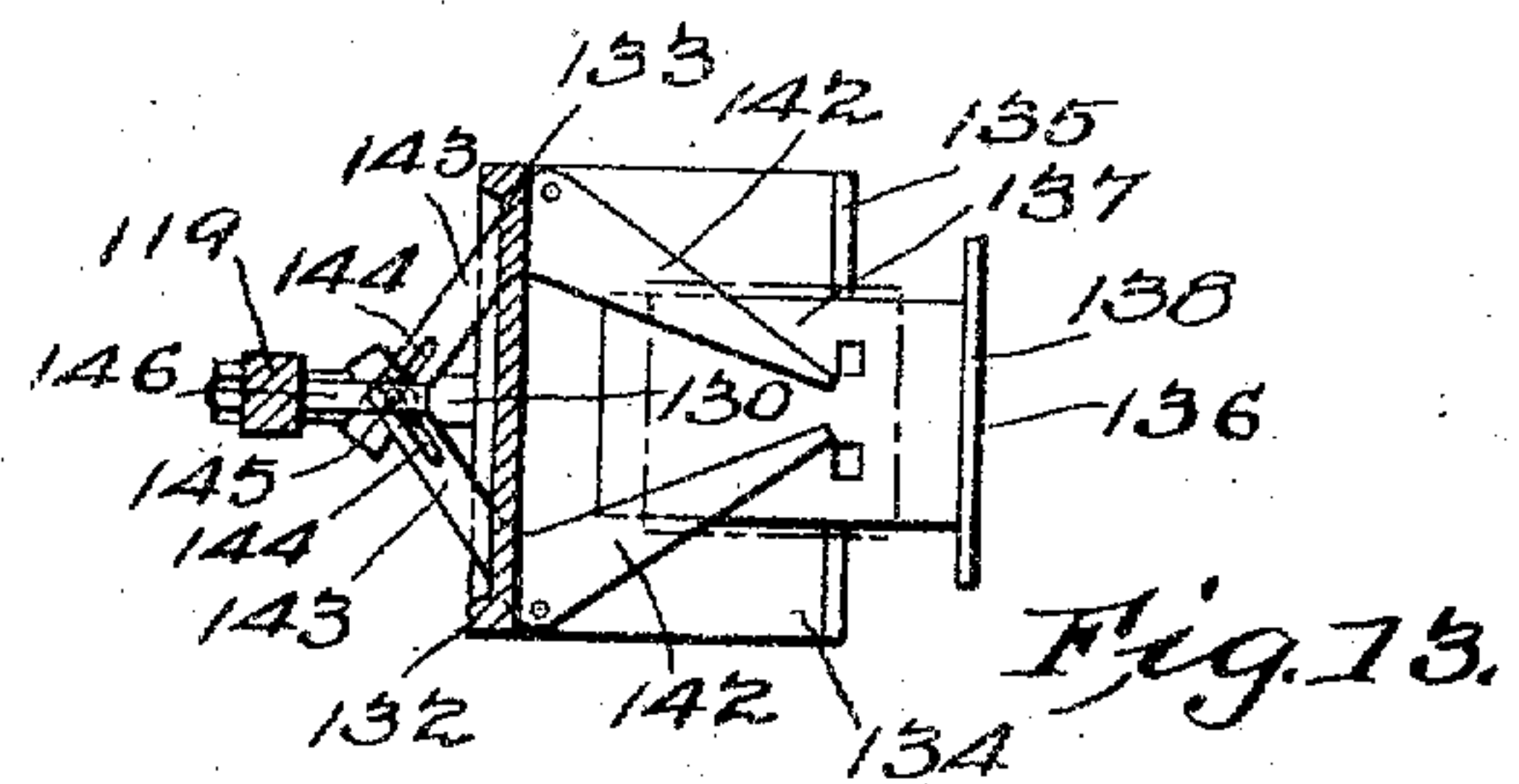
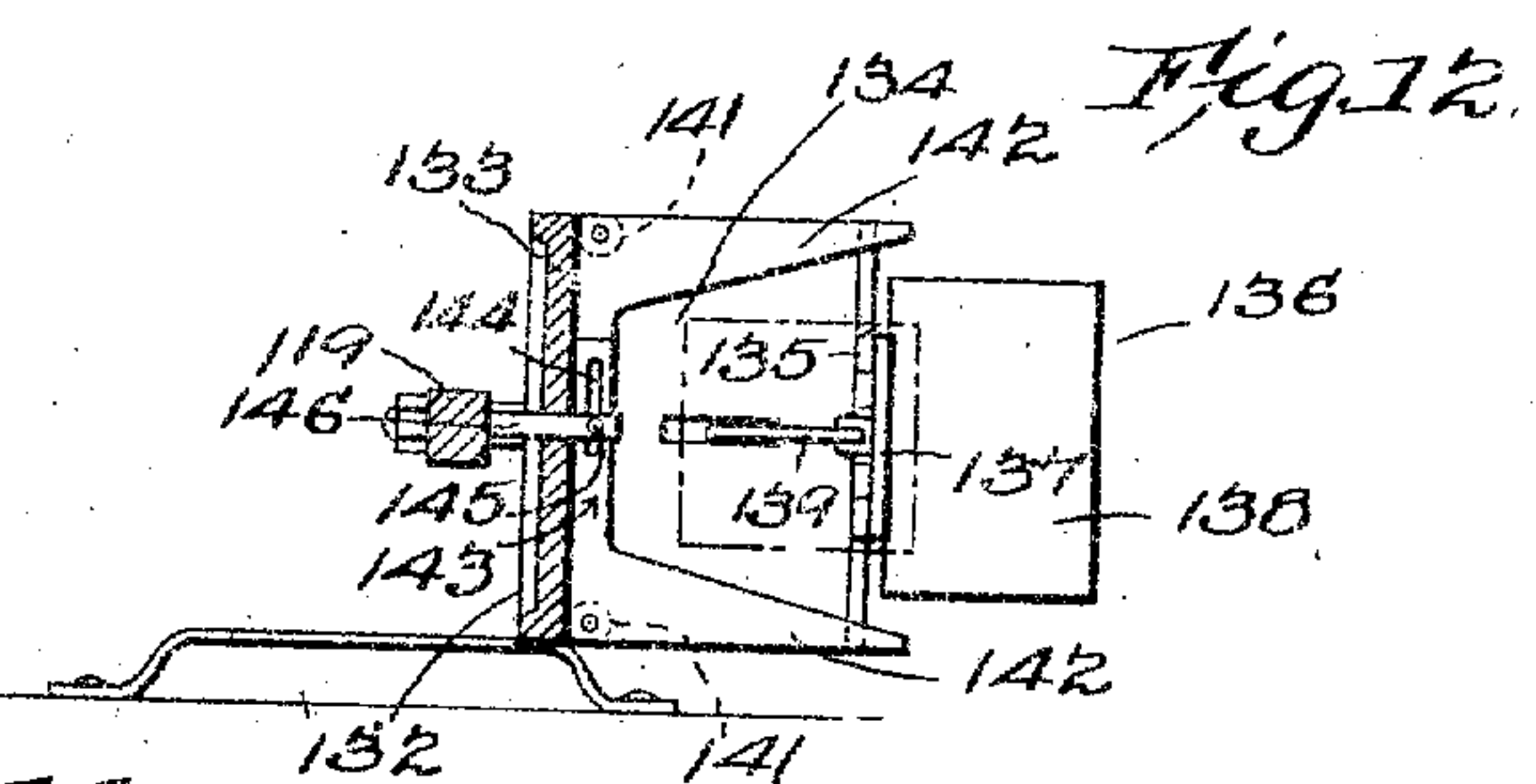
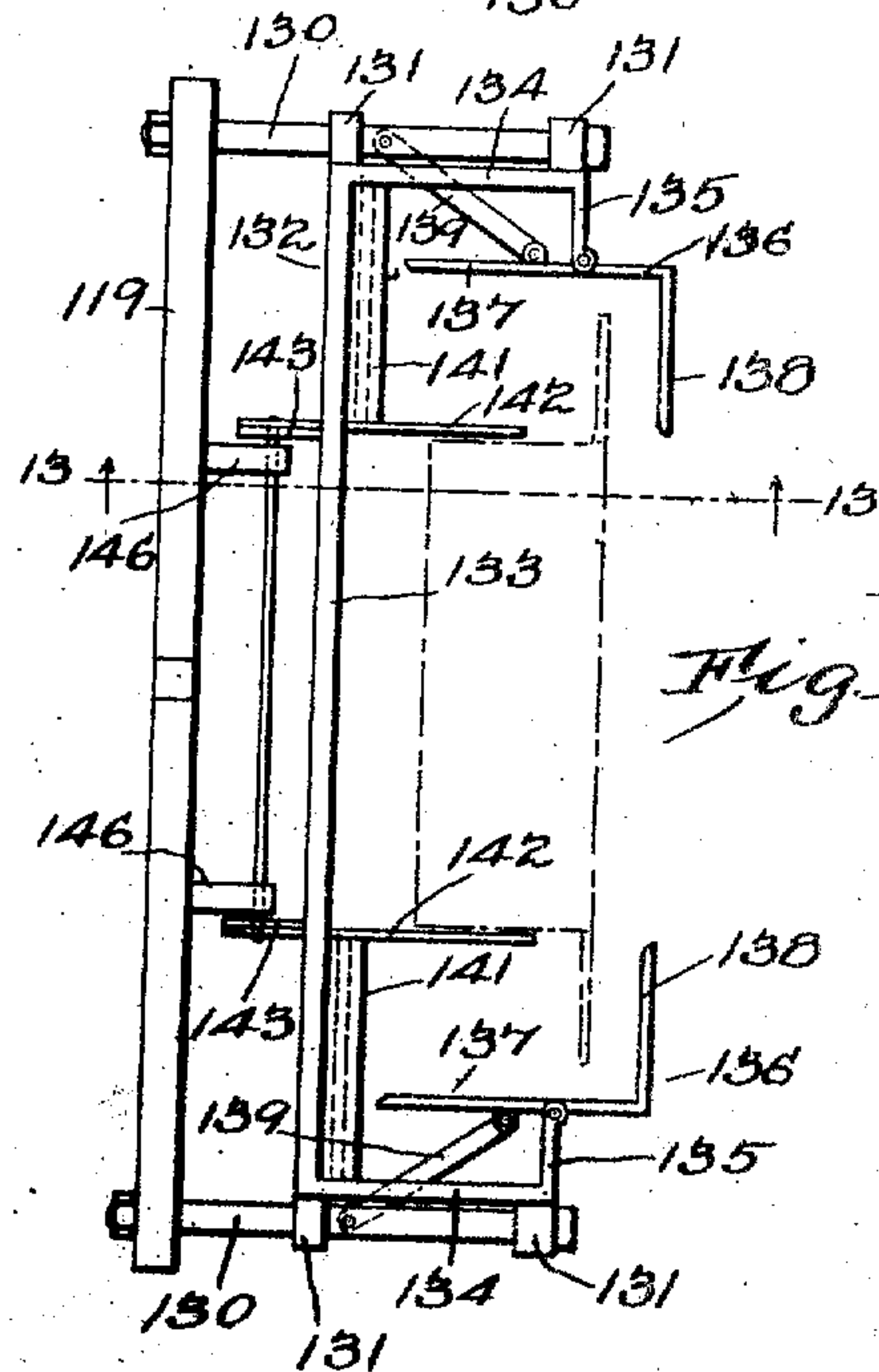
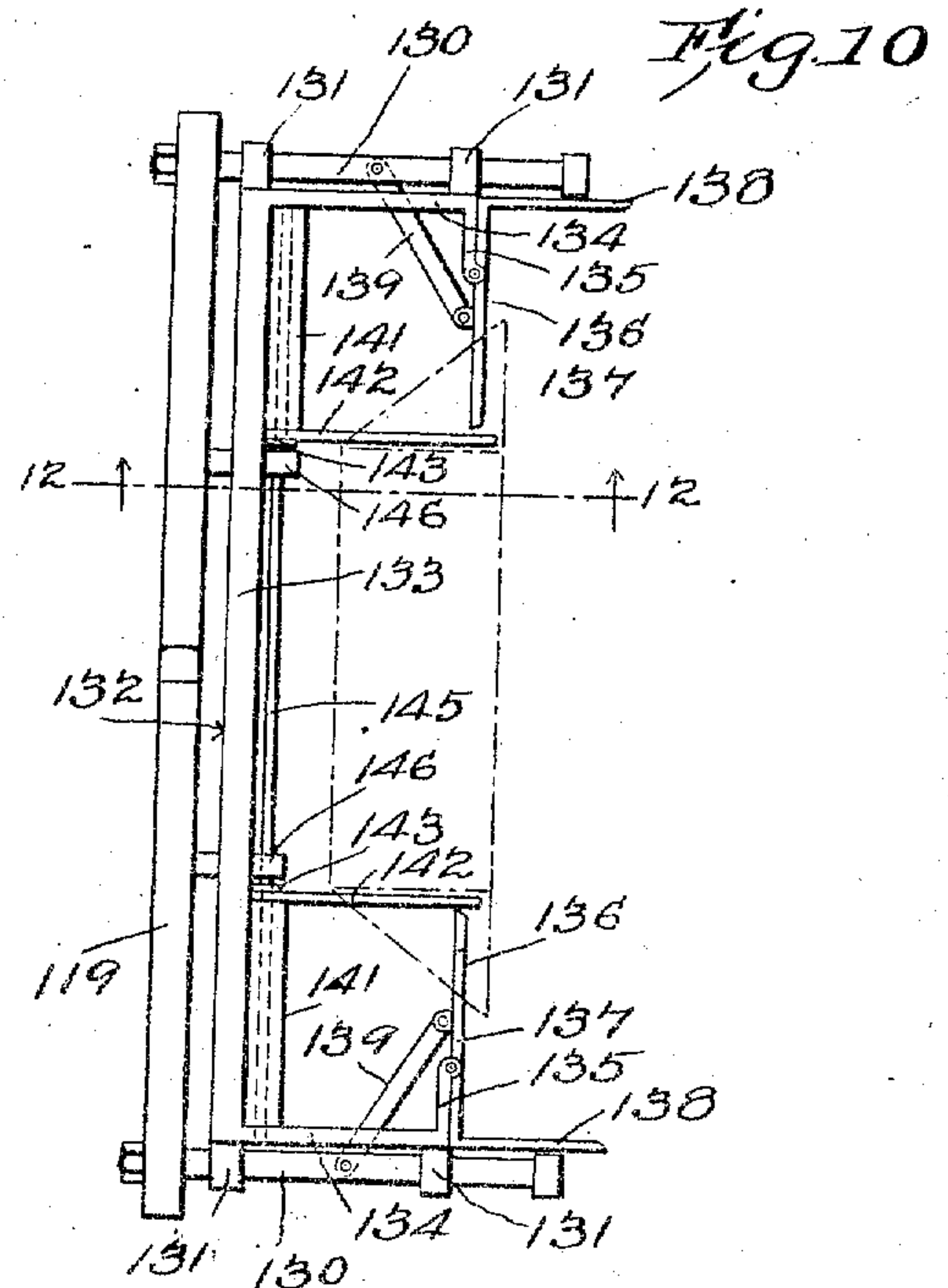
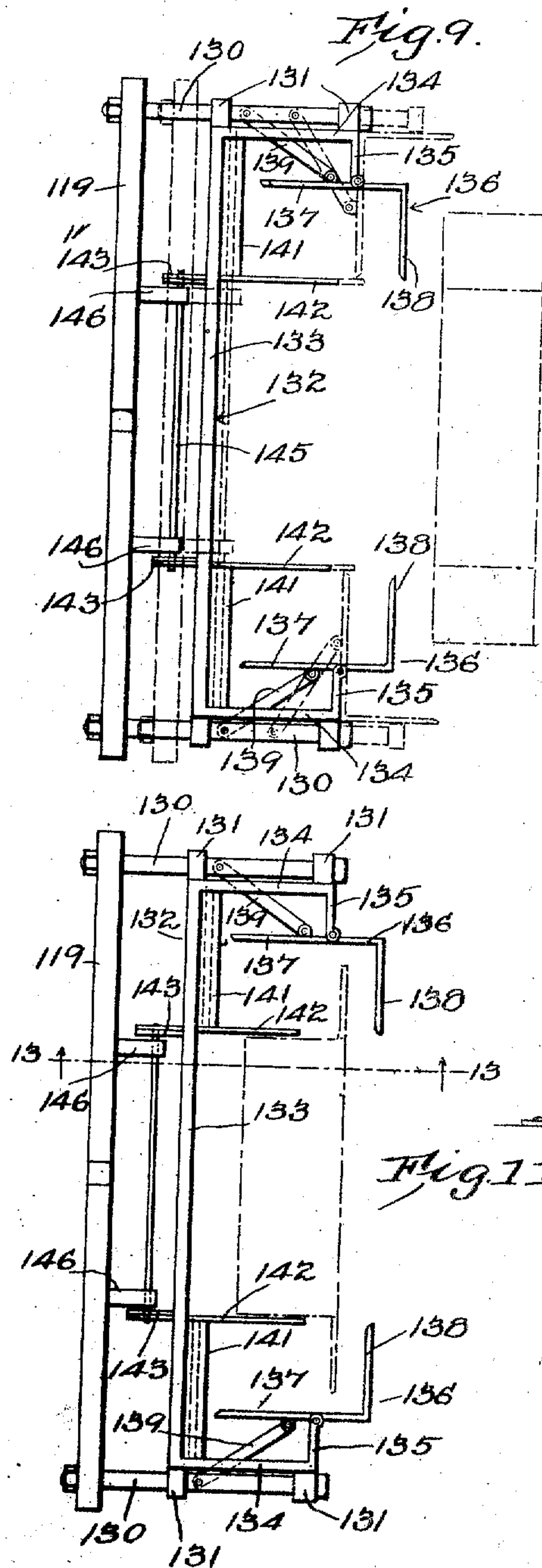


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APPLICATION FILED NOV. 24, 1906.

6 SHEETS—SHEET 6.



Witnesses

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# UNITED STATES PATENT OFFICE.

JENS N. JACOBSEN, OF FERNDALE, CALIFORNIA.

## WRAPPING-MACHINE.

No. 857,466.

Specification of Letters Patent.

Patented June 18, 1907.

Application filed November 24, 1906. Serial No. 288,908

*To all whom it may concern:*

Be it known that I, JENS N. JACOBSEN, a citizen of Germany, residing at Ferndale, in the county of Humboldt and State of California, for more than one year last past, have invented a new and useful Wrapping-Machine, of which the following is a specification.

This invention relates to packaging machines, and has for its principal object to provide a machine for wrapping cubes of butter or other material, the mechanism being automatic throughout, and being arranged to receive the articles and inclose the same in sheets of paper, cloth or other material.

A further object of the invention is to construct a machine of this type in which the separate cubes or articles are fed one by one into the wrapping mechanism, a sheet of wrapping material of appropriate size being automatically cut from a roll or sheet and fed with the article, and the inclosing sheet being first folded around the sides of the article, after which the ends are folded or tucked, and the completely wrapped article delivered from the machine.

A still further object of the invention is to provide a wrapping machine in which the article to be wrapped serves as the initial operating member during the wrapping operation, and in which said article serves, also, as a means for automatically feeding the wrapper to position in the machine.

A still further object of the invention is to provide a wrapping machine in which a portion of the wrapper folding mechanism serves to retain the article in position until the discharge point is reached.

A still further object of the invention is to provide an end folding mechanism, which, during a single reciprocatory movement, will fold the ends of the wrapper projecting beyond the ends of the article.

A still further object of the invention is to provide a simple form of folding device which may be reciprocated past the projecting unfolded end of a wrapper, and during a single movement will completely fold the four sides of said wrapper.

A still further object of the invention is to provide a machine especially adapted for packaging butter, and wherein a mass of butter may be supplied to the machine and automatically cut into cubes of a predetermined size, the cubes being separately wrapped and

delivered as separate articles, each of a given size, and of approximately the same weight.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel features of construction and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings:—Figure 1 is a longitudinal sectional elevation of a packaging machine constructed in accordance with the invention. Fig. 2 is a plan view of the machine. Fig. 3 is a transverse sectional elevation of the machine, on the line 3—3 of Fig. 2. Fig. 4 is a detail elevation, illustrating more particularly the mechanism for imparting a step by step movement to the revolvable carrier or wrapping devices. Fig. 5 is a sectional elevation, on an enlarged scale, of a portion of the devices shown in Fig. 1, illustrating the construction of the paper gripping, feeding and cutting mechanisms. Fig. 6 is a detail perspective view of the feeder which delivers the articles from the conveyer into the wrapping boxes. Fig. 7 is a plan view of the wrapper cutter. Fig. 8 is a detail sectional view of one of the wrapping boxes. Fig. 9 is a plan view of the mechanism for folding the ends of the wrapper, the parts being shown in initial position before the beginning of the folding operation. Fig. 10 is a similar view of the same parts at the completion of the first stage of the folding operation. Fig. 11 is a similar view, showing the position of the parts at the completion of the second stage of the folding operation. Fig. 12 is a transverse sectional view of the end folder, the view being on a plane indicated by the line 12—12 of Fig. 10, and showing the side folders in initial position. Fig. 13 is a similar view on the line 13—13 of Fig. 11, showing the side folders after the folding operation. Fig. 14 is a detail perspective view of one end of a wrapper before the commencement of the end folding operation. Fig. 15 is a similar view showing the wrapper after the completion of the first stage of the folding operation. Fig. 16 illustrates the wrapper after the side folders have



operated. Fig. 17 is a similar view, showing the wrapper completely folded.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

The various working parts of the machine are supported on a suitable framework 20, which may be formed of wooden beams or structural iron, and this frame comprises two main members that are arranged at a right angle to each other, the general contour of the machine being in the form of the letter L, and both portions of the frame are provided with conveyers, the mass of butter being supplied to one of the conveyers and during its transit to the second conveyer being cut into the form of cubes of approximately the same size, and approximately the same weight, which are delivered one by one, by the second conveyer, to the packaging or wrapping mechanism.

The shorter frame, shown more clearly in Figs. 2 and 3, is provided with bearings for the reception of a pair of parallel shafts 21, on which are mounted octagonal disks or drums 22 that serve as supports for an endless conveyer 23, that is formed of a plurality of pivotally connected slats, the upper run of the conveyer forming a movable platform on which the mass of butter is placed. Each end of each of the conveyer slats is provided with a projecting pin 24 adapted to be engaged by the upper end of a pawl 25 that is pivoted to a bracket 26 slidably mounted in guides 27 on the frame, and when the bracket is moved in one direction, the conveyer will be advanced to an extent equal to the width of a single slat, while on movement in the opposite direction the pawl will turn on its pivot, in order to pass under the next succeeding pin.

The brackets 26 are connected by pitman rods 28 to cranks 29, on a horizontally disposed shaft 30 mounted in suitable supporting bearings carried by the frame, and having a timed operation in order to effect a forward movement of the conveyer 23 at predetermined intervals.

At a point in advance of the delivery end of the conveyer 23 is a second conveyer 32, that is arranged at a right angle to the first conveyer, and is formed of a plurality of pivotally connected slats 34. This conveyer is supported by hexagonal disks or drums 35, supported by the frame, and is operated in such manner as to receive in the present instance five step by step movements for each movement of the conveyer 23.

In order to transfer the butter from the conveyer 23 to the conveyer 32, a pair of stationary platform members 36 and 37 are employed, the platform member 36 being in the form of a strip having its lower edge beveled in order that it may extend over that portion

of the conveyer 23 which passes around the drum 22, and the butter is pushed by the mass on the conveyer over the strip 36 on to the strip 37, and from thence on to the conveyer 32, to be carried to the packaging or wrapping mechanism, and during the movement from the platform member 36 to the member 37, the mass of butter is cut into cubes of predetermined size.

The cutting mechanism is disposed between the platform strips 36 and 37, and includes a frame 39 having a plurality of guiding lugs 40 for the reception of a horizontally movable frame 41, that carries a plurality of wire cutters 42. The wires 42 are arranged at equi-distant intervals, the spaces between them being equal to the widths of the slats 34 of which the conveyer 32 is composed. The frame 41 remains stationary during each forward movement of the conveyer 23, so that the mass of butter will be forced between the wires and will be provided with vertical cuts or incisions of a depth equal to the extent of forward movement of the conveyer 23. At the completion of this movement, the frame 41 will be moved endwise, or in a direction parallel with the direction in which the conveyer 32 moves in order to sever the mass laterally, and thus form a number of separate blocks or cubes of butter. In order to operate the cutter frame, the shaft 30 is provided with a pair of disks 43, having cam grooves for the reception of antifriction rollers 44 carried by a vertically guided rod 45, the upper end of which is secured to one arm of a bell crank lever 46 that is pivoted to the frame. The opposite arm of the bell crank lever is connected by a pitman 47 to the lower portion of the frame 41. The cams are so timed that the frame 41 receives at each operation a movement in one direction to an extent equal to the distance between each two wires 47, after which the frame is stopped until the conveyer 23 has again operated to force a second portion of the mass of butter past the then stationary cutter wires 42, after which the frame 41 and cutter wires 42 are moved laterally to the first position. It may here be observed that the mass of butter placed on the conveyer 23 is first shaped into the form of a large cube, the width of which is exactly equal to the combined widths of five, more or less, of the slats 34.

The main frame of the machine is provided with supports for a horizontally disposed stationary shaft 50 on which a pair of spaced disks 51 are revolvably mounted, and between these disks is a pair of spaced cam disks 52 and 53 secured to the shaft, the disk 52 having a cam groove 54, and the disk 53 being provided with a cam groove 55.

Secured to the peripheries of the disks 51 are pockets or boxes 56 arranged at equi-distant intervals around the disks, and of any desired number, five being shown in the pres-



ent-instance. These pockets or boxes are closed at the bottom, open at the top, and are provided with side walls that are parallel with lines radiating from the axis of the shaft. At the outer edge of each of the boxes is a laterally extending flange 57 having guiding grooves for the reception of folder plates 58 and 59, these plates being arranged to act in successive order to fold the wrapper of paper, cloth or other material around the edges of the butter or other article to be wrapped. The packages are received in these pockets from the conveyer 32 in the manner hereinafter described, and the disks 51 receive a step by step movement, during which time the wrapper is folded around the butter, the end of the wrapper being folded last, and the fully wrapped cube of butter is then discharged from the pocket, preferably on an endless conveyer arranged at the lower portion of the frame.

In order to impart the step by step movement, a pawl and ratchet mechanism of the construction shown in Fig. 4 is employed. This comprises merely a pawl carrying arm 61 pivoted on the shaft 50 and having a spring pressed pawl 62 arranged to engage with ratchet teeth formed in a disk or wheel 63 that is loose on the shaft. At the rear of the frame is arranged a shaft 64 having a crank 65 that is connected by a pitman 66 to the pawl carrying arm 61. This shaft 64 is the main shaft of the machine and receives a single complete rotative movement for each cube of butter wrapped, and it requires a single complete rotative movement of the shaft to accomplish a single step movement of the ratchet disk 63.

The main frame is provided with inclined members 68, which support a transversely extending plate 69 that is arranged at the delivery end of the conveyer 32 and is disposed at an angle of about thirty-six degrees from the horizontal, this plate serving to receive the cubes of butter as the conveyer passes over the adjacent hexagonal drum 35.

During the operation of the machine, one of the pockets or boxes 56 is stopped at each step of the operation, at a receiving point immediately in advance of the plate 69, as will be observed on reference to Fig. 1, and to convey the butter from the plate 69 to the pocket a slidably mounted carrier 70 is employed. The carrier 70 comprises a lower plate 71 that is arranged to slide under the plate 69, and a pair of vertical side members 72, that are connected by a top bar or strip 73. This carrier is provided with laterally extended arms 75 that are rigidly secured to bars 76 adapted to guides 77 that are secured to the inclined frame member 68, and said bars 76 are reciprocated endwise once for each cube of butter to be wrapped, the butter being received from the plate 69 and delivered into the pocket 56.

In order to remove the butter from the plate 69 in case there is a tendency of the butter to cling to the plate, the carrier is provided with a pair of side wings 78 having vertically disposed pivot pintles 79 in the frame of the carrier, and extending from the pivot point are arms 80 that are arranged to engage stationary cams 81 carried by the frame. On rearward movement of the carrier, that is to say, on movement in the direction of the conveyer 32, the arms 80 will engage the cams 81, and the side walls 78 will press lightly against the sides of the cube of butter, firmly gripping the same and insuring positive movement of the cube of butter from the plate 69. As soon as the butter passes beyond the lower edge of the plate 69, the arms 80 are free from the cams 81, and the butter is released. The gripping action of the side walls 78 against the butter cube takes place only at the end of the return movement of the carrier, and should there be any movement of the butter cube while the side walls 78 are gripping it, this movement is so small as to be practically negligible and the gripping action therefore takes place without perceptibly marring the butter cube. The forward or lower edge of the plate 71 is provided with a recess 72' in order to expose the lower face of the cube of butter, and after the butter has been slid into the pocket 56, the lower face of the butter will tend to remain within the pocket, on a wrapper that is carried into the pocket with the butter, and the carrier will then be free to return for another cube.

During the movement of the carrier between the conveyer and the pocket 56 the sheet of paper or other wrapping material is placed below the carrier, and the latter, carrying the cube of butter, moves the sheet of paper into the pocket 56, together with the butter, thus forming the initial fold in the wrapper. In this way the butter or other article to be wrapped practically constitutes the initial folding means for the wrapper.

In wrapping the butter any suitable material may be employed, such, for instance, as cheese cloth, wax paper or the like, and this material is wound in the form of a strip on a carrying shaft or drum 84, adapted to suitable bearings at the top of the frame. This strip is fed over the roller 85 at the upper portion of an inclined stationary frame 86, that is disposed at a right angle to the plane of movement of the carrier 70. At the upper portion of this frame is a guard 87 which turns the end of the strip downward after it passes from the roller 85, and a spring 88 is preferably employed to engage the top of the strip immediately over the roller, in order to prevent the weight of the main portion of the strip from drawing the end thereof back over said roller.

The inclined frame 86 is provided with



suitable guides for a pair of longitudinally  
 movable bars 90 that are connected at their  
 upper and lower ends by cross bars 91 and  
 92. The upper bar 91 carries a fixed jaw 93,  
 5 which passes under the end of the strip of  
 wrapping material when the gripper is  
 raised to the position shown in Fig. 5. The  
 cross bar 91 is further provided with pivoted  
 lugs for the support of a small shaft 94, car-  
 10 rying a movable gripping jaw 95 that is ar-  
 ranged to move through recesses 96 formed  
 in the guard 87, and in connection with the  
 jaw 93 to grip the end of the wrapping strip.  
 The shaft 94 carries a projecting arm 97 that  
 15 is connected by a rod 98 to a crank 99 on an  
 operating shaft 100 journaled in the lower  
 portion of the frame, and during the opera-  
 tion of this shaft the rod 98 will be moved  
 upward, and in so doing will rock the shaft  
 20 94 and move the gripping jaw 95 away from  
 the gripping jaw 93, the open jaws being  
 moved upward until they reach the guard 87,  
 and the parts assume the position shown in  
 Fig. 5. The rod 98 is then moved downward  
 25 and as a result of this, the shaft 94 is first  
 rocked, and the movable gripper 95 is forced  
 into contact with the wrapping strip, the  
 latter being firmly held between the two  
 jaws, and then as downward movement of  
 30 the rod 98 is continued, the jaws are moved  
 down to pull the end of the wrapping strip  
 across the path of movement of the carrier 70.  
 Secured to the upper portion of the fixed  
 frame 86 is a horizontally disposed cutter  
 35 plate 102, and said frame carries guides 103,  
 for a removable cutter plate 104, these  
 plates opening to the positions shown in Figs.  
 5 and 7 to permit the passage of the wrapper  
 gripping jaws. The movable cutter plate  
 40 104 is provided with arms 105 that are con-  
 nected by links 106 to the upper portion of  
 the movable carrier 70, so that as said car-  
 rier moves downward toward the box 56, the  
 cutter 104 will be moved in the direction of  
 45 the stationary cutter 102, and the strip of  
 wrapping material will be severed in order to  
 form a sheet of proper size for the wrapping  
 of the cube of butter or other material. At  
 the same time, that is to say, during the  
 50 movement of the carrier 70 in the direction of  
 the pocket 56, the rod 98 will start its up-  
 ward movement, and the shaft 94 will be  
 rocked drawing the jaw 95 downward and  
 releasing the lower end of the paper, and this  
 55 releasing movement at the bottom of the  
 strip and the cutting operation, occur only  
 after the forward end of the carrier or the for-  
 ward edge of the cube of butter or other ma-  
 terial has already engaged with the wrapping  
 60 strip, and there will be no danger of the sheet  
 thus severed falling from position. The  
 sheet is carried into the pocket or wrapping  
 box 56, and is folded into U shape form, thus  
 embracing three sides of the cube of butter

or other material, and receiving the initial 65  
 fold.

Each of the pockets 56 is provided with  
 the slidable folding plates 58 and 59, previ-  
 ously described, and during the delivery of  
 the butter into the pocket, both plates are 70  
 moved outward, so as to leave the pocket  
 open, as shown in Fig. 1.

The plate 58 is pivotally connected to a  
 bell crank lever 110, fulcrumed at the end of  
 a cross bar 111 at the bottom of the pocket. 75  
 The inner end of this bell crank lever is pro-  
 vided with an anti-friction roller 112 that en-  
 ters the cam groove 54 of the stationary cam  
 disk 52. During the rotative movement of  
 the pockets and their carrying disks, this 80  
 anti-friction roller will travel first from the  
 point *a* of the cam 51 to the point *b*, and will  
 move the folding plate 58 over the top of the  
 pocket, folding down the projecting portion  
 of the wrapper, and then, during further 85  
 movement of the pockets, and their carrying  
 disks, the roller will travel toward the point *c*  
 of the cam, and in so doing the plate 58 will  
 be withdrawn, as shown to the left of Fig. 1.

The plate 59 is pivoted to one arm of a bell 90  
 crank lever 113 that is mounted at one end  
 of a cross bar 111, and the opposite end of  
 said bell crank lever is provided with an anti-  
 friction roller 114 that is arranged to travel  
 in the cam groove 55 on the stationary cam 95  
 disk 53. During the first step of the pockets  
 and their carrying disks from the receiving  
 position, the roller 114 will travel in a path  
 concentric with the disk until it reaches the  
 point *d* of the cam, see Fig. 1, and during the 100  
 next step, from point *d* to point *e*, the roller  
 will be actuated for the purpose of moving  
 the plate 59 over the open part of the pocket  
 and folding down the second side of the 105  
 wrapper, and said plate will remain in this  
 position during the tucking and folding of  
 the ends of the wrapper, until the roller  
 reaches the point *f* of the cam, and between  
 the point *f* and the point *g* of the cam, the  
 roller will be moved outward, and the folding 110  
 plate 59 will be withdrawn, leaving the  
 pocket open, so that the completely wrapped  
 cube of butter may fall on to a traveling belt  
 115 arranged at the lower portion of the ma-  
 chine, and receiving motion through a suit-  
 able belt connecting 116 from the main shaft,  
 (see Fig. 4). The pocket remains open until  
 it has again moved to a position in alignment  
 with the butter feeding carrier 70.

The mechanism for folding the ends of the 120  
 wrapper is shown at the left of Fig. 1, and in  
 detail in Figs. 9 to 13, inclusive. At the op-  
 posite sides of the frame are arranged bear-  
 ings or supports 117 for the reception of a  
 pair of slidably mounted rods 118 that are 125  
 rigidly secured to a transversely extending  
 bar 119. The central portion of this bar is  
 circular in cross section and is received with-



in an elongated slot formed in the upper end of a lever 120, the lower end of which is pivoted on a bracket 121 carried by the frame. The frame, also, carries a bracket 122 to which is pivoted a lever 123 provided near its upper end with a pair of pins or anti-friction rollers 124 that enter cam grooves 125 formed in a pair of cam disks 126 secured to the main shaft 64 of the machine, and during the rotation of the shaft the lever 123 is oscillated by said cams. The two levers 120 and 123 are provided with adjustable clips 127 that are connected to each other by a link 128 so that movement from lever 123 is transmitted to lever 120, and the extent of such movement may be adjusted by properly positioning the clips 127. The opposite ends of the cross bar 119 carry bars 130 which extend loosely through openings formed in lugs 131 that project from the opposite ends of a frame 132, said frame including a cross plate 133 that is parallel with the bar 119, and side plates 134 arranged at a right angle to the cross plate. From the ends of the side plates 134 extend inwardly directed arms 135 to which are pivoted folding members 136, each being in the form of a plate that is bent at a right angle to form folding members 137 and 138. The connection between the folder and arm 135 is at a point intermediate the ends of the folding member or plate 137, the member being longer than the plate 138. The folding plate 137 is connected by a link 139 to the rod 130, and when said rod 130 is moved by the cross bar 119, and the frame 132 remains in position, the folder 136 will be rocked on its pivot and presented to the position shown in full lines, or the position shown in dotted lines in Fig. 9, the normal position at the beginning of operations being that shown by full lines in Fig. 9. The plate 133 is provided with lugs 141 to which are pivoted folding blades 142 each of which has an arm 143 extending in a plane approximately at right angles to the plane of the folding blade, and said arms have slots 144 for the reception of a pin 145 that is carried by a pair of lugs 146 projecting from the transversely disposed bar 119. The cross bar 119 receives movement toward and from the shaft 50 and is arranged to move both independently of, and simultaneously with the frame 132. In order to insure proper operation, the frame 132 is frictionally held in any suitable manner, as by a friction spring 148, Fig. 12. During the operation of this portion of the mechanism, the pocket containing the partly folded wrapper is brought into alignment with the folders, the wrapper at this time being folded as shown in Fig. 14. The bar 119 is then moved in the direction of the shaft 50 moving from the full line position to the dotted line position of Fig. 9, while the frame 132 remains stationary. This movement is transmitted through the links 139 to the folders

136, moving the latter to the dotted line position of Fig. 9, and at the same time the pin 145 is carried forward and the folding blades 142 are open, that is to say, are moved from the position shown in Fig. 13, to the position shown in Fig. 12. After movement of the bar 119 continues, it carries with it the frame 132, and the ends of the folding blades 137 engage with the projecting ends of the wrapper and make the first fold while moving from the dotted line position of Fig. 9 to the full line position of Fig. 10, the result of such operation being shown in Fig. 15. This completes the forward movement of all of the parts, and the cross bar 119 is then moved in the reverse direction, while the frame 132 remains stationary. The immediate result of this movement is to draw the pin 145 outwardly, and said pin traveling in the slots 144 of arms 143 move the folding blades 142 toward each other, or from the position shown in Fig. 12 to the position shown in Fig. 13. This folds down the upper and lower sides of the ends of the wrapper with the result shown in Fig. 16. During this time the frame 132 remains stationary and the movement is transmitted, also, through the links 139 to the folder 136, turning the latter from the position shown in Fig. 10 to the position shown in Fig. 11. As the bar 119 continues its movement toward the initial position, the folding plates 138 then engage with the remaining portion of the end of the wrapper, and fold the latter down from the position shown in Fig. 16 to the position shown in Fig. 17, this being the final fold, and the operation being completed. The parts move back with all the folders in the position shown in Fig. 11, until they reach the position shown in Fig. 9, in full lines, remaining in such position until the bar 119 is again moved forward.

The longitudinally movable rods or bars 118 previously referred to are connected by links 150 to the rods 76 that carry the butter carrier 70, and as said rods receive a single reciprocating movement for each revolution of the shaft 65, the carrier 70 will, also, receive a single movement, and this movement will occur while the pockets and their carrying disks are stationary. The bars or rods 118 are further connected by bell crank levers 152, pivoted on brackets 153 of the frame to rods 154. These rods 154 are connected to slides 155 that are mounted in guides 156 on the frame and are provided on their forward ends with pawls 157 that are arranged to engage pins 158 projecting from the opposite ends of the slats 34 which constitute the conveyer 32, so that movement of the conveyer is properly timed with respect to the movement of the butter carrier, and the folding mechanism.

With a device constructed in accordance with this invention, butter or other material



may be severed into cubes of a predetermined size, and of approximately the same width, and automatically wrapped without any manual operations.

5 Having thus described the invention, what is claimed is:—

1. The combination with a receiving pocket, of an endless conveyer, means for feeding a sheet of wrapping material across the mouth of the pocket; a reciprocatory feeder moving between the conveyer and the pocket, article gripping jaws forming a part of said feeder, and stationary cams for moving the jaws into engagement with the article.

15 2. The combination with a receiving pocket, of means for feeding a sheet of wrapping material across the mouth of the pocket, an endless conveyer, a feeding device movable between the conveyer and the pocket and provided with a recessed bottom to permit engagement of the article with the wrapper, a pair of gripping plates carried by the feeder, cams for moving said gripping plates into engagement with the article, and springs for removing the plates from engagement with the article.

3. In a wrapping machine, a revoluble carrier, a plurality of pockets supported thereby, means for imparting a step by step movement to said carrier, an endless conveyer, means for imparting a step by step movement to the endless conveyer, and a reciprocating feeding device movable in an inclined plane between the discharge end of the carrier and the pockets, as the latter are successively presented to receiving position.

4. In an article-wrapping machine, the combination with a reciprocatory carrying frame, of an end folder, including a pivotally mounted folding member arranged during movement of the carrier in one direction for folding one edge of the wrapper, and during movement in the opposite direction for folding the opposite edge of the wrapper.

5. In a device of the class specified, a reciprocatory carrying frame, and a folding member pivotally connected thereto and provided with successively operable folding edges, one of which folding edges is brought into action when the frame is moved in one direction and the other of which edges is brought into action when the frame is moved in the other direction.

6. In a device of the class specified, a reciprocatory carrier, a folding member pivotally connected thereto and provided with folding plates arranged at an angle to each other, one folding plate being movable to operative position during the movement of the carrier in one direction, and the other folding plate being movable to operative position during the movement of the carrier in the other direction.

7. In a device of the class specified, a reciprocatory carrier, a pivotally mounted fold-

ing member supported thereby and provided with folding edges that are successively adjusted to operative position, and a pair of pivotally mounted side folders, also, supported by the carrier and operable between movements of the two folding edges.

8. In apparatus of the class described, an end folder for rectangular tubes comprising a pair of folded plates arranged approximately at a right angle to each other, means for moving said plates across the end of the tube, the edge of one of said plates being active during movement in one direction, and the edge of the other being brought into play during movement in the opposite direction, and side folders operable at the completion of the initial folding operation.

9. An end folding device for rectangular tubes, comprising a reciprocatory carrier, a folding member having folding edges, one of which is active during the forward movement of the carrier, and the other being turned to operative position for engagement with the wrapper during the reverse movement, and pivotally mounted side folders operable at the completion of the initial folding operation.

10. An end folder for rectangular tubes comprising a reciprocatory frame, a plurality of folders pivotally mounted thereon, and a frame actuating member operatively connected to the folders and receiving initial movement independent of the reciprocatory frame to adjust the positions of the folders.

11. An end folding device for rectangular tubes comprising a reciprocatory carrier, pivotally mounted folding members supported thereby, an operating bar for the carrier, means for connecting said bar to the folding members, and means for effecting preliminary independent movement of the bar in advance of movement of the carrier in each direction to adjust said folders prior to their engagement with the tube.

12. In apparatus of the class described, a reciprocatory folding frame, a folding member carried thereby and formed of a pair of plates arranged at a right angle to each other, an operating member having a linked connection with the folding member, a pair of pivotally mounted side folding plates having slotted shanks, a pin carried by the operating member and entering the slots, and means for imparting movement to the operating member for effecting adjustment of the folders in advance of the engagement with the operating member with the carrier.

13. The combination with a carrying frame, of end folding members pivoted thereto, and each formed of a pair of plates disposed approximately at a right angle to each other, a reciprocatory operating bar, pins projecting from the bar and extending through lugs on the carrying frame, links connecting the folders to said pins, a pair of pivotally mounted side folding plates supported



by the frame and having slotted shanks, lugs projecting from the bar, and a pin carried by said lugs and entering the slots to effect preliminary adjustment of the folding members in advance of the movement of the carrying frame.

14. In apparatus of the class described, an endless article conveyer, a revoluble carrier, a plurality of pockets supported thereby, a strip feeding means for moving the end of a strip of wrapping material over the mouth of the pockets as the latter approach the receiving position, a feeder for carrying the successive articles from the conveyer to the pockets, and serving in connection with the article and the walls of the pockets to effect initial forming of the wrapper, means oper-

ating during movement of the carrier for folding down the projecting edges of the wrapper, means for folding the ends of the wrapper, a main shaft, cams carried thereby, mechanism operable by said cams for imparting movement to the end-folders and to the conveyer, and feeding means, and means operated from said shaft for imparting a step by step movement to said carrier.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JENS N. JACOBSEN.

Witnesses:

M. C. DECARLI,  
THEO. PETERSEN.