

H. S. BREWINGTON.
CANDY PULLING MACHINE.
APPLICATION FILED DEC. 17, 1909.

977,161.

Patented Nov. 29, 1910.

4 SHEETS—SHEET 1.

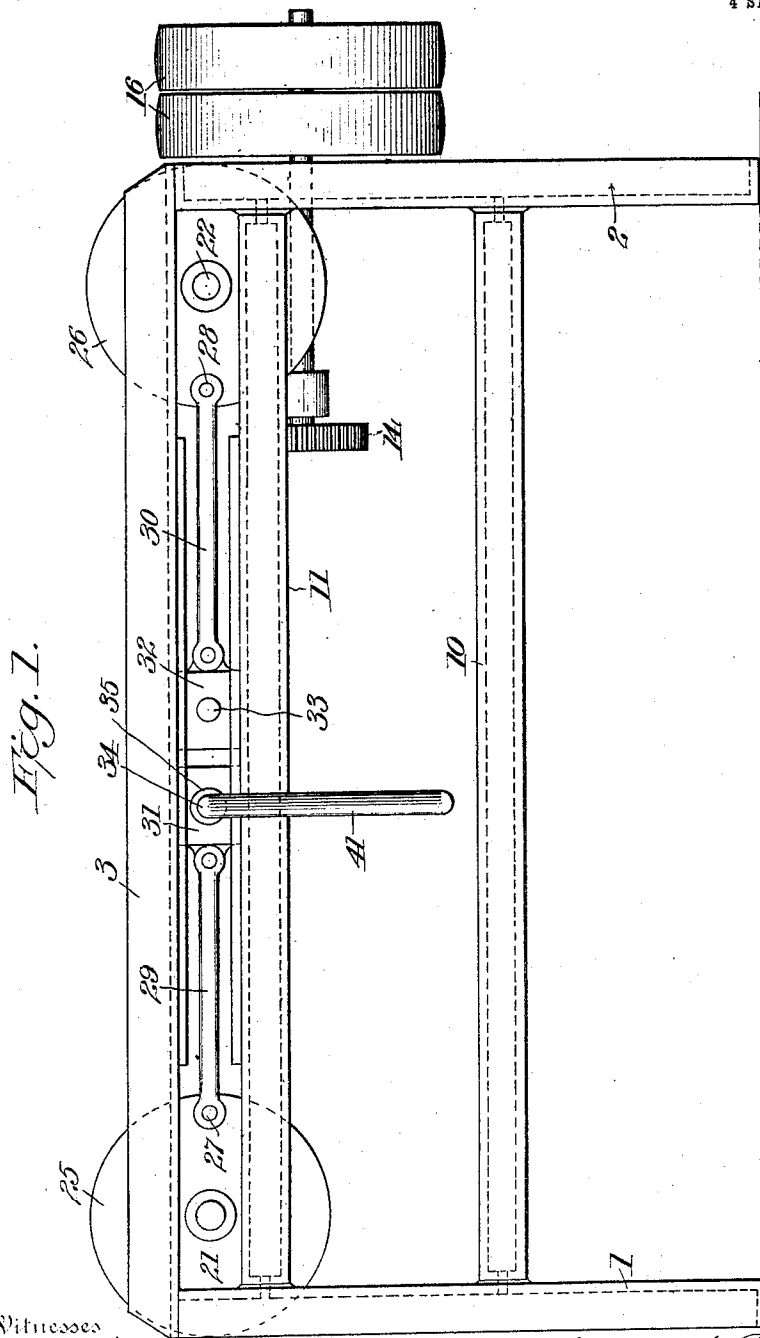


Fig. 1.

Inventor

Witnesses

C. H. Walker
R. E. Precker

By

Henry S. Brewington
E. Walton Brewington
Attorney

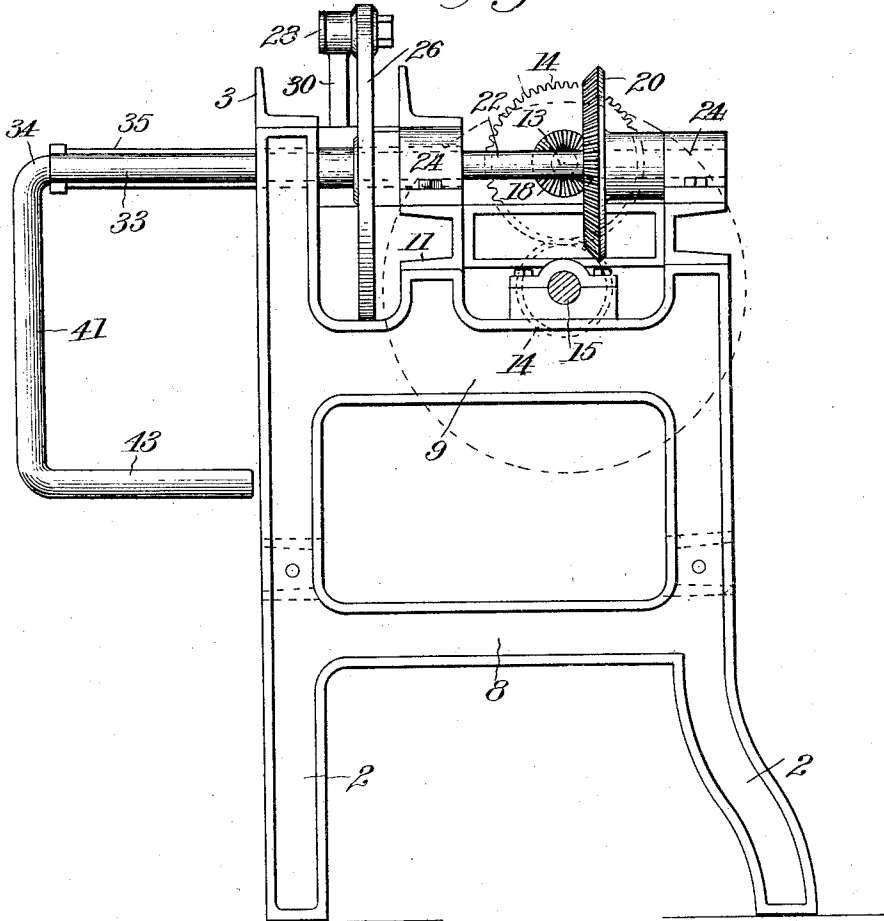
H. S. BREWINGTON.
CANDY PULLING MACHINE,
APPLICATION FILED DEC. 17, 1909.

977,161.

Patented Nov. 29, 1910.

4 SHEETS—SHEET 2.

Fig. 2.



Inventor

Witnesses

C. M. Walker
R. L. Prosser

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

H. S. BREWINGTON.
CANDY PULLING MACHINE.
APPLICATION FILED DEC. 17, 1909.

977,161.

Patented Nov. 29, 1910.

4 SHEETS—SHEET 3.

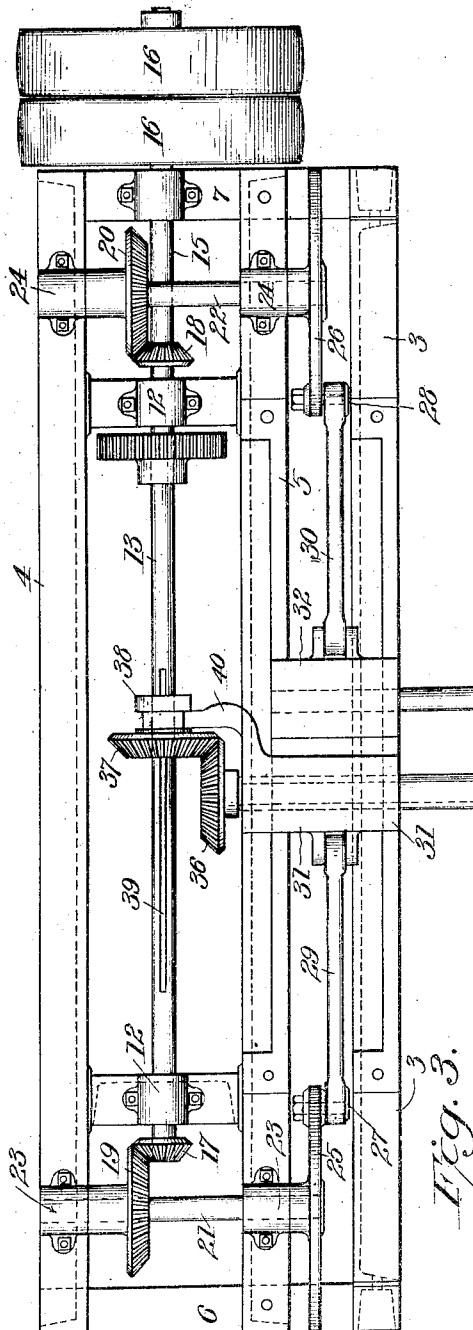


Fig. 3.

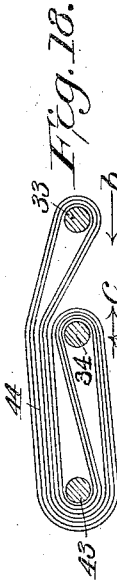


Fig. 18.

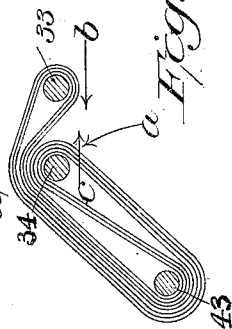


Fig. 19.

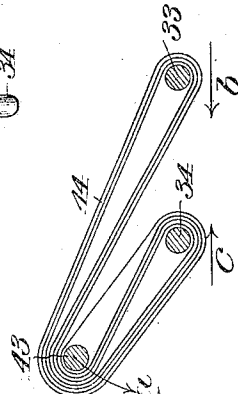


Fig. 17.

Witnesses.

A. Walker.
R. R. Pierce.

Inventor

Henry S. Brewington.

By *E. Walton Brewington.*

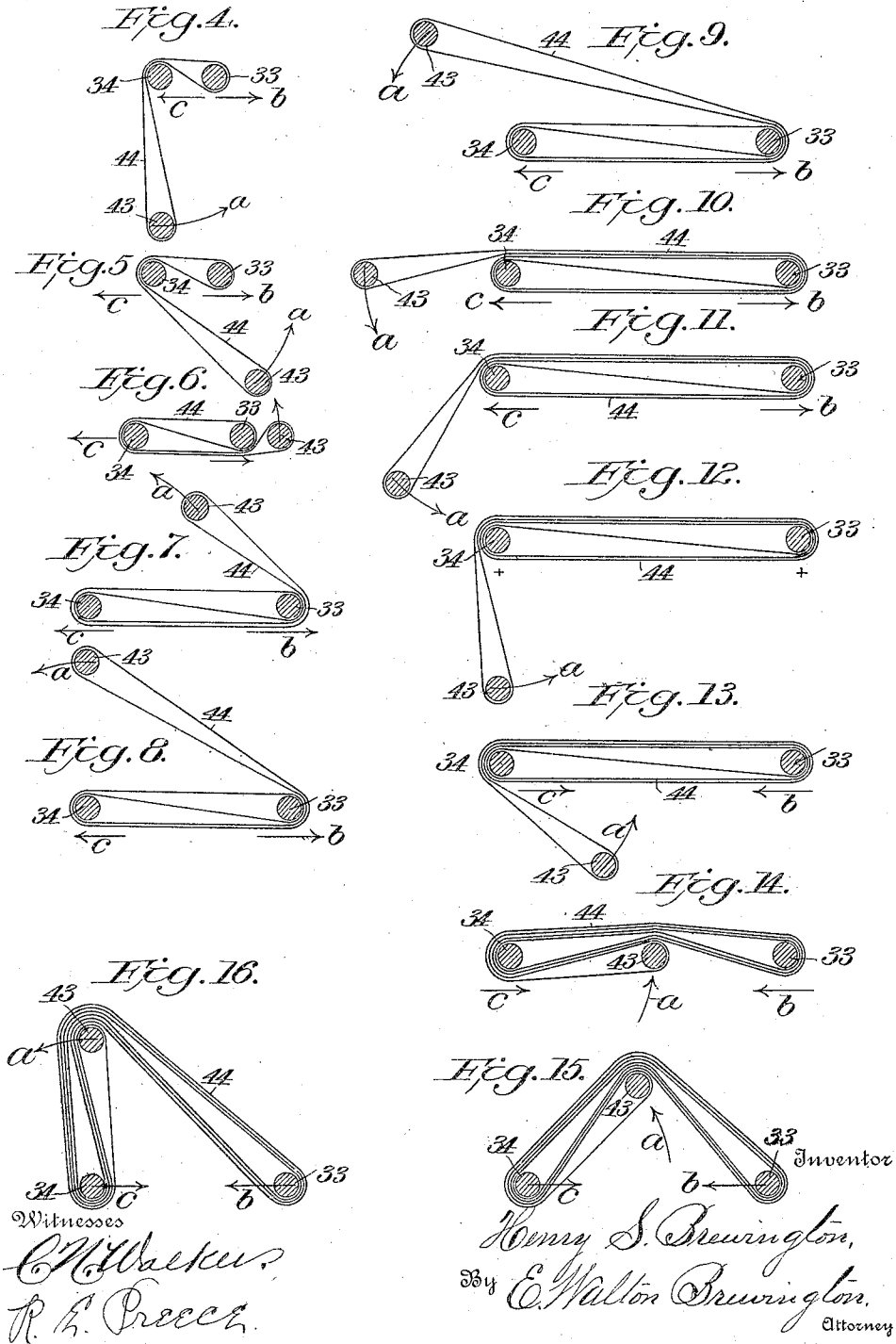
Attorney

H. S. BREWINGTON.
CANDY PULLING MACHINE.
APPLICATION FILED DEC. 17, 1909.

977,161.

Patented Nov. 29, 1910.

4 SHEETS—SHEET 4.



UNITED STATES PATENT OFFICE.

HENRY S. BREWINGTON, OF BALTIMORE, MARYLAND.

CANDY-PULLING MACHINE.

977,161.

Specification of Letters Patent.

Patented Nov. 29, 1910.

Application filed December 17, 1909. Serial No. 533,523.

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 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 or taffy and has for its object to provide a machine of this character of simple and economical construction which will be effective and rapid in operation.

With this object in view the invention consists in the improved construction, arrangement and combination of parts hereinafter fully described and afterward specifically claimed.

In the accompanying drawings, which illustrate an embodiment of my invention, Figure 1 represents a view of the machine in front elevation. Fig. 2 represents a view in end elevation with the driving pulleys removed. Fig. 3 represents a top plan view of the machine, and Figs. 4 to 19 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 mark the same parts in all the figures of the 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 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 connected by suitable transverse bars 8 and 9, but the construction of the frame may be varied to suit circumstances. Suitable longitudinally connecting bars 10 and 11 will be provided to brace and strengthen the structure.

On intermediate transverse bars connecting 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 driven by any suitable power as, for instance, belts running on pulleys 16, (Figs. 1 and 3). Upon the shaft 13 are mounted bevel pinions 17, 18, which mesh with 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 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 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 longitudinally 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. The pulling bar 34 and its 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 bar 34 at its outer end being bent downward as at 41, Figs. 1 and 2, and inward at 43, the portion 43 being parallel with the bar 34 and the sleeve 35 and forming a third pulling bar.

In the operation of the machine the rotation of the driving shaft 15 is communicated 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 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, 34 and 43 and sleeve 35. 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 bar 43 to move in circular paths about the pulling bar 34 and sleeve 35, 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 have been a sufficient number of preliminary movements to bring the hank of candy into the position shown in Fig. 4, in which it embraces the pulling bar 33, passes over the pulling bar 34 and embraces the pulling bar 43, the views of the different steps in the operation being illustrated in Figs. 4 to 19 inclusive in somewhat diagrammatic form, the sleeve 35 being omitted.

In Fig. 4 it will be noticed that the two pulling bars 33 and 34 are at the inner end of their movement and that the pulling bar 43 is in the position shown in Figs. 1, 2 and 3 of the drawings. From this position the pulling bar 43, rotating around the pulling bar 34 moves in the direction of the arrow *a* while the pulling bars 33 and 34 are moving away from each other, as indicated by the arrows *b* and *c*. In Fig. 5 these parts are illustrated with the bars 33 and 34 slightly farther apart and the bar 43 moving forward toward the bar 33 and carrying the loop of candy with it. In Fig. 6, the bars 33 and 34 are represented as having moved still farther apart and the bar 43 about to pass upward beyond the bar 33 carrying the loop 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 bar 43 has passed above the bar 33 in the direction of the arrow, stretching the loop of candy around the bar 33 and the candy upon it. In Fig. 8 the same motions have been continued, the bars 33 and 34 being a little farther apart and the bar 43 at about its highest point in its revolution around the bar 34, the candy loop being still further stretched. In Fig. 9 is illustrated the parts a little farther on in the same movements. In Fig. 10 the bars 33 and 34 have moved still farther apart stretching the parts of the candy between them, and the bar 43 in its movement in the direction of the arrow, is about to pass downward and bend the loop of candy again around the outside of the bar 34 and the candy upon it. In Fig. 11 this motion is continued, the bar 43 having carried the loop down partially around the bar 34 and the bars 33 and 34 being slightly farther apart. In Fig. 12 the same motions have been continued bringing the bars 33 and 34 a little farther apart and the bar 43 has again reached its lowermost position, still further bending the loop of candy around the bar 34. In Fig. 13 the bars 33 and 34 have begun to move toward each other and the bar 43 continuing its motion around the bar 34 has still further doubled the candy around said bar 34. In Fig. 14 the bars 33 and 34 have moved nearer to each other and

the bar 43 in its motion around the bar 34 is moving upward and about to strike the loop of candy about midway between the bars 33 and 34. In Fig. 15 this motion has been continued, the bars 33 and 34 being nearer to each other, and the bar 43 being some distance on its upward movement carrying the loop of candy with it, bending it in the middle and increasing the number of folds of the candy, which of course adhere to each other as soon as they touch. In Fig. 16 the bars 33 and 34 are shown as having moved still nearer to each other and the bar 43 moving as indicated by its arrow, has again reached its upper position still further stretching the double loop of candy between the bars 33 and 34. In Fig. 17 the motions just described have been continued. The bars 33 and 34 are nearer together and the bar 43 has started on its downward path to the left of the bar 34 about which it rotates carrying the loop of candy with it. In Fig. 18 the bar 43 has continued its motion as indicated by its arrow until it has reached its extreme left hand position, while the bars 33 and 34 have approached quite near to each other, the bar 43 carrying the double loop of candy down and bending it over the candy already upon the bar 34. In Fig. 19 these motions have been continued and the bars 33 and 34 have almost reached their inner position as illustrated in Figs. 1, 2 and 3. The bar 43 has continued downward still further bending the loop of candy around the candy already about the bar 34.

It will be observed that owing to the difference in size between the bevel pinions 17 and 18 and the bevel 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 the bevel gears 36 and 37 are of equal size and that therefore the shaft 13 and pulling bar 34 make the same number of revolutions. Owing to this difference in gearing, the pulling bar 43 will 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, with reference to Figs. 4 to 19, inclusive, and its advantages will be obvious to the candy manufacturer. The next movement (not illustrated) would bring the bars 33, 34 and 43 to the position illustrated in Figs. 1, 2 and 3 of the drawings, still further folding the candy about the bars in substantially the manner as hereinbefore described.

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 or 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, the primary point of the invention being broadly means for causing the pulling bars to pursue the paths described and illustrated in the manner set forth.

Having described my 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 third pulling bar carried by one of the first mentioned bars, means for revolving the said last mentioned bar, and means for reciprocating the said first mentioned bars.

2. In a machine of the character described, the combination of two slidable pulling bars, and a third pulling bar carried by one of the said first mentioned bars, means for revolving the said last mentioned bar, and means for reciprocating the said first mentioned bars toward and from each other.

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

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

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

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

7. In a machine of the character described, the combination of two slidable

pulling bars, and a third pulling bar carried by one of the first mentioned bars, means for revolving the said last mentioned bar, and means for reciprocating the remaining pulling bar diametrically into and out of the circle of revolution of the said last mentioned bar.

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

9. In a machine of the character described, the combination of two parallel slidable pulling bars, and a third pulling bar, means for reciprocating the said first mentioned bars, means for revolving one of the said first mentioned bars during the reciprocation thereof, and means for reciprocating the said third pulling bar.

10. In a machine of the character described, the combination of two parallel slidable pulling bars, and a third pulling bar, means for reciprocating the first mentioned bars, means for revolving one of the said first mentioned bars during the reciprocation thereof, and means for reciprocating the said third pulling bar toward and from the said first mentioned bars.

11. In a machine of the character described, the combination of two parallel slidable pulling bars, and a third pulling bar, means for reciprocating the first mentioned bars, means for revolving one of the said first mentioned bars during the reciprocation thereof, and means for reciprocating the said third pulling bar across the path of movement of the said revolving bar.

12. In a machine of the character described, the combination of two parallel slidable pulling bars, and a third pulling bar, means for reciprocating the first mentioned bars, means for revolving one of the said first mentioned bars during the reciprocation thereof, and means for reciprocating the third pulling bar diametrically into and out of the path of movement of the said revolving bar.

13. In a machine of the character described, the combination of two parallel slidable pulling bars, and a third pulling bar, means for reciprocating the first mentioned bars, and means for revolving one of the said first mentioned bars during the reciprocation thereof, and means for reciprocating the third pulling bar into and out of the circle of revolution of the said revolving bar.

14. In a machine of the character described, the combination of three reciprocating pulling bars, means for revolving one of

the bars around a second bar as an axis, and means for reciprocating the third bar toward and from the axial bar.

15. In a machine of the character described, the combination of three reciprocating pulling bars, means for revolving one of the bars around a second bar as an axis and means for reciprocating the third bar across the path of the revolving bar.

16. In a machine of the character described, the combination of three reciprocating pulling bars, means for revolving one of the bars around a second bar as an axis, and means for reciprocating the third bar toward and from the axial bar and across the path of the revolving bar.

17. In a machine of the character described, the combination of three reciprocating pulling bars, means for revolving one of the bars around a second bar as an axis, and means for reciprocating the third bar into and out of the circle of movement of the revolving bar.

18. In a machine of the character described, the combination of three reciprocating pulling bars, means for revolving one of the bars around a second bar as an axis, and means for reciprocating the third bar diametrically into and out of the circle of movement of the revolving bar.

19. In a machine of the character described, the combination of three reciprocating pulling bars, means for revolving one of the bars around a second bar as an axis, and means for reciprocating the third bar into and beyond the path of movement of the revolving bar.

20. In a machine of the character described, the combination of three reciprocating pulling bars, means for revolving one of the bars around a second bar as an axis, and means for reciprocating the third bar diametrically into and beyond the path of movement of the revolving bar.

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

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

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

24. In a machine of the character described, the combination of a reciprocating

sleeve, a pulling bar revoluble about said sleeve as an axis, a second pulling bar, and means for reciprocating the second bar laterally across the path of movement of the revoluble bar.

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

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

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

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

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

30. In a machine of the character described, the combination of a pulling bar, a second bar parallel therewith, means for reciprocating the second bar laterally toward and from the first and simultaneously revolving it laterally about a parallel axis, and means for reciprocating the first bar toward and from the axis of the second bar, the two bars and the axis 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 second pulling bar parallel with the first and carried thereby, means for reciprocating the cross head toward and from the second pulling bar, and means for revolving the second bar laterally about an axis parallel with the two bars.

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 second pulling bar carried by the axial bar, means for revolving it 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 second pulling bar carried by the axial bar and means for revolving it 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 second pulling bar carried by the axial bar, means for revolving it 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, and means for revolving it 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, means for revolving it 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, means for revolving it 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 longi-

tudinal 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, and means for revolving it 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, means for revolving it 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, means for revolving it 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.

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 second pulling bar and means for reciprocating the first pulling bar and the axial bar toward and from each other.

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

HENRY S. BREWINGTON.

Witnesses:

MARY M. MAGRAW,
HARRIET S. MAGRAW.