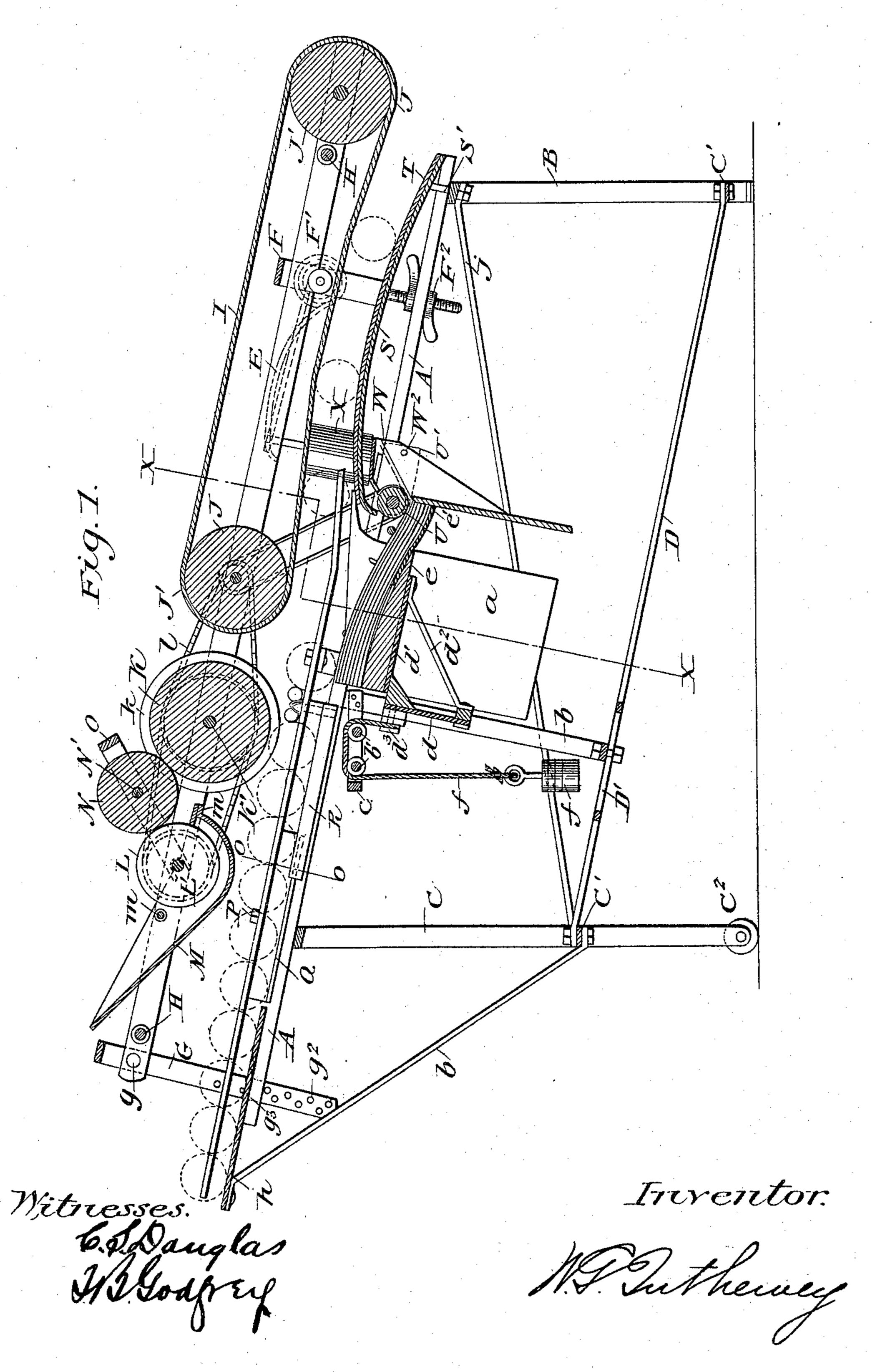
W. G. TRETHEWEY. CAN LABELING MACHINE.

No. 598,277.

Patented Feb. 1, 1898.

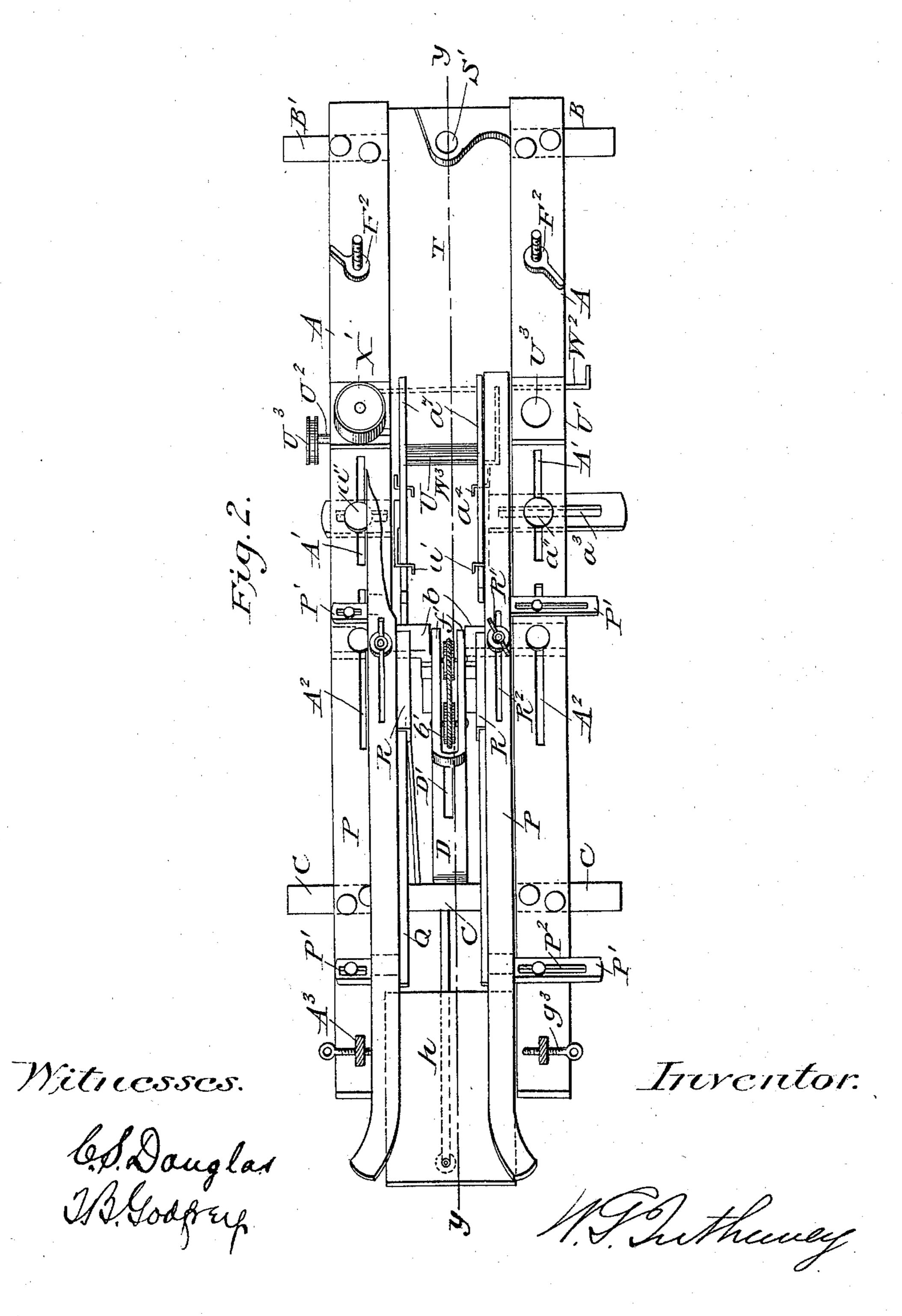


THE NORRIS PETERS CO , PHOTO-LITHOL WASHINGTON, D. C.

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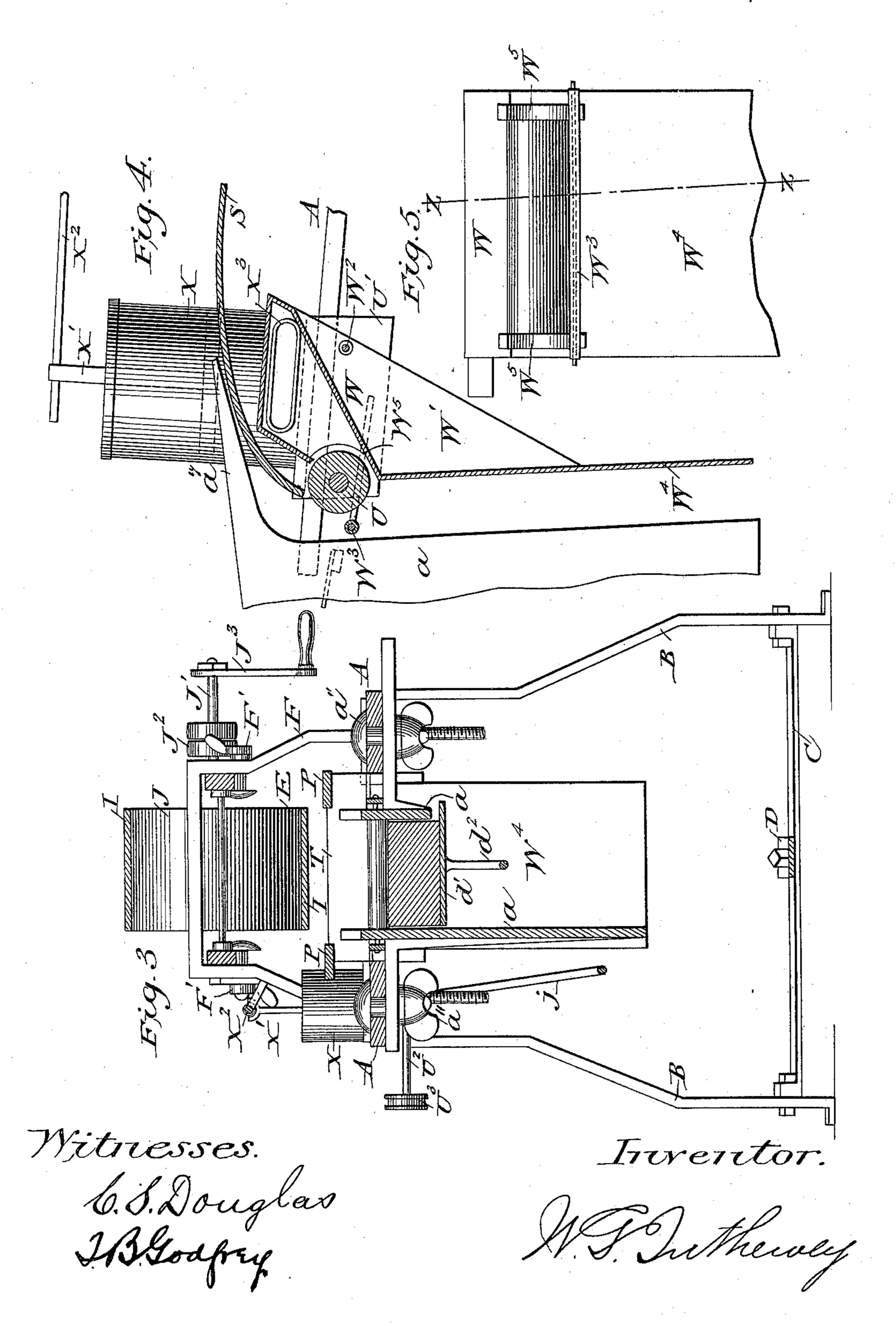


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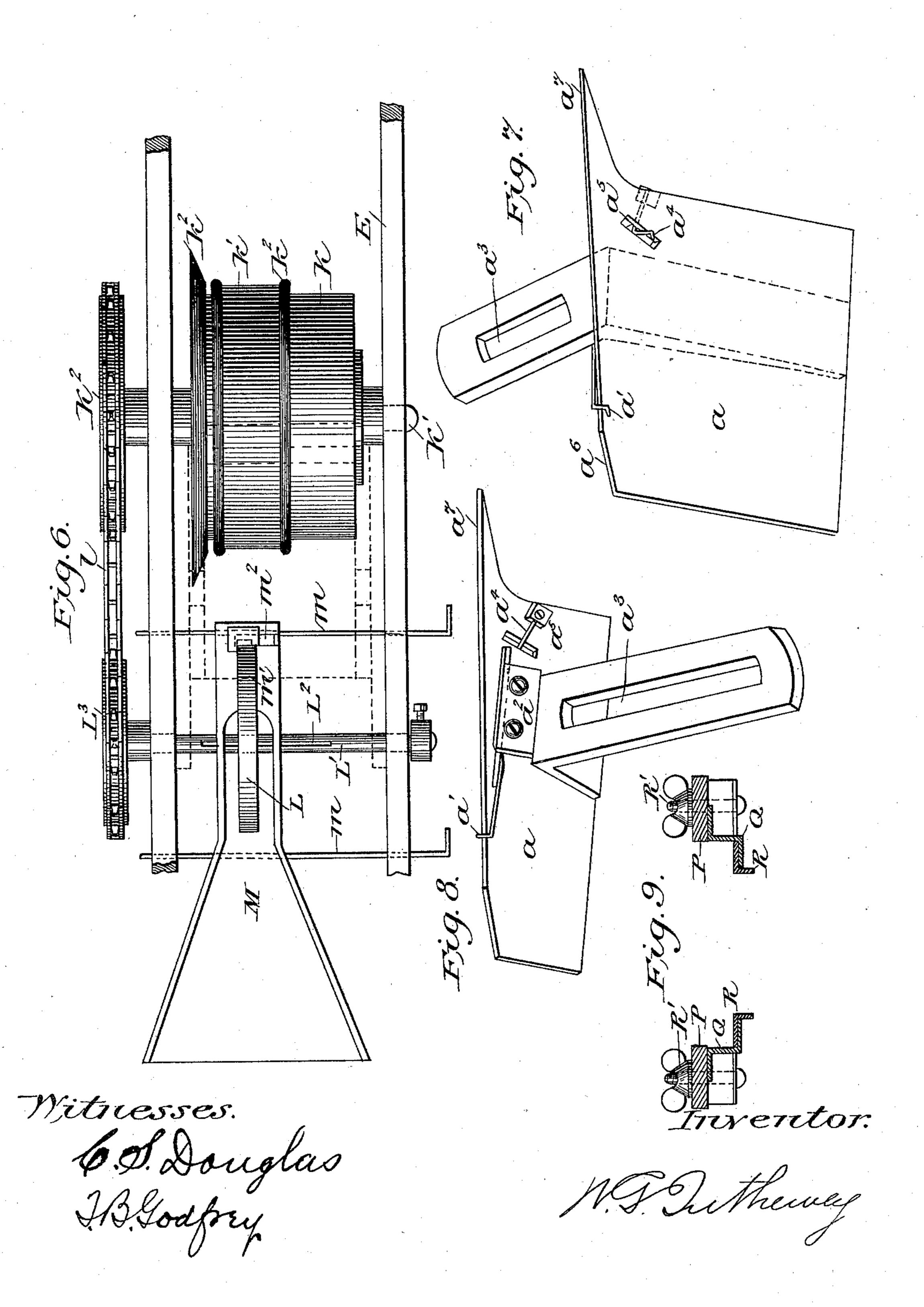
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United States Patent Office.

WILLIAM G. TRETHEWEY, OF VANCOUVER, CANADA.

CAN-LABELING MACHINE.

SPECIFICATION forming part of Letters Patent No. 598,277, dated February 1, 1898.

Application filed September 8, 1896. Serial No. 605,218. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM G. TRETHE-WEY, a citizen of the Dominion of Canada, residing at Vancouver, in the Province of British Columbia, Canada, have invented a new and useful Labeling-Machine, of which the

following is a specification.

My invention relates to improvements in machines for labeling cans; and its objects ro are, first, to provide a machine of the kind of a cheap, simple, and durable construction and which may be readily adjusted to suit cans and labels of various dimensions and that may be readily repaired when worn or 15 broken; second, to produce a machine that will label perfectly a great number of cans in a short space of time, securely pasting down the lap, and turn them out dry and clean, free from paste daubs, ready for casing im-20 mediately after coming from the machine, and, third, a labeling-machine that will as readily apply narrow labels to a can of a much greater length than the said label's width, as to cans whose entire circumferences are cov-25 ered by the labels. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a vertical longitudinal intersection of my improved machine, taken at lines 30 YY of Fig. 2. Fig. 2 is plan view of the same with the adjustable pasting-can feeding and propelling gear removed. Fig. 3 is a vertical cross-section of the machine, taken at line X X of Fig. 1. Fig. 4 shows an enlarged view 35 of the lap-pasting device intersected at line Z Z of Fig. 5, and Fig. 5 is an enlarged detail view of a part of the same with its lower depending part broken away. Fig. 6 is a plan view of the paste-fountain, the can pasting 40 and spacing device, and also the paste-spreading roller shown in dotted lines. Fig. 7 is an enlarged perspective view of the back-label guide and can-support with its appurtenances and showing the manner in which said guide 45 is connected with the bed of the machine. Fig. 8 is an enlarged perspective view of the front-label guide, which is provided with a

50 line O O of Fig. 1. In the said drawings similar letters and nu-

short depending portion; and Fig. 9 is a cross-

section of the adjustable can-guides, taken at

merals designate corresponding parts in all the views.

A indicates the bed of my improved machine, which is preferably mounted upon and 55 secured to legs, as B and C.

D indicates the tie-bar, which is securely fastened to the cross-ties C' of the legs B and

C. (See Figs. 1 and 3.)

Eindicates an adjustable frame, which is ar- 60 ranged above the bed A by means of the support-brackets F and G, with their depending arms passing through apertures in the bed A. The arms of the bracket F at their lower extremities are threaded and are provided 65 with wing-nuts thereon below and above the bed A on either side of the aperture, and they are provided on their inner side beneath the frame E with lug-bolts, as F', as shown in Fig. 3. The bracket G is provided 70 at its lower dependencies (which pass through the slotted openings in the bed A, as A³) with a number of small apertures g^2 , through which the pins g^3 are thrust and rest upon the bed A. Toward the top of the depending arms 75 of the said bracket G are machine-screws g, which connect and securely fasten the frame E in place, as shown in Fig. 1, and at the opposite end the said frame E is rigidly connected by the collar-bolt H. By reason of the 80 said apertures, wing-nuts, and pins it will be perceived that the frame E, carrying the beltwheel J, and the paste and can feeding mechanism may be adjustably fixed at various elevations above the bed A, for a purpose pres- 85 ently described.

By reason of the wheels J being mounted in the manner just described it will be seen that the belt I may be adjustably fixed at various altitudes above the bed A to engage 90 cans of various diameters in their passage through the rear part of the machine, it being simply necessary when it is desired to increase the distance between the belt I and the bed A to move the frame E upward through 95 the medium of the wing-nuts F² and securely fix it where desired.

Approximate to the forward belt-wheel J is mounted a wheel K and secured on a shaft K'. This wheel K is larger in diameter than 100 the belt-wheels J, for a reason to appear presently, and encircling the said wheel is a cush-

ion-pad k', provided on its edges with the slight flanges k^2 , and on the end of the said wheel is a beveled flange, whose outer rim projects beyond the periphery of the said wheel,

5 as shown in Fig. 6.

Directly in front of and approximate to the wheel K is a paste-wheel L, which is adjustably mounted on the shaft L' by means of the key in the seat L², and beneath the said wheel 10 L is mounted a paste-receptacle M. This receptacle is designed to carry and supply the paste-wheel Lupon its periphery by means of the opening, which may be closed by the slidevalve m², and thus it will be seen that any de-15 sired amount of paste may be allowed to escape, for the purpose of better supplying paste to cans of different length, as it will be readily understood that in labeling flat cans the surface to be pasted will not be so great 20 as in operating on tall cans. To better assist in the control of the adhesive, the receptacle M is formed to engage the rising sides of the wheel L by the flanges m', and it is mounted on bars which pass through small aper-25 tures on either side of the wheel L in the frame E, which apertures are not in direct line with the apertures in the paste-receptacle M by reason of the pasting-periphery of the wheel L forcing the position of said ap-30 ertures in the receptacle M from alinement with the apertures in the frame E intervening. (See Fig. 6.) Thus it will be seen that the paste-receptacle is constantly yieldingly pressed against the wheel L by the spring of 35 the rods m.

Lying above and between the paste-wheel L and the cushioned wheel K is a pastespreading roller N, mounted in a swinging bracket O. This bracket is provided at the 40 ends of its parallel branches with slots which receive and rest upon the shaft L', so that the said roller N turns in close proximity to the paste-wheel L, and when the machine is in operation lies upon and is turned by the cush-

45 ion-wheel K.

In operating on extreme flat cans a cushion k' is employed not quite so wide as the label to be applied in order that no adhesive may be smeared over the parts of the can not 50 covered by the said label, and by reason of the adjustment of the paste-wheel L and the slide-valve m^2 the stream of paste is directed to the periphery of the roller N, that bears between the flanges k^2 on the wheel K. The 55 said flanges k^2 keep the paste from spreading over the edges of the cushion.

Lying parallel and longitudinally to the bed of the machine are adjustable guide-bars P. which are securely fastened where desired to 60 accommodate the length of can to be labeled by bolts passing through the slots P2 of the brackets P' and apertures in the bed A, as shown in Fig. 2. About the center of the guide-bars P and on their inner sides are de-65 pending flanges Q. These flanges Q are designed to receive the rims and support the cans in their passage through the machine. To the rear and with their ends resting upon the said flanges Q are adjustable flanges R, which are securely fixed where desired 70 through the medium of the slots R² and the thumb-nuts R'. It will be readily seen from the foregoing that labels of various lengths may be employed in the machine.

On the rear side of the label-opening is se- 75 curely fixed a curved plate S, (see Fig. 1,) which has its forward depending end curved downward and its opposite corners resting on the bed A, and at its opposite end it is securely fastened to the horizontal part of the 80 leg-frame B by the bolt S', as shown in Figs.

1 and 2.

Upon the curved plate S is suitably arranged a strip of ordinary carpet, as T. This carpet acts as a cushion to securely affix the 85 lap end of the label when the passing can is pressed between the belt I and the said plate S. Owing to the particular shape of the curved plate S it will be readily seen that the cans may pass over the said plate in a con- 90 tinual stream in close proximity to each other without the possibility of the belt being lifted from any of the cans by reason of the convex shape of the plate S. The more cans that may be upon it the tighter the belt I will 95 press the said cans.

Approximate to and beneath the front end of the plate S is a small roller U, mounted upon a shaft U², the said shaft being journaled and made to turn in depending brack- 100 ets U', the whole being suitably fastened to

the bed A by means of the bolts U³.

Bearing against the rear side of the roller U and with an opening receiving the periphery thereof is a paste-fountain W. This paste- 105 fountain W is designed to supply paste to the lap end of the labels in such quantities as desired, and it is preferably made in the shape as shown in Figs. 1, 4, and 5. In the said paste-fountain, W'indicates the parallel side 110 plates of the same, which are of triangular shape, with their lower portions projecting clear of the fountain proper, and near the outer edges of these side plates w', which lie in proximity to the depending lugs U', are 115 apertures, the same being placed a little from line with apertures in the said lugs U', and when the spring-rod w^2 is passed through the apertures in the depending lugs U' and the side plates w' of the paste-fountain the open-120 ing on the opposite side will be pressed against the roller U, and thus allow but a thin film of paste to pass to the lap of the label by the turning of the said roller U.

To prevent too much of the adhesive being 125 taken on the lap of the labels, I provide the cross-wire scraper W³. This wire scraper is made to lie upon and across the label-stack and bear upon the same immediately in front of the roller U, (see Fig. 4,) and it is provided 130 with a tubular roller upon its horizontal portion. The parallel ends of the said scraper are fastened to the sides of the paste-fountain by solder or other suitable means. It will

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be seen from the foregoing that it matters little how much paste may be lying on the lap of the label it cannot pass the scraper W³, but is scraped off onto the next label, and so on, thus insuring clean and positive work.

To guard against the paste becoming smeared upon the ends of the roller U, bearing-flanges W⁵ are provided, as shown in Fig. 5. These flanges W⁵ snugly fit and provide bearings for the roller U within the opening of the paste-fountain W. Beneath the pasteroller U and extending downward is a depending plate W⁴, which acts as a support for the ends of the labels to rest against and a means

15 of keeping them even.

X indicates a cylindrical paste-receptacle, which is provided with a plunger on the end of the shaft X', and the said plunger is pressed downward by the spring-arm X², the opposite end of which is preferably fastened to the frame-bracket by the lug-bolt F', (see Fig. 3,) the paste within the fountain and receptacle W and X being of such a consistency that it will not escape through the opening in the receptacle, as X³, when the machine is not in operation; but when the roller U is made to turn by the machine's operation the paste is gradually worked from the fountain and is applied to the bearing ends of the labels.

which are employed on each of the opposite longitudinal sides of the label-space. These guides a, as better shown in Figs. 7 and 8, respectively, comprise vertical portions which form the guide for the labels and horizontal portions which have slots a³, and they are adjustably connected to the bed A by bolts a", which take through the slots a³ and A², whereby it will be seen that they may be readily adjusted in the direction of the width and length of the bed and may be fixed at various positions, according to the size of the labels employed, which is a great consideration.

The horizontal portions of the label-guides are arranged below the upper edges of the vertical portions, and the upper edges of the said vertical portions are placed at an obtuse angle to the horizontal portions, and they are 50 provided with extending points a^7 , and at their opposite ends are beveled off, as a^6 . About the center of the vertical portion are clamps a^2 , which securely hold in place hooked pins a', which are designed to extend over 55 and engage the topmost label, and their points are yieldingly pressed downward, so that if two labels are taken up by a passing can the second one is thrown back in its place ready for the next can. Upon the vertical portions 60 and to the rear of the horizontal parts of the guide-frames a are a second set of hooked pins a^4 , projecting through slots a^5 of the frames a and suitably fastened thereto, as shown in Fig. 8. These pins are intended to 65 prevent the labels from being dragged out of place by the velocity of the uppermost label on its way to the can.

It will be observed that passing cans can only roll upon the front part of the label-stack, as their rims are supported by the upper 70 edges of the vertical parts of the guides a, and by reason of the sudden rise thereon the label-covered can is brought between the belt I and the cushion T on the plate S, thus insuring neat and regular work.

b indicates the label-support frame, which may be and preferably is formed in one piece, as shown, and it comprises the lower horizontal part, which is fastened by means of a bolt passing through an aperture therein and 80 the slot D' of the tie-bar D, and the top of the said frame b is provided with lateral branches which rest against and are adjustably fastened to the under side of the bed A by bolts taking through slots A² therein and apertures 85 in the said lateral branches of the frame b.

By reason of the slot D' in the tie-bar D and the slots A² of the bed A it will be readily seen that the frame b may be fixed at any desired distance from the depending portion 90 W⁴ of the paste-fountain W to accommodate

labels of various lengths.

Within the upright portions of the frame b is the sliding frame d. This sliding frame d is designed to provide the label-support and 95 the means of automatically supplying labels to passing cans. It is preferably made with the horizontal portion d' being held rigidly in its flat position by means of shoulders bearing against the rear sides and shoulders engaging the forward side of the frame b, the said frame b and the shoulders in the frame d being so fitted that the frame d is drawn up the frame b by means of the weight b' in 105 the bracket b' and fastened at its end to the bolt b' in the frame b'.

Lying upon the horizontal part of the frame d, as d', is a block of wood or other suitable material e. This block e is convex on its upper surface, and toward its rear end it tapers off to an edge, and projecting beyond this edge is provided a yielding metal spring, as e'. The said spring may be made by suitably fastening a piece of sheet-tin to the receding 115 part of the block, and at its extremity the said spring is curved upward, for the reason that the horizontal parts of the rear edges of the labels will always be yieldingly pressed against the paste-roller U and prevents at 120 any time their becoming jammed between the roller U and the said yielding support.

A separate block e is provided to fit the different widths and lengths of labels desired to be operated upon, and by reason of the vertical depending portion of one of the label-guides a extending downward but a very short distance (see Fig. 8) the said guide a will slide laterally over the support d' of the frame d and will engage the labels and blocks e of 130 various widths and will allow of the last label upon the block e being taken up without interference from the support-plate d' of the frame d.

At the forward end of the machine and suitably fastened to the bed A is a plate h. This plate is rigidly braced by a rod i, which is securely fastened to the under side thereof 5 and with its depending end fastened beneath the cross-tie C' of the legs C, and secured from the said cross-tie C' is a second bracerod j, which securely connects the cross-tie C' and the top horizontal part of the legs B. 10 The above brace-rods effectually prevent undue vibration in the machine's frame.

At the lower extremities of the legs C are wheels, as C², which furnish an easy means of moving the machine from place to place.

In providing for the driving power of can feeding and pasting devices either hand or motive power may be attached to the rear shaft J', as J² and J³, and when turned the lap-roller U will be driven by means of an 20 elastic belt n, passing over a pulley mounted on a shaft U² and a similar one mounted on the forward shaft J'. A second, and preferably a small, sprocket-pulley is mounted on the said shaft J', and a sprocket-belt l, passing 25 there around and over a large sprocket-pulley K², mounted on the shaft K', and thence around the sprocket-pulley L3, mounted on

the shaft L', as shown in Fig. 6.

By reason of the wheel K being larger than 30 the belt-wheels J it will be seen that when the cans are poured into the chute, as shown in Fig. 1, their peripheries will be engaged by the cushion k', and as the said chute or bed of the machine is on an incline that when 35 the wheel K is turned the cans will be passed

under the said wheel K and their uppermost peripheries will be thoroughly pasted by means of the cushion k', and it will be readily understood that by the slow movement of the 40 wheel K, through the medium of the small

sprocket-pulley on the shaft J' and the large one on the shaft K', the cans will be spaced by gravity and on account of the incline in the said bed imparting to the cans a faster

45 motion than the motion of the wheel K, thus producing a cheap and positive spacer for all sizes of cans, which is an important desideratum. I further employ the wheel K as an auxiliary in better handling the cans by means

50 of the beveled flange k^2 , which flange is set with its outer rim just without the can-chute and its inner bevel projecting slightly over the edge of the said chute. As the cans are engaged by the wheel K their outer rim will

55 be engaged by the flange k^2 , and the cans will be shunted and squared by their opposite ends being pressed against the front guide. Especially is the above advantageous in handling cans of unequal length that vary to one-

60 eighth of an inch and under.

In the practice of my invention the belt I, the wheel K, the guides P, the label-guides a, the label-block e, and the label-supporting frame d are adjusted to suit the size of the 65 cans and that of the labels to be applied thereto, and, if necessary, the cushion k' may be removed and a cushion of more proper

size employed. The labels are now placed in a stack upon the block e, on the supportframe thereof, and the machine is ready for 70 operation. In operation the machine is set in motion and the cans are preferably poured into a temporary chute in advance of the machine and with the lower end resting upon the plate h. From the chute and over the plate 75 h to the wheel K the cans will be brought by gravity. They are pasted and released one by one by the slow turning of the said wheel K, and one half-turn brings the pasted portion of the cans upon the forward end of the 80 label-stack, each one taking up one label. At this point the cans are brought upon a plane of less declivity by reason of the rise rearward on the label-guides a, which bring the label-covered cans in contact with the 85 belt I, which rolls them along and tightly presses the labels thereon, and are dropped into a suitable chute, from which they may be conveniently packed into cases.

It will be seen from the foregoing that my 90 improved machine, considering the wide range of work it is adapted to do, is very cheap and simple, and it will also be seen that the machine may be readily taken apart, and may consequently be easily repaired 95 when worn or broken. It will also be seen from the foregoing that the machine requires but one attendant and that it is adapted to efficiently label a large number of cans in a short space of time, which is the important 100

desideratum.

I have in some respects specifically described the construction and relative arrangement of the several parts of my improved machine in order to impart a full and clear un- 105 derstanding of the same; but I do not desire to be understood as confining myself to such construction or arrangement, as such changes or modifications may be made in practice as fairly fall within the scope of my invention. 110

Having described my invention, what I

claim is—

1. In a can-labeling machine with adjustable guideways for cans and labels of different dimensions, the combination of a wheel 115 K mounted in an adjustable frame E having a flange k on its one end, and a cushion having flanges k^2 on its periphery and means for imparting slow motion to the same, whereby the cans will be pasted by the engagement there- 120 of, and retarded, while the released cans will roll forward by gravity at a higher speed than the turning of the said wheel K, and a swiftlytraveling belt I will engage the cans through the rear part of the machine, substantially 125 as set forth.

2. In a machine for labeling cans with a bed and a frame E adjustably arranged above the bed, a can-engaging, pasting-wheel K having a flange k on its one end mounted in the said 130 frame E and means for imparting slower movement to the said wheel K than the trend of the cans, whereby the same will be spaced by gravity, a paste-supplying wheel L mount-

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ed in the said frame E and to the rear of the wheel K, a spreading-roller N which lies upon and is turned by the can engaging and pasting wheel, the said roller N being made to 5 receive the paste from the wheel L and spread it upon the cushion on the wheel K, as set forth.

3. In a machine for labeling cans having a bed A with an adjustable frame E mounted to thereon, the combination of a can engaging, pasting and spacing wheel K, the said wheel having a flange k upon its one end, a cushion having flanges k^2 on its can-engaging periphery, a chain belt l, passing over a large 15 sprocket-pulley mounted on the shaft of the wheel K and around a small drive sprocketwheel, for the purpose of imparting slow movement to the wheel K, whereby the cans will gravitate apart after their slow release-20 ment, of a swinging bracket G supporting one end of the frame E and an adjustable vertically-fixed bracket F supporting the other end, by which means the said wheel K may be fixed along and at different altitudes above 25 the said bed A, substantially as specified.

4. In combination with a machine for labeling cans, an adjustable runway on a bed and an opening with a label-support therein below said bed, the said support being of con-30 vex form on its upper surface toward the forward end, and its rear end being depressed and having a resilient portion e', a paste-roller U below the track of the cans arranged to lie upon and supply paste to the topmost label, 35 and means for supplying paste to the said

roller U, substantially as set forth.

5. In a machine for applying labels to cans ing therein for the passage of labels, a belt I 40 engaging the cans directly above the rear elevated portion of the label-guides of different dimensions, the combination of label-guides adjustably arranged on the opposite sides of said opening, the rear portions of said guides 45 having an upward trend, whereby the cans are raised above the plane of the labels, and resilient hooked pins secured to said guides, said pins projecting laterally into the path of the labels and engaging the topmost one, as 50 set forth.

6. In a can-labeling machine, the combination of a bed having label-guides adjustably arranged on opposite sides thereof, resilient hooked pins adjustably fixed on the forward 55 portions of the said label-guides and similar pins rigidly fixed at a declivity to the forward pins and made to engage the rear opposite edges of the labels, by their lateral projection through slots in the said guides, substantially 60 as specified.

7. In a machine for applying labels to cans, the combination of a bed with guides adjustably secured thereon, the said guides having adjustable depending portions R, of a label-65 opening in the rear of the depending portions R, and a vertical guide-frame b adjustably

fixed beneath the bed, a sliding frame d car-

rying a horizontal or flat portion d', a labelblock e upon said flat portion provided at one end with a curved and yielding spring e', and 70 means for moving the sliding frame d upwardly on the vertical guide-frame b, sub-

stantially as specified.

8. In a can-labeling machine, the combination of a sliding frame d made to bear against 75 the upper front sides and lower rear sides of the vertical guide-frame b, of the paste-roller U arranged across the opposite end of the label-space and means for supplying paste thereto, a tubular roller w³ mounted in a re- 80 silient way and placed parallel to and at a distance in front of the said paste-roller, a depending plate w^4 beneath the roller, of a movable label-guide a depending and placed at right angles to the plate w^4 and a short de- 85 pending label-guide adjustably fixed parallel to and on the opposite side of the label-opening, and resilient pins a' and a^4 secured to the said label-guides and projecting laterally into the said passage or opening and made to en- 90 gage the topmost label, all substantially as specified.

9. In combination with a machine for labeling cans, a bed having a passage for labels and means for passing labels upwardly there- 95 through, a small pasting-roller U mounted beneath the rear end thereof and suitable means for supplying paste thereto, the topmost label being engaged by the roller U and means for imparting motion to the said roller where- 100 by the upper label will be pasted on the lap

end, substantially as specified.

10. In a can-labeling machine, the combination of a bed provided with a can chute or having an adjustable runway with an open- | runway adjustably fixed thereto, the said 105 runway being formed by independent guidebars having depending can-rim-supporting flanges on their inner edges, which are designed to be adjusted laterally and lengthwise of the machine, an adjustable frame 110 mounted above the bed, a paste-wheel mounted in the said frame, a paste-receptacle designed to receive the lower periphery of the said wheel, and made to yieldingly bear against the said wheel by rods passing through 115 apertures and to the opposite sides of the frame E, the said apertures in the frame E not being in direct line with the apertures in the paste-receptacle by the periphery of the paste-wheel L intervening, of flanges de- 120 signed to bear against the sides of the pastewheel, a slide-valve m^2 designed to regulate the flow of paste, of a paste-spreading roller N journaled on a shaft N', a swinging bracket O designed to carry and interpose the said 125 roller N with its periphery adjacent to the paste-supply wheel L and of a cushioned, can pasting and spacing wheel K, which supports the spreading-roller and conveys the paste therefrom to passing cans, all substantially as 130 and for the purposes specified.

> 11. In a can-labeling machine with a can chute or runway, the combination of a roller U placed in proximity below the runway and

means for supplying paste thereto, of labelguides a on either side of a label-passage, their supporting and rear edges being raised and projecting above the roller U, and of resilient hooked pins secured to the said guides a and projecting laterally within the path of the labels in the label-space, substantially as specified.

12. In a machine for applying labels to cans, with a runway for cans and a space for labels, the combination of a roller U placed at a lower plane than the said runway, the said roller being made to turn in a paste-receptacle, by an elastic belt taking around a pulley on its shaft and a similar pulley on a shaft arranged

in an adjustable frame above the can-runway, and of means of yieldingly pressing labels against the said roller, a tubular roller w^3 on a resilient wire placed parallel to the said roller U at some distance in front thereof and 20 made to act as a paste-scraper for the lapel of the topmost label, substantially as and for the purposes set forth.

In testimony whereof I affix my signature

in the presence of two witnesses.

W. G. TRETHEWEY.

Witnesses:

C. S. Douglas,

S. F. SNELLING.