

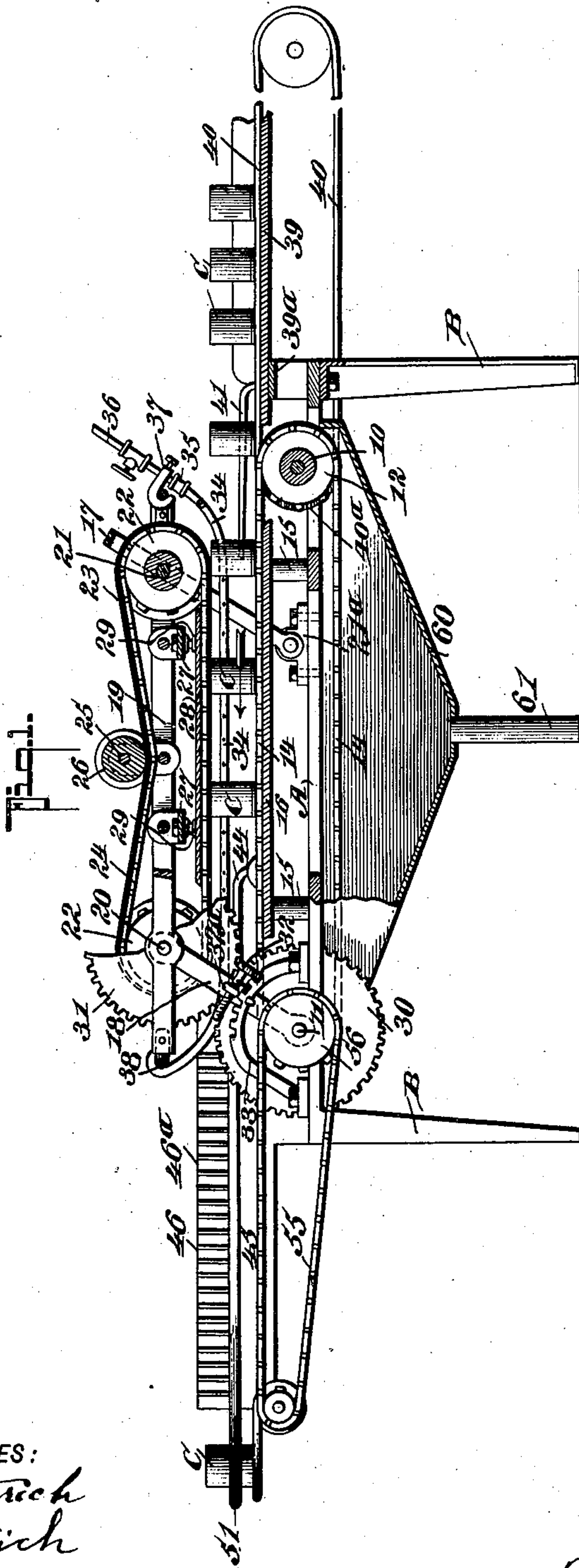
No. 618,795.

Patented Jan. 31, 1899.

J. KELLINGTON.
MACHINE FOR WIPING CANS.

(No Model.)

3 Sheets—Sheet 1.



WITNESSES :

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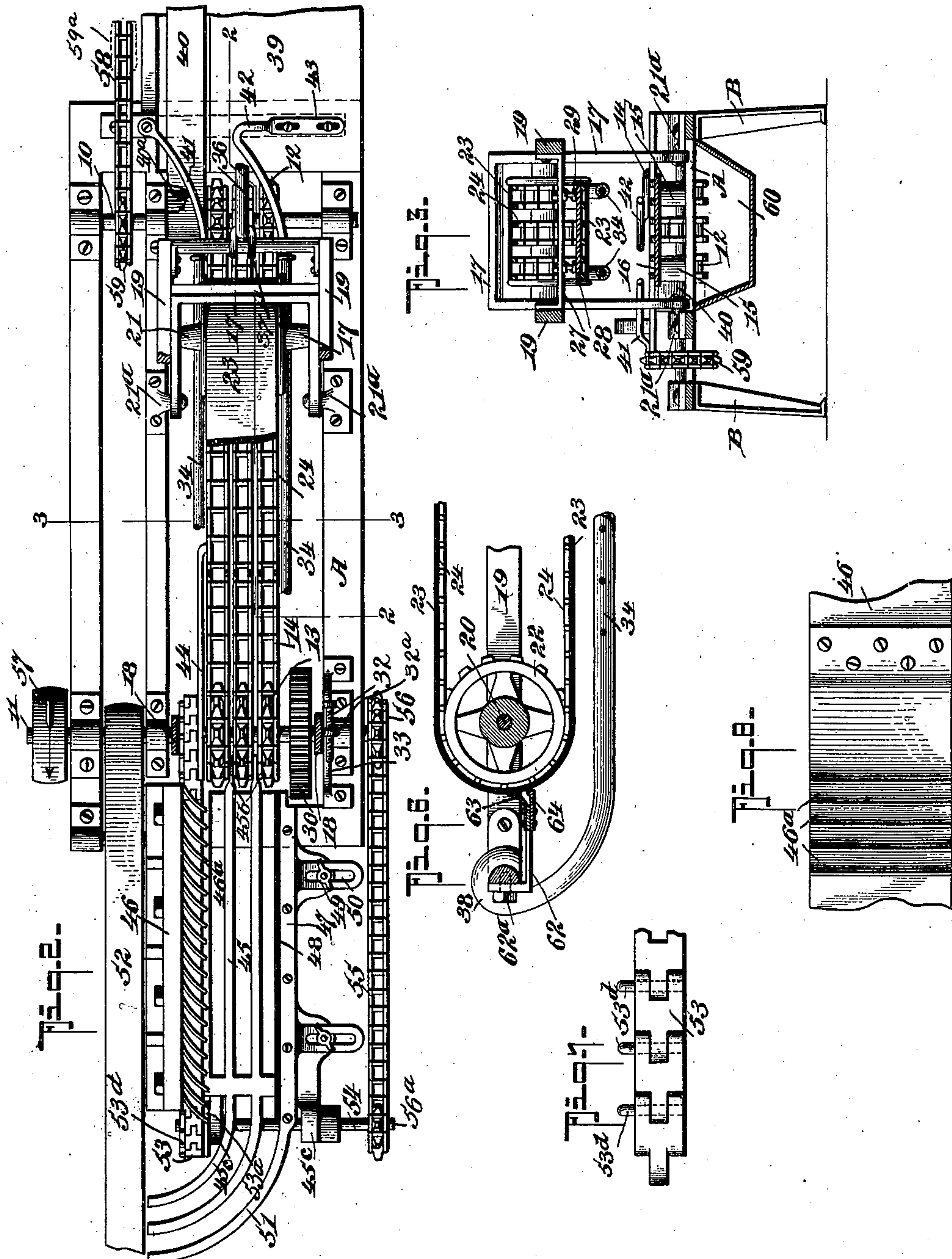
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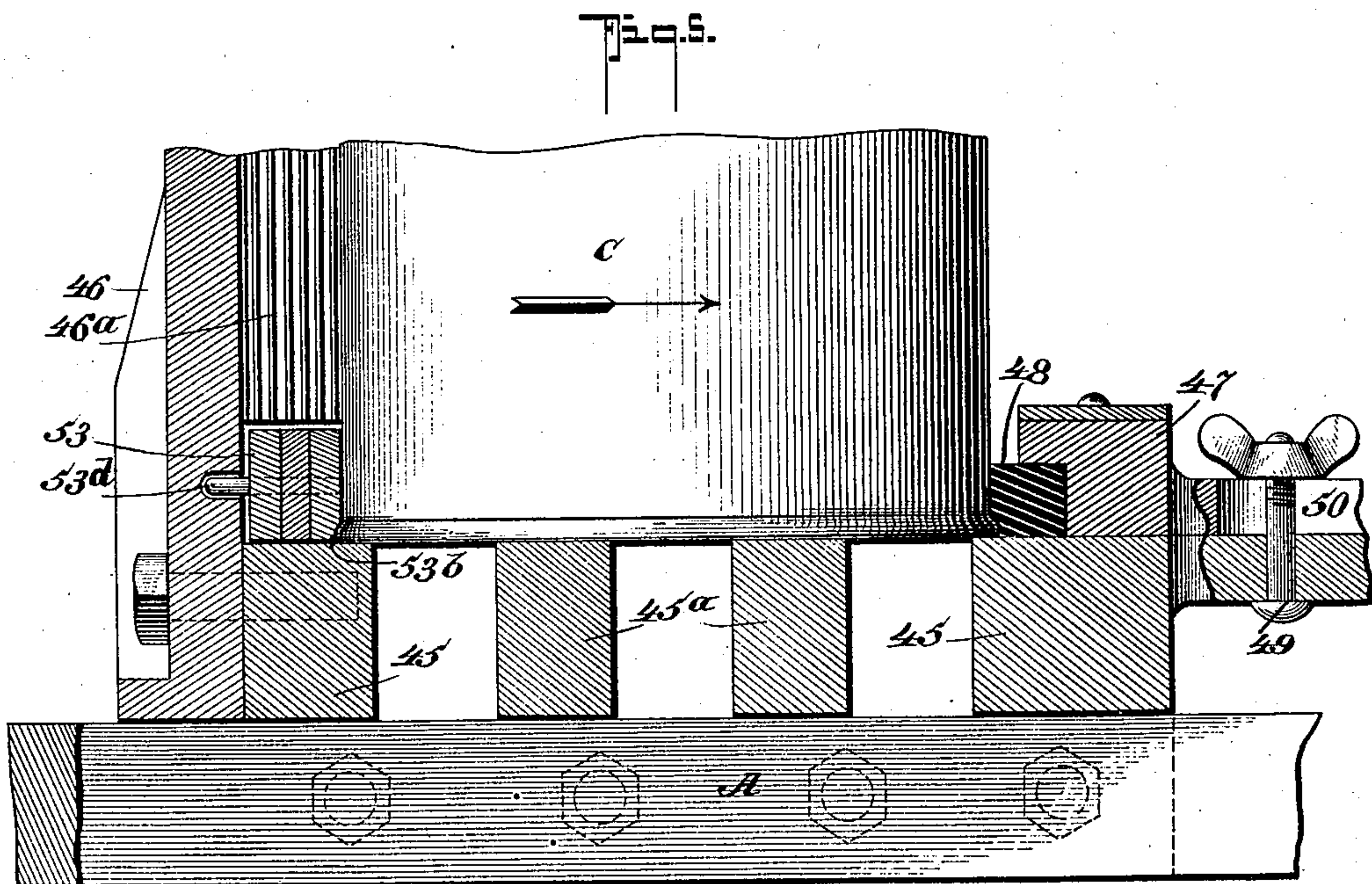
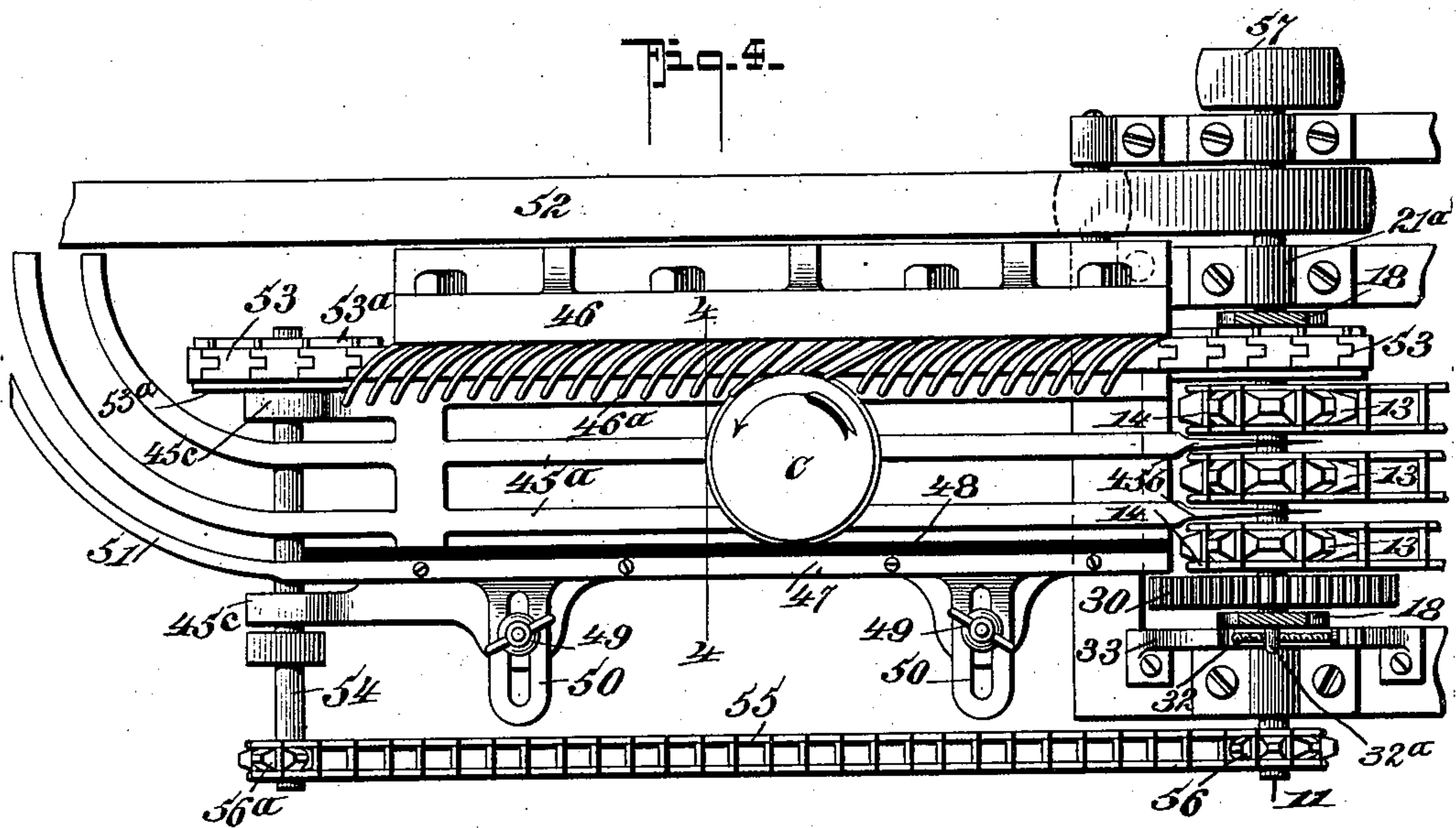
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UNITED STATES PATENT OFFICE.

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TO DANIEL J. MUNN, OF NEW WESTMINSTER, CANADA.

MACHINE FOR WIPING CANS.

SPECIFICATION forming part of Letters Patent No. 618,795, dated January 31, 1899.

Application filed April 29, 1898. Serial No. 679,269. (No model.)

To all whom it may concern:

Be it known that I, JOHN KELLINGTON, a citizen of the Dominion of Canada, residing at Terra Nova, Province of British Columbia, Canada, have invented a new and useful Machine for Wiping Cans, of which the following is a specification.

My invention relates to improvements in devices for cleaning the grease from the edges and peripheries of cans which are intended to be covered and hermetically sealed; and the objects of my invention are, first, to provide a machine that is simple and cheap of construction and that will thoroughly clean and wipe vast numbers of cans in comparatively a short space of time, and, second, a machine of the kind that may be readily and speedily adjusted to handle cans of various dimensions. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is an elevation of the machine with parts broken away, as shown by line 22 in Fig. 2. Fig. 2 is a plan of the invention with a part of the top broken away. Fig. 3 is a vertical cross-section taken at line 3 3 in Fig. 2. Fig. 4 is a plan view of the drawing-table, and Fig. 5 is a cross-section of the same on line 4 4. Fig. 6 is a detail showing the scraper 64. Fig. 7 is a detail of the can-conveying chain; and Fig. 8 is a detail of the mat with the metallic brushes, showing the means of fastening the same.

Similar numerals and letters refer to similar parts throughout the several views, in which—

A is the bed of the machine, which is supported by the legs B. Suitably journaled in boxes on and near the opposite ends of the bed A are shafts 10 and 11, and rigidly secured to these shafts are wheels 12 and 13, the same being arranged to carry three or more sprocket-chains 14 parallel to each other. Lying on the inner side of these chains or belts and supported by pillars 15 is a horizontal table or board 16. This is for the purpose of keeping the belts horizontal and up to their work, as will be fully understood later.

Pivotally supported on brackets 21^a, secured to the bed of the machine, are up-

wardly-extending brackets 17 and 18. The bracket 17 is of U shape and passed over and down to the side frame near the rear side of the bed; but the brackets 18 project upward and connect with a frame 19, which frame 19 rests on bushed portions on the upper ends of the brackets and similar bushings on the outer sides of the bracket 17. This frame 19 has parallel sides, and they are connected together by cross-bars at either end.

Passing through the bushings in the brackets 17 and 18 are shafts 20 and 21, and mounted on these shafts are wheels 22, the same being provided with sprocket-toothed peripheries, around which take chain belts 24. (See Figs. 2 and 3.) Placed over the surface of this belt or belts is a belt 23, having a surface of rubber or of other pliable matter. This belt 23 is intended to close the mouths of open cans as they are passed through the machine.

Arranged in brackets 25, secured to the opposite sides of the frame 19, is a belt-tightener 26, which takes up the slack of the belts 23 and 24.

To prevent the chain belt 24 and the rubber belt 23 from being pushed upward above the plane of the lower peripheries of the wheels 22 by the passing cans, I provide a table or plate 28, which is supported by bolts being secured thereto and being passed through apertures in the brackets 27, which are secured to the inner side of the frame 19, and to provide an upwardly-resilient movement of such plate 28 the coil-springs 29 are inserted over the said upwardly-projecting bolts and between the brackets 27 and the plate 28. (See Fig. 1.)

From the foregoing it will be seen that in the event of an unusually tall can being taken between the chain belts 14 and the rubber belt 23 such can will be allowed to pass without damage by the plate 28 being pressed upward.

To impart movements to the belts 23 and 24, which take round the wheels 22, I provide the gear-wheels 30 and 31, which are rigidly secured to the shafts 11 and 20, and by imparting movement to the shaft 11, as will appear later, the belts 23 and 24 will be put in motion, and owing to the wheels 12 and 13

being of the same diameter as the wheels 22 the said upper and lower belts will travel at the same speed and in the same direction.

To provide for the adjustment of the elevation of the belt 23 above the chain belts 14, it is shown that the upper frame supporting the mechanism which carries the belt 23 is pivotally supported by the brackets 17 and 18 and by a set-screw 32, taking through a projection 32^a on the front bracket 18, and the depending head of such set-screw 32 engaging in notches in an arc 33, which is secured to the bed A, the said belt 23 may be set at any desired height for the accommodation of cans of different lengths, and the said screw 32 by being turned will adjust the said frame to a nicety.

As shown in Figs. 1, 2, and 3, 34 indicates hot-water or steam pipes, which are connected to supply-pipe 36, the same being supported to the frame 19 by a bracket 37. It will be seen that these pipes 34 pass parallel to the belt 23 on the under side thereof, and they are curved upward and secured to cross-bar 25 at the opposite end of the frame 19, as 38. Arranged at intervals along the inner portions of these pipes, beneath the belt 23, are a series of small apertures for the hot water or steam to escape, which is ejected to the passing cans under pressure. This has the effect of cleaning all grease or dirt from the peripheries of such cans while they are passing through the machine, and while this operation is being performed the tops of the cans are covered by the belt 23, so that none of the wash may be conveyed to the matter within the said cans.

Arranged on a level plane with the top of the chain belt 14, at the forward part of the machine, is a table 39, which is secured above the bed A by a bracket 39^a, and arranged to travel toward the machine on a level plane with the said table is a belt 40. This belt is intended to receive the cans from the table 39 and carry them into the machine. As shown in Fig. 2, this belt 40 passes over a pulley which is loosely mounted on the shaft 10 in proximity to the wheel 12. Therefore it is necessary to arrange a fixed guide 41, which is curved over the belt 40. This will guide the cans from the line of the belt 40 to line with the belts 14 and 23, and to further assist the guidance of the cans I provide the adjustable guide 42, which is secured on the opposite side of the can-chute by the screws 43, passing through slots therein. Near the opposite end of the can-chute is a fixed guide 44, which directs the cans so that they will be properly received on the drying-table 45. As better shown in Figs. 4 and 5, this drying-table is composed of a frame having parallel bars 45^a, and its lower forward portion is secured to the bed A, and its top is arranged on a level plane with the belts 14.

45^b indicates slightly-raised portions which project rearward between the said belts 14, these being for the purpose that when the

cans come to this point there will be no vibratory movement of the same on contacting with the chain conveyer 53, to be explained hereinafter.

46 indicates an upwardly-projecting bracket which is suitably secured to the rear side of the table 45, and on the front side of this bracket are secured metallic brushes 46^a, which are resilient and project into the track of passing cans, and consequently will rub the peripheries of such cans as they are carried along, as will be understood presently. On the opposite side of the can-track on this table 45 is arranged an adjustable guide-rail 47, and on the said track face or side of which is suitably secured a rubber strip 48, which engages the rims of the cans, and this rail 47 is adjustably secured to the table 45 by thumb-bolts 49, passing through slots 50 in projecting brackets on the said rail 47, and the lower ends of such bolts may be rigidly fixed in projections on said table 45. The top of the guide-rail 47 is provided with an extending strip 51, which curves round toward the belt 52, and by this belt the cans are conducted from the machine. (See Fig. 4.)

53 indicates a conveying-chain which grips the lower edges and the peripheries of the cans, and by reason of the opposite sides of the same being engaged by the fixed rubber strip 48 as the chain travels the cans will be revolved in the direction of the arrow. (See Fig. 4.) This chain 53 is driven by means of the sprocket-chain 55, passing over rigidly-fixed wheels on the shaft 54 and the drive-shaft 11, and by reason of the wheel mounted on the said shaft 11, over which the conveying-chain 53 passes, being loose and the sprocket-wheel 56 being larger than the wheel 56^a on the shaft 54 and the rigidly-fixed wheel 53^a on the opposite end thereof, over which the conveying-chain 53 travels, being larger than the said wheel 56^a it will be seen that the chain 53 will travel at a higher speed than the belts 14 and 23, and consequently will draw the cans apart and will rotate them rapidly against the brushes 46^a, where the moisture will be removed from the bodies thereof.

To prevent the conveying-chain 53 from slipping, I provide the coupling-pins to project on one side of said chain, (see Figs. 4 and 5,) and these projecting pins 53^a rest in recesses in the flanges of the wheel 53^a, around which said chain passes, and the said chain is prevented from being pressed laterally by lying against the wall of the bracket 46. In order to prevent the cans from rising while being conveyed along by the chain 53, I provide a groove 53^b therein, into which the rims of the cans are received, as shown in Fig. 5.

57 indicates a pulley on the shaft 11, to which is attached the motive power.

To provide that the cans will not be taken between the belts 14 and 23 in too close proximity to each other and thus retard the work of the hot-water or steam while passing between such belts, I arrange the feed-belt 40

on a loose pulley 40^a on the shaft 10, as before mentioned, and a chain belt 58 is passed over a pulley 59, rigidly fixed on the said shaft 10, and over a pulley 59^a of larger diameter on the shaft that carries the pulley that drives the belt 40.

From the foregoing it is shown that a slower movement is imparted to the feed-belt 40 than to the chain belt 14, and that as the cans come to the guides 41 and 42 they will be drawn apart by the faster-traveling belts 14.

As better shown in Fig. 1, 60 indicates a depending trough or receptacle to receive the water after being used, and it is conducted downward through the pipe 61. The sides of this receptacle 60 may extend upward above the horizontal line of the hot-water pipes 34, so that all water will be prevented from slopping over other parts of the machine.

Any water that may accumulate on the belt 23 is prevented from dripping off into the cans, as the said belt is released from the top of the same, by a scraping device secured to a bracket 62. (Shown in Fig. 6.) This bracket 62 is secured to the cross-bar of the frame 19 by a bolt 62^a, and to its opposite end is secured a flexible scraper 63, which contacts with the rising side of the belt 23. This scraper 63 prevents the water from passing upward on the belt and deposits it in the pan 64 beneath, which pan is open on opposite sides, and whereby it may escape to the receptacle 60 through the said open sides.

In the operation of my machine motive power is supplied to the shaft 11 by the pulley 57 in the direction of the arrow, the frame 19 carrying the belt 23, and the chain belt 24 is adjusted the proper distance above the bed to conveniently receive the sized cans desired to be cleaned. This adjustment is obtained by setting the head of the screw 32 in the proper notch in the arc 33. The guide 42 is set the proper distance from the fixed guide 41, and the guide-rail 47 is similarly set from the conveyer-chain 33, so that the cans will be engaged between the rubber strip 48 and such chain. Hot water is now turned on in the pipe 36 and the machine is ready to receive the cans, which will be spaced, as before mentioned, and will be thoroughly cleaned from grease by the jets from the pipes 34, and when they come to the conveying-chain 53 they will be rapidly revolved against the brushes 46^a, where the water will be removed therefrom, and they will then be guided onto the belt 52, which will carry them away.

It will be seen from the foregoing that my invention is simple to operate, and owing to its novel means of adjustment different dimensions of cans may be accommodated without unnecessary delay or trouble, this being one of the essential features requisite in large canning establishments, and it is further shown that the machine is simple and cheap of construction and that it will perform a vast amount of work in a short space of time, which is the important desideratum.

I have in some respects specifically described the construction and relative arrangement of the several parts of my improved machine; but I do not desire to be understood as confining myself to such specific construction and arrangement, as such changes or modifications may be made in practice as fairly fall within the scope of my invention.

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

1. A can-cleaning machine, comprising a conveyer consisting of upper and lower belts adapted to engage the tops and bottoms of the cans, and spray-pipes extending longitudinally and disposed in a plane between the upper and lower belts as specified.

2. In a machine as described; the combination with the longitudinally-disposed spray-pipes, and conveyer means for carrying the cans between such pipes, said means including a closure member in the nature of an endless belt adapted to tightly fit over the cans and close them as they pass between the said spray-pipes, as specified.

3. In a can-cleaning machine in combination; spraying devices and conveyer mechanism, said mechanism including upper and lower belts for engaging respectively the top and bottoms of the cans, the upper belt having means for effecting a tight closure of the can-top for the purposes specified.

4. In combination with the endless conveyer-chains 14 and the spraying means held in the same longitudinal plane therewith; of the vertically-adjustable frame 19, and the endless belt mounted thereon, consisting of the link portion 24, and the solid yielding contact portion 23, and means for operating the two endless belts, as specified.

5. In a machine as described, the combination with a supporting-base for the cans; an adjustable side guide having a yielding bearing; an opposing guide having resilient wiping-teeth projected inward to engage the sides of the can; and a conveyer-belt adapted to engage the can and hold it against the yielding bearing of the side guide and carry it forward and at the same time rotate it, for the purposes specified.

6. A can cleaning and wiping machine, comprising a feed-belt and a take-off belt; a cleaning and wiping mechanism interposed between the two said belts; conveyer means for carrying the cans through the cleaning and wiping mechanism; a guide connecting the feed-belt and the cleaning mechanism for deflecting the can from the feed-belt to the cleaning mechanism; a guide for deflecting the can from the wiper mechanism to the take-off belt, said feed-belt and conveyer means being movable in line directions but at variable speeds, the feed-belt traveling the slower whereby to effect a separation of the cans as they pass from the feed-belt to the conveyer.

7. An improved can-cleaning machine, comprising a cleaner mechanism, including a hot-

water or steam spray, a conveyer for carrying the can therethrough; a feed-belt for leading the cans to the said conveyer; a drying-table arranged to receive the cans direct from the cleaning-mechanism conveyer; a wiping mechanism in juxtaposition to the drying-table and including a supplemental conveyer for carrying the can forward as it is being wiped, as specified.

8. A can cleaning and wiping mechanism combining the several elements, to wit: means for ejecting a hot-water or steam spray; conveyer devices for carrying the cans through the spray and wiping means; a supplemental conveyer device adapted to receive the can from the other conveyer after they pass through the cleaning-spray and arranged to carry the cans through the wiping devices, as specified.

9. In a machine as described, in combination with the longitudinally-disposed spraying means; a conveyer-chain having fixedly-journaled drive-pulleys; a supplemental drive-belt held parallel with the drive-chain and a supporting-chain therefor vertically adjustable, as and for the purposes described.

10. In a machine of the class described the combination of a bed, wheels mounted near opposite ends of said bed, chain belts taking around the same, brackets 17 and 18 pivotally fixed to the bed A, a frame 19 pivotally supported on said brackets on a level plane, shafts 20 and 21 passing through bushings in the brackets 17 and 18, which support the frame 19, wheels 22 rigidly fixed on the said shafts and belts arranged to take around said wheels, and arranged to lie on a horizontal plane above the belts supported by the wheels mounted near opposite ends of said bed, and a gear-wheel 30, rigidly fixed to the shaft 11 meshing with a similar wheel 31, on the shaft 20, as and for the purposes specified.

11. In a can-wiping machine, having a bed A, in combination with belts 14, taking around wheels arranged near opposite ends of said bed, means for supporting the upper plane of said belts, an adjustable frame 19, supported by the bed above the belts 14, wheels arranged in opposite ends of said frame, belts 23 and 24 taking around said wheels, a depressing-plate 28, supported above the lower plane of the belts 23 and 24, the said plate being hung from brackets 27 secured to opposite sides of the frame 19, and springs 29 interposed between said brackets and the said plate, as specified, and means for taking up the slack of the belts as set forth.

12. A machine of the class described having a bed A and belt-wheels mounted thereon and belts taking around the same, in combination with an adjustable frame 19 pivotally secured in brackets 17 and 18 above said bed, an arc-shaped bracket 33 rigidly secured to the bed A, in proximity to one of the brackets 18, a projection 32^a on said bracket 18, a screw-bolt 32 taking through said projection, and the head of the screw-bolt arranged to

lie in notches in the arc 33, whereby the frame 19 may be rigidly set at any altitude above the said bed as specified.

13. In a machine for wiping cans in combination with a bed, belt-wheels arranged to turn in journals suitably secured thereto, and similar wheels arranged in an adjustable frame above the bed, and belts mounted on the said wheels, pipes 34 secured to both cross end pieces of the frame 19, and arranged to pass on both sides of a can-chute beneath the belts mounted on said wheels in the frame 19, perforations on the inner sides of the pipes 34, said pipes being closed where secured to the cross-piece at 38, and connecting at the opposite end with the supply-pipe 36, and means for supplying water or steam to said pipes, for the purposes specified.

14. In a machine of the class described, the combination with a bed, shafts suitably mounted on opposite ends thereof, wheels secured to said shafts, and belts 14 taking therearound, and means for supporting the upper plane of said belts, an adjustable frame arranged on brackets above the belts 14, wheels mounted in said frame, and belts 24 taking therearound, an elastic belt 23 arranged over the belts 24, said belt 23 having a pliable face to engage and close the open ends of the cans, and means for pressing the lower plane of said belts downward, as set forth.

15. In a can-wiping machine having a bed with wheels mounted thereon and belts passing over said wheels and forming a carrier for cans above the plane of said bed, in combination with a frame 19, adjustably mounted above said carrier, wheels arranged in said frame and belts taking therearound, means for adjusting the lower plane of the belts taking around the wheels in the upper frame, so that cans passing along on the belts beneath will be engaged by the belts in the frame 19, and means for imparting the same movement and speed to the upper and lower belts as specified, and means for spraying hot water or steam to the peripheries of cans while being passed beneath the belts 23 and 24, as and for the purposes set forth.

16. In a machine of the class described, in combination with a bed A, wheels mounted near opposite ends of said bed, belts taking around said wheels and forming a carrier for cans in a vertical position, an adjustable frame 19, arranged above the carrier, wheels mounted in said frame and belts taking around the same, the said belts traveling at the same speed as the belts forming the carrier beneath, a bracket 62 secured to the rear cross-piece of the frame 19, a pan 64 secured to said bracket to lie in close proximity to the rising periphery of the belt 23, a scraper 63 to engage said belt above the pan, whereby the surplus water will be deposited in the said pan, and will be directed from the track of the cans, as specified.

17. In a can-wiper, having a bed and a passage for cans over the same, means for sup-

plying hot water or steam through pipes 34 on either side of said passage, in combination with a drying-table 45 secured to the rear end of the bed, an upright bracket or backing 46 secured to the rear side of said table, resilient metallic brushes 46^a secured to the bracket 46, a chain 53 passing along beneath the projecting brushes 46^a, the same being arranged to engage the lower rims of cans, and a rubber or frictional strip 48 raised to engage and grip the opposite lower peripheries of cans, whereby the cans will be revolved against the brushes by the chain 53 as set forth.

18. In a machine of the kind illustrated, having a bed and a passage for cans thereover, in combination with a drying or wiping table 45, a bracket 46 secured to the rear side of said table, a chain 53 lying in proximity to said bracket, projecting pins 53^d extending from the chain 53 and passing in a groove in the bracket 46, a groove 53^b in the opposite side of said belt to receive the rims or flanges of cans, and metallic brushes 46^a, to engage the peripheries of the same, and a frictional strip 48, to engage the opposite sides of the said cans, whereby, when the chain is put in motion, the cans will be revolved against the metallic brushes.

19. In a machine for cleaning cans, a bed A having shafts 10 and 11 mounted near opposite ends thereof, wheels secured to said

shafts and belts taking around the same, in combination with a drying-table secured to the said bed, a shaft 54 secured in journals in the rear end of said table, a wheel 56 secured to the shaft 11, a smaller wheel 56^a secured to the shaft 54, a belt 55 passing over such shaft; a wheel 53^a, fixedly held on the opposite end of the shaft 54; the adjustable and yielding guide 47, and belt 53 for engaging the can and holding it against the guide 47, as it is moved forward, whereby to revolve it as it moves forward, as specified.

20. In a machine of the kind described having a bed and a carrier for cans thereover, in combination with a drying or wiping table 45, stationary resilient metallic brushes secured to and projecting into one side of a can-chute in such table, a conveyer 53, arranged to travel beneath such brushes, an adjustable guide-rail on the opposite side of the table, means for fixing the said rail to engage cans of different dimensions, and a frictional surface on the inner wall of said guide-rail to engage the vertical walls of cans, whereby they will be caused to rotate against the brushes on the opposite side of the table, as set forth.

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Witnesses:

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