

No. 875,009.

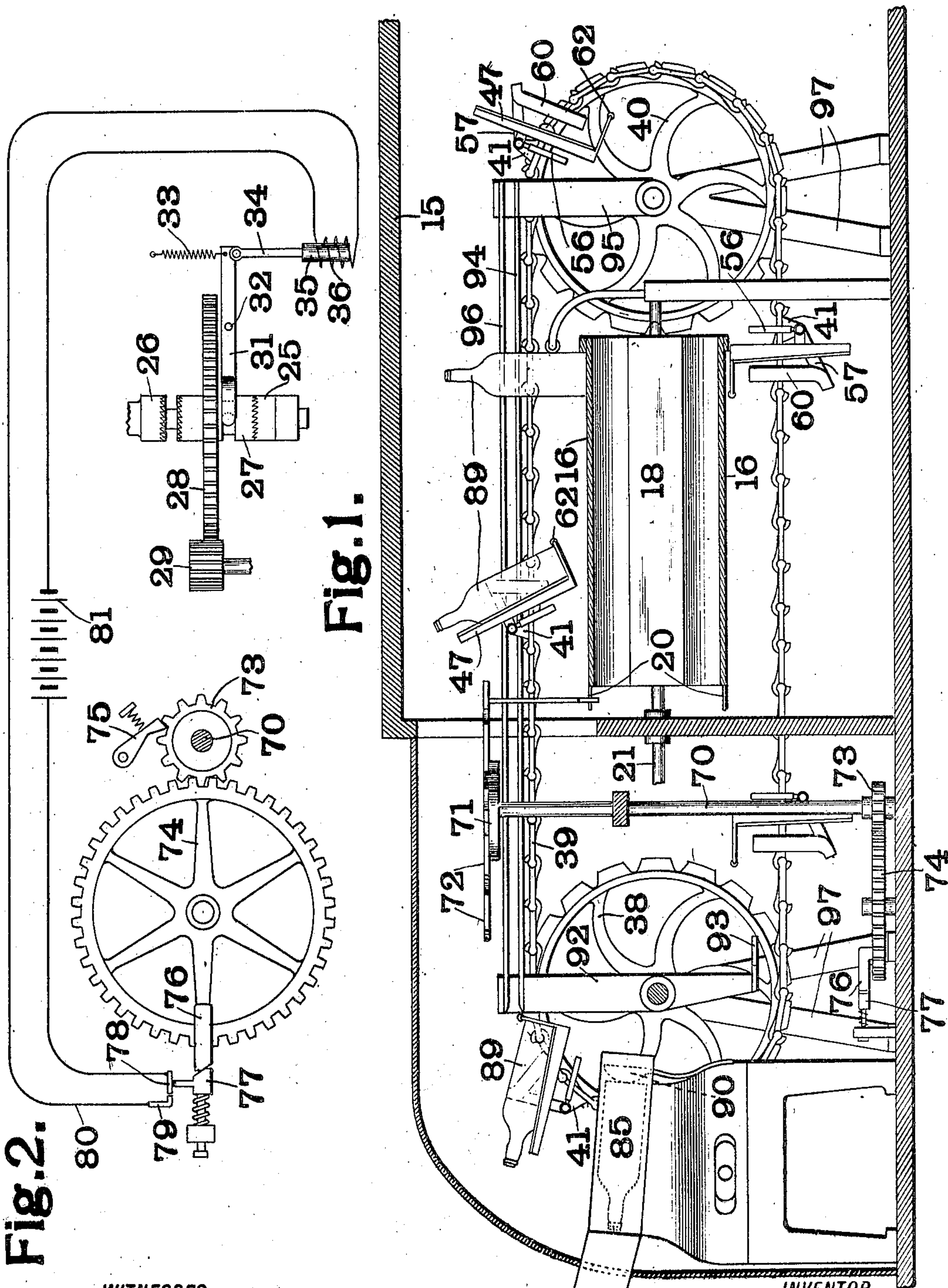
H. J. STIEBEL.

PATENTED DEC. 31, 1907.

CARRYING AND SETTING UP MACHINE FOR BOTTLES AND THE LIKE.

APPLICATION FILED JUNE 28, 1907.

4 SHEETS—SHEET 1.



WITNESSES:

W. Alexander.

L. L. Mead.

INVENTOR

H. J. Stiebel

BY

Lawrence & Bryson
ATTORNEYS

No. 875,009.

H. J. STIEBEL.

PATENTED DEC. 31, 1907.

CARRYING AND SETTING UP MACHINE FOR BOTTLES AND THE LIKE.

APPLICATION FILED JUNE 28, 1907.

4 SHEETS—SHEET 2.

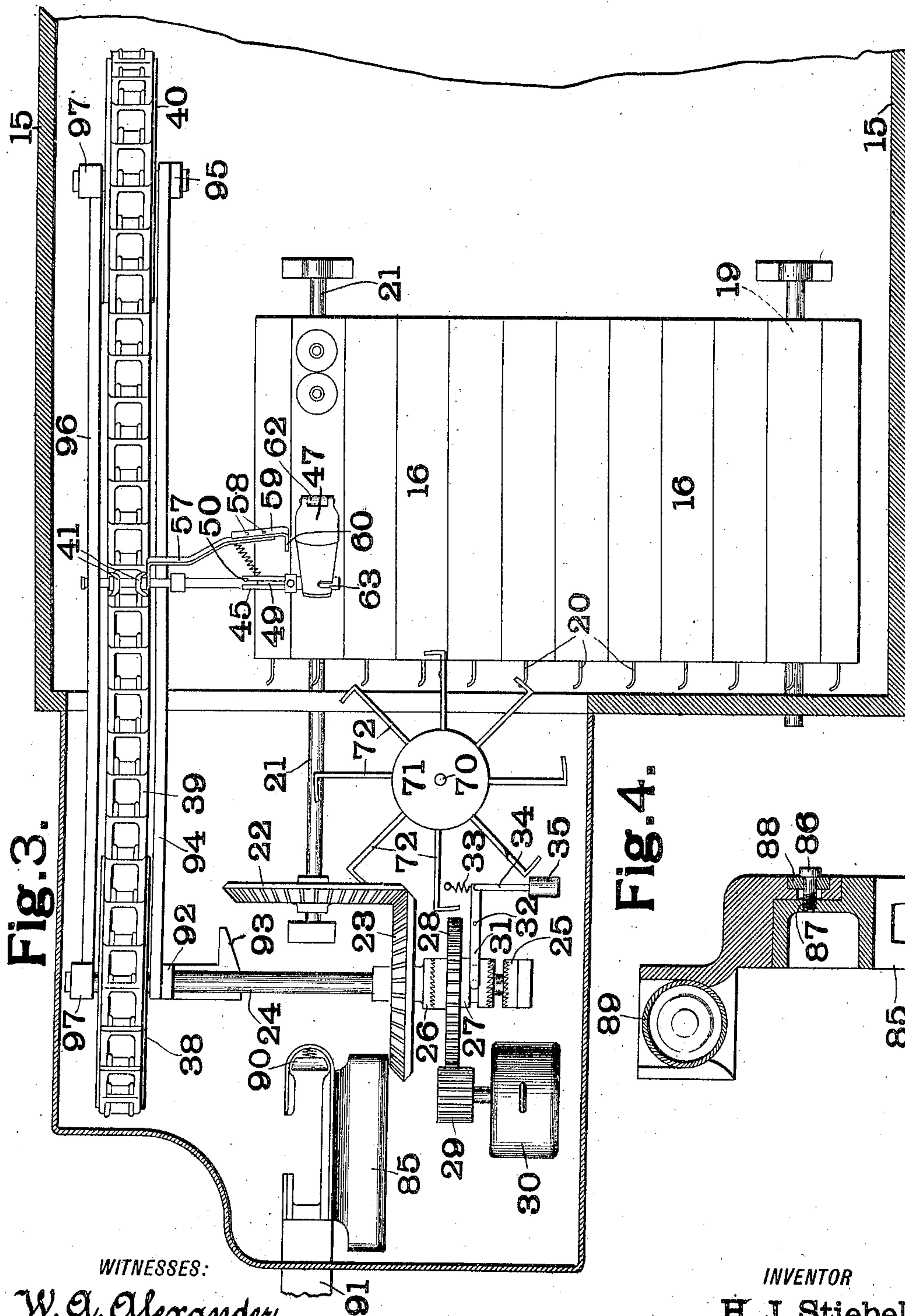


Fig. 3.

Fig. 4.

WITNESSES:
W. A. Alexander.
L. L. Mead.

INVENTOR
H. J. Stiebel

BY
Lowell & Bryson
ATTORNEYS

Fig. 5.

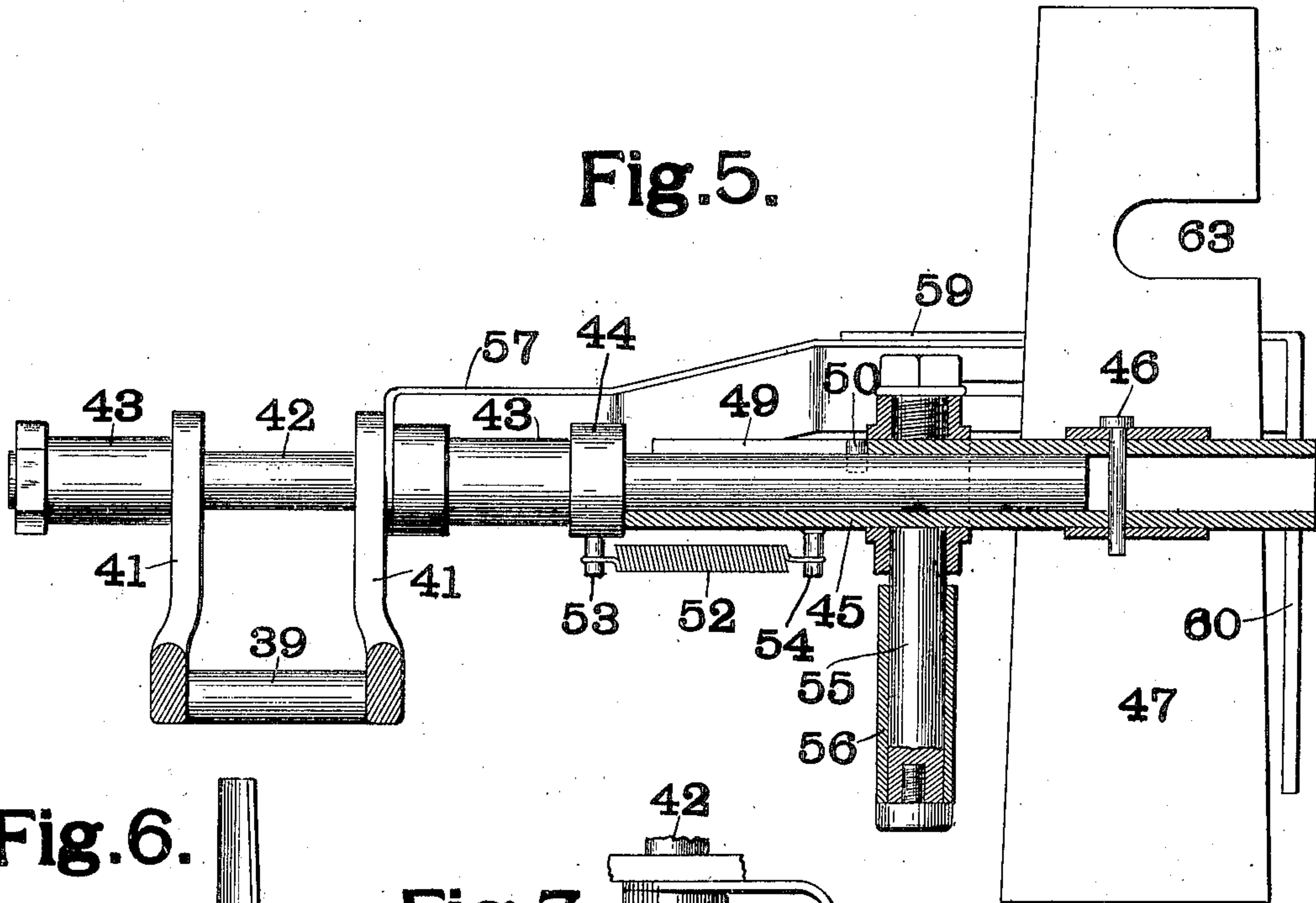


Fig. 6.

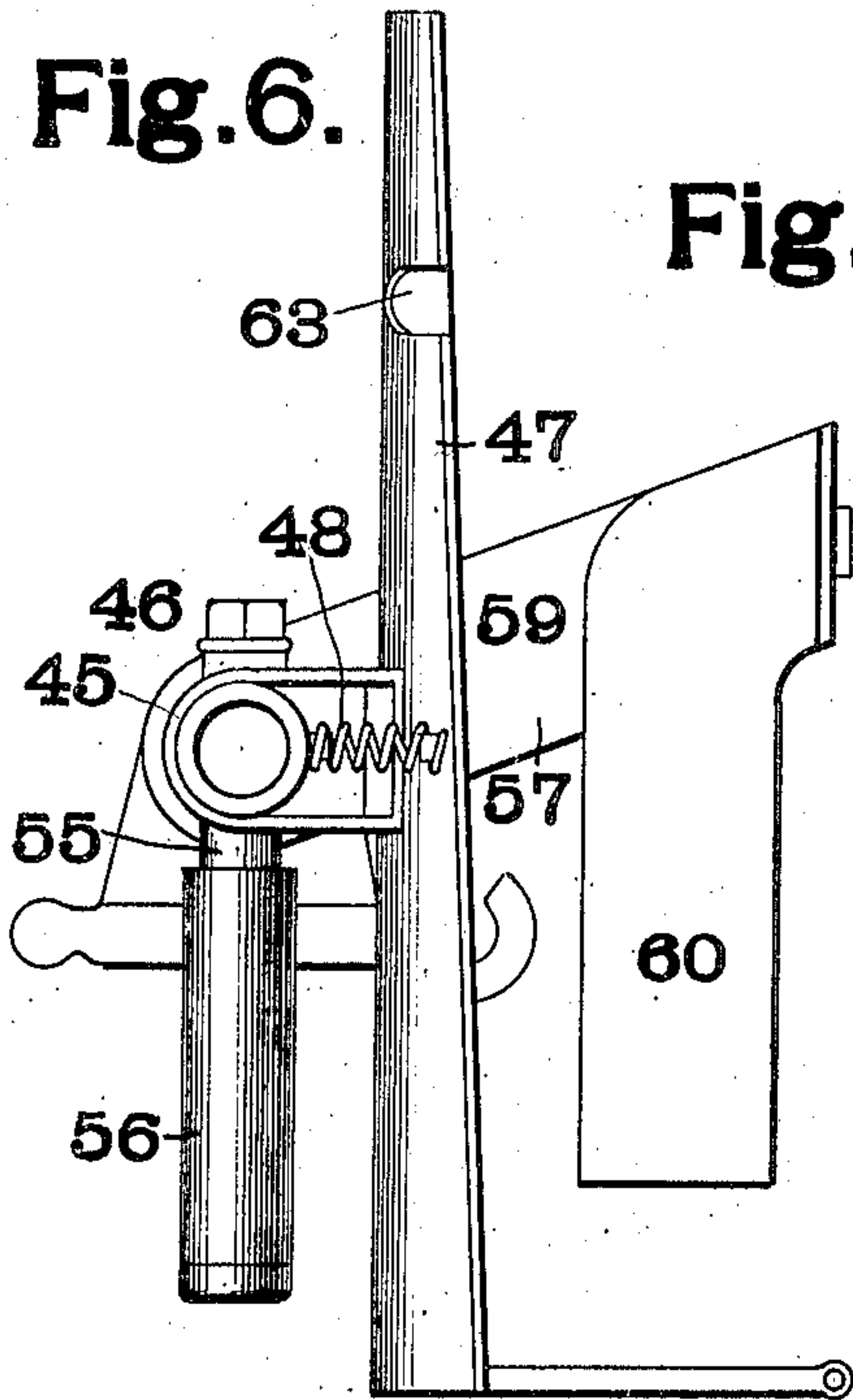
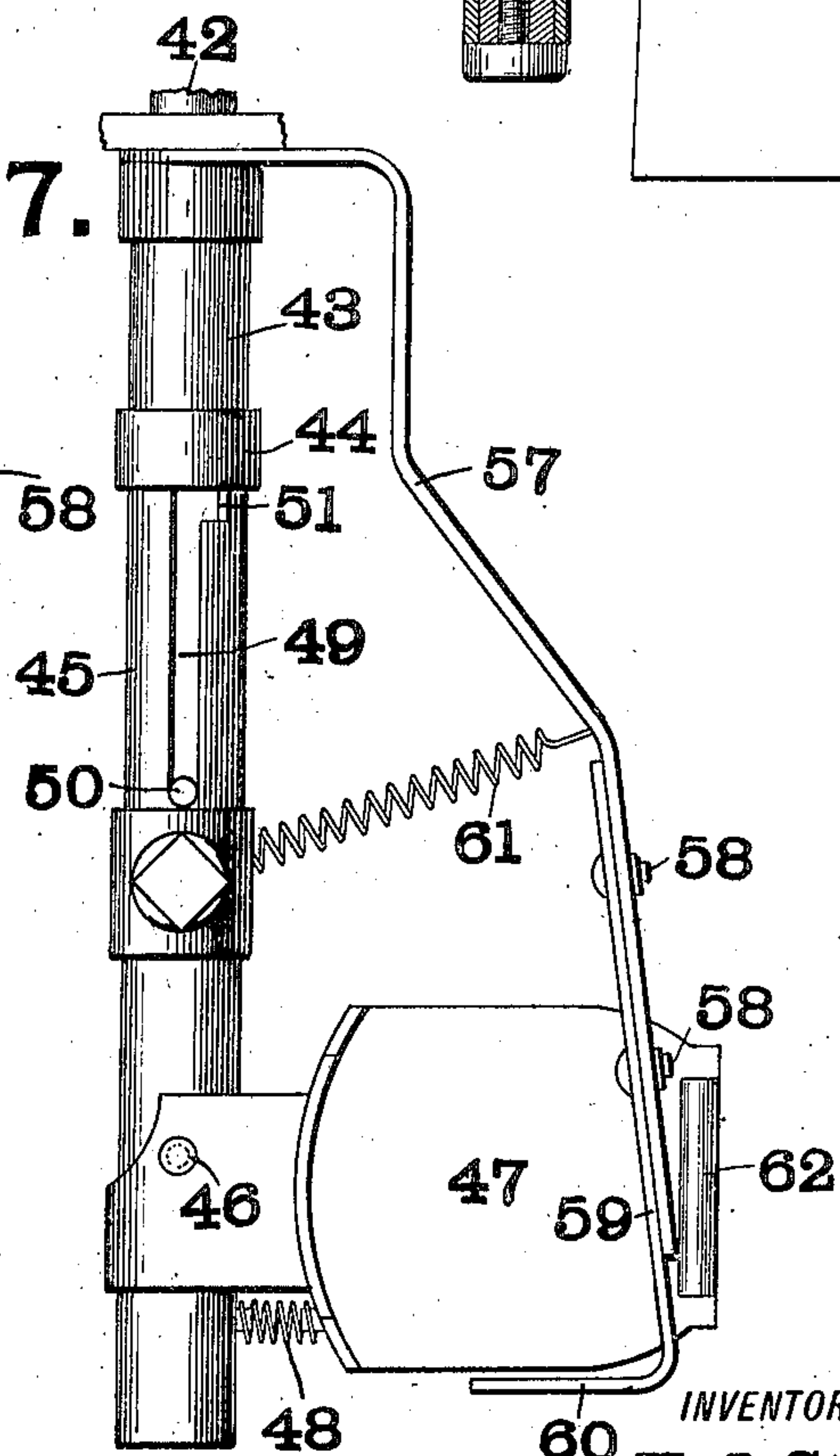


Fig. 7.



WITNESSES:

W. A. Alexander.

L. L. Mead.

INVENTOR

H. J. Stiebel

BY

Loeber & Bryson
ATTORNEYS

No. 875,009.

H. J. STIEBEL.

PATENTED DEC. 31, 1907.

CARRYING AND SETTING UP MACHINE FOR BOTTLES AND THE LIKE.

APPLICATION FILED JUNE 28, 1907.

4 SHEETS—SHEET 4.

Fig. 8.

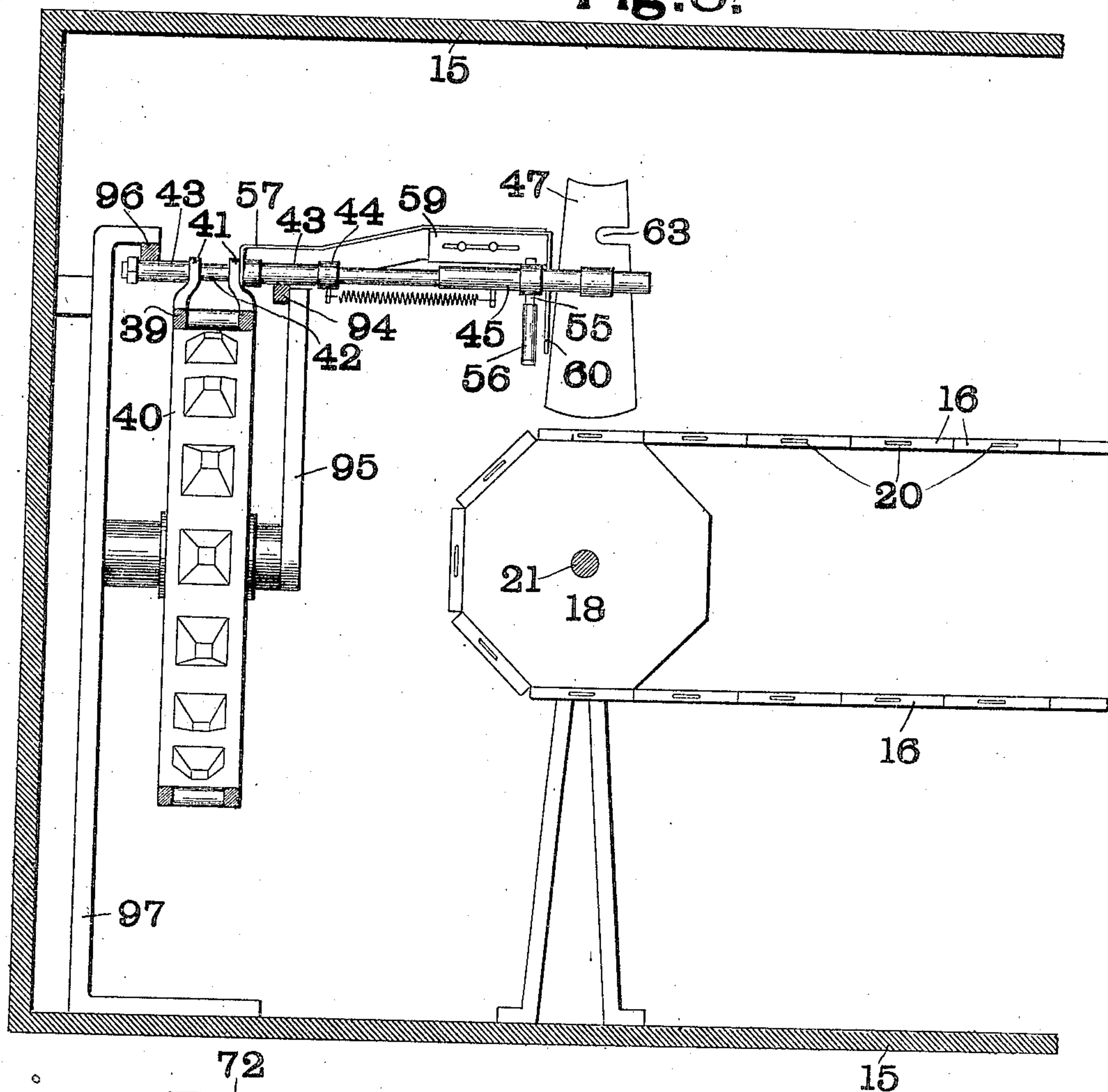
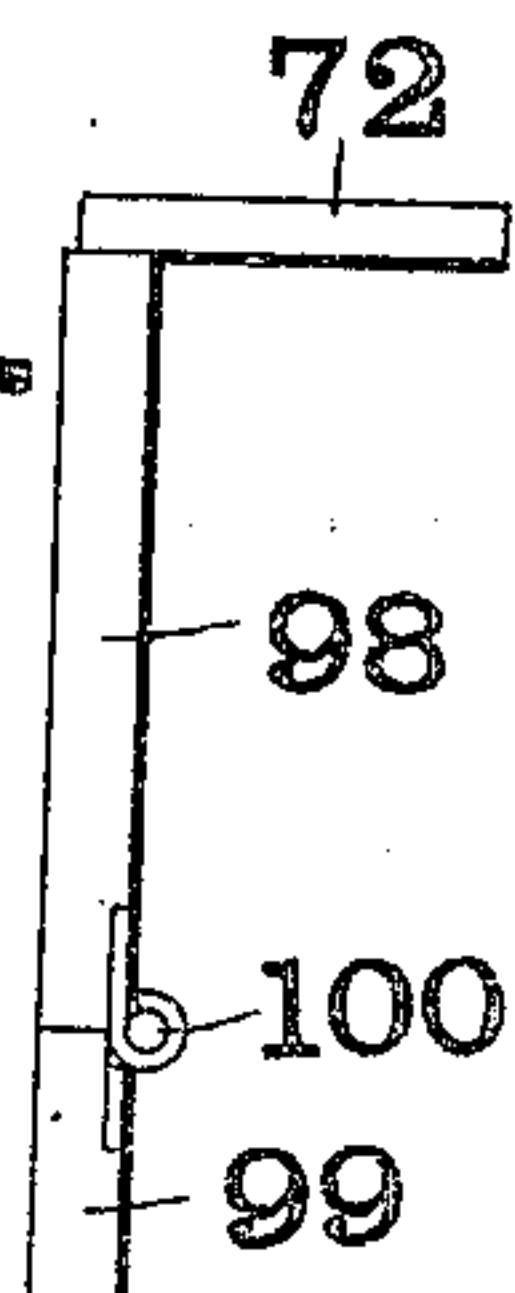


Fig. 9.



WITNESSES:

W. A. Alexander.

L. L. Mead.

INVENTOR

H. J. Stiebel

BY

Loehle & Bryson
ATTORNEYS

UNITED STATES PATENT OFFICE.

HARRY J. STIEBEL, OF ST. LOUIS, MISSOURI.

CARRYING AND SETTING-UP MACHINE FOR BOTTLES AND THE LIKE.

No. 875,009.

Specification of Letters Patent.

Patented Dec. 31, 1907.

Application filed June 28, 1907. Serial No. 381,329.

To all whom it may concern:

Be it known that I, HARRY J. STIEBEL, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented a certain new and useful Carrying and Setting-Up Machine for Bottles and the Like, of which the following is such a full, clear, and exact description as will enable any one skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to a machine for carrying and setting up bottles or other similar articles and is especially adapted to be used in connection with an annealing furnace.

In the accompanying drawings, which illustrate one form of machine made in accordance with my invention, Figure 1 is a vertical longitudinal section, Fig. 2 is a view partly diagrammatic showing the means for shifting the driving mechanism from one carrier to another, Fig. 3 is a top plan view, Fig. 4 is an enlarged sectional view showing a detail of construction, Figs. 5, 6 and 7 are enlarged detailed views of the holder, Fig. 8 is an end view and Fig. 9 is an enlarged view showing a detail of construction.

Like marks of reference refer to similar parts in the several views of the drawings.

15 represents the walls of the annealing furnace, which is of the usual form. Situated within the annealing furnace 15 is the usual support in the form of an endless carrier. This support consists of a number of metallic plates 16 pivoted to each other and mounted upon a pair of octagonal drums 18 and 19 respectively. Each of the plates 16 is provided at its forward end with a projection or finger piece 20, the object of which will be hereinafter explained. The shaft 21 of the drum 18 is extended through the forward wall of the furnace 15 and has secured to it a beveled gear wheel 22, as shown in Fig. 3. This gear wheel 22 meshes with a second gear wheel 23 loosely mounted upon a shaft 24. This shaft 24 has rigidly mounted upon it a toothed clutch member 25 and the wheel 23 has rigidly secured to it a similar toothed clutch member 26. Loosely mounted upon the shaft 24 between the clutch members 25 and 26 is a longitudinally movable clutch member 27 adapted to engage with one or the other of the members 25 and 26. This clutch member 27 has mounted

upon it a gear wheel 28 which meshes with a gear wheel 29 driven by a motor 30. The gear wheel 29 is made considerably wider than the wheel 28, so that the clutch member carrying the wheel 28 may move longitudinally on its shaft without disengaging the gear 28 from the gear 29. The clutch member 27 is engaged by a bifurcated lever 31 pivoted at 32 and normally held in position by means of a spring 33 so as to hold the clutch member 27 in engagement with the clutch member 25, as shown in Fig. 2. The lever 31 also has pivoted to it an arm 34 carrying a core 35 adapted to be drawn into a solenoid 36 so as to move the clutch member 27 in the opposite direction and engage it with the clutch member 26.

Rigidly mounted upon the end of the shaft 24 opposite to the clutch mechanism above described is a sprocket wheel 38. This sprocket wheel 38 is surrounded by a sprocket chain 39 forming an endless carrier. This sprocket chain 39 also surrounds a similar sprocket wheel 40 within the annealing furnace 15. Secured to the sprocket chain 39 are a number of carriers which will now be described. The links of the chain 39, at the points where the carriers are to be supplied, are provided with lugs 41. Through these lugs 41 passes a rod 42. Mounted upon the rod 42, at each side of the lugs 41, are a pair of rollers 43. Adjacent to the end of the inner roller 43 the rod 42 has rigidly secured to it a collar 44. Adjacent to the collar 44 the rod 42 has slidably mounted upon it a sleeve 45. This sleeve 45 has pivoted to it at 46 a cradle 47 adapted to receive the bottle or other article to be carried. The cradle 47 is mounted upon the sleeve 45 so as to have a slight lateral rocking movement, but is held in its normal position by means of the spring 48 interposed between the cradle and the sleeve, as best shown in Fig. 6. The sleeve 45 slides longitudinally upon the rod 42 and is provided with a slot 49 in which slides a pin 50 rigidly secured in the rod 42. At the end of the slot 49 the sleeve 45 is provided with a notch 51 adapted to engage the pin 50 and hold the sleeve in its extended position. The spring 52 is secured at one end of a pin 53 in the collar 44 and at the other to a pin 54 carried by the sleeve 45 and holds said sleeve 45 in its retracted position except when the detent 51 engages with the pin 50.

In order to set the sleeve 45 in its extended

position, said sleeve is provided with a downwardly projecting stud 55 provided with an antifriction roller 56. Rigidly carried by the rod 42 is a strip 57 extending to a point in front of the cradle 47 when the said cradle is in its retracted position. This plate 57 has adjustably secured to it by means of bolts 58 a second plate 59 carrying a downward extension 60 operating as an abutment to discharge the bottles or other articles from the cradle 47, as will be hereinafter described. The plate 57 has secured to it one end of a coil spring 61, the opposite end of which surrounds the pin 54 on the sleeve 45. This spring 61 tends to rotate the sleeve 45 so that when the sleeve is extended, as will be hereinafter described, it is moved into position to engage the pin 50 with the notch 51. The bottom of the cradle 47 is provided with a roller 62, and the upper portion of the body of the cradle is provided with a passage 63, the purpose of both of which will be hereinafter described.

70 is a vertical shaft upon the upper end of which is rigidly mounted a disk 71 and this disk 71 carries a series of arms 72, the ends of which are adapted to be struck by the bottle carried in the cradle 47. The object of the opening 63 in the cradle 47 is to allow the arms 72 to pass through the cradle when it is empty so that the disk 71 will not be rotated. When, however, a bottle is contained in the cradle, the bottle will strike the arm and rotate the disk 71 through a predetermined distance. Rigidly mounted on the lower end of the shaft 70 is a gear wheel 73, which in turn meshes with a wheel 74. The gear wheel 73 is prevented from moving backwards by means of a pawl 75, as shown in Fig. 2. The gear wheel 74 carries an arm 76 having a beveled end and adapted to make contact with a sliding member 77. This member 77 carries a contact 78 adapted to engage with a contact 79 and thus complete the electric circuit 80 which passes through the solenoid 36 and is supplied from any suitable source 81.

Adjacent to the sprocket wheel 38 is situated a bottle receiver 85 shown in detail in Fig. 4. This bottle receiver is arranged to be adjusted by means of a bolt 86 passing through a slot 87 in the base of the receiver and through the clamping strip 88. The upper portion of the receiver 85 is made the proper form to receive and hold a bottle 89 but at the same time to allow the cradle to pass upward through it so as to engage the bottle. A spring mounted piece 90 acts as a buffer for the bottle as it passes into the receiver and at the same time enables the bottom of the cradle 47 carrying the roller 62 to properly pass into position below the bottom of the bottle. The bottles 89 are delivered to the receiver 85 by means of the chute 91 of the usual form. Carried by the shaft 24

is an upright 92, the lower end of which is provided with a wedge shaped member 93 adapted to engage with the antifriction roller 56 on the stud 55 to set the sleeve 45 and cradle 47 in their extended positions. The upper end of the upright 92 has secured to it at one end a guide 94, the opposite end of which is secured to a similar upright 95 carried upon the shaft of the wheel 40. A second guide 96 is carried by uprights 97 supporting the opposite ends of the shafts carrying the wheels 38 and 40. The guide 94 engages with the under side of one of the rollers 43, while the guide 96 engages with the upper side of the other roller 43, as best shown in Fig. 8. The guides 94 and 96 thus steady the bottle carriers in their passage from the wheel 38 to the wheel 40. One of the arms 72 hereinbefore described is provided with a downward extension 98, as shown in detail in Fig. 9. This downward extension 98 is provided with a separate end 99 pivoted to the main part at 100 so as to swing in one direction but to be incapable of movement in the opposite direction. As the disk 71 rotates, this end 98 can swing on its pivot 100 when the said part strikes one of the projections 20 on the plates 16. When, however, the carrier composed of the plates 16 is moved so as to cause one of the fingers 20 to strike the end 98, it will be incapable of movement relative to the main part, and thus the disk 71 will be rotated for a purpose hereinafter to be described.

The operation of my machine is as follows: The bottles 89 are conveyed in the receiver 85 through the chute 91 in the usual way, The motor 30, being normally in connection with the conveyer 39, rotates this conveyer. As the bottle holders 47 approach the receiver, the sleeves 45 are extended by means of the engagement of the wedge 93 with the roller 56. The cradle 47 is thus brought in position to pass through the receiver 85 and remove therefrom a bottle, as best shown in Fig. 1. As the bottle is carried forward, it comes into engagement with one of the arms 72, thus partially rotating the disk 71. As soon as the forward end of the bottom of the cradle 47 carrying the roller 62 comes in contact with the last bottle set up on the support 16, the cradle will be rocked upon its pivot so as to disengage the pin 50 from the detent 51. The coil spring 52 will now retract the cradle and the contact of the abutment 60 with the bottle will discharge the bottle from the holder and place it upon the carrier 16. When this action has taken place the required number of times to set up one row of bottles on the carrier 16, the wheel 74 will be moved through a complete revolution and will cause the arm 76 to engage with the sliding member 77 and thus complete the contact through the circuit 80. This will cause the core 35 to be drawn into the solenoid 36.

oid 36 against the pull of the spring 33 and thus move the clutch member 27 out of engagement with the clutch member 25 and into engagement with the clutch member 26.

5 This will stop the carrier 39 and start the carrier 16. Soon, however, after the carrier has started to move one of the projecting finger pieces 20 will come into engagement with the lower end of the projection 98 and
10 cause a sufficient further movement in the disk 71 to disengage the arm 76 from the slide 77 and thus break the circuit. The parts will now be in position to set up a second row of bottles. The above operation is
15 repeated until the carrier 16 is completely filled.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

20 1. In a carrying and setting up machine, the combination with a conveyer, of a holder for the article to be carried mounted on said conveyer, an abutment for said holder, and means for moving said holder laterally to
25 cause said abutment to discharge the article.

2. In a conveying and setting up machine, the combination with a conveyer, of a holder for the article to be conveyed tiltingly
30 mounted on said conveyer, an abutment for said holder, and means controlled by the tilting of said holder for causing relative movement between said holder and abutment to discharge the article.

3. In a conveying and setting up machine, the combination with a conveyer, of a spring
35 mounted holder on said conveyer for the article to be carried, an abutment for said holder, and means for releasing said holder to discharge the article.

40 4. In a conveying and setting up machine, the combination with an endless conveyer, of a spring mounted holder on said conveyer for the article to be carried, an abutment for said holder, and means for releasing said holder to
45 discharge the article.

5. In a conveying and setting up machine, the combination with an endless conveyer, of
50 a second conveyer moving at an angle to said first conveyer, a spring mounted holder on said first conveyer for the article to be carried, an abutment for said holder, and means for releasing said holder to discharge the article on said second conveyer.

6. In a conveying and setting up machine, the combination with an endless conveyer, of
55 a second conveyer at right angles to and below said first conveyer, a spring mounted holder on said first conveyer for the article to be conveyed, an abutment for said holder, and means for releasing said holder to discharge the article on said second conveyer.
60

7. In a conveying and setting up machine, the combination with an endless conveyer, of
65 a tilting spring mounted holder on said conveyer for the article to be conveyed, an abut-

ment for said holder, and means for tilting said holder to release the same and discharge the article.

8. In a conveying and setting up machine, the combination with an endless conveyer, of
70 a second conveyer moving at an angle to said first conveyer, a tilting spring mounted holder on said first conveyer, for the article to be conveyed, an abutment for said holder, and means for tilting said holder to release the
75 same and discharge the article on said second conveyer.

9. In a conveying and setting up machine, the combination with an endless conveyer, of
80 a second conveyer moving at right angles to and below said first conveyer, a tilting spring mounted holder on said first conveyer for the article to be carried, an abutment for said holder, and means for tilting said holder to release the same and discharge the article on
85 said second conveyer.

10. In a conveying and setting up machine, the combination with an endless conveyer, of holders on said conveyer for the ar-
90 ticles to be conveyed, a rotary member provided with arms extending into the path of said holders, a second conveyer, means controlled by said rotary member for shifting the movement from said first to said second conveyer, and projections carried by said second
95 conveyer and adapted to actuate said rotary member to shift the movement of said first conveyer.

11. In a conveying and setting up machine, the combination with an endless con-
100 veyer, of a holder on said conveyer, a receptacle for the article through which said holder passes whereby said holder extracts the article from said receptacle, an abutment for said holder, and means for causing relative
105 movement between said holder and abutment to discharge the article.

12. In a conveying and setting up machine, the combination with an endless con-
110 veyer, of a holder for said conveyer, a receptacle for the article through which said holder passes whereby said holder extracts the article from said receptacle, an abutment for said holder, and means for moving said holder to discharge the article.
115

13. In a conveying and setting up machine, the combination with an endless con-
120 veyer, of a receiver having a curved spring mounted buffer for the article, and a holder on said conveyer adapted to pass through said receiver and provided with a portion adapted to pass between said buffer and the article.

14. In a conveying and setting up machine, the combination with an endless con-
125 veyer, of a receiver having a curved spring mounted buffer for the article, a spring mounted holder on said conveyer adapted to pass through said receiver and provided with a portion adapted to pass between said buffer
130

and the article, an abutment for said holder, and means for causing relative movement between said holder and abutment to discharge the article.

- 5 15. In a conveying and setting up machine, the combination with an endless conveyer, of a receiver for the article, a spring mounted holder on said conveyer adapted to pass through said receiver and remove the ar-

ticle, and means for setting said holder before it passes through the said receiver.

In testimony whereof, I have hereunto set my hand and affixed my seal in the presence of the two subscribing witnesses:

HARRY J. STIEBEL. [L. s.]

Witnesses:

ELIZABETH BAILEY,
JAMES H. BRYSON.