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E. S. MILLER.
LABELING MACHINE.
APPLICATION FILED MAR. 22, 1900.

Patented Aug. 9, 1910.

3 SHEETS—SHEET 1.

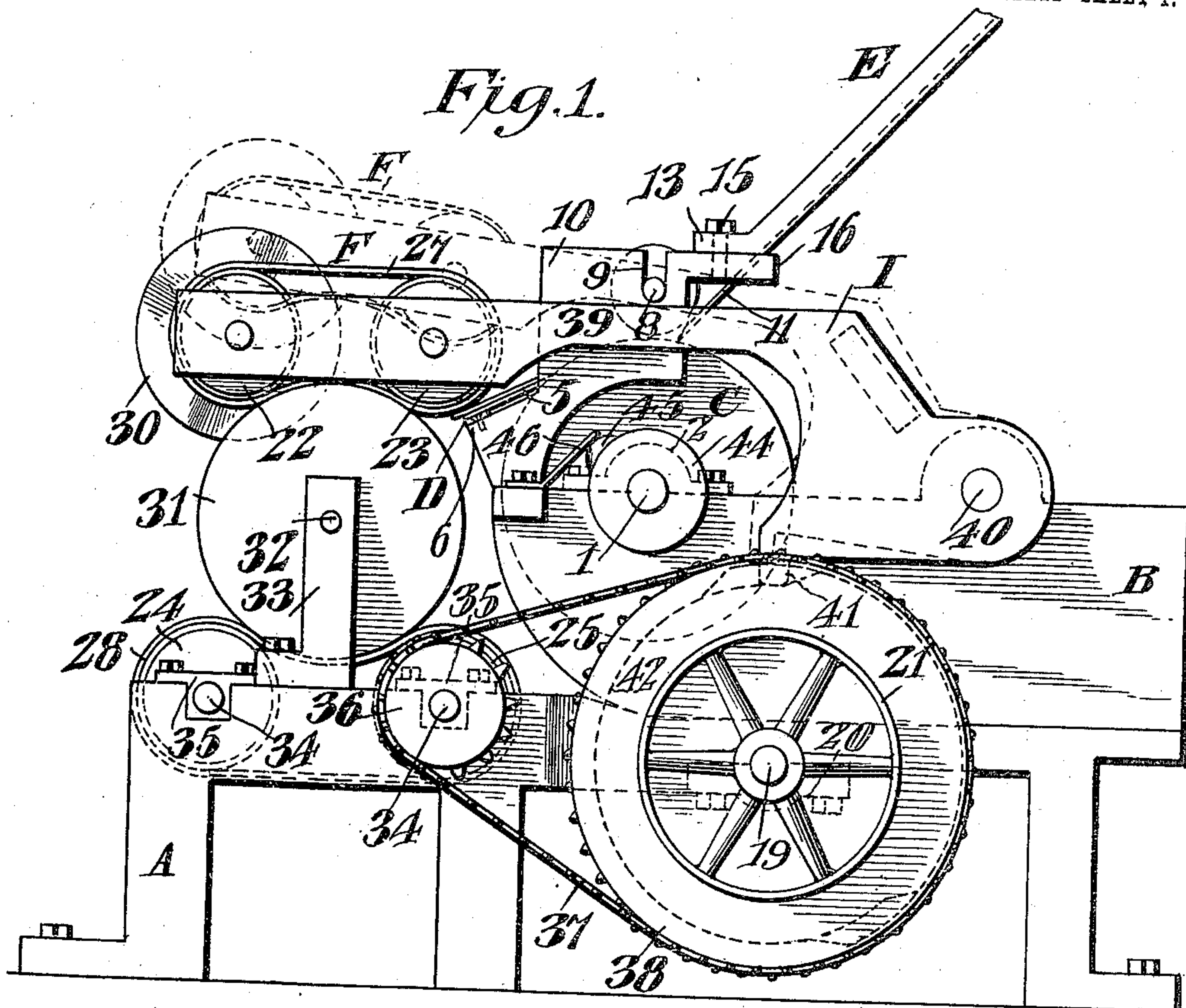


Fig. 7.

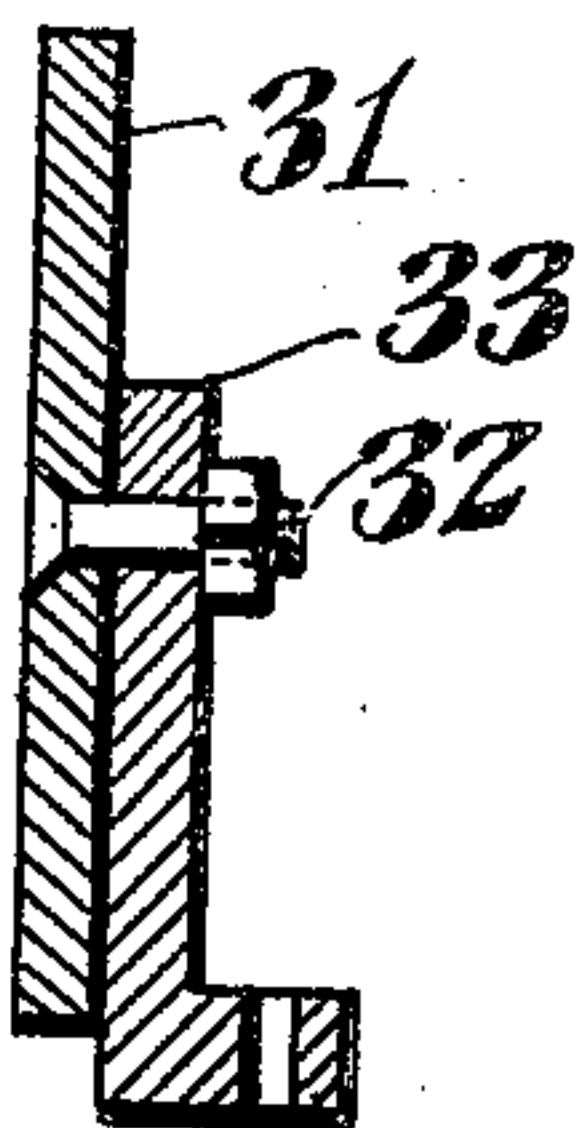
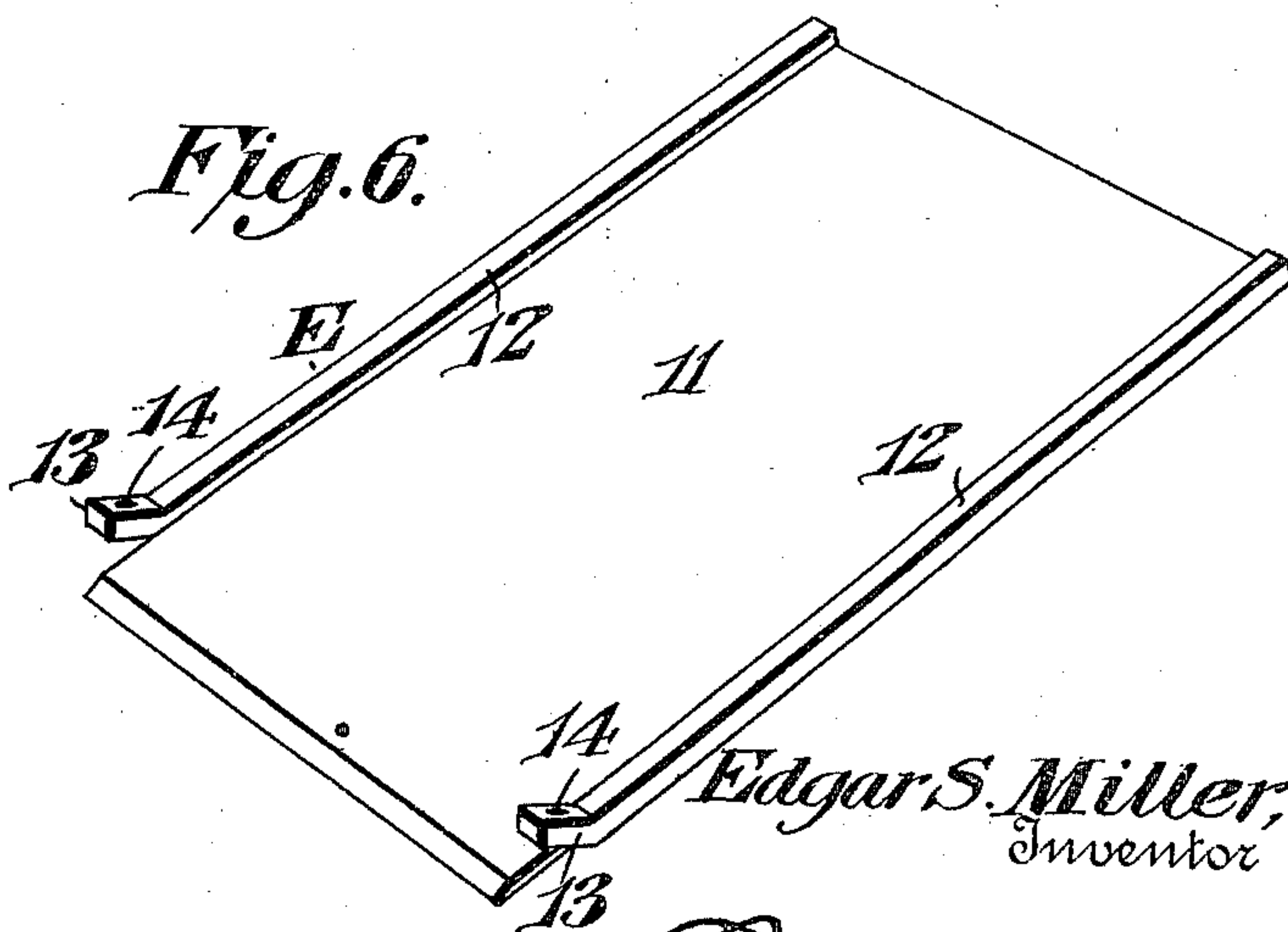


Fig. 6.



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By

E. G. Siggers

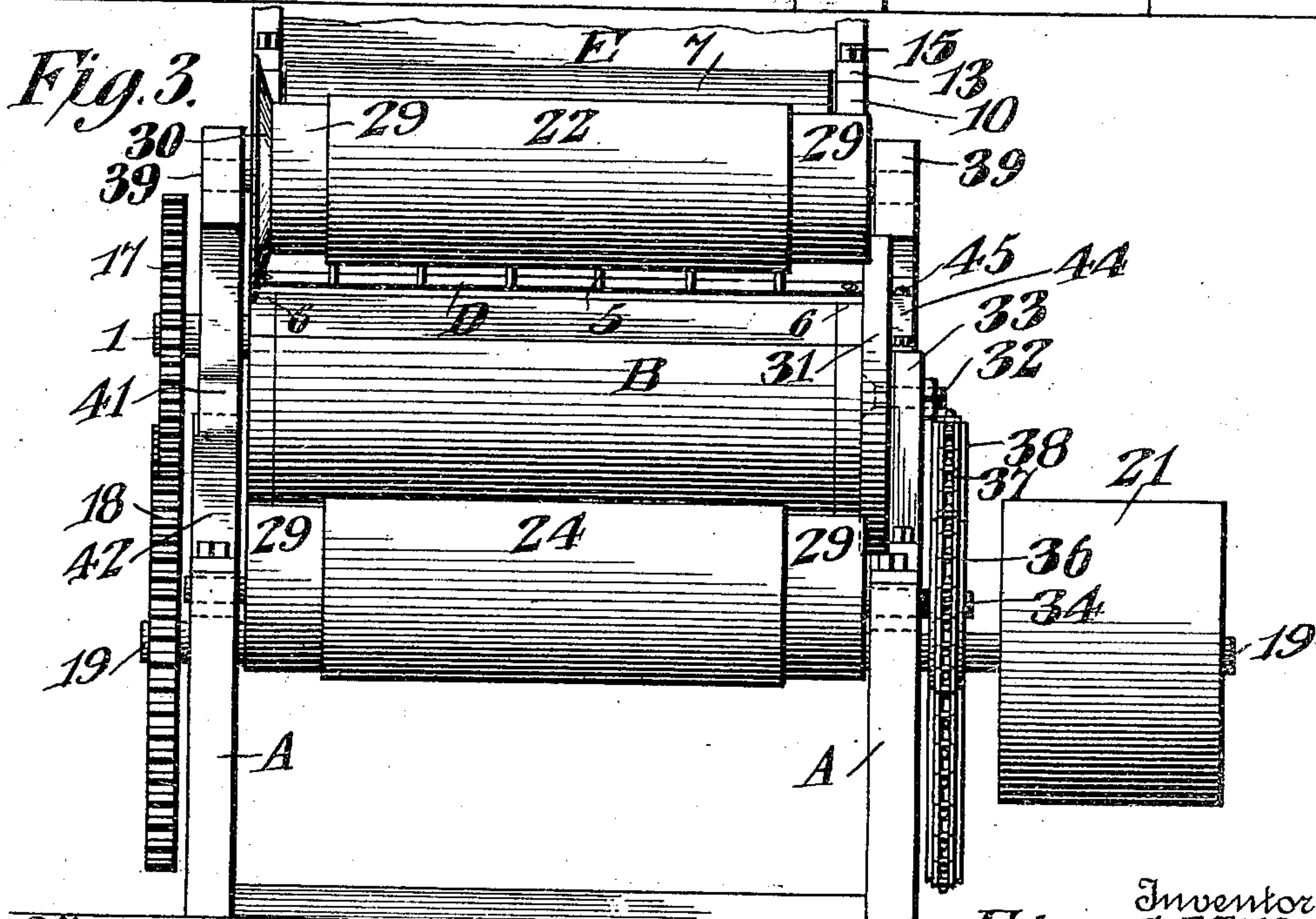
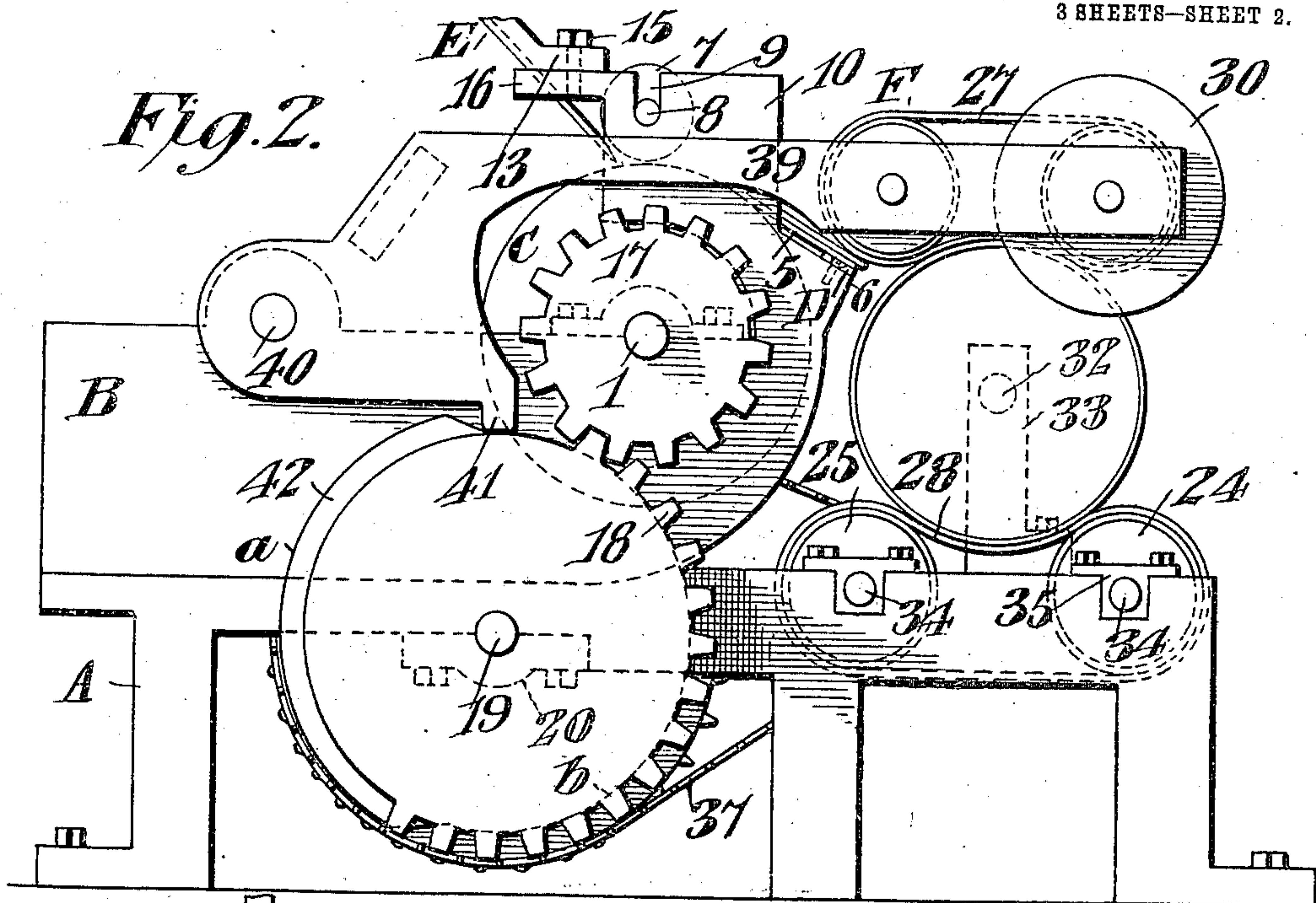
Attorney

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3 SHEETS—SHEET 2.



Witnesses
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APPLICATION FILED MAR. 22, 1909.

Patented Aug. 9, 1910.

3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

EDGAR STILLMAN MILLER, OF ATCHISON, KANSAS, ASSIGNOR TO INDUSTRIAL ENGINEERING COMPANY, OF ATCHISON, KANSAS, A COPARTNERSHIP.

LABELING-MACHINE.

966,463.

Specification of Letters Patent.

Patented Aug. 9, 1910.

Application filed March 22, 1909. Serial No. 485,081.

To all whom it may concern:

Be it known that I, EDGAR S. MILLER, a citizen of the United States, residing at Atchison, in the county of Atchison and State of Kansas, have invented a new and useful Labeling-Machine, of which the following is a specification.

This invention relates to a machine for labeling cans, cartons, packages and the like, and the invention has for one of its objects to improve and simplify the construction and operation of machines of this character so as to be comparatively simple and inexpensive to manufacture, reliable and efficient in use, and readily manipulated.

Another object of the invention is the provision of a novel means for wrapping the label on the can and, at the same time, applying pressure thereto to firmly set the adhesive, in connection with an efficient paste-applying device, and means for feeding the label over such device and to the can.

With these objects in view and others, as will appear as the description proceeds, the invention comprises the various novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawings, which illustrate one embodiment of the invention, Figure 1 is a front elevation of the machine. Fig. 2 is a rear view thereof. Fig. 3 is an end view. Fig. 4 is a central vertical longitudinal section. Fig. 5 is a transverse section. Fig. 6 is a perspective view of the label chute or holder. Fig. 7 is a detail sectional view of the retaining device for holding the can in proper position for receiving the label.

Similar reference characters are employed to designate corresponding parts throughout the views.

Referring to the drawings, A designates a supporting frame of any approved construction on which is mounted a tank or reservoir B for holding the paste that is to be applied to the labels, and in one end of this reservoir is disposed a rotary paste-applying drum C mounted on a horizontal shaft 1 and having the lower portion submerged in the paste. The shaft 1 is mounted in bearings 2 at the opposite side walls

3 of the tank, and extending around the paste-applying drum are spaced annular grooves 4 in which ride the spring teeth 5 of the comb D which is supported at 6 on the side walls of the tank. The teeth of the comb are disposed approximately tangentially to the drums C and cooperate to form an inclined shelf or guide over which the label passes to the can, the comb serving primarily to peel the label from the drum after receiving the paste from the latter. Disposed vertically over the drum is an idler roller 7 having journals 8 at its ends resting in bearings 9 provided on the upwardly-extending arms 10 of the side walls of the tank, and this idler serves to press the labels fed between it and the drum C into contact with the latter so that the under surfaces of the labels will be evenly coated with paste.

Extending upwardly from the top of the drum and inclined at a suitable angle is a label chute or guide E that comprises a flat plate 11 having upstanding marginal flanges 12 formed by bars and between which the label is guided in its downward movement to the paste-applying drum. The lower ends of the bars 12 are bent laterally into horizontal lugs 13 that are provided with apertures 14 for receiving bolts 15 for securing the lugs to the horizontally-projecting ears 16 of the arms 10. The lower edge of the plate 11 projects below the lugs 13 into close proximity to the drum C where the pressing roller 7 cooperates therewith so as to guide the lower edge of the label into position to be gripped between the drum and roller, and, furthermore, the lower edge of the plate of the label-guide can serve as a scraper for removing surplus paste from the drum, so that the labels will not be coated with an excessive amount of paste. On one end of the shaft 1 is a pinion 17 which meshes with a mutilated gear 18 secured to a main driving shaft 19 mounted in bearings 20 in a position under the paste tank B, and this shaft is adapted to be driven in any suitable manner, as for instance, by a belt passing over the pulley 21 on the front end of the shaft.

Arranged in cooperative relation with the coating drum is a label-wrapping and pressing device designated generally by F which

is adapted to receive the can or package to be labeled and automatically apply the moistened label thereto and press the label in position. This device comprises a pair of upper rollers 22 and 23 and a pair of lower rollers 24 and 25, between which pairs a can H is held in parallelism with the paste-applying drum for receiving the label immediately therefrom, and the can is rotated while in this position so that the label will be wrapped around the same. On the upper pair of rolls is a band or belt 27 of rubber or other suitable material which serves as a pressure element to evenly apply pressure to the label. Passing around the lower set of rolls is a similar belt or band 28 which presses against the label on the can. The ends of the rollers 22 to 25 are reduced at 29, as clearly shown in Fig. 3, so as to accommodate the flanges of the heads of the cans and allow the intermediate portions of the rollers to work between the said heads, so that by this means, the label will be pressed against the body of the can without the heads of the latter interfering. The roller 22 has an annular flange 30 that constitutes a rest against which one end of the can is adapted to bear, while the opposite end of the can is engaged by a disk-shaped retainer 31 secured by means of a bolt 32 on a standard 33 secured to the frame A. The bands are adapted to tightly grip the can at diametrically-opposite points so that the can will be rotated by the movement of at least one of the belts. The roller 25 constitutes a driver whereby the lower belt is positively driven so as to impart movement to the can, which latter, by frictional engagement with the upper band, causes rotation of the latter so that there will be a moving contact of the said bands with the label. The shafts 34 of the lower rollers 24 and 25 are mounted in bearings 35 on the main frame A, and the shaft 34 of the roller 25 is provided with a sprocket wheel 36 which meshes with a sprocket chain 37 that passes around a large gear wheel 38 on the main driving shaft 19, one rotation of the wheel 38 causing approximately four revolutions of the wheel 36. The upper pair of pressure rollers 22 and 23, which, like the rollers 24 and 25, may be of iron or other suitable material, are mounted in a frame I composed of spaced side members 39 having their inner extremities pivoted at 40 to the sides of the tank, the arms projecting from one side of the pivot, so that the weight of the frame, together with the rollers 22 and 23, will be supported to a considerable extent by the can so that the label will be tightly pressed against the latter.

The arms are adapted to be automatically raised and lowered to permit of the ready insertion and removal of the can. For this purpose, the spaced arms 39 are provided

with depending lugs or members 41 which ride on cam wheels 42 secured on the main shaft 19. Each cam wheel has a raised portion *a* and a depressed portion *b*, and while the members 41 of the arms engage the members *a* of the cams, the arms will be supported in raised position, as shown by dotted lines in Fig. 1, so that the labeled can can be removed and a new can to be labeled, inserted, and as soon as the members 41 ride off the raised portions of the cam, the arms will drop to bring the top belt into engagement with the can. In order to arrest the movement of the coating drum at the proper moment, so as not to feed the next label during the removal of the labeled can and the insertion of the can to be labeled, a brake device is employed such as a disk 44 on the shaft 1 of the paste-applying drum, which disk is provided with a lug or abutment 45 with which a spring shoe 46 secured on the outside of the tank B, is adapted to engage and thus stop the drum when the teeth of the mutilated gear 18 are disengaged from the teeth of the pinion on the drum shaft 1.

In practice, the tank B of the machine is supplied with a suitable quantity of paste to submerge the lower portion of the coating drum C, and the operator, taking a label from a pile conveniently accessible, places the label lengthwise in the guide E with its lower end presented between the coating drum and roller 7, and by turning the latter, the label will be fed between the drum and roller to receive paste from the former, the label being, of course, inserted so that the under or unprinted side will be presented to the drum. When the label designated by L, Fig. 4, reaches such a position that the lower edge thereof will coincide with the bottom of the comb, the turning of the roller 7 is stopped. A can to be labeled is then placed in the label-wrapping and pressing device, as shown in Fig. 4, and thereupon, the machine is started by applying power to the shaft 19. As the shaft rotates, the mutilated gear will simultaneously mesh with the pinion 17 while the high portions of the cams will pass from the engaging portion of the swinging frame I to thereby bring the upper belt 27 into engagement with the top of the can. The result will be that the label will be fed forwardly and gripped between the moving can and upper belt 27, and by their joint action, wrapped around the can and firmly pressed in place on the latter. As the label is almost fed through the device, the attendant places a new label end to end with respect to the label being applied, so that when the coating drum stops rotating and the label-wrapping device opens, the second label will be in the position shown in Fig. 4 ready for the next can. As soon as the drum makes one revolution, it will be brought to rest by the brake

device, it being understood that the gear teeth 18 disengage from the pinion after the drum has made one revolution. After the label has been applied to the can, the swinging frame I will be raised to permit the can to be taken out and a new one replaced. The periphery of the can is driven at a slightly higher speed than the drum C, so that the label will be subject to a draft or tension for preventing the label from wrinkling. The gears 17 and 18 are so proportioned that a half revolution of the main shaft will cause one revolution of the drum C. While the drum is making one revolution, the driving roll 25 of the can-rotating mechanism makes two revolutions. The circumference of the drum is slightly less than the length of the label, and as the circumference of the roller 25, augmented by the thickness of the belt 28, is one-half the length of the label, two revolutions of the roller 25 will cause the can to revolve the whole length of the label, while the drum C is turning less than the length of the label in the same period of time, with the result that the label will be stretched and thus evenly applied to the can.

From the foregoing description, taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the apparatus which I now consider to be the best embodiment thereof, I desire to have it understood that the apparatus shown is merely illustrative, and that such changes may be made when desired as are within the scope of the claims appended hereto.

Having thus described the invention, what I claim as new and desire to secure by Letters-Patent, is:—

1. In an apparatus of the class described, the combination of two pairs of rotatable rollers, separate supports for the rollers relatively movable, each pair of rollers being spaced apart a distance less than the diameter of the article to be labeled, and a flexible belt passing around each pair of rollers whereby the unsupported portions of the belts between the rollers engage the article to be labeled.

2. In an apparatus of the class described, the combination of a pair of endless members spaced apart to receive between them the article to be labeled, a set of spaced rollers supporting each member, said members being flexible to permit the unsupported portions thereof between the rollers to conform to the circumferential surface of the article for frictionally engaging the same over relatively wide areas at spaced points, means for positively driving one of

the members to rotate the article to be labeled and cause the members to coact for pressing the label on the article, and a device for supplying the label between the article and one of the members.

3. In an apparatus of the class described, the combination of a label-wrapping device including article-gripping elements of elastic material mounted to conform to the outer surface of the article to frictionally engage portions thereof whereby one element rotates the article and the article drives the other element, means for periodically opening and closing the device for receiving the articles to be labeled successively between the elements, means for continuously driving one of the elements to rotate the article, a periodically-operated device for feeding a label to the first-mentioned device while the latter is closed, and an operating mechanism for opening and closing the label-wrapping device and actuating the label-feeding device in timed relation.

4. In an apparatus of the class described, the combination of a label-wrapping device including article-gripping elements, means for periodically opening and closing the device for receiving the articles to be labeled successively between the elements, means for continuously driving one of the elements to rotate the article, a periodically-operated device for feeding a label to the first-mentioned device while the latter is closed, an operating mechanism for opening and closing the label-wrapping device and actuating the label-feeding device in timed relation, and a brake for holding the feeding device idle during the opening and closing of the wrapping device.

5. In an apparatus of the class described, the combination of a horizontal belt on which the article to be labeled is adapted to rest, a horizontal belt arranged to engage the top of the article, means for continuously driving one of the belts to rotate the article, means for intermittently moving the belts toward and away from each other for permitting the article to be inserted or removed and for frictionally gripping the article to the belts whereby the continuously-driven belt rotates the article and the article in turn drives the other belt, and a label-feeding device operating intermittently to supply a label between one of the belts and article during the period when the belts are engaging the article.

6. In an apparatus of the class described, the combination of a horizontal belt on which the article to be labeled is adapted to rest, a horizontal belt arranged to engage the top of the article, means for continuously driving one of the belts, means for intermittently moving the belts toward and away from each other for permitting the article to be inserted or removed, a label-

feeding device operating intermittently to supply a label between one of the belts and article during the period when the belts are engaging the article, and means for driving
5 the feeding device at a speed less than the rotation of the article for producing a tension on the label during the wrapping thereof.

7. In a labeling machine, the combination
10 of a supporting structure, a pair of rollers mounted thereon, an endless band passing around the rollers, means for driving one of the rollers, a second pair of rollers, a movable support on which the last-mentioned
15 rollers are mounted, a band passing around the second-mentioned rollers, the weight of the movable support and rollers thereon serving to hold the article to be labeled in frictional engagement with both bands,
20 means for periodically actuating the movable support to permit an article to be applied or removed, and means for feeding a label between one of the said bands and article.

8. In a labeling machine, the combination
25 of a supporting structure, a pair of spaced rollers mounted thereon, an endless flexible elastic belt passing around the rollers, the unsupported portion of the belt between the
30 rollers being adapted to receive the article to be labeled, means for driving the belt to rotate the article, a second pair of rollers, an endless flexible elastic belt passing around the same and arranged to engage the article
35 at a point diametrically opposite from the first-mentioned belt to be driven by the article, said belts having a tendency to move toward each other for pressing the label on the article, and a label-feeding device ar-
40 ranged to feed the label between one of the belts and article whereby the belts act successively on the label to fix the same to the article.

9. In a labeling machine, the combination
45 of a supporting frame, two pairs of rollers located one above the other, a horizontally-disposed belt passing around each pair of rollers and arranged to receive between them the article to be labeled, a device for feeding
50 a label to the article, means on one of the rollers for engaging one end of the article, and a device cooperating with the last-mentioned means for holding the article in position.

10. In a labeling machine, the combina-
55 tion of a rotary-feeding drum, means for intermittently operating the same, a pair of spaced belts cooperating to rotate the article to be labeled, means for intermittently mov-
60 ing the belts apart and together for permitting the insertion or removal of the article, the last-mentioned means being operative while the first-mentioned means is idle, a rotary disk mounted to engage one end of
35 the article during the labeling operation,

and means for simultaneously engaging the other end for preventing longitudinal movement of the article.

11. In a labeling machine, the combina-
70 tion of a label-feeding drum, a drive shaft, a gearing between the shaft and drum for intermittently rotating the latter, a pair of article-engaging elements arranged to wrap the label around the article, a frame carry-
75 ing one of the elements, and a cam mounted on the shaft for constantly sustaining the weight of the frame and having a raised portion for lifting the frame during the time the drum is idle for permitting the re-
80 moval or insertion of an article.

12. In a labeling machine, the combina-
85 tion of a label-feeding drum, a drive shaft, a gearing between the shaft and drum for intermittently rotating the latter, a pair of article-engaging elements arranged to wrap the label around the article, a frame carry-
90 ing one of the elements, a cam mounted on the shaft for constantly sustaining the weight of the frame and having a raised portion for lifting the frame during the time the drum is idle for permitting the re-
95 moval or insertion of an article, and a yielding brake for arresting the movement of the drum after the feeding of the label.

13. In a labeling machine, the combina-
95 tion of a rotary coating drum, a stop for arresting the movement of the drum after the passage of a label thereover, a device for wrapping and pressing the label on the article to be labeled, said device including a
100 holding means for the article, and means for automatically opening and closing the said means to permit the article to be inserted or removed.

14. In a labeling machine, the combina-
105 tion of a coating drum, a brake for stopping the same after feeding a label, a device for holding the article to be labeled and arranged to be opened when the drum is idle for permitting the insertion or removal of
110 the article, and means for automatically closing the said device and rotating the drum to supply the label to the article in the holder.

15. In a labeling machine, the combina-
115 tion of a rotary paste-applying element mounted on a horizontal axis, a horizontally-disposed comb having its teeth disposed in tangential relation to the element, means for feeding a label to the element, and a mech-
120 anism for applying the label to the article to be labeled, said mechanism comprising two pairs of rollers arranged to support the article in cooperative relation with the comb, flexible bands frictionally engaging the ar-
125 ticle and passing around the rollers, one of the bands being arranged to cooperate with the comb for directing the label to the article, and a separate device located adjacent the sides of the bands for engaging the ends
130

of the article to maintain the same in central position in the mechanism.

16. In a labeling machine, the combination of a paste-holding tank, a drum arranged with a portion thereof submerged in the paste, means for removing the excess paste from the drum, a roller located to hold a label against the drum for receiving paste therefrom, means for intermittently rotating the drum, a device arranged to hold the article to be labeled and composed of relatively-movable elements and automatically-operated means for actuating the elements to engage the article about the time the drum begins to rotate and to disengage the article about the time the drum stops rotating.

17. In a labeling machine, a mechanism for feeding a label and applying paste thereto, a plurality of elements for wrapping the label on the article to be labeled, a support for one of the elements movable with respect to the other element for engaging or disengaging the article, and a rotary cam on which the support constantly rests and provided with a raised portion for periodically actuating the support.

18. In a labeling machine, a mechanism for feeding a label and applying paste thereto, a plurality of elements for wrapping the label on the article to be labeled, a support for one of the elements movable with respect to the other element for engaging or disengaging the article, a rotatable device for periodically operating the support, and means for arresting the movement of the said mechanism prior to the operation of the said support.

19. In a labeling machine, a mechanism for feeding a label and applying paste thereto, a plurality of elements for wrapping the label on the article to be labeled, a support for one of the elements movable with respect to the other element for engaging or disengaging the article, a cam for operating the support, and a brake for stopping the said mechanism prior to the movement of the support.

20. In a labeling machine, the combination of an intermittently actuated mechanism for feeding labels and applying paste thereto, with a device for rotatably supporting the article to be labeled, a second device arranged to engage the article while supported by the first device to apply the label to the article, a pivoted support for the second device, the pivot of the support being so located that the combined weight of the support and second device is utilized to press the label on the article, and means actuated during the idle period of the mechanism for operating the support to permit the article to be placed or removed in or from the first-mentioned device.

21. In a labeling machine, the combination of elements arranged to engage the

article to be labeled, a movable support for one of the elements so arranged as that the combined weight of the support and element thereon acts to press the label on the article, means for periodically moving the support, a rotatable label-feeding drum, and a mutilated gear for periodically actuating the same during the time the said element engages the article.

22. In a labeling machine, the combination of elements arranged to engage the article to be labeled, a movable support for one of the elements so arranged as that the combined weight of the support and element thereon acts to press the label on the article, a cam for periodically lifting the support, and an intermittently-operated label-feeding device arranged in coöperative relation with the elements and adapted to be idle while the cam is acting.

23. In a labeling machine, the combination of a pair of elements arranged to engage the article to be labeled for turning the article while applying the label thereto, one of the elements being located under and the other above the article, the under element being continuously driven, a pivoted frame for supporting the upper element, a cam device arranged to move the frame for engaging the elements with or disengaging them from the article, and a power-driven intermittently-rotated drum for feeding labels, said drum being idle during the period of actuation of the frame by the cam device.

24. In a labeling machine, the combination of an intermittently-actuated paste-applying device, means for feeding labels thereto, a plurality of elastic elements movable independently and arranged to frictionally engage and exert a pressure on the label at different points for applying the labels to the articles to be labeled, a pivoted frame supporting one of the elements at the side of the device opposite from the pivot of the frame, means for intermittently moving the frame to permit the insertion of an article between the elements.

25. In a labeling machine, the combination of a paste-applying drum, a plurality of elements located at one side of the drum for applying the labels to the articles to be labeled, a movable frame supporting one of the elements, a pivot for the frame, a cam for periodically moving the frame to permit an article to be placed between or removed from the elements, a label holder disposed above the drum, and a roller arranged in coöperative relation with the holder and drum for directing the labels over the latter to receive paste therefrom.

26. In a labeling machine, the combination of a paste-holding tank, a paste-applying device mounted therein, means for feed-

ing labels to the device to receive paste therefrom, means for wrapping the labels to the articles to be labeled, said means including an element movably mounted on the tank, and a continuously-driven rotatable device for periodically opening the said means for removing or inserting an article.

27. In a labeling machine, the combination of a paste-holding tank, a paste-applying device mounted therein, means for feeding labels to the device to receive paste therefrom, means for wrapping the labels to the articles to be labeled, said means comprising a frame carried by the tank, an article-engaging element on the frame, and continuously moving means for periodically operating the frame to engage or disengage the element with or from the article.

28. In a labeling machine, the combination of a paste-applying drum, a driving shaft, means for rotating the drum during part of each revolution of the said shaft, a device for holding and rotating the article to be labeled, and means operated by the said shaft to cause the said device to engage the article preparatory to the starting of the drum and to disengage the article after the drum stops.

29. In a labeling machine, the combination of a tank, a paste-applying device associated therewith, a driving shaft, a mutilated gear on the shaft, a pinion connected with the drum and meshing with the gear, a label-wrapping device adapted to periodically open and close for the placing and removal of the article to be labeled, and means operated by the shaft to close the said device on the article about the time the drum starts and open the said device after the drum stops.

30. In a labeling machine, the combination of a tank, a paste-applying drum therein, means for feeding labels to the drum to receive paste therefrom, a driving shaft, means for intermittently turning the drum by the shaft, a label-wrapping device disposed in cooperative relation with the drum and comprising label-engaging elements, a movable support for one of the elements, a cam on the shaft for actuating the support, and driving means between the shaft and the other element.

31. In a labeling machine, the combination of a paste-holding tank, a paste-applying device associated therewith, means for feeding labels to the device, a driving shaft, a mutilated gearing between the shaft and device for intermittently actuating the latter, a brake for stopping the device after a label is fed by the same, a label-wrapping mechanism for applying the label to the article to be labeled, said mechanism being adapted to open and close for receiving the articles, and means operated by the shaft

to open the mechanism while the drum is idle.

32. In a labeling machine, the combination of a paste-applying device, an operating shaft, a gearing for intermittently operating the said device by the shaft, a pair of article-engaging elements, a sprocket and chain mechanism between the shaft and one of the elements for positively driving the latter and operating through the article to be labeled to drive the other element, a movable support for the article-driven element, and a cam on the shaft for operating the support to press the label on the article in timed relation to the said device.

33. In a labeling machine, the combination of a label-feeding and paste-applying mechanism, with a label-wrapping mechanism, said last-mentioned mechanism comprising a plurality of sets of independently-supported elements arranged to engage the article to be labeled at opposite points, means for automatically moving the sets of elements apart for receiving an article and toward each other for gripping the article, and means for engaging the ends of the article for preventing displacement thereof during the wrapping of the label.

34. In a labeling machine, the combination of a label-feeding and paste-applying mechanism, with a label-wrapping mechanism, said last-mentioned mechanism comprising elements for engaging the article to be labeled and pressing the label thereon, one of the elements including a roller having a flange for engaging one end of the article, and a device cooperating with the said flange to engage the other end of the article to prevent displacement of the latter during the wrapping of the label.

35. In a labeling machine, the combination of a label-feeding and paste-applying mechanism, with a label-wrapping mechanism, said last-mentioned mechanism comprising elements for engaging the article to be labeled and pressing the label thereon, one of the elements including a roller having a flange for engaging one end of the article, and a rotatable disk arranged to engage the end of the article opposite from that engaged by the flange to prevent displacement of the article.

36. In a labeling machine, the combination of a label-feeding and paste-applying mechanism, with a label-wrapping mechanism, said last-mentioned mechanism comprising two pairs of rollers, bands passing around the rollers and arranged to engage the article to be labeled, and rotatable devices arranged to engage both ends of the article for preventing lateral displacement thereof in a direction parallel with the rollers.

37. In a labeling machine, the combina-

tion of a label-feeding and paste-applying mechanism, with a label-wrapping mechanism, said last-mentioned mechanism comprising a pair of lower rollers, a pair of upper rollers arranged with their axes parallel with the lower rollers, flexible bands passing around both pairs of rollers and spaced apart to receive between them the article to be labeled, an article-engaging means carried by one of the rollers, and a device co-operating with the said means for preventing displacement of the article during the wrapping of the label thereon.

38. In a labeling machine, the combination of a label-feeding and paste-applying mechanism, with a label-wrapping mechanism, said last-mentioned mechanism comprising a pair of lower rollers, a pair of upper rollers arranged with their axes parallel with the lower rollers, flexible bands passing around both pairs of rollers and spaced apart to receive between them the article to be labeled, an article-engaging means carried by one of the rollers, a device coöperating with the said means for preventing displacement of the article during the wrapping of the label thereon, and means for positively driving the lower band for turning the article during the wrapping of the label and whereby the article frictionally drives the upper band.

39. In a labeling machine, the combination of a label-feeding and paste-applying mechanism with a label-wrapping mechanism, said last-mentioned mechanism comprising a pair of lower rollers, a pair of upper rollers arranged with their axes parallel with the lower rollers, flexible bands passing around both pairs of rollers and spaced apart to receive between them the article to be labeled, an article-engaging means carried by one of the rollers, a device coöperating with the said means for preventing displacement of the article during the wrapping of the label thereon, means for positively driving the lower band for turning the article during the wrapping of the label and whereby the article frictionally drives the upper band, and a movable support for the upper pair of rollers for engaging or disengaging the article between the bands.

40. In a labeling machine, the combina-

tion of a label-feeding drum, a stop for arresting the movement of the drum after the passage of a label thereover, a device for wrapping and pressing the label on the article to be labeled while rotating the latter, said device including a holding means for the article, means for automatically opening and closing the said means to permit the article to be inserted or removed, and means for rotating the drum at a less speed than the article for subjecting the label to tension during the wrapping thereof.

41. In a labeling machine, the combination of a label-feeding drum, a driving shaft, means for rotating the drum during part of each revolution of the said shaft, a device for holding and rotating the article to be labeled, means operated by the said shaft to cause the said device to engage the article preparatory to the starting of the drum and to disengage the article after the drum stops, and means for rotating the drum at a less speed than the article for subjecting the label to tension during the wrapping thereof.

42. In a labeling machine, the combination of a label-wrapping device consisting of flexible endless article-engaging elements supported to be moved toward and away from each other, said elements being movable to rotate the article to be labeled, and a mechanism for automatically moving the elements toward and away from each other periodically, with a periodically-operated label-feeding device arranged to feed a label to the dropping device after the elements are engaged with the article, said elements serving to rotate the article at a slightly greater speed than the feeding movement of the last-mentioned device for producing a tension on the label during the wrapping thereof, and means for automatically operating the label-feeding device in timed relation to the operation of the label-wrapping device.

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

EDGAR STILLMAN MILLER.

Witnesses:

JOSEPH LOUFEK,
B. H. MILLER.