

H. S. BREWINGTON.
CANDY PULLING MACHINE.
APPLICATION FILED AUG. 18, 1910.

979,125.

Patented Dec. 20, 1910.

6 SHEETS—SHEET 1.

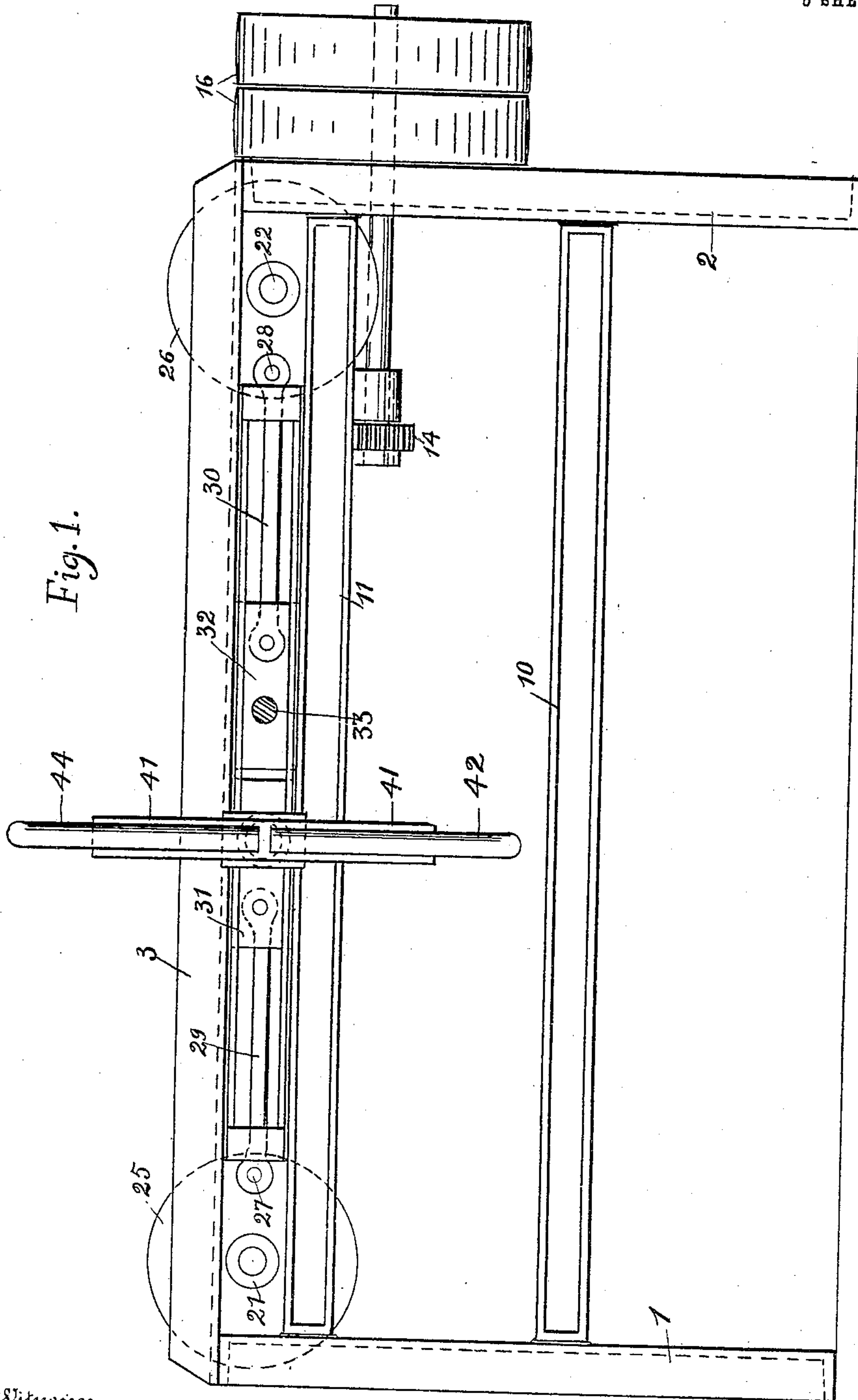


Fig. 1.

Inventor

Witnesses

Justus Riehl

Albert E. Lickman

By

Henry G. Brewington,

E. Walton Brewington,

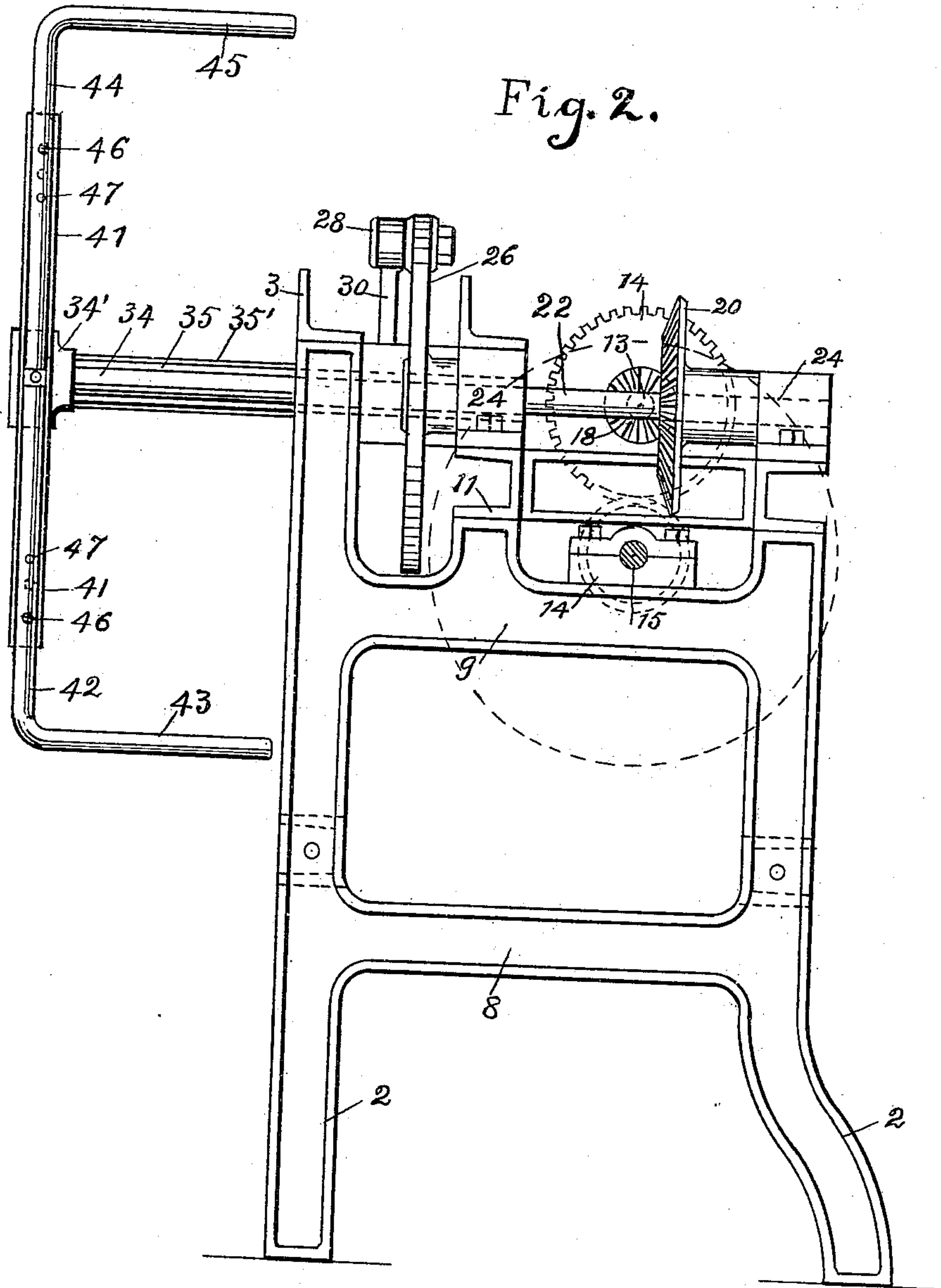
Attorney

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5 SHEETS—SHEET 2.



Witnesses
Justus Riehl
Albert E. Leckman

Inventor
Henry J. Brewington,
By E. Walter Brewington,
Attorney

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5 SHEETS—SHEET 3.

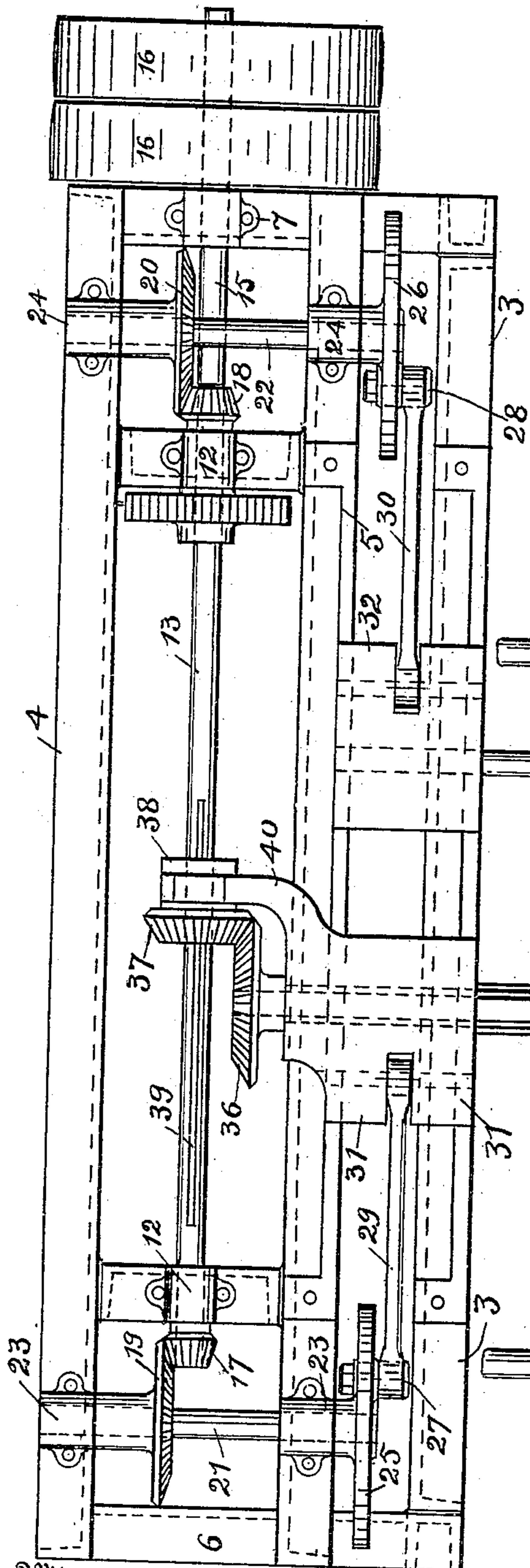


Fig. 3.

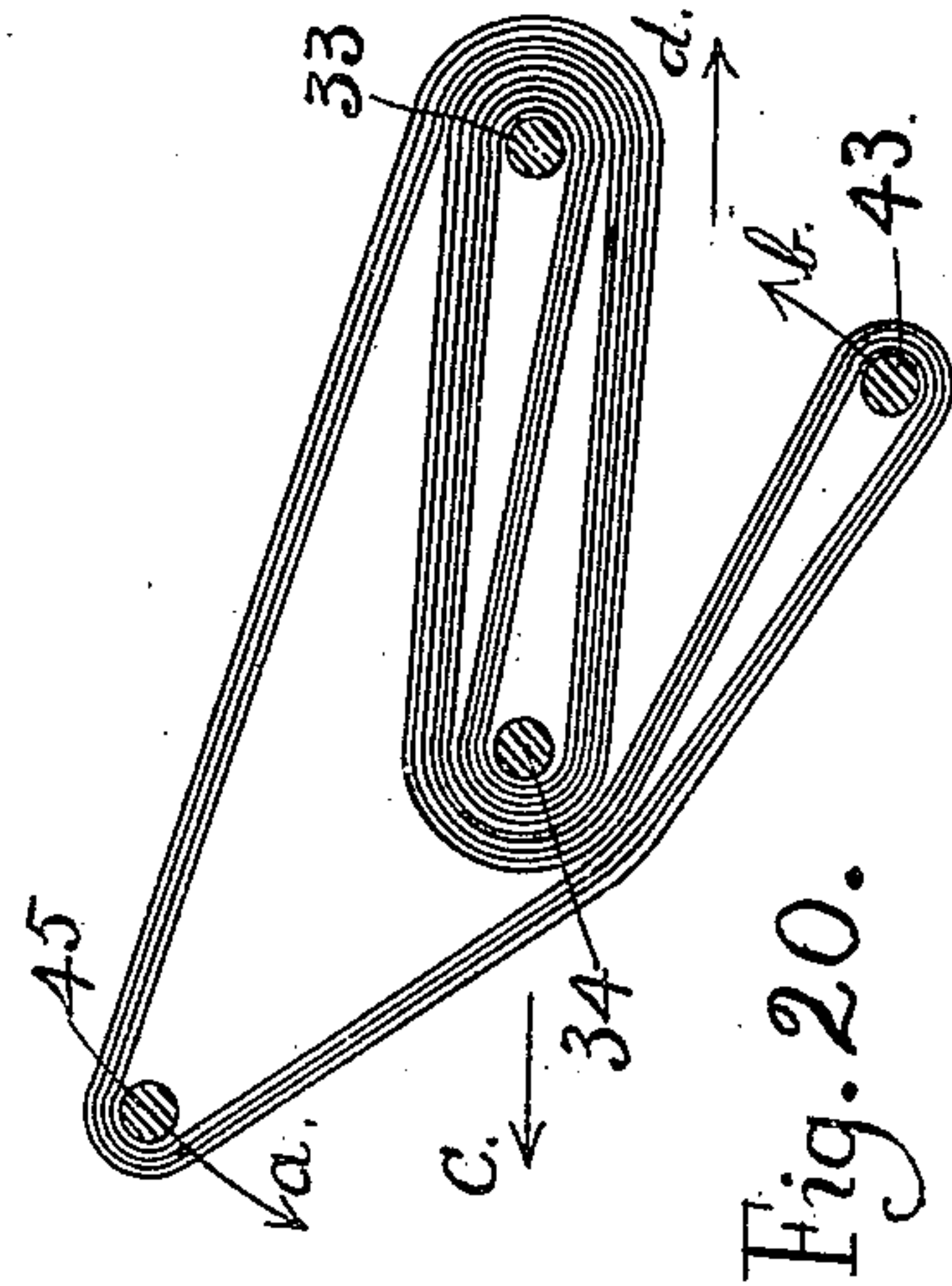


Fig. 20.

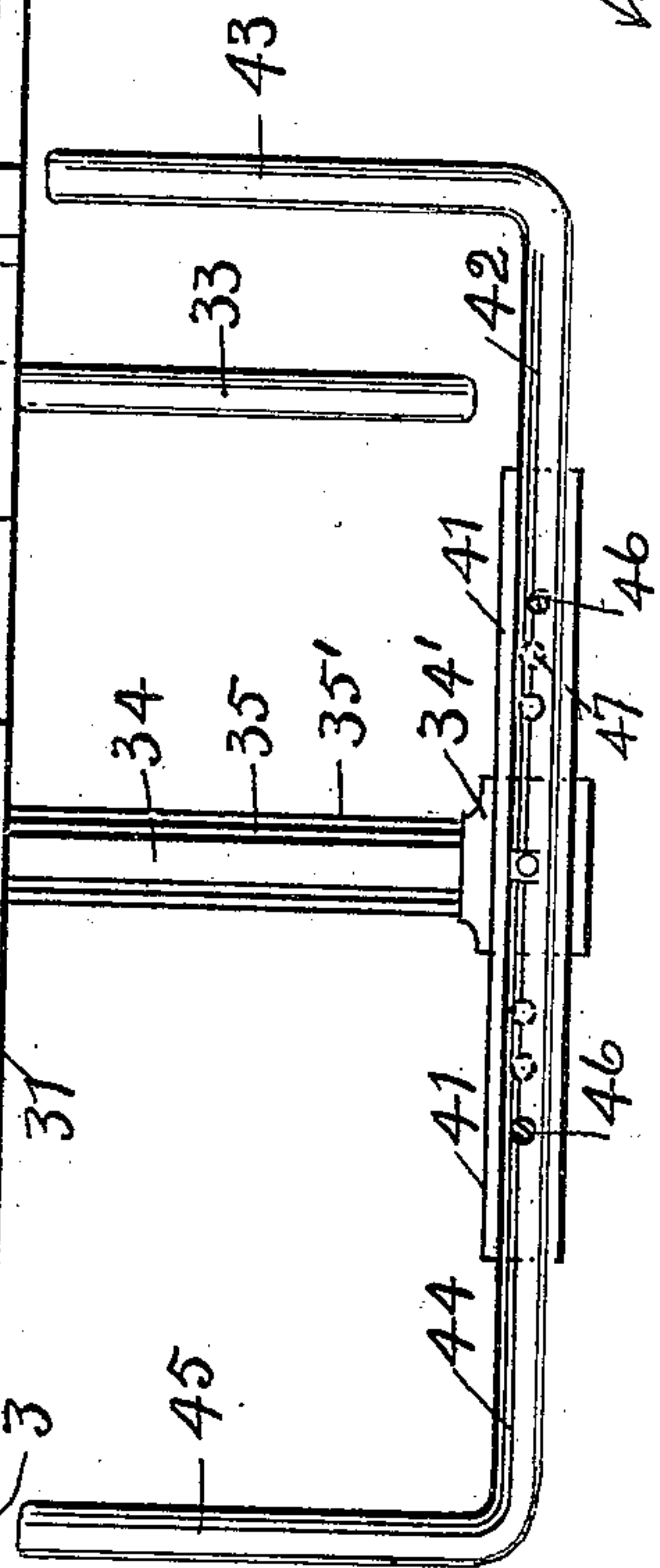


Fig. 21.

Witnesses

Justus Riehl

Albert E. Lickman

Inventor

Henry F. Brewington.

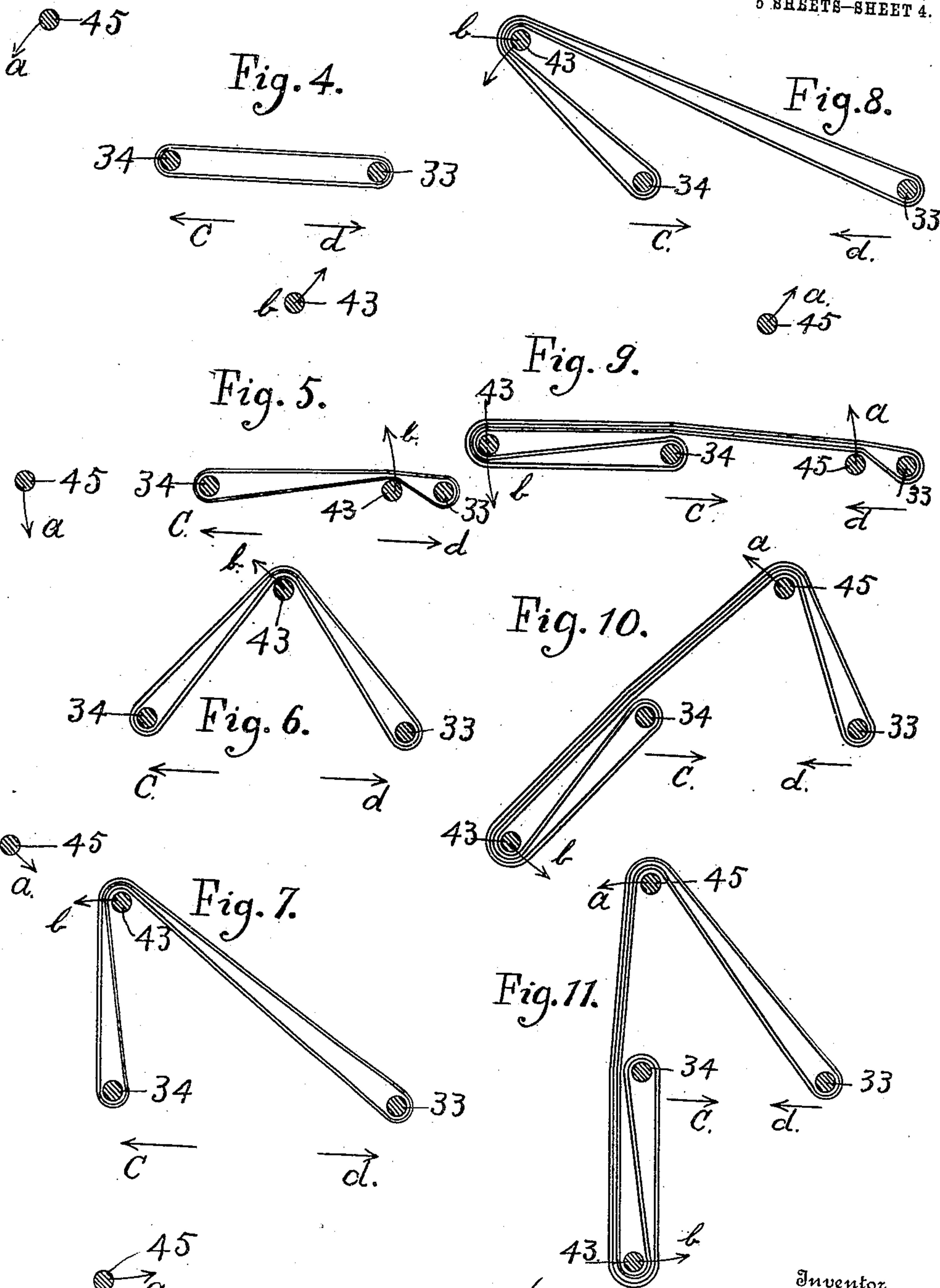
By

E. Walton Brewington.

Attorney

979,125.

Patented Dec. 20, 1910.
5 SHEETS—SHEET 4.



Witnesses
Justus Riehl
Albert E. Lickman

Inventor
Henry S. Brewington,
By E. Walton Brewington,
Attorney

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5 SHEETS—SHEET 5.

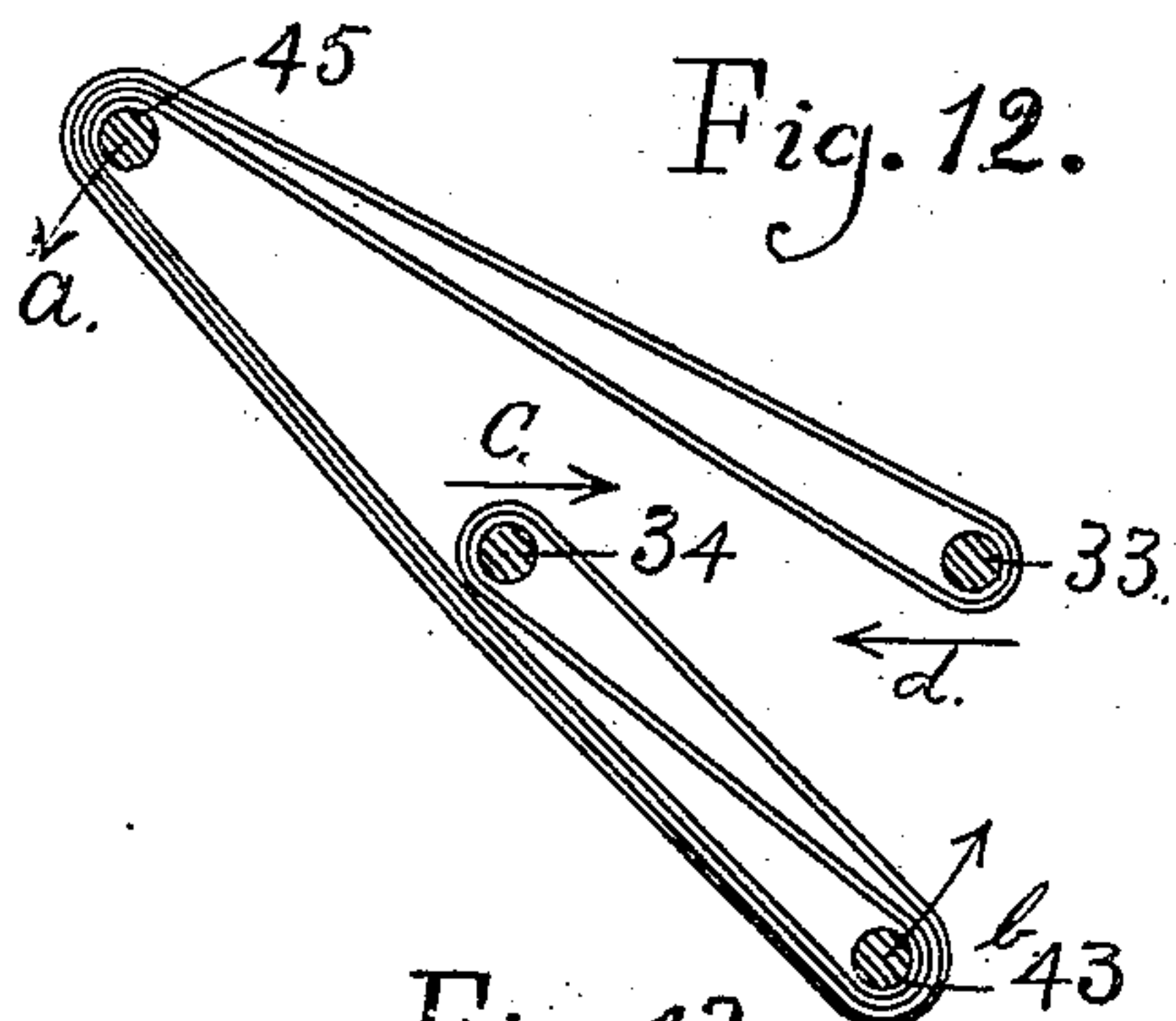


Fig. 12.

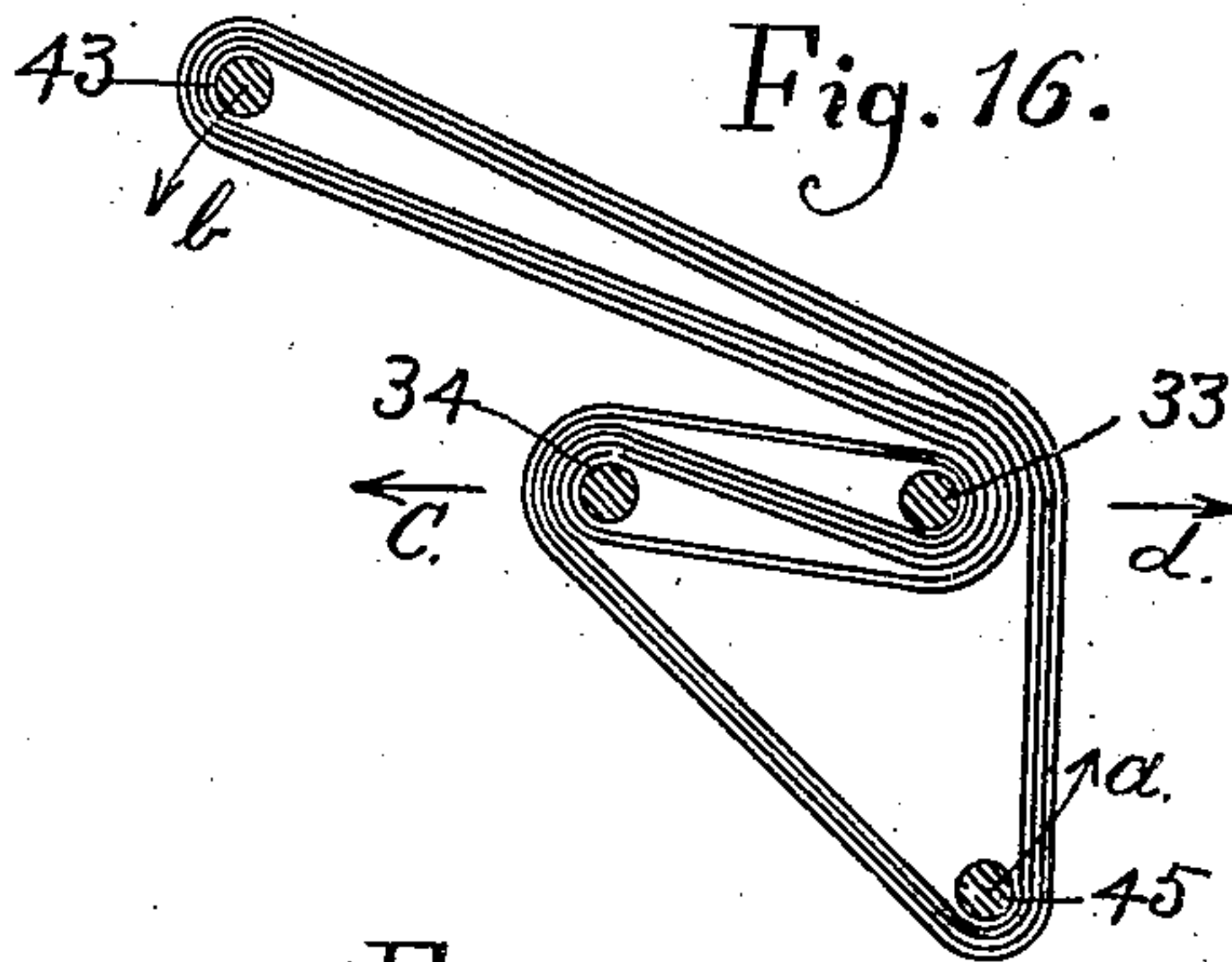


Fig. 16.

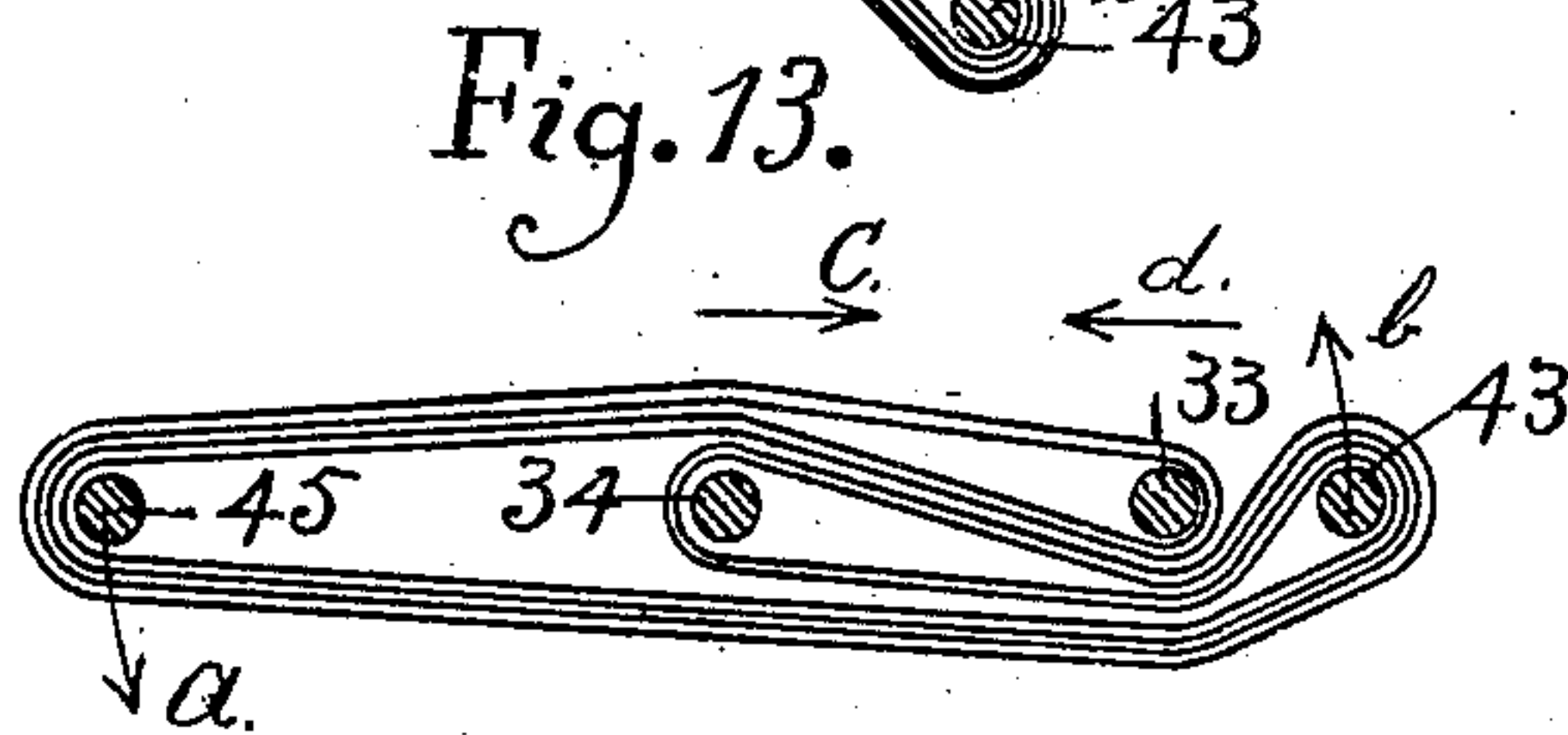


Fig. 13.

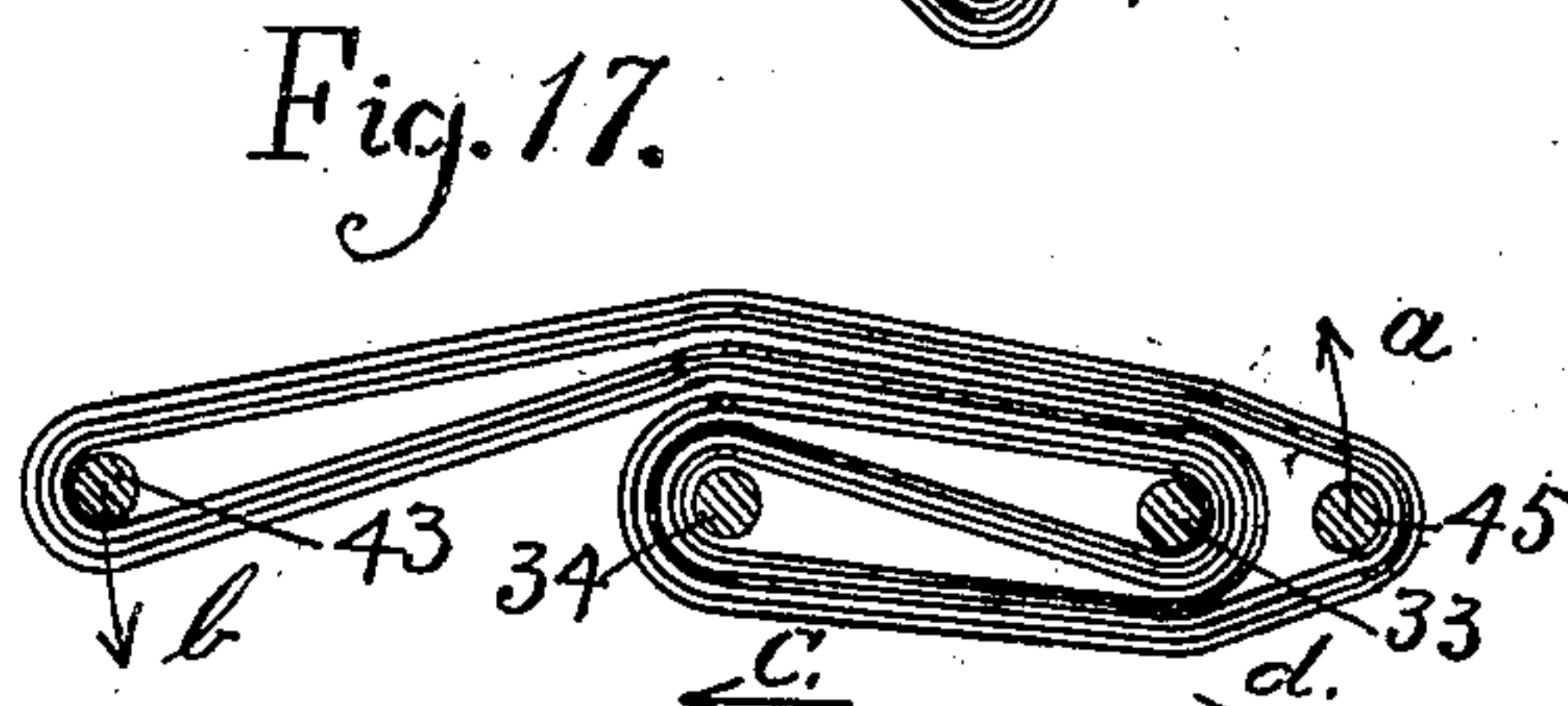


Fig. 17.

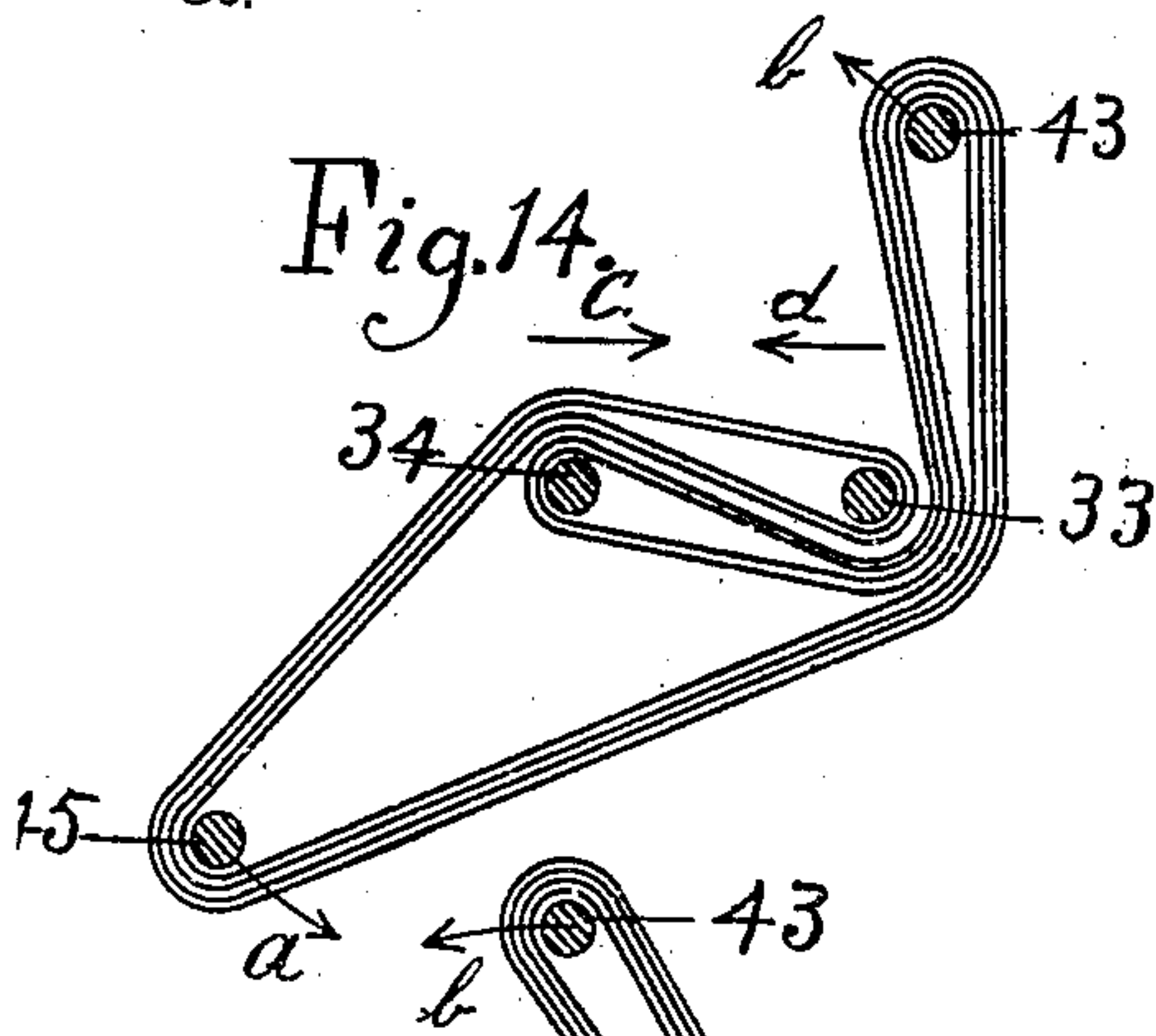


Fig. 14.

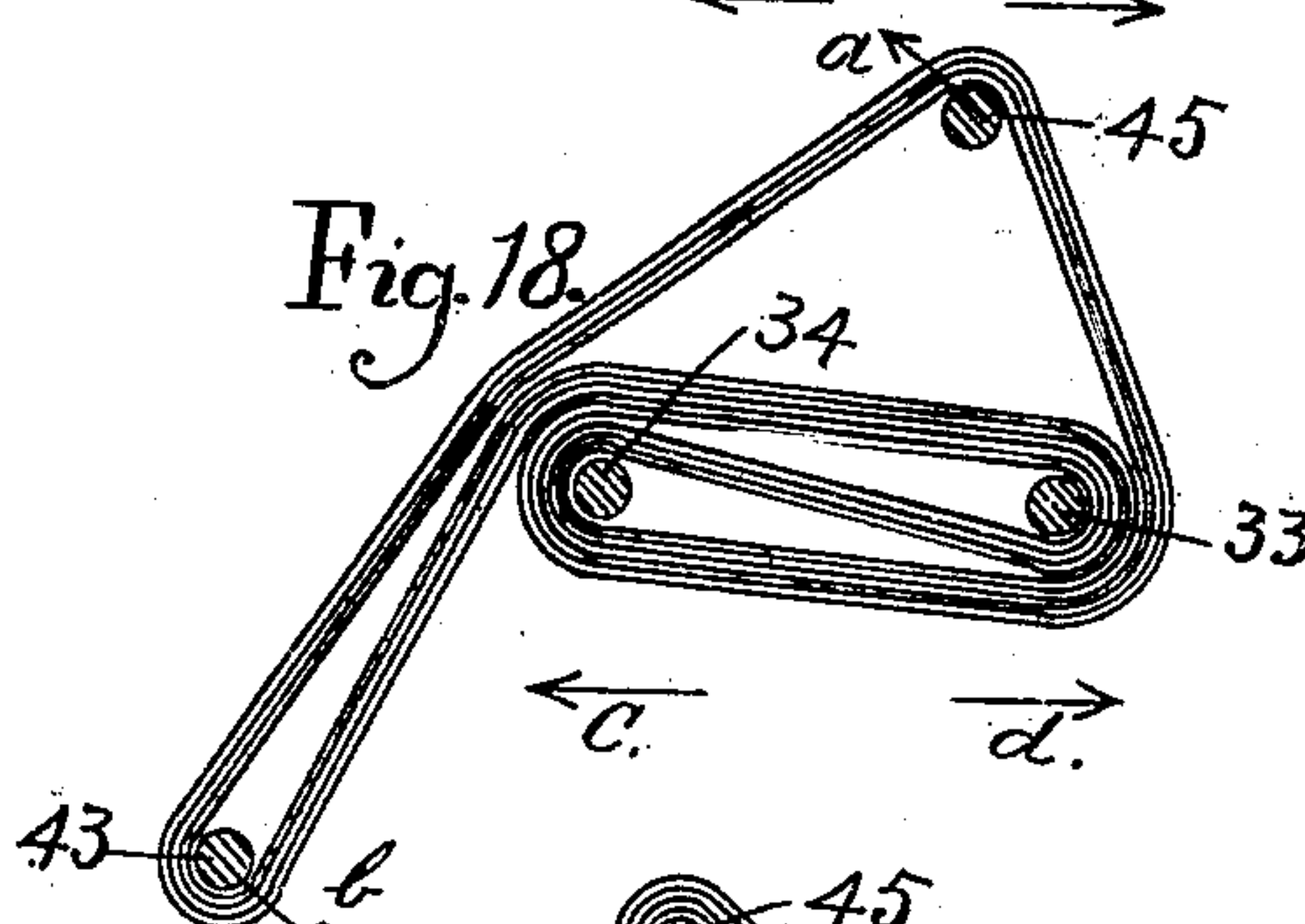


Fig. 18.

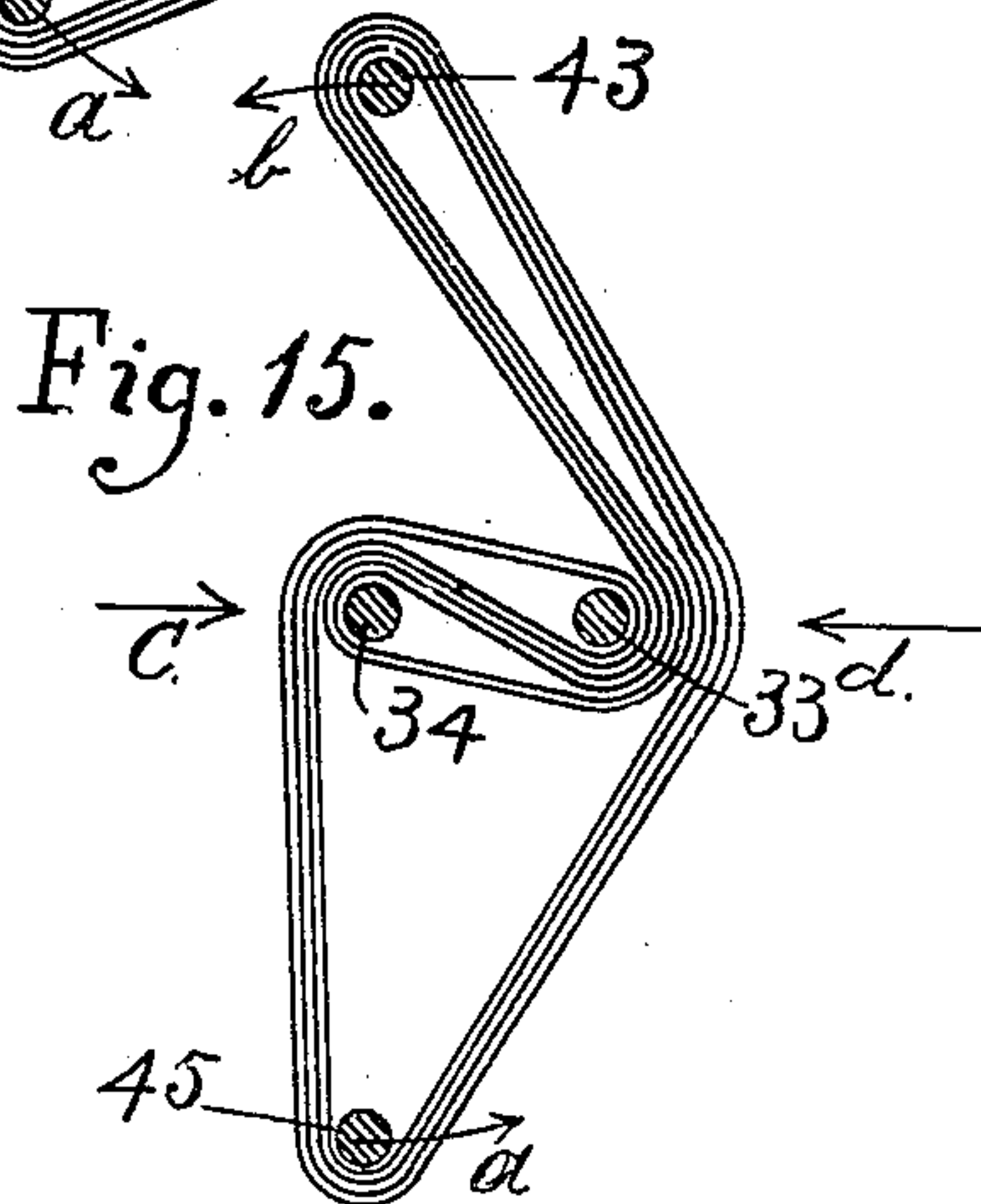


Fig. 15.

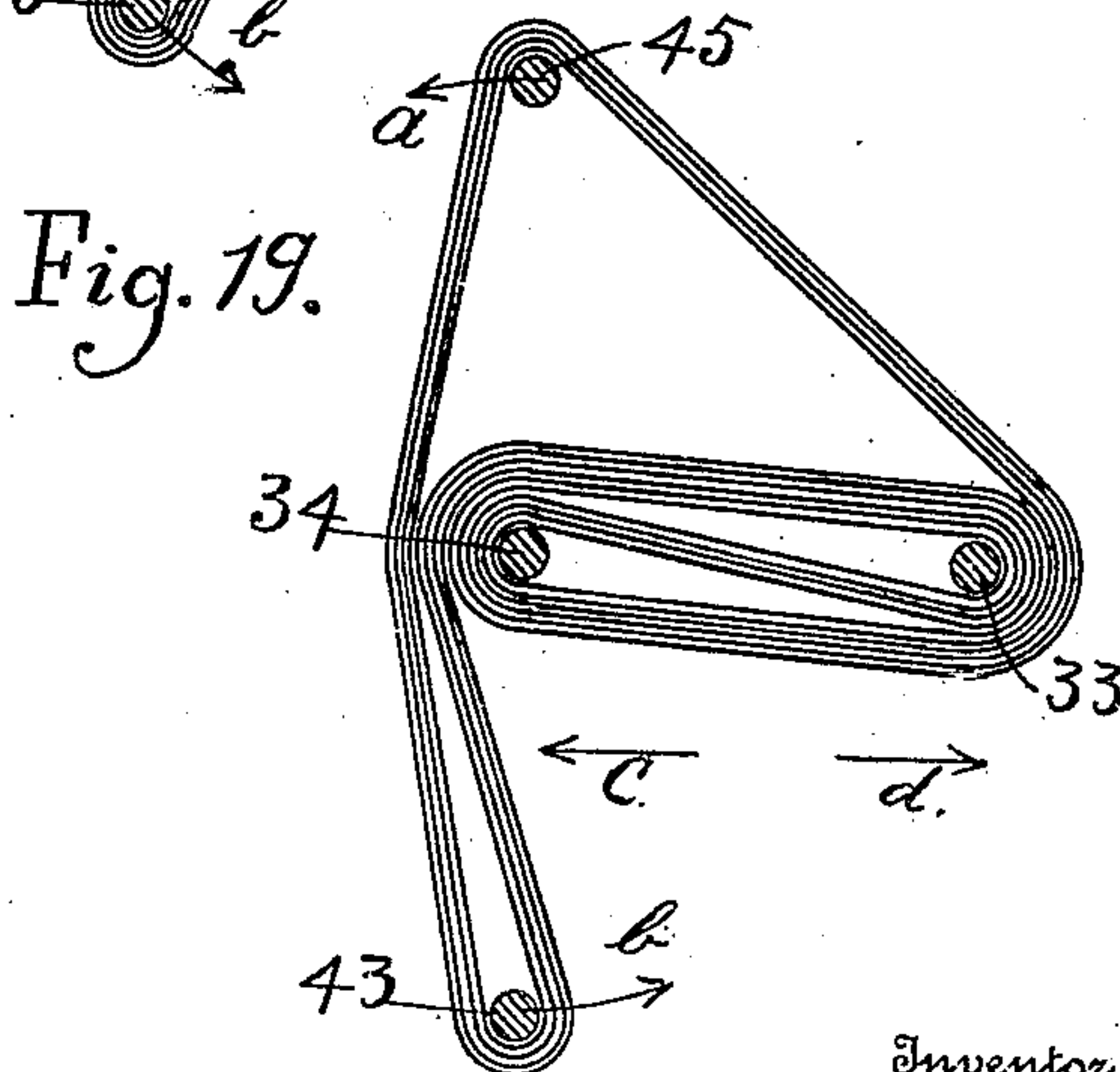


Fig. 19.

Inventor

Witnesses

Justus Richl
Albert E. Lickman

Henry S. Brewington,
By E. Walton Brewington,
Attorney

UNITED STATES PATENT OFFICE.

HENRY S. BREWINGTON, OF BALTIMORE, MARYLAND.

CANDY-PULLING MACHINE.

979,125.

Specification of Letters Patent. Patented Dec. 20, 1910.

Application filed August 13, 1910. Serial No. 577,857.

To all whom it may concern:

Be it known that I, HENRY S. BREWINGTON, a citizen of the United States, residing at Baltimore city, State of Maryland, have
5 invented certain new and useful Improvements in Candy-Pulling Machines, of which the following is a specification.

This invention relates to machines for pulling candy and taffy and the like, and
10 has for its object to provide a machine of this character of simple and economical construction which will be effective and rapid in operation, and I do declare the following to be a full, clear and exact description of
15 the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which
20 form a part of this specification.

With the foregoing object in view the invention consists in certain novel features of construction, arrangement and combinations of parts which will be hereinafter described
25 and pointed out in the claims.

In the accompanying drawings, which illustrate an embodiment of the invention; Figure 1 represents a view of the machine in front elevation; Fig. 2 represents a view
30 in end elevation with the driving pulleys removed; Fig. 3 represents a top plan view of the machine, and Figs. 4 to 21 inclusive are detail views illustrating the various positions assumed by the candy pulling bars and the hank of candy thereon, throughout the operation of the machine.

Like reference characters indicate the same parts as shown in the several figures of the accompanying drawings.

Referring specifically to the drawings, 1 and 2 indicate the uprights or supporting legs of the frame in which the working parts of the machine are mounted and upon which are supported longitudinal top bars
45 3, 4 and 5 and transverse top bars 6 and 7. The uprights or supporting legs are at each end of the machine and are preferably in the form of end castings, as illustrated in Fig. 2, the front and rear legs of each end being
50 connected by suitable transverse bars 8 and 9, but the construction of the frame may be varied to suit the circumstances. Suitable longitudinally connecting bars 10 and 11 will be provided to brace and strengthen the
55 structure.

On intermediate transverse bars connect-

ing the longitudinal bars 4 and 5, are mounted bearings 12, 12, in which is journaled a shaft 13 which is connected by gears 14 with the main driving shaft 15 and which may be
60 driven by any suitable power as, for instance, belts running on pulleys 16 (Figs. 1 and 3). Upon the shaft 13 are mounted beveled pinions 17, 18, which mesh with
65 bevel gears 19, 20, on transverse shafts 21, 22, journaled in bearings 23 and 24 mounted on longitudinal top bars 4 and 5 of the machine. Said shafts 21 and 22 carry at their front ends disks 25 and 26 in which
70 are mounted crank pins 27 and 28, which are connected by pitmen 29, 30 with cross heads 31 and 32, mounted to slide on longitudinal top bars 3 and 5 of the frame. From the cross head 32 a pulling bar 33 projects forwardly beyond the front of the machine
75 while in the cross head 31 is journaled a pulling bar 34 within a sleeve 35, the pulling bar carrying at its inner end a bevel gear 36 which meshes with the bevel gear 37 on a sleeve 38 adapted to slide on a key 39 longi-
80 tudinally of the shaft 13, a bracket 40 extending rearwardly from the cross head 31 embracing the sleeve 38 and causing the sleeve to reciprocate with the cross head 31 as it slides back and forth on the longitudinal bars 3 and 5.

Provided on the outward end of the pulling bar 34, and preferably integral therewith, is a head 34' in to which is secured a sleeve 41. Secured within the sleeve 41
90 are pulling arms 42 and 44, the arms being made adjustable by means of the openings 47 and pins 46. Loosely fitted around the sleeve 35 which is stationary, is provided a sleeve 35', the pulling bar 34 and its
95 sleeve 35 project forwardly beyond the face of the machine in the same horizontal plane as the pulling bar 33 and to substantially the same distance from the front of the machine, the pulling arms 42 and 44 at
100 their outer ends being bent inwardly at 43 and 45 respectively, and parallel with the pulling bar 34 and the sleeves 35 and 35' provided thereon.

In the operation of the machine the rotation of the driving shaft 15 is communi-
105 cated through gearing 14 to the shaft 13 and through the bevel gearing 17, 18, 19 and 20, the rotation of the shaft 13 being communicated through the shafts 21 and
110 22. The crank disks 25 and 26 rotate with their shafts 21 and 22 and through the

medium of the pitmen 29 and 30 impart a reciprocating motion to the cross heads 31 and 32 on the bars 3 and 5 causing said cross heads to move outward from the position illustrated in Figs. 1 and 3 to the extent of the swing of the crank pins and then move toward each other back to the position of Figs. 1 and 3, the cross heads carrying with them the pulling bars 33 and 34, and the pulling arms 43 and 45. During this reciprocation of the parts just described, the pulling bar 34 is rotated from the shaft 13 through the medium of the bevel gearing 36 and 37 causing the pulling arms 43 and 45 to move in circular paths about the pulling bar 34 and the sleeves 35 and 35' provided thereon, as will be particularly described hereinafter.

In the operation of the machine, a hank of candy is placed upon the pulling bars in any position which they may have reached at the time desired, but in the following description of the operation it will be assumed that there has been a sufficient movement to bring the hank of candy into the position as shown in Fig. 4, in which the pulling bars 33 and 34 are shown in a receding position stretching the hank of candy and the pulling arms 43 and 45 in position prior to the arm 43 engaging the hank of candy, the views of the different steps in the operation being illustrated in Figs. 4 to 21 inclusive in somewhat diagrammatic form, the sleeves 35 and 35' being omitted. In Fig. 4 it will be noticed that the two pulling bars 33 and 34 are traveling toward the outer end of their movement and that the pulling arm 43 is moving forward toward the bar 33. From the position of the pulling arms 43 and 45 as shown in Figs. 1 and 2, they have begun rotating around the pulling bar 34 and move in the direction of the arrows *b* and *a* respectively, while the pulling bars 33 and 34 are moving away from each other, as indicated by the arrows *d* and *c*. In Fig. 5 these parts are illustrated with the bars 33 and 34 slightly farther apart, and the arm 43 having moved forward toward the bar 33 sufficiently to engage the hank of candy. In Fig. 6, the bars 33 and 34 are represented as having moved still farther apart and the arm 43 passing upward between the bars 33 and 34 carrying the hank of candy with it. In Fig. 7 the bars 33 and 34 are represented as still farther apart as indicated by the arrows and the arm 43 is directly above the bar 34 in the direction of the arrow, and in a position reversed to that as shown in Figs. 1 and 2, the bars 33 and 34 having reached their limit of travel apart. In Fig. 8 the bars 33 and 34 are indicated as having begun to approach each other, the arm 43 having passed above the bar 34, and has started on its downward movement, while the arm 45 has begun its upward movement as indicated

by the arrows *b* and *a* respectively. In Fig. 9 the bars and arms are indicated in parallel position, the arm 45 in its travel upward having reached a point where it for the first time engages the hank of candy between the bars 33 and 34, the arm 43 beginning its travel downward. In Fig. 10 the bars 33 and 34 have moved still closer toward each other, the arm 45 having moved upward between the rods carrying the hank of candy, while the arm 43 has moved downward and bent the hank of candy around the bar 34. In Fig. 11 the bars 33 and 34 have approached each other still closer, the arm 45 having moved to a position directly above, and the arm 43 to a position directly below the bar 34, and are in the position shown in Fig. 1, the arms having made one complete revolution. In Fig. 12 the bars 33 and 34 are indicated as having approached each other still closer, the arm 43 being on its upward movement around the bar 33, and the arm 45 on its downward movement. In Fig. 13 the bars 33 and 34 have approached each other still closer, the arm 43 in its upward movement passing around the bar 33, and lapping the candy on itself, and the arm 45 just starting on its downward movement around the bar 34. In Fig. 14 the bars 33 and 34 have approached each other still closer, the arm 43 having passed upward around the bar 33 lapping the candy on itself about the bar, and the arm 45 has passed downward around the bar 34, stretching the hank of candy around the bar. In Fig. 15 the bars 33 and 34 are indicated as having approached each other to their closest point, the arm 43 having reached a point directly above, and the arm 45 directly below the bar 34. In Fig. 16 the bars 33 and 34 are indicated as having begun to recede from each other with the hank of candy about them to be stretched, the arm 43 having passed above and beyond the bar 34, and the arm 45 traveling upward toward and around the bar 33. In Fig. 17 the bars 33 and 34 are indicated as farther apart, the arm 43 about to pass around the bar 34 in its downward travel, the arm 45 just passing around the bar 33 in its upward travel. In Fig. 18 the bars 33 and 34 are indicated as having traveled still farther apart, the arm 43 having passed around the bar 34 in its downward travel, lapping the candy on itself about the bar, and the arm 45 on its upward travel having passed around the bar 33 and lapped the candy on itself around this bar. In Fig. 19 the bars 33 and 34 are indicated as having traveled still farther apart, the arm 43 having started in its travel upward toward the bar 33 and the arm 45 just about to start its travel downward toward the bar 34. In Fig. 20 the bars 33 and 34 are indicated as having traveled still farther apart, the arm 43 traveling upward toward the

bar 33, and the arm 45 traveling on its downward course around the bar 34. In Fig. 21 the bars 33 and 34 are indicated as having traveled still farther distance apart, the arm 43 passing upward between the bars 33 and 34 carrying the hank of candy and again lapping it, and the arm 45 just starting on its downward travel around the bar 34 lapping and stretching the candy on itself about the said bar, the members now being in the same position as shown in Fig. 5, wherein the arm 43 is shown as engaging the candy for the first time. The operation of the bars and arms is repeated and the hank of candy acted upon in a manner the same as has been just described until the hank of candy is thoroughly pulled.

It will be observed that owing to the difference in size between the bevel pinions 17 and 18 and the gears 19 and 20, that the shaft 13 must make more than one revolution to each revolution of the shafts 21 and 22. It will be further observed that owing to the difference in size of the gears 36 and 37, the shaft 13 will make more than one revolution to each revolution of the pulling bar 34. Owing to this difference in gearing, the pulling arms 43 and 45 will each make more than one revolution around the pulling bar 34, during a single movement of the cross heads 31 and 32 to and from each other. The effect of this differential motion will be readily recognized in the description of the operation of the machine hereinbefore described, with reference to Figs. 4 to 21 inclusive, and its advantages will be obvious to the candy manufacturer.

By means of the mechanism operating in the manner described, it will be obvious to those skilled in the art, that a hank of candy will be very quickly and continuously pulled, that the mechanism is simple and that there exists a minimum danger of breakage and dislocation. It will be obvious also to those skilled in the art, that the particular mechanism for operating the pulling bars in the manner described might be varied to a large extent without departing from the spirit and scope of the invention, hence I do not wish to limit myself to the exact construction as herein set forth, the primary point of the invention being broadly means for causing the pulling arms and bars to pursue the paths described and illustrated in the manner set forth.

Having fully described the invention, what I claim and desire to secure by Letters Patent, is;

1. In a machine of the character described, the combination of two slidable pulling bars, and a pair of pulling arms carried by one of the said bars, means for revolving the said pulling arms, and means for reciprocating the said pulling bars.

2. In a machine of the character described,

the combination of two slidable pulling bars, and a pair of pulling arms carried by one of the said bars, means for revolving the pulling arms, and means for reciprocating the pulling bars toward and from each other.

3. In a machine of the character described, the combination of two slidable pulling bars, and a pair of pulling arms carried by one of the said bars, means for revolving the pulling arms, and means for reciprocating the remaining pulling bar into and out of the circle of revolution of the said pulling arms.

4. In a machine of the character described, the combination of two slidable pulling bars, and a pair of pulling arms carried by one of the said pulling bars, means for revolving the pulling arms, and means for reciprocating the remaining pulling bar across the path of movement of the said pulling arms.

5. In a machine of the character described, the combination of two slidable pulling bars, and a pair of pulling arms carried by one of the said bars, means for revolving the said pulling arms, and means for reciprocating the remaining pulling bar in a path in line with that of the other pulling bar.

6. In a machine of the character described, the combination of two slidable pulling bars, and a pair of pulling arms carried by one of the pulling bars, means for revolving the pulling arms, and means for reciprocating the remaining pulling bar diametrically across the path of movement of the pulling arms.

7. In a machine of the character described, the combination of two slidable pulling bars, and a pair of pulling arms carried by one of the pulling bars, means for revolving the pulling arms, and means for reciprocating the remaining pulling bar diametrically into and out of the circle of revolution of the said pulling arms.

8. In a machine of the character described, the combination of two slidable pulling bars, and a pair of pulling arms carried by one of the pulling bars, means for revolving, and means for reciprocating the said pulling arms at one and the same time, and means for reciprocating the remaining pulling bar diametrically into and out of the circle of revolution of the said pulling arms.

9. In a machine of the character described, the combination of two parallel slidable pulling bars, and a pair of pulling arms, means for reciprocating the pulling bars and arms, and means for revolving the said pulling arms during the reciprocation thereof.

10. In a machine of the character described, the combination of two parallel slidable pulling bars, and a pair of pulling arms carried by one of the pulling bars, means for reciprocating the said pulling bars, means for revolving the said pulling bar with the said pulling arms provided

thereon during the reciprocation thereof, and means for reciprocating the said pulling arms toward and from the said pulling bars.

5 11. In a machine of the character described, the combination of two parallel slidable pulling bars, and a pair of pulling arms, means for reciprocating the pulling bars, means for revolving one of the said
10 pulling bars during the reciprocation thereof, and means for reciprocating the remaining pulling bar across the path of movement of the said revolving pulling arms.

12. In a machine of the character described, the combination of two parallel
15 slidable pulling bars, and a pair of pulling arms, means for reciprocating the pulling bars, means for revolving the pulling arms during the reciprocation thereof, and means
20 for reciprocating one of the pulling bars diametrically into and out of the path of movement of the said revolving pulling arms.

13. In a machine of the character described, the combination of two parallel
25 slidable pulling bars, and a pair of pulling arms carried by one of the said pulling bars, means for reciprocating the said pulling bars, means for revolving the said pulling
30 arms during the reciprocation thereof, and means for reciprocating the said remaining pulling bar into and out of the circle of revolution of the said revolving pulling arms.

35 14. In a machine of the character described, the combination of a pair of reciprocating pulling bars, and a pair of reciprocating pulling arms, means for revolving
40 the pulling arms around one of the pulling bars as an axis, and means for reciprocating the remaining pulling bar toward and from the axial bar.

45 15. In a machine of the character described, the combination of a pair of reciprocating pulling bars and a pair of pulling arms, means for revolving the pulling arms around one of the pulling bars as an axis, and means for reciprocating the remaining
50 pulling bar across the path of the revolving pulling arms.

16. In a machine of the character described, the combination of a pair of reciprocating pulling bars and a pair of reciprocating pulling arms, means for revolving
55 the pulling arms around one of the pulling bars as an axis, and means for reciprocating the remaining pulling bar toward and from the axial bar and across the paths of the revolving pulling arms.

60 17. In a machine of the character described, the combination of a pair of reciprocating pulling bars and a pair of reciprocating pulling arms, means for revolving
65 the pulling arms around one of the pulling bars as an axis, and means for reciprocating

the remaining pulling bar into and out of the circle of movement of the revolving pulling arms.

18. In a machine of the character described, the combination of a pair of reciprocating pulling bars, and a pair of reciprocating pulling arms, means for revolving
70 the pulling arms around one of the pulling bars as an axis, and means for reciprocating the remaining pulling bar diametrically into
75 and out of the circle of movement of the revolving pulling arms.

19. In a machine of the character described, the combination of a pair of reciprocating pulling bars, and a pair of reciprocating pulling arms, means for revolving
80 the pulling arms around one of the pulling bars as an axis, and means for reciprocating the remaining pulling bar into and beyond the path of movement of the revolving pulling
85 arms.

20. In a machine of the character described, the combination of a pair of reciprocating pulling bars, and a pair of reciprocating pulling arms, means for revolving
90 the pulling arms around one of the pulling bars as an axis, and means for reciprocating the remaining pulling bar diametrically into and beyond the path of movement of the revolving pulling arms.
95

21. In a machine of the character described, the combination of a reciprocating sleeve, pulling arms revoluble about said sleeve as an axis, a pulling bar, and means
100 for reciprocating the pulling bar laterally.

22. In a machine of the character described, the combination of a reciprocating sleeve, pulling arms revoluble about said sleeve as an axis, a pulling bar, and means
105 for reciprocating the pulling bar laterally toward and from the sleeve.

23. In a machine of the character described, the combination of a reciprocating sleeve, pulling arms revoluble about said sleeve as an axis, a pulling bar, and means
110 for reciprocating the pulling bar laterally into the path of movement of the revoluble pulling arms.

24. In a machine of the character described, the combination of a reciprocating
115 sleeve, pulling arms revoluble about said sleeve as an axis, a pulling bar, and means for reciprocating the bar laterally across the path of movement of the revoluble arms.

25. In a machine of the character described, the combination of a reciprocating
120 sleeve, pulling arms revoluble about said sleeve as an axis, a pulling bar, and means for reciprocating the bar laterally diametrically into the path of movement of the
125 revoluble arms.

26. In a machine of the character described, the combination of a reciprocating sleeve, pulling arms revoluble about said sleeve as an axis, a pulling bar, and means
130

for reciprocating the bar laterally diametrically across the path of movement of the revoluble arms.

27. In a machine of the character described, the combination of a reciprocating sleeve, pulling arms revoluble about said sleeve as an axis, a pulling bar and means for reciprocating the sleeve and the pulling bar toward and from each other.

28. In a machine of the character described, the combination of a reciprocating pulling bar, a pair of pulling arms carried thereby and parallel therewith, and means for reciprocating the pulling arms laterally toward and from the pulling bar and simultaneously revolving the arms laterally about a parallel axis.

29. In a machine of the character described, the combination of a pulling bar, a pair of pulling arms parallel therewith, means for reciprocating the pulling arms laterally toward and from the pulling bar and simultaneously revolving the arms laterally about a parallel axis, and means for reciprocating the bar toward and from the axis of the pulling arms.

30. In a machine of the character described, the combination of a pulling bar, a pair of pulling arms parallel therewith, means for reciprocating the pulling arms laterally toward and from the pulling bar and simultaneously revolving the arms laterally about a parallel axis, and means for reciprocating the bar toward and from the axis of the pulling arms, the bars and the axis of the arms being always maintained in parallel positions.

31. In a machine of the character described, the combination of a frame, a cross head slidable thereon, a pulling bar carried by the cross head, a pair of pulling arms parallel with the pulling bar and carried thereby, means for reciprocating the cross head toward and from the pulling arms, and means for revolving the pulling arms laterally about an axis parallel with the arms and bar.

32. In a machine of the character described, the combination of a frame, two cross heads slidable thereon, a pulling bar on one cross head, an axial bar on the other cross head, a pair of pulling arms carried by the axial bar, means for revolving the arms about the axial bar, and means for reciprocating the cross heads toward and from each other.

33. In a machine of the character described, the combination of a frame, two parallel shafts, a crank pin on each, two cross heads slidable on the frame, a pitman connecting each crank pin with a cross head, a pulling bar on one cross head, an axial bar on the other cross head, a pair of pulling arms carried by the axial bar, and means for

revolving the pulling arms about the axial bar.

34. In a machine of the character described, the combination of a frame, two parallel shafts, a crank pin on each, two cross heads slidable on the frame, a pitman connecting each crank pin with a cross head, a pulling bar on one cross head, an axial bar on the other cross head, a pair of pulling arms carried by the axial bar, means for revolving the arms about the axial bar, and means for reciprocating the cross heads toward and from each other.

35. In a machine of the character described, the combination with a frame, a longitudinal shaft, two parallel transverse shafts geared thereto, a crank pin on each transverse shaft, two cross heads slidable on the frame, a pitman connecting each crank pin with a cross head, a pulling bar on one cross head, an axial bar on the other cross head, a pair of arms carried thereby, and means for revolving the arms about the axial bar.

36. In a machine of the character described, the combination of a frame, a longitudinal shaft, two parallel transverse shafts geared thereto, a crank pin on each transverse shaft, two cross heads slidable on the frame, a pitman connecting each crank pin with a cross head, a pulling bar on one cross head, an axial bar on the other cross head, a pair of arms carried by the axial bar, means for revolving the arms about the axial bar, and means for reciprocating the cross heads toward and from each other.

37. In a machine of the character described, the combination of a frame, a longitudinal shaft, two parallel transverse shafts geared thereto, a crank pin on each transverse shaft, two cross heads slidable on the frame, a pitman connecting each crank pin with a cross head, a pulling bar on one cross head, an axial bar on the other cross head, a pair of arms carried by the axial bar, means for revolving the arms about the axial bar, means for sliding one cross head on the longitudinal shaft and gearing for connecting the axial bar with the longitudinal shaft.

38. In a machine of the character described, the combination of a frame, a longitudinal shaft, two parallel transverse shafts, differential gearing connecting said transverse shafts with the longitudinal shafts, a crank pin on each transverse shaft, two cross heads slidable on the frame, a pitman connecting each crank pin with a cross head, a pulling bar on one cross head, an axial bar on the other cross head, a pair of arms carried thereby, and means for revolving the said arms about the axial bar.

39. In a machine of the character described, the combination of a frame, a longitudinal shaft, two parallel transverse shafts,

differential gearing connecting said transverse shafts with the longitudinal shafts, a crank pin on each transverse shaft, two cross heads slidable on the frame, a pitman connecting each crank pin with a cross head, a pulling bar on one cross head, an axial bar on the other cross head, a pair of arms carried by the axial bar, means for revolving the arms about the axial bar, and means for reciprocating the cross heads toward and from each other.

40. In a machine of the character described, the combination of a frame, a longitudinal shaft, two parallel transverse shafts, differential gearing connecting said transverse shafts with the longitudinal shafts, a crank pin on each transverse shaft, two cross heads slidable on the frame, a pitman connecting each crank pin with a cross head, a pulling bar on one cross head, an axial bar on the other cross head, a pair of arms carried thereby, means for revolving the arms about the axial bar, means for sliding one

cross head on the longitudinal shaft, and gearing for connecting the axial bar with the longitudinal shaft. 25

41. In a machine of the character described, the combination with a frame, a longitudinal shaft, two parallel transverse shafts, differential gearing connecting said transverse shafts with the longitudinal shafts, a crank pin on each transverse shaft, two cross heads slidable on the frame, a pulling bar carried by one cross head, an axial bar carried by the other cross head, equal speed gearing connecting the axial bar with the longitudinal shaft, a pair of arms carried by the said axial bar, and means for reciprocating the pulling bar and the axial bar toward and from each other. 30 35 40

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

HENRY S. BREWINGTON.

Witnesses:

BROWN M. ALLEN,
JUSTUS RIEHL.