

APPLICATION FILED APR. 28, 1909.

Patented Aug. 2, 1910.

4 SHEETS--SHEET 1.



L. HIRSCHFELD.
ROLLING MACHINE.

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966,206.

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4 SHEETS—SHEET 2.

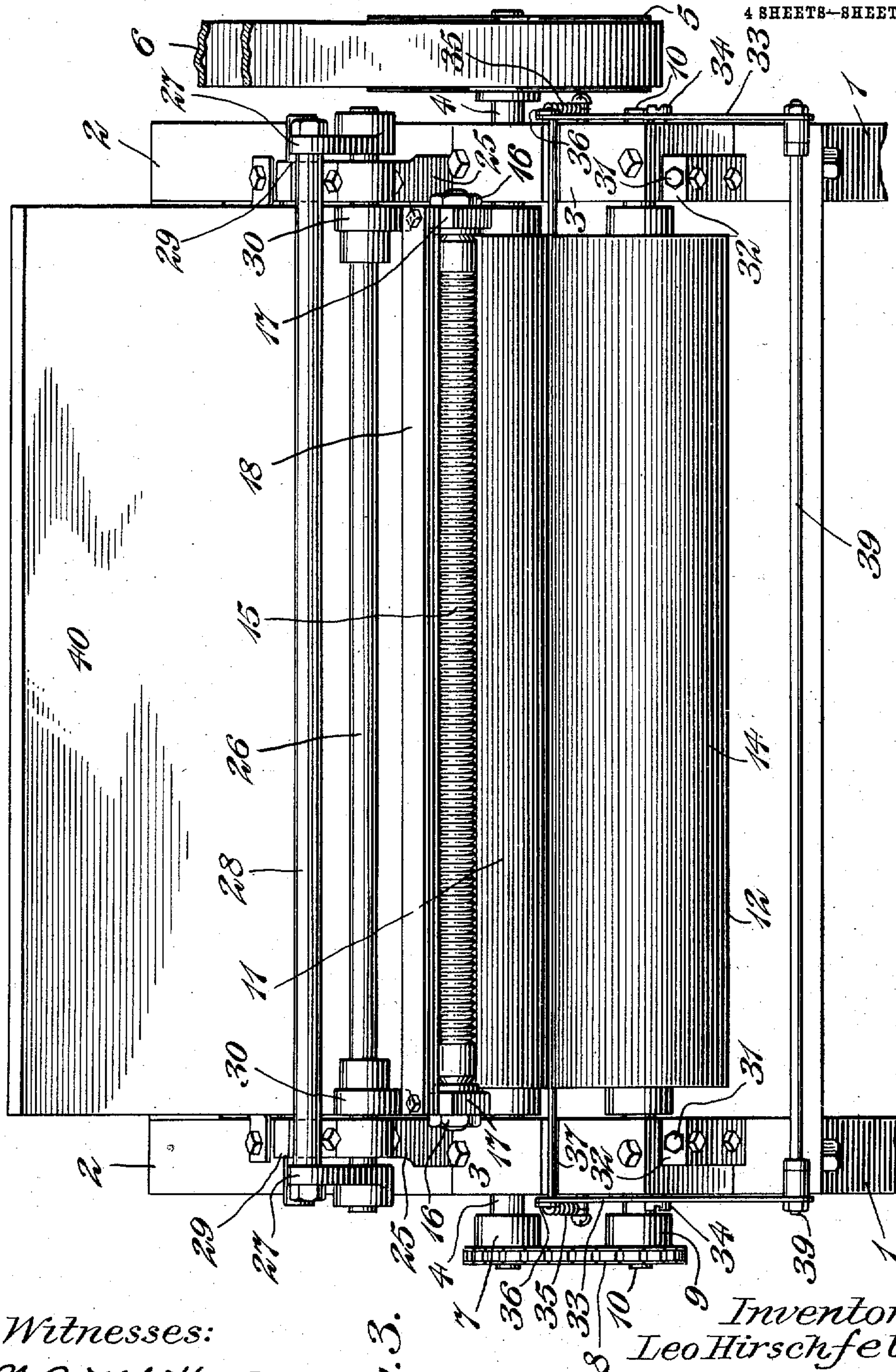


Fig. 3.

Witnesses:

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A. F. Cornell

Inventor:
Leo Hirschfeld

By *[Signature]*
his Attorney

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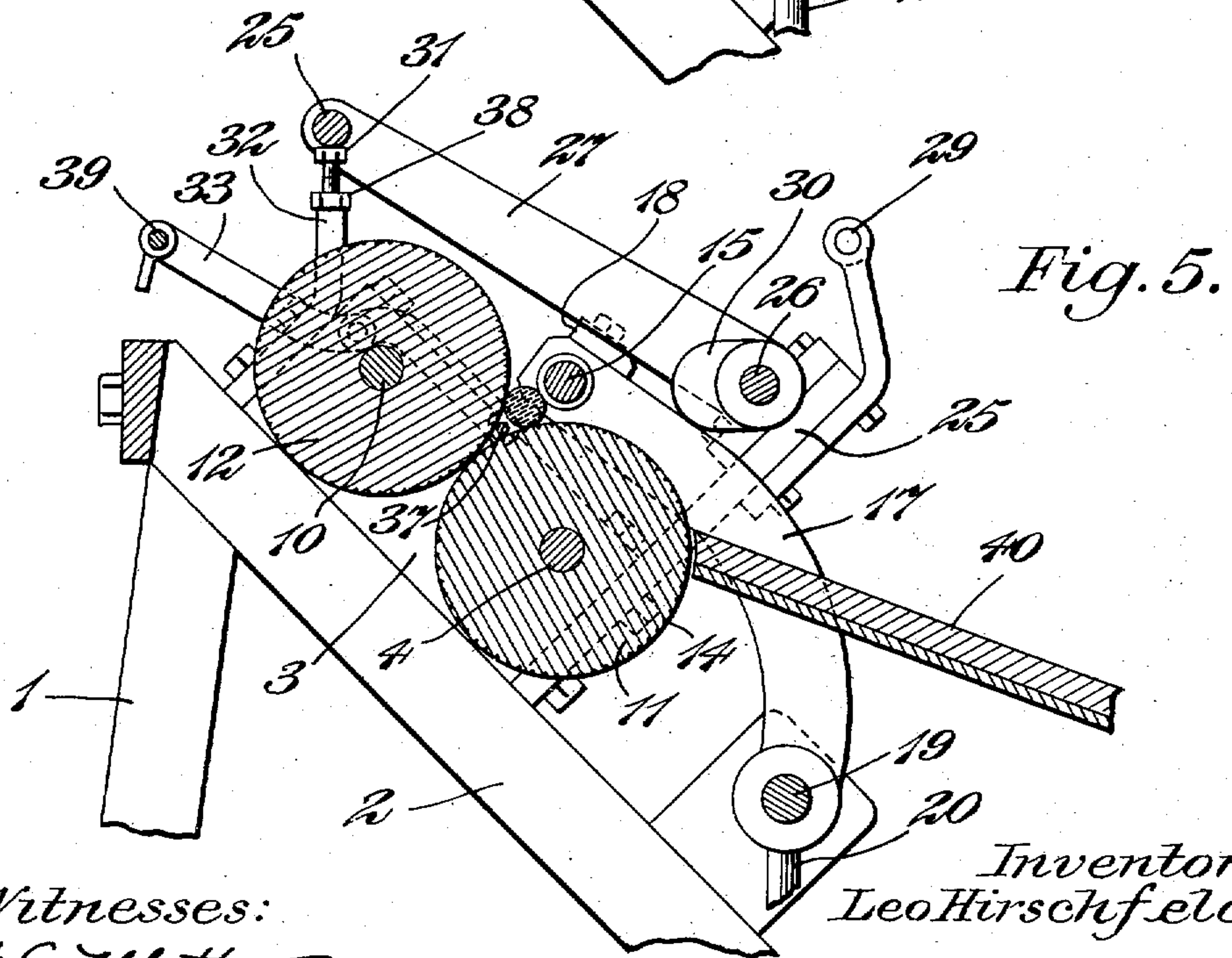
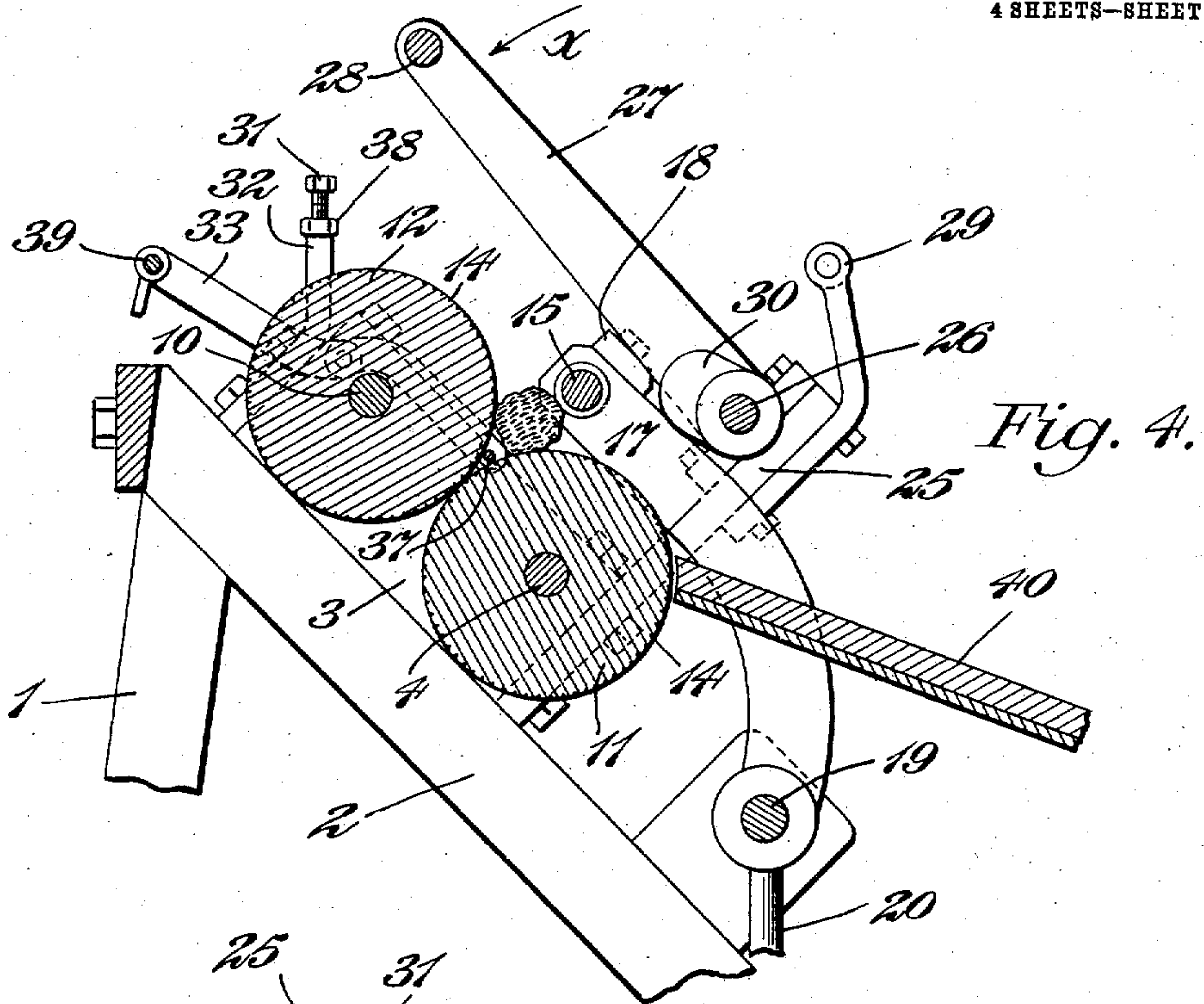
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4 SHEETS—SHEET 4.

Fig. 8.

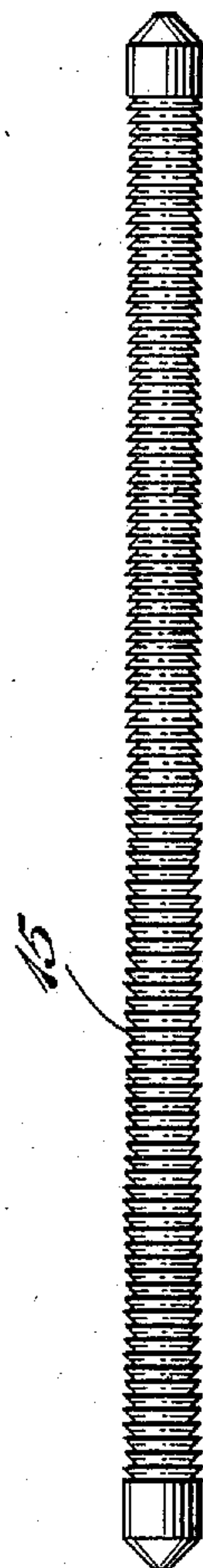


Fig. 9.

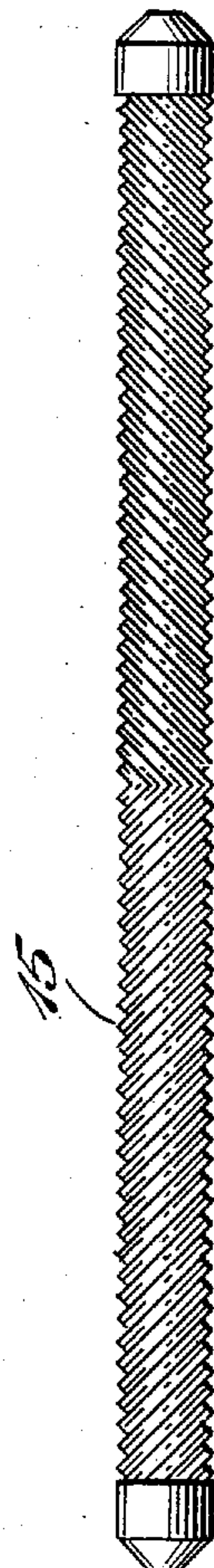


Fig. 7.

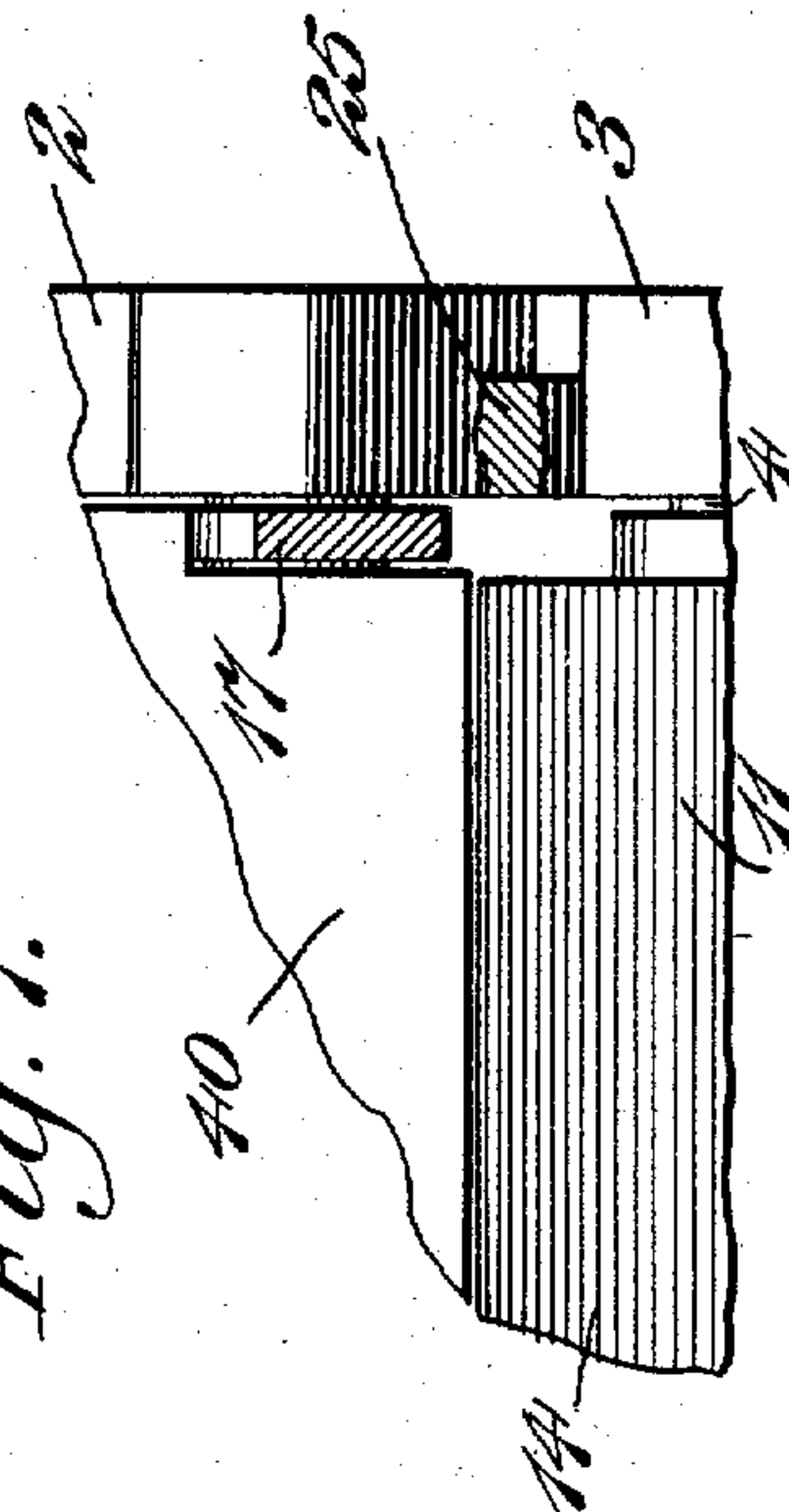
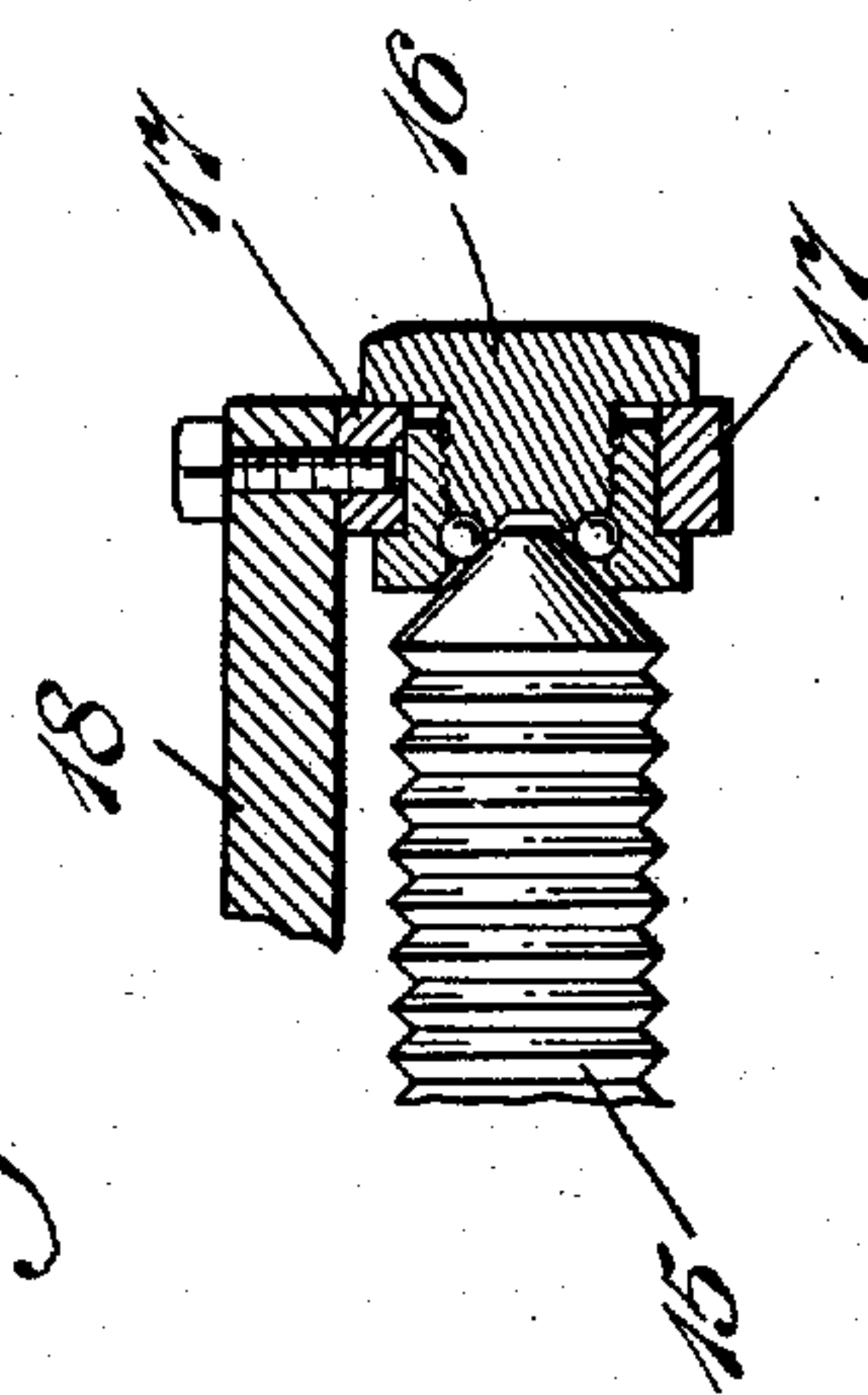


Fig. 6.



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UNITED STATES PATENT OFFICE.

LEO HIRSCHFELD, OF NEW YORK, N. Y.

ROLLING-MACHINE.

966,206.

Specification of Letters Patent.

Patented Aug. 2, 1910.

Application filed April 28, 1909. Serial No. 492,772.

To all whom it may concern:

Be it known that I, LEO HIRSCHFELD, a citizen of the United States, and a resident of the city, county, and State of New York, have invented certain Improvements in Rolling-Machines, of which the following is a specification.

This invention relates to certain improvements in that class of machines which are particularly designed and adapted for use in rolling plastic materials, such as candy, for example, and the object of the invention is to provide a machine of this general character of a simple and comparatively inexpensive nature, and of a compact and strong construction, which shall permit of being conveniently and rapidly operated for rolling plastic materials in a uniform and regular manner, without necessitating any special skill or experience upon the part of the attendant.

The invention consists in certain novel features of the construction, and combinations and arrangements of the several parts of the improved rolling machine, whereby certain important advantages are attained, and the machine is rendered simpler, less expensive and otherwise better adapted and more convenient for use, all as will be hereinafter fully set forth.

The novel features of the invention will be carefully defined in the claims.

In order that my improvements may be the better understood, I will now proceed to describe the same with reference to the accompanying drawings, wherein—

Figure 1 is a side elevation of the machine with its operative parts adjusted in position to receive the candy or other material to be rolled; Fig. 2 is a fragmentary elevation of the side of the machine opposite to that shown in Fig. 1; Fig. 3 is a partial plan view of the machine; Fig. 4 is a vertical section taken through the operative parts of the machine, showing the same as they appear during the rolling operation; Fig. 5 is a sectional view similar to Fig. 4, but showing the operative parts of the machine in the positions in which they stand at the termination of the rolling operation; Fig. 6 is a fragmentary sectional view showing the anti-friction bearing for the end of the adjustable rolling member of the machine; Fig. 7 is a fragmentary detail view showing one of the arms of the yoke for sup-

porting said adjustable rolling member; Fig. 8 is a detached detail view showing a modified formation of the adjustable rolling member of the machine, and Fig. 9 is a view similar to Fig. 6, but showing another modified formation of the adjustable rolling member.

Referring first to Figs. 1 to 7, inclusive, the improved rolling machine, as therein illustrated, comprises a base frame 1 of any desired construction, having spaced inclined bars or supports 2, 2, extended in alinement along the opposite sides of its upper part and provided with upturned oppositely arranged bearing pieces 3, 3, wherein is journaled a driving shaft 4, extended horizontally across the frame, and provided at one end with a driving pulley 5, adapted for the passage of a belt or band 6, in order that the shaft may be driven from any suitable source of power during the operation of the machine.

At the side of the machine opposite to the driving pulley 5, the shaft 4 carries a sprocket wheel 7, around which is passed a sprocket chain or link belt 8, said chain also passing around a sprocket wheel 9 secured upon the adjacent end of a shaft 10, which is also journaled in the bearing pieces 3, 3, and is extended horizontally across the frame parallel with, but at some slight distance from the first-named horizontal shaft 4. Owing to the inclination of the upper frame bars 2, 2, and of the bearing pieces 3, 3, secured thereon, the shaft 10 is caused to stand at an elevation above and at one side of said shaft 4.

The spaced parallel shafts 4 and 10 are driven in unison and at the same speed, and carry between the bearing pieces 3, 3, drums or cylindrical members 11 and 12, of substantially equal diameters, with perimeters arranged in close proximity to each other, and affording, adjacent to the bight of said drums or members, a depressed receptacle adapted for the effective support of the candy or other plastic material placed in the machine. The perimetral surfaces of said drums or members 11 and 12 are longitudinally fluted or ribbed, as shown at 14 upon the drawings, so as to permit said surfaces to have effective contact with the candy supported upon them in order that continuous rolling movement may be imparted to such candy during the operation

of the machine without liability of such candy adhering to said drums or members and being drawn down within the bight between them. In connection with the driven rolling members or drums 11 and 12, which are driven in the same direction by means of the sprocket gearing between the shafts 4 and 10, I also provide an auxiliary rolling member 15, which is made in the form of a roll or drum of considerably less diameter than the drums or members 11 and 12, and has conical or tapered ends which are supported for free rotatory movement in roller bearings 16, 16 produced at the upper ends of yoke arms 17, 17, which are tied or connected together at their upper ends back of the auxiliary rolling member 15 by means of a transverse brace or tie bar 18 and which have their lower ends secured upon a transverse shaft 19 extended across the frame members 2, 2 below the lower drum or member 11, and having its extremities mounted to rock in bearings as clearly shown in Figs. 1, 4 and 5 so as to permit said auxiliary rolling member to be moved toward and from the bight of the members 4 and 11 when said shaft 19 and yoke arms 17 are rocked, as will be hereinafter explained. The shaft 19 carries an opening arm 20 the lower end of which has connection with one end of a spring 21 the opposite end of which is secured to the frame in such a way that the tension of said spring is exerted to rock the shaft in one direction and hold the yoke arms and the auxiliary rolling member 15 supported thereby normally separated from the bight of the members 4 and 11, as clearly shown in Figs. 1 and 2 of the drawings.

25, 25 represent bearing arms extended substantially at right angles from the frame members 2, 2 at the lower ends of the bearing pieces 3, 3, and said arms afford bearings at their outer ends for the extremities of a transverse shaft 26 which is extended across the machine outside the yoke arms 17 and is provided at its extremities with upwardly directed arms 27, 27 fixed upon it and connected at their upper ends by a transverse handle bar 28, adapted to be grasped by the hand of the attendant for imparting pivotal or rocking movement to said shaft 26. The shaft 26 is provided adjacent to its opposite ends with cams or eccentrics 30, 30, which are adapted for contact upon the upper surfaces of the yoke arms 17, in such a manner that when the shaft is rocked or turned in its bearings, said yoke arms are pressed downwardly from the position shown in Fig. 1 to that shown in Figs. 4 and 5, whereby the auxiliary rolling member 15 supported by said yoke arms is pressed toward and from the bight of the members 4 and 11.

29, 29 represent stops erected upon the bearing arms 25, 25 and adapted for contact

with the arms 27 when the handle bar is retracted, during which movement the spring 21 exerts its tension to automatically raise the auxiliary rolling member 15 out of the bight of the members 4 and 11.

31, 31 represent screws carried upon the upper ends of arms 32, 32 projecting above the upper ends of the bearing pieces 3, 3 and adapted to be locked in adjusted position by means of lock-nuts 38, as clearly shown in Figs. 1 and 2, and these screws afford adjustable stops to limit the swinging movement of the handle bar 28 away from the stops 29, whereby it will be understood that the extent of movement of the shaft 26, yoke arms 17 and of the auxiliary rolling member 15 may be conveniently regulated so as to insure accurate positioning of said auxiliary member 15 at each operation of the machine.

33, 33 represent levers pivoted at opposite sides of the upper ends of the bearing members 3, 3, as shown at 34 on the drawings, and the lower ends of these levers support an ejector rod or member 37, which is extended across the machine within the bight of the members 4 and 11, being normally held in lowered position closely adjacent to the perimeter of said members as indicated in Figs. 4 and 5 by means of springs 35. The upper ends of the levers 33, 33 are connected together by means of a transverse handle bar 39 which is extended horizontally across the upper part of the frame and is adapted to be grasped by the operator and forced downwardly to rock the levers 33 and elevate the ejector member 37 in such a manner as to insure the discharge of the candy from the machine after the same has been rolled.

40 represents a table supported upon the frame of the machine with its upper end closely adjacent to the perimeter of the lower member 11, said table being extended thence downwardly in an inclined direction so as to permit the candy to roll freely down its surface after being discharged from the bight of the members 4 and 11, and to be received, if desired, in a suitable receptacle arranged below said table.

The auxiliary rolling member 15, as clearly shown in Fig. 3 of the drawings, is provided with circumferential grooves or flutings which are extended in directions at right angles to the flutings of the members 4 and 11, and are adapted for contact with the candy to be rolled, being provided with opposite beveled surface, as clearly shown in said figure, so that when the said member is pressed upon the candy said oppositely beveled surfaces of the flutings will operate to press the candy in the direction of the length of said member 15, and in the operation of the improved machine the handle bar 28 being raised against its stops 29, and the yoke arms being elevated by the spring 21 so that the

auxiliary member 15 is raised from the bight of the members 4 and 11, a piece of candy of proper size is inserted in the machine, being rested in the depressed receptacle afforded at the bight of the members 4 and 11 as indicated in Fig. 4 of the drawing, after which the handle bar 28 is grasped by the operator and moved in the direction indicated by the arrows at x in Figs. 1 and 4, whereby the auxiliary member 15 is caused to press upon the candy opposite to the surfaces of the members 4 and 11, with which the candy is in contact. The rotatory movement of the driven members 4 and 11 will thereupon be imparted to the candy pressed in contact therewith so that said candy will likewise be rotated, and since the auxiliary member 15 is capable of free movement in its bearings 16, 16 it is evident that the rotatory movement of the candy will also be imparted to said auxiliary member 15 so that the surface of the candy will be smoothly rolled and formed into a cylindrical shape. As the movement of the handle bar 28 in the direction of the arrow x continues, the pressure exerted by the auxiliary member 15 upon the candy will serve to gradually reduce the diameter thereof until the desired diameter for the roll is attained, whereupon, as shown in Fig. 5, the ends of the handle bar will contact with the stop screws 31, 31 so that further movement of the handle bar and member 15 is effectively prevented, and the candy being then properly rolled, said handle bar 28 is released by the operator so that the spring 21 is permitted to exert its tension to raise the auxiliary member 15 and retract the handle bar to its initial position as shown in Fig. 1. The completed candy roll thereafter rests in rolling contact with the fluted perimeters of the members 4 and 11 until such time as the operator depresses the bar 39 to rock the levers 33, 33 and elevate the ejector member 37 beneath the completed roll, whereupon by reason of the inclined positions of the members 4 and 11, the candy roll is carried up over the upper perimetral surface of the lowermost member 11 and is thereafter discharged by the rotation of said roll upon the table 40, and is permitted to roll down the same out of the machine, leaving the parts in position to receive a fresh piece of candy to be rolled.

From the above description of my invention it will be seen that the improved rolling machine constructed according thereto is of an extremely simple and comparatively inexpensive nature and is particularly well adapted for use by reason of the convenience and rapidity of its operation and of the accuracy with which the candy is rolled during the use of the machine, and it will also be obvious from the above description of my invention that the machine constructed according thereto is capable of considerable

change without material departure from the principles and spirit of the invention, and for this reason I do not desire to be understood as limiting myself to the precise form and arrangement of the several parts herein set forth in carrying out my invention in practice. For example in Fig. 8, I have shown a modified formation of the adjustable auxiliary rolling member 15 wherein the flutings thereof, instead of being each provided with two oppositely beveled faces are each provided with but one such beveled surface, the flutings at one end of the member having their bevels directed in one way so as to press the candy toward that end of the member, while the flutings at the opposite end of said member are reversely beveled so as to press the candy in the reverse direction. Similarly in Fig. 9 the perimeter of the member 15 is provided with reverse spiral flutings at its opposite ends, the flutings at one end being adapted to press the candy in one direction while those at the opposite end are adapted to press the candy in the opposite direction.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. A machine of the character described, having rolling members arranged at an inclination and having their peripheral surfaces in proximity and forming a receptacle for plastic material to be rolled, an auxiliary member capable of movement toward and from the first named members and capable to press the plastic material within the receptacle toward the peripheral surfaces of the said first named members, and means movable between the first named members capable of movement to eject the plastic material from the receptacle formed by the said first named members.

2. A machine of the character described having rolling members, having peripheral surfaces in proximity and affording a receptacle for plastic material to be rolled, means for driving said members, an auxiliary member movable toward and from the first named members, and adapted for contact upon the plastic material within the receptacle to press the same upon the surface of the said first named members and means movable between the first named members capable of movement to eject material from the receptacle formed by the first named members.

3. A machine of the character described, having rolling members having peripheral surfaces in proximity, affording a receptacle for plastic material to be rolled, an auxiliary member capable of rotatory movement, and movable toward and from the first named members, and adapted for contact with the plastic material in the receptacle to press the same against the peripheral surfaces of

said first named members, and means movable between the first named members capable of movement to eject the plastic material from the receptacle formed by the first named members.

4. A machine of the character described having rolling members arranged with their peripheral surfaces in proximity, and forming a receptacle adapted to receive plastic material to be rolled, said peripheral surfaces being provided with longitudinal corrugations, and a rotatory auxiliary member movable toward and from the first-named members and adapted for contact upon the plastic material in said receptacle to press the same upon the fluted peripheral surfaces of said first-named members, and means independent of the rollers forming the receptacle for ejecting the rolled material from said receptacle.

5. A machine of the character described having three cylindrical members adapted to receive between them the material to be rolled, one of the members being adjustable toward and from the other members, and means independent of the cylindrical members for ejecting the rolled material comprising a part capable of movement between said members and adapted for contact with the rolled material.

6. A machine of the character described having three cylindrical members capable of rotary movement and adapted to receive between them plastic material to be rolled, one of said members being movable toward and from the remaining two, and an ejecting means for the plastic material positioned normally between the remaining two members.

7. A machine of the character described having roller members having surfaces in proximity affording a receptacle for plastic material, and an ejector member normally held between the bight of the roller members to eject the plastic material from the receptacle formed by the roller members.

8. A machine of the character described having roller members having surfaces in proximity affording a receptacle for plastic material, an ejector member capable of movement to eject the plastic material from the receptacle formed by the roller members, and means for holding the ejector member normally between the bight of the roller members.

9. A machine of the character described having roller members having their surfaces in proximity to afford a receptacle for plastic material, an auxiliary member capable of movement toward and from the first-named members and adapted to press the plastic material within the receptacle toward the surfaces of the first-named members, means for holding the auxiliary member normally away from the first-named members

and means independent of the roller members to eject the plastic material from the receptacle formed by the roller members.

10. A machine of the character described having roller members having their surfaces in proximity to afford a receptacle for plastic material, an auxiliary member capable of movement toward and from the first-named members and adapted to press the plastic material within the receptacle toward the surfaces of the first-named members, and automatic means for holding the auxiliary member normally away from the first-named members.

11. A machine of the character described having roller members having their surfaces in proximity to afford a receptacle for plastic material, an auxiliary member capable of movement toward and from the first-named members and adapted to press the plastic material within the receptacle toward the surfaces of the first-named members, and spring means for holding the auxiliary member normally away from the first-named members.

12. A machine of the character described having roller members having their surfaces in proximity to afford a receptacle for plastic material, an auxiliary member capable of movement toward and from the first-named members and adapted to press the plastic material within the receptacle toward the surfaces of the first-named members, means for holding the auxiliary member normally away from the first-named members, and means for moving the auxiliary member toward the first-named members.

13. A machine of the character described having roller members having their surfaces in proximity to afford a receptacle for plastic material, an auxiliary member capable of movement toward and from the first-named members and adapted to press the plastic material within the receptacle toward the surfaces of the first-named members, means for holding the auxiliary member normally away from the first-named members, means for moving the auxiliary member toward the first-named members, and controlling devices limiting the operations of said moving means.

14. A machine of the character described having roller members having their surfaces in proximity to afford a receptacle for plastic material, an auxiliary member capable of movement toward and from the first-named members and adapted to press the plastic material within the receptacle toward the surfaces of the first-named members, means for holding the auxiliary member normally away from the first-named members, means for moving the auxiliary member toward the first-named members, and adjustable controlling devices limiting the operations of said moving means.

15. A machine of the character described having roller members having surfaces in proximity affording a receptacle for plastic material, an ejector member between the
5 bight of the roller members to eject the plastic material from the receptacle formed by the roller members and springs engaging the ejector member to hold such member normally between the bight of the roller mem-
10 bers.

16. A machine of the character described having roller members having surfaces in proximity affording a receptacle for plastic material, an ejector member extended be-
15 tween the bight of the roller members, and projecting beyond the ends thereof, and means engaging said projected portions to move such member from between the bight of the roller members to eject the plastic
20 material from the receptacle formed by the roller members.

17. A machine of the character described having roller members having surfaces in proximity affording a receptacle for plastic material, an ejector member extended be-
25 tween the bight of the roller members, and projecting beyond the ends thereof, and springs engaging the projected portions of the ejector member to normally hold the same between the bight of the roller mem-
30 bers to eject the plastic material from the receptacle formed by the roller members.

18. A machine of the character described having roller members having surfaces in proximity affording a receptacle for plastic material and a rod normally held between
35 the bight of the roller members to eject the plastic material from the receptacle formed by the roller members.

19. A machine of the character described having roller members having surfaces in proximity to afford a receptacle for plastic material, an auxiliary roller member capable
40 of movement toward and from the first named members, the periphery of said auxiliary member being grooved and adapted to press the plastic material within the receptacle toward the surfaces of the first
45 named members, and automatic means for holding the auxiliary member normally away from the first named members.

20. A machine of the character described having roller members having their surfaces grooved and in proximity to afford a recep-
55 tacle for plastic material, an auxiliary roller member having its surfaces fluted capable of movement toward and from the first named members and adapted to press the plastic material within the receptacle toward the
60 surfaces of the first named members, and automatic means for holding the auxiliary member normally away from the first named members.

21. A machine of the character described having roller members having their surfaces

in proximity to afford a receptacle for plastic material, a shaft mounted in proximity to the roller members, arms projecting from the shaft, an auxiliary roller mounted be-
70 tween the arms, means acting in conjunction with the shaft to hold the roller carried by the arms normally away from the first named roller members and means for moving the auxiliary roller toward the first
75 named members.

22. A machine of the character described having roller members having their surfaces in proximity to afford a receptacle for plastic material, arms capable of oscillatory movement, an auxiliary roller mounted be-
80 tween the arms, a shaft mounted adjacent the arms means for rotating the shaft and means carried by the shaft contacting with the arms to force the auxiliary roller toward the first named roller members.
85

23. A machine of the character described having roller members having their surfaces in proximity to afford a receptacle for plastic material, arms capable of oscillatory movement, an auxiliary roller mounted be-
90 tween the arms, a shaft mounted adjacent the arms means for rotating the shaft, and cams carried by the shaft to contact with the shaft to move said auxiliary roller toward the first named roller members.
95

24. A machine of the character described having roller members having their surfaces in proximity to afford a receptacle for plastic material, arms capable of oscillatory movement, an auxiliary roller mounted be-
100 tween the arms, a shaft mounted adjacent the arms, and an arm projecting from the shaft capable of movement to rotate the shaft means positioned to engage the arm to limit its movement in both directions.
105

25. A machine of the character described having roller members having their surfaces in proximity to afford a receptacle for plastic material, arms capable of oscillatory movement, an auxiliary roller mounted be-
110 tween the arms, a shaft mounted adjacent the arms, an arm projecting from the shaft capable of movement to rotate the shaft, and means positioned to engage the arm to limit its movement in both directions, said means
115 being adjustable.

26. A machine of the character described having roller members having their surfaces in proximity to afford a receptacle for plastic material, arms capable of oscillatory movement, an auxiliary roller mounted be-
120 tween the arms, a shaft mounted adjacent the arms, arms projecting from the shaft capable of unitary movement to rotate such shaft means carried by the shaft to engage
125 the arms to move the auxiliary roller toward the first named roller members when the shaft is rotated, and means for limiting the movement of the arms in both directions.

27. A machine of the character described 130

having roller members having their surfaces in proximity to afford a receptacle for plastic material, arms capable of oscillatory movement, an auxiliary roller mounted between the arms, a shaft mounted adjacent the arms, arms projecting from the shaft capable of unitary movement to rotate such shaft and stops projecting above the arms to limit the movement thereof in one direction.

28. A machine of the character described having roller members having their surfaces in proximity to afford a receptacle for plastic material, arms capable of oscillatory movement, an auxiliary roller mounted between the arms, means contacting with the arms to move the auxiliary roller toward the first named roller members and means for maintaining the arms in constant contact with their engaging means.

29. A machine of the character described having roller members having their surfaces in proximity to afford a receptacle for plastic material, a shaft mounted adjacent such rollers, arms carried by the shaft, an auxiliary roller mounted between the arms, and means acting in conjunction with the shaft for holding the arms normally away from the first named roller members.

30. A machine of the character described having roller members having their surfaces in proximity to afford a receptacle for plastic material, a shaft mounted adjacent such rollers, arms carried by the shaft, an auxiliary roller mounted between the arms, and a spring acting in conjunction with the shaft for holding the arms normally away from the first named roller members.

31. A machine of the character described having roller members having their surfaces in proximity to afford a receptacle for plastic material, a shaft mounted adjacent such rollers, arms carried by the shaft, an auxiliary roller mounted between the arms, an operating arm projecting from the shaft, and means engaging such operating arm to hold the first named arms of the shaft away from the first named roller members.

32. A machine of the character described having roller members having their surfaces in proximity to afford a receptacle for plastic material, a shaft mounted adjacent such rollers, arms carried by the shaft, an auxiliary roller mounted between the arms, an operating arm projecting from the shaft, and a spring engaging such operating arm to hold the first named arms of the shaft away from the first named roller members.

33. A machine of the character described having roller members having their surfaces in proximity to afford a receptacle for plastic material, an auxiliary roller capable of movement toward or from the first named roller members, means for moving said auxiliary roller toward the first named roller members, including operating arms and stops to contact with said arms to limit the movement of the auxiliary roller toward the first named roller members.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

LEO HIRSCHFELD.

Witnesses:

J. D. CAPLINGER,
W. C. ABBOTT.