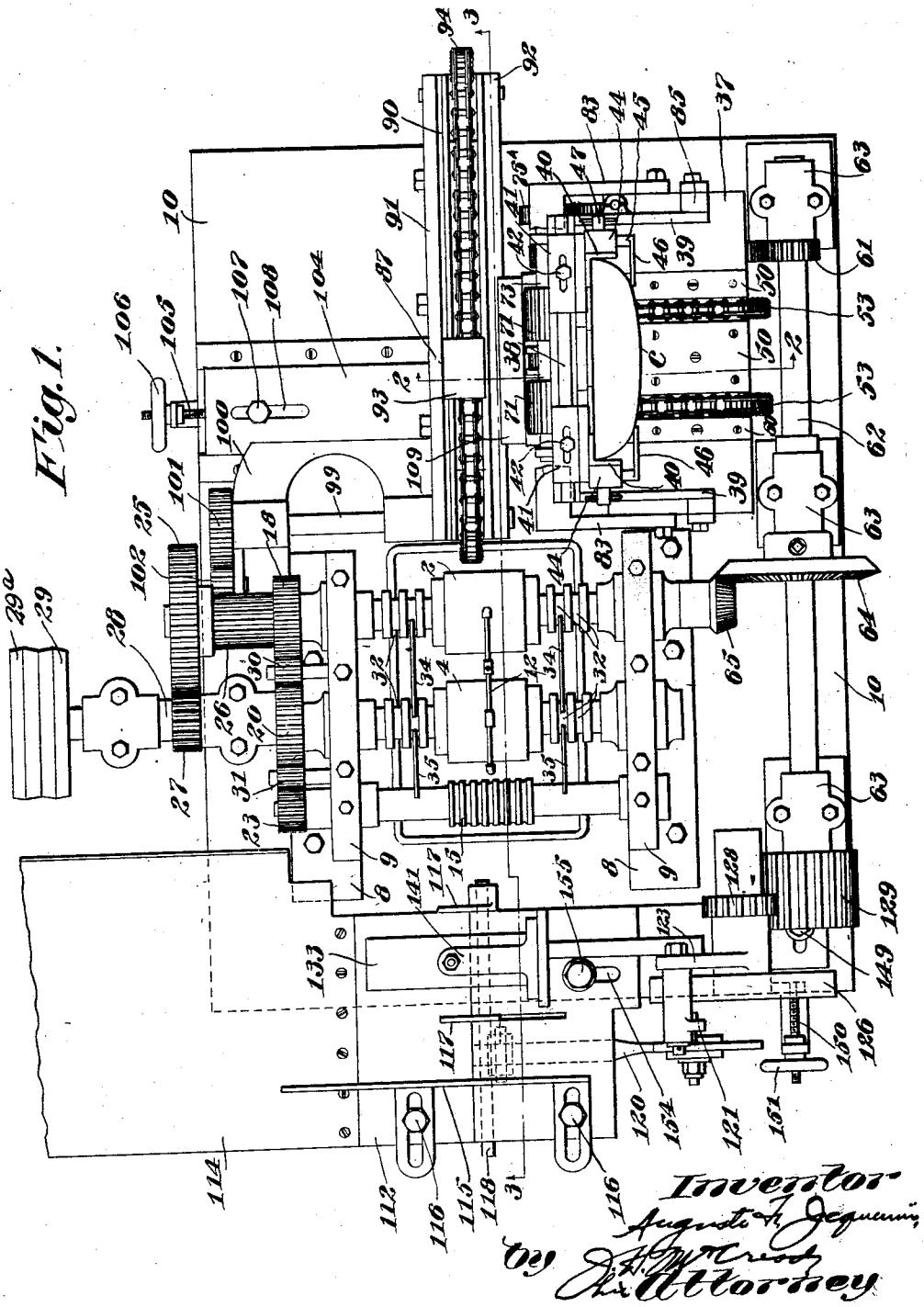
Aug. 17, 1926. 1,596,488

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MACHINE FOR OPERATING ON SHOE COUNTERS

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Fig. 1.



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MACHINE FOR OPERATING ON SHOE COUNTERS

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Fig. 2.

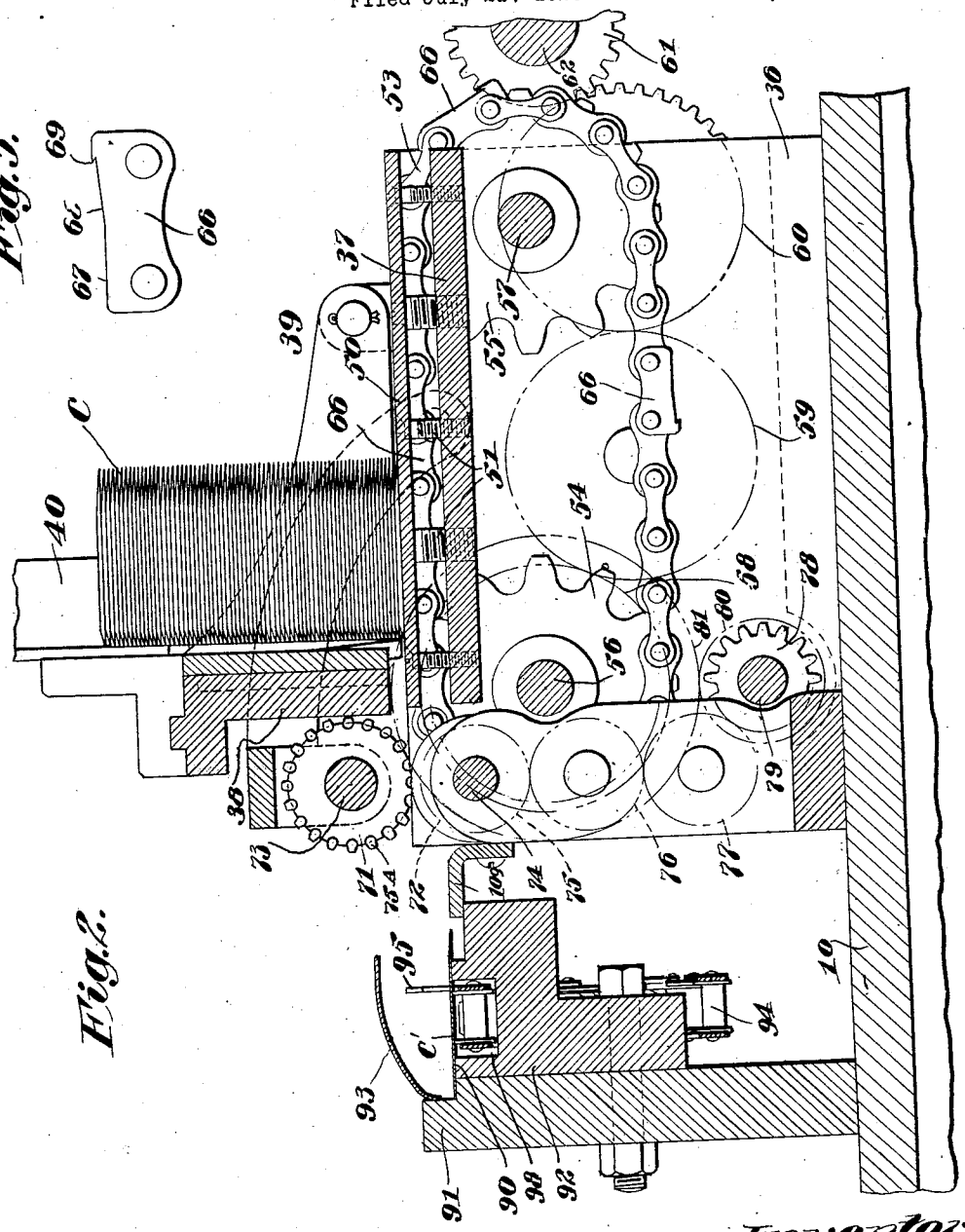


Fig. 3.

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MACHINE FOR OPERATING ON SHOE COUNTERS

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Fig. 4.

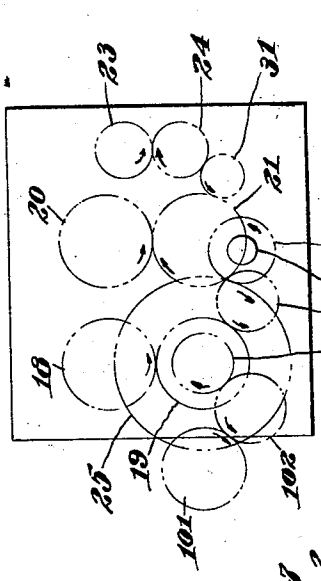


Fig. 3.

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MACHINE FOR OPERATING ON SHOE COUNTERS

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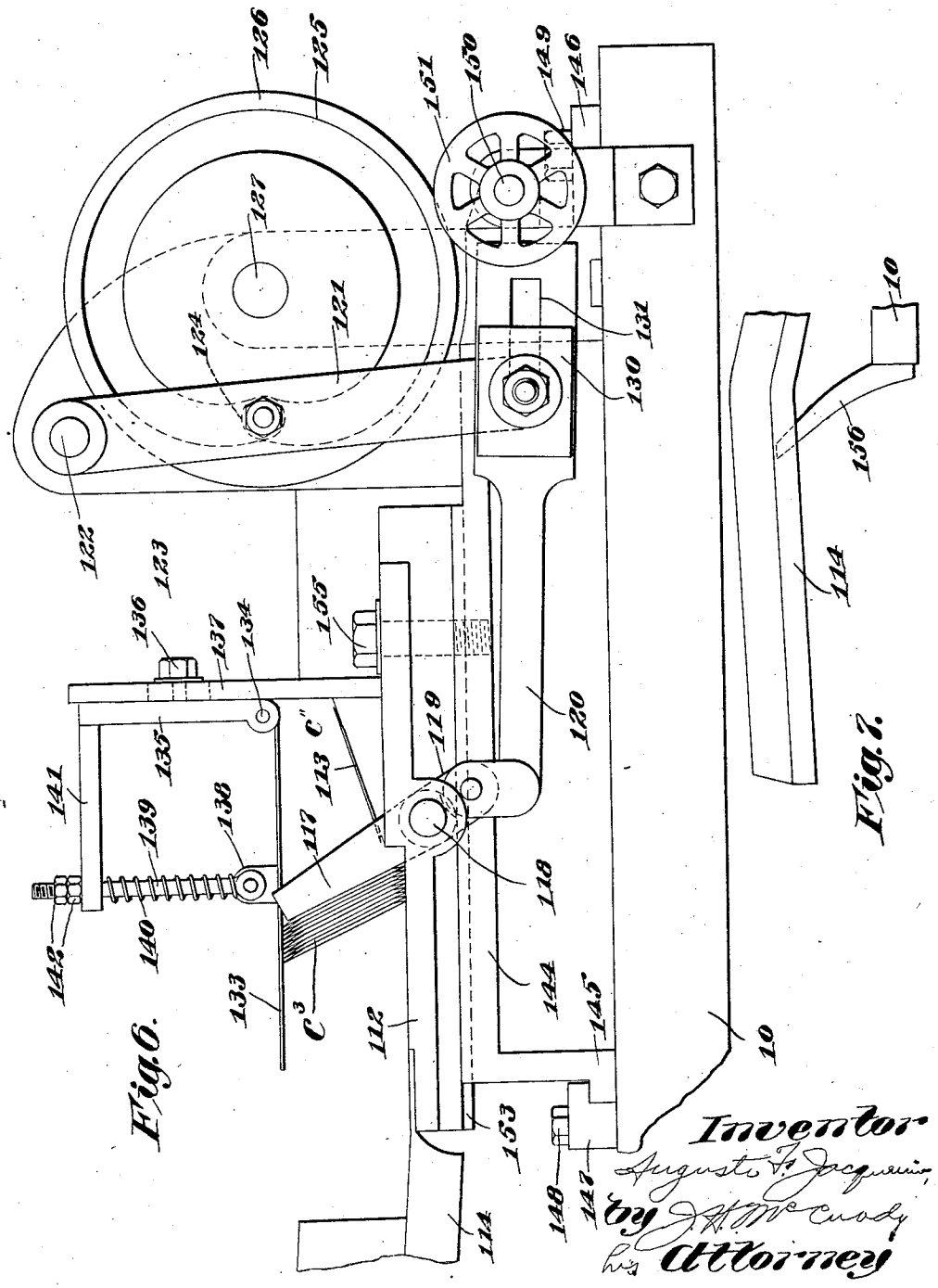


Fig. 6.

Fig. 7.

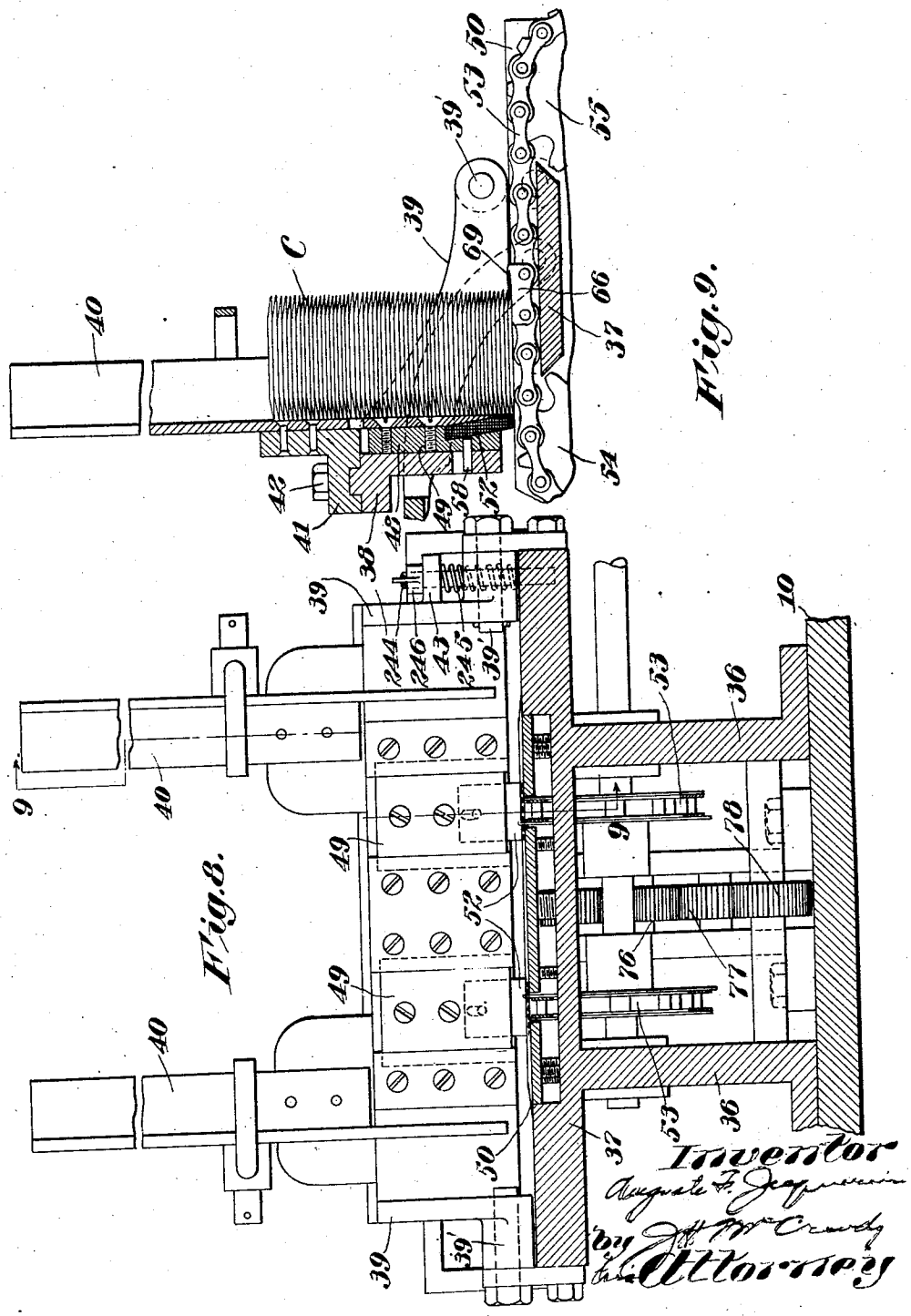
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MACHINE FOR OPERATING ON SHOE COUNTERS

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Patented Aug. 17, 1926. 1,596,488

UNITED STATES PATENT OFFICE.

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MACHINE FOR OPERATING ON SHOE COUNTERS.

Application filed July 21, 1921. Serial No. 486,452.

This invention relates to machines for use in the manufacture of shoe counters and the like. The invention is especially concerned with the problem of tempering fibre counter blanks prior to being molded although it will readily be appreciated from an understanding of the invention that some of its features may also be used to advantage in other machines for operating on counters or counter blanks.

The usual process of manufacturing a molded fibre counter consists, briefly stated, in shaping the counter blank, tempering the blank, and molding it. That is, the blank is cut out of a sheet of fibre board, the edges are bevelled, the ends usually are "released" or skived, and the blank is next tempered or moistened preparatory to being molded. This tempering operation is designed to make the blank more pliable so that it will not break during the molding operation, and also to enable it to take the shape of the molds more readily and to permanently retain this shape.

According to the usual practice these blanks are tempered by dipping them in water, a stack of the blanks usually being dipped simultaneously by hand. They are then allowed to remain in a stacked or collected condition for several hours so that the water will penetrate the stock. It is important that the blanks shall neither be too wet not too dry at the time the molding operation is performed and one of the important difficulties in carrying out this process is to control the degree of moisture, or in other words, the degree of temper. That is, in the usual hand process some of the counter blanks are very likely to receive much more water than others, with the result that when the majority of the blanks are in the proper condition for molding, others in the same batch are either too wet or too dry.

With these conditions in view it is the chief object of the present invention to devise a machine which will automatically perform the tempering operation. The invention aims not only to devise a satisfactory tempering or conditioning mechanism, but also to devise simple and reliable mechanisms for feeding the blanks to the tempering or conditioning means and for automatically stacking the blanks after they have been tempered or conditioned. It is contemplated that the feeding and stacking mechanisms can be used to advantage in other machines for operating on counter blanks and the like, as for instance, in machines for printing the blanks, bevelling or releasing them, or otherwise modifying their condition.

The nature of the invention will be readily understood from the following description when read in connection with the accompanying drawings, and the novel features will be particularly pointed out in the appended claims.

Referring now to the drawings,

Figure 1 is a plan view of a machine constructed in accordance with the present invention;

Fig. 2 is a cross sectional view substantially on the line 2—2, Fig. 1;

Fig. 3 is a cross sectional view substantially on the line 3—3, Fig. 1;

Fig. 4 is a diagrammatic view showing the gear train for driving the tempering rolls;

Fig. 5 is a side elevation of one of the links of the conveyor chain of the feeding mechanism;

Fig. 6 is a side elevation of the stacker mechanism;

Fig. 7 is a side elevation of a portion of the table or support on which the counters are stacked;

Fig. 8 is a rear elevation of a portion of the magazine for the counter blanks and the mechanism for feeding the same, certain of the parts being shown in cross section; and

Fig. 9 is a vertical cross-sectional view of part of this mechanism.

The machine shown comprises four tempering rolls arranged in pairs, the upper and lower rolls of one pair being designated by the numerals 2 and 3, respectively, and those of the other pair by the numerals 4 and 5. These rolls preferably have rubber surfaces and they are provided with extensions or shafts which are supported in bearing blocks, certain of these blocks being indicated by the numeral 6, Fig. 3. These blocks are supported in vertical guideways 7—7 formed in bearing brackets 8—8, Figs. 1 and 3, which are secured to the bed or base 10 of the machine. Cap plates 9—9 bolted to the upper edge of the bearing blocks 8—8 close the upper ends of the slots 7—7.

The construction at one end of the rolls is

duplicated at the opposite end. The upper rolls 2 and 4 simply rest by gravity on the lower rolls 3 and 5, respectively, so that as the counter is fed between them the upper rolls can rise to admit the counter, and while the counter is being advanced between the rolls they will exert a yielding pressure on it, so that they can strip surplus water from the blanks. Water or other tempering liquid, hereinafter referred to as water, is supplied to the rolls through pipe connections 12, this water flowing down into a pan 13 which is drained by a pipe 14. The flow of water to the rolls is controlled by needle valves 12′ in the pipe connections. The rolls are rotated in the direction indicated by the arrows, Fig. 3, so that they feed a counter blank through them from right to left, and a blank so advanced is fed between upper and lower rolls 15 and 16, respectively, Fig. 3, which preferably are grooved as shown in Fig. 1. These rolls are mounted similarly to the rolls 2 and 3 but the upper roll is pressed downwardly on to the lower roll by a spiral spring 17, Fig. 3, one of these springs acting on the shaft on which the roll is formed at each side of the working surface of the roll.

The mechanism for driving the rolls above mentioned will be best understood by referring to Figs. 1 and 4. This mechanism consists of a train of gearing indicated diagrammatically in Fig. 4, the gears fixed to the rolls 2 and 3 being indicated at 18 and 19, respectively, those fast to the rolls 4 and 5 being indicated at 20 and 21, and those rotating with the rolls 15 and 16 at 23 and 24. The individuals of each pair of gears mesh with each other so that the upper and lower rolls are driven in opposite directions as indicated by the arrows. The shaft carrying the roll 3 in addition to carrying the gear 19 also has fixed thereto a gear 25 and a barrel pinion 26. The gear 25 meshes with a gear 27 mounted fast on the driving shaft 28 which is supported in suitable bearings. This shaft carries fast and loose pulleys 29 and 29ª, respectively, by means of which it is driven. The direction of rotation of this train of gearing is shown by the arrows in Fig. 4, and the manner in which motion is transmitted through this mechanism will be evident from an inspection of this figure, it being noted that an idler pinion 30 is interposed between the gears 19 and 21, and another idler 31 transmits power from the gear 21 to the gear 24.

In order to keep the water from travelling along the shafts of the tempering rolls, these shafts are grooved, as indicated at 32, Fig. 1. Plates 34 and 35 also are set into certain of these grooves, as shown in Figs. 1 and 3, to prevent the splashing of the water backwardly into the bearings.

The magazine for the blanks and the blank feeding mechanism are mounted on a frame comprising side pieces 36—36 which are bolted to a bed 10, and it also includes a horizontal top 37 secured to these side pieces. The magazine comprises two vertical, grooved members 40—40, respectively, which may conveniently be made of angle iron and which are spaced apart to receive a stack of counters C between them. Each of these members has a bracket 41 secured fast thereto that is slotted to receive a bolt 42 threaded into a horizontal bar 38. This bar extends across the front of the magazine and has arms 39—39 at its opposite ends, which are pivoted at 39′—39′ to legs secured fast to the opposite edges of the top or table 37, as best shown in Figs. 8 and 9. An ear 43 projects laterally from one of these arms 39, and a screw 244 secured in the top 37 projects loosely through a hole formed in this ear, and is encircled by a spring 245 which supports the ear. A nut 246 threaded on the screw bears against the upper surface of the ear 43 and cooperates with the spring 245 in holding the bar 38 in an adjusted position with its lower edge at a fixed distance from the top 37. It will be seen from an inspection of Fig. 9 that the lower side of each bracket 41 is grooved to receive the upper edge of the bar 38 and this construction thus permits the two side members 40—40 to be adjusted toward and from each other to accommodate different lengths of counter blanks. Secured fast to each side piece 40 is a boss or holder 44, Fig. 1, to receive an arm 45 having a vertical plate 46 secured fast thereto. A thumb screw 47 threaded through the wall of the boss 44 secures the arm 45 in its adjusted position. The edges of these two plates 46—46 support the rear edges of the blanks C. It will be evident from an understanding of the construction just described that when the side pieces 40—40 are adjusted toward or from each other, their companion parts 46—46 are moved with them. At the same time each part 46 can be adjusted relatively to its cooperating part 40. This construction thus enables the magazine to accommodate a great variety of sizes of counter blanks.

Two dove-tail guideways or grooves are formed in the rear face of the bar 38 to receive gates each consisting of plates 48 and 49 which are secured together by screws and which are shaped at their lower ends to receive a piece 52 of friction material such as rubber, leather, or the like. These gates are free to move up and down relatively to the bar 38, the limits of this movement, however, being controlled by a pin 58 that projects from the plate 48 into a short slot formed by the bar 38.

The entire stack of blanks rests on plates 50 which all lie in the same horizontal plane

and form the bottom of the magazine these plates being supported by adjusting screws 51, Fig. 2, which are threaded into the plate 37 and serve as a convenient means for adjusting the level of the plates 50.

As shown in Fig. 1, the bottom of the magazine is divided into three parts, the central part being spaced from the members at opposite sides thereof by slots in which two conveyor belts or chains 53—53 are located. These chains are supported on front and rear pairs of sprocket wheels designated at 54 and 55, Fig. 2, mounted, respectively, on shafts 56 and 57 supported in the opposite side pieces 36—36. A gear indicated diagrammatically at 58, Fig. 2, is mounted fast on the shaft 56 and is driven through additional gears 59, 60 and 61, the last of these gears being mounted fast on a shaft 62, Figs. 1 and 2, which is supported in bearings 63—63 secured to the base 10. This shaft is driven through bevel gears 64 and 65, Fig. 1, the latter gear being mounted fast on the end of the shaft which supports the roll 2.

This mechanism imparts a continous motion to the chains 53—53 and it will be seen that each of these chains carries at intervals a feeding link 66, the construction of which is best shown in Fig. 5. The upper surface of each of these links includes a straight horizontal portion 67, an upwardly inclined portion 68, and a hook or tooth 69 located at the upper end of the inclined portion 68. The rearward edges of the counter C are bevelled and as the upper reach of each chain 53 moves forward and one of the links 66 comes in contact with the bevelled edge of the bottommost counter blank in the stack, the edge of this blank will ride up on the incline 68 and be caught by the hook or tooth 69. This construction ensures the accurate engagement of each blank by the hooks 69, notwithstanding slight bends or irregularities in the shape of the blanks. These feeding teeth 66 are so spaced on the two chains 53—53 that the corresponding hooks of each chain will simultaneously engage the rearward edge of a counter, and as the chains continue to move forward these hooks will carry the lowermost counter blank out from under the other blanks in the stack, the next adjacent blank being prevented from moving with the lowermost blank by it contact with the friction members 52—52 of the gates 49—49. That is, the bar 38 is adjusted so that the lower edges of the parts 52 are normally just above the surface of the plates 50, leaving a slot only wide enough to permit the entrance of the bevelled edge of the lowermost blank. As this blank is carried forward by the hooks 69—69 the contact of the inclined edge of this blank with the parts 52—52 lifts the gates 49—49 slightly, this movement permitting the lowermost blank to be carried forward out of the magazine. As soon as the blank has passed out from under the gates they can drop by gravity into their original positions. This mechanism thus operates with great certainty to prevent the feeding of more than one blank at a time.

When the lowermost blank in the magazine has been fed forward, as above described, it is delivered by the conveyor chains 53—53 to upper and lower feed rolls 71 and 72, respectively. The upper roll is in two sections, both fast on a shaft 73, while the lower roll is secured fast to a shaft 74 having a gear wheel 75 fixed thereto which is driven through a train of gears indicated at 76, 77 and 78, Fig. 2, the last of these gears being fast on a shaft 79 having a gear 80 fixed thereto which meshes with another gear 81 mounted fast on the sprocket wheel shaft 56. In order to allow the upper feed roll 71 to move up and down relatively to its cooperating lower roll 72, the shaft 73 is mounted in the upper ends of two inclined links, one of which is shown at 83, Fig. 1, this link being pivoted on a bolt 85. The other link is similarly arranged. A pinion 75^a is secured fast to the shaft 73 and is driven by a gear fixed to the shaft 56.

The feed rolls 71 and 72 revolve at a greater peripheral speed than the chains 53 and they take the counter blank out of the hooks 69 and shoot it forward on to a supporting surface 90, Fig. 2, formed partly on an upright plate 91 and partly on a bracket 92 bolted to said plate. This prevents the hooks from notching the rearward edges of the blanks. In Fig. 2, C′ designates a counter resting on this support. A shield 93 secured fast to the plate 91 overlies the portion of the surface 90 on which the counter is delivered and prevents the counters from being thrown over the upper edge of the plate 91. A conveyor carries these counters forward and delivers them to the wetting or tempering rolls previously described. This conveyor consists of a sprocket chain 94 provided with feeding teeth 95 of the shape best shown in Fig. 3, this chain being supported on sprocket wheels 96 and 97 mounted near the opposite ends of the upright plate 91, and the upper reach of the chain runs in a groove 98, Fig. 2, formed in the bracket 92. The sprocket wheel 97 is mounted fast on the end of a shaft 99 supported in bearings formed in a bracket 100, and this shaft also has fixed to its opposite end a gear 101, Figs. 1 and 4, which meshes with an idler gear 102 that is driven by the barrel pinion 26 previously referred to. This mechanism thus imparts a continuous movement to the chain 94, and the driving mechanism for this chain is positively connected with the driving mechanism for the feeding chains 53—53. The movements of these two

chains are so timed that the conveyor 94 carries the counter blanks forward and delivers them to the wetting rolls as rapidly as the chains 53—53 feed the blanks out of the magazine.

The upright plate 91 which supports the conveyor chain 94 is secured fast to the forward end of a slide 104, Fig. 1, which is mounted in a dove-tail groove formed in the bed plate 10. The bracket 100 also is secured fast to, or formed integral with, this slide 104. A threaded stem 105 is secured to the rearward edge of the slide and is engaged by a hand wheel 106 which is mounted in a suitable bracket secured to the bed 10 and thereby held against movement longitudinally of the stem or screw 105. This arrangement enables the operative to adjust the slide 104 and all the parts carried thereby, including the conveyor chain 94 and the driving mechanism therefor, toward and from the magazine. A bolt 107 which projects through a slot 108 formed in the slide 104 and is threaded into the bed 10, serves to secure the plate in its adjusted position.

A short bracket 109, Fig. 2, is secured to the front of the magazine frame and overlies a portion of the bracket 92 where it closes the space between the magazine frame and the second conveyor mechanism, and prevents counter blanks from accidentally dropping down between these parts.

The blanks thus delivered to the two pairs of wetting rolls are moistened by their contact with these rolls. The wetting rolls deliver the blanks to the rolls 15 and 16 which strip the surplus water from each blank and discharge it on the upper surface of a table 112. This table has an inclined part 113 on which the blanks fall, one such blank being indicated at C″, Fig. 6, and it also has an extension 114 which is slanted slightly upwardly. A stop 115, Fig. 1, adjustably secured to the table 112 by bolts 116—116, limits the forward movement of the blanks as they are delivered to the table. This stop has been omitted from Fig. 6. These blanks lie flat-wise on the inclined face 113 and a reciprocating stacking lever engages them while they rest on this face, moves them into an upright position, and forces them forward on to the horizontal surface of the table 112. This lever comprises two arms 117—117, Figs. 1, 3 and 6, both secured fast on a rock shaft 118, supported in hangers or bosses formed on the lower side of the table 112, and this shaft has an arm 119 secured thereto which is pivoted to the forward end of a link 120. The rearward end of this link is pivoted to the lower end of a lever 121, Fig. 6, which is fulcrumed at 122 on a bracket 123 that projects upwardly from the table 112. This lever carries a cam roll 124 running in the path 125 of a cam 126 mounted fast on a shaft 127, this shaft carrying a pinion 128 that meshes with a barrel gear 129 fast on the shaft 62 above mentioned. The pivotal connections between the lower end of the lever 121 and the link 120 is made through a block 130 which is adjustable in a slot 131 formed in the end of the link, and this arrangement thus permits an adjustment of the limits of the stroke of the reciprocating stacker lever 117.

Normally the lever 117 lies below the surface 113, but immediately after a counter blank C″ has been deposited on this surface the lever is given a quick forward movement by the mechanism above described thus causing it to set the counter blank up on edge and at the same time carry it forward on to the horizontal surface of the table 112. As this operation is continued the blanks are stacked horizontally, as indicated at C^3, Fig. 6, and this stack is pushed forward as each blank is added to it until the stack reaches the extension 114 of the table 112. A portion of this extension is inclined upwardly, as shown, since I find that the operation of the stacker mechanism is improved by this construction. In order to facilitate the holding of the blanks in their edgewise position, that is, resting with their edges on the support 112, a presser plate 133, Fig. 6, is mounted to bear yieldingly on the upper edges of the blanks. This plate is hinged at 134 to a part 135 adjustably secured by a bolt 136 to an upright 137 mounted fast on the table 112. The plate also is provided with an ear 138 to which a rod 139 is pivoted, this rod being encircled by a spring 140 that bears at its upper end against a horizontal extension 141 of the part 135. The rod 139 projects through this extension and is threaded to receive nuts 142 by means of which the plate 133 can be adjusted angularly with reference to the table 112. The spring 140 presses downwardly on the plate 133 and thus maintains a slight pressure on the upper edges of the stack of counters C^3, the stack acting as a follower. Since the bolt 136 projects through a slot formed in the standard 137, this entire presser mechanism can be adjusted up and down.

The entire stacker mechanism, including the table 112, is supported on a bracket 144, Fig. 6, which is adjustably secured to the bed 10. That is, this bracket has feet 145 and 146, respectively, that rest on the table, the foot 145 sliding in a guideway formed in a bar 147 that is secured to the table by a bolt 148, and the foot 146 being slotted to receive a bolt 149 by means of which it may be secured in adjusted position to the bed 10. This construction enables the entire stacker mechanism to be adjusted toward and from the wetting or tempering mechanism. A threaded rod 150, also secured to the bracket 144, is engaged by a

hand wheel 151 to facilitate this adjusting operation, this adjustment being like that of the parts 105 and 106. The table 112 also is adjustable with reference to the bracket 114 at right angles to the adjustment above described. That is, this table is provided with a tongue 153, Figs. 3 and 6, that projects into a groove formed in the upper surface of the bracket 144, and the table is slotted, as shown at 154, Fig. 1, to receive a bolt 155 by means of which it is secured in its adjusted relationship to the bracket 144. An arm 156, Fig. 7, projecting from a portion of the bed 10, supports the outer end of the extension 144, but this part may be supported in any other suitable manner. The adjustments permit the stacking mechanism to be moved into any desired relationship to the tempering mechanism.

It will now be understood that during the normal operation of the machine the feeding chains 53—53 remove counter blanks one at a time from the bottom of the magazine, advancing these counters, in this particular instance with their straight edges foremost, against the edge of the part 91. One of the hooks 95 on the conveyor chain 94 engages each blank and carries it endwise to the tempering rolls 2 to 6 inclusive. The blank here is dampened, the tempering rolls present it to the rolls 15 and 16, and these rolls deliver the blank to the inclined surface 113 of the table 112. The stacker lever 117 moves this blank up into an approximately upright position on the table and these operations are repeated so long as the machine runs, the tempered blanks being forced outwardly along the extension 114 of the table.

It will therefore be appreciated that this invention provides a completely automatic machine for taking blanks from a stack or supply, tempering them, and stacking them in readiness to be removed by an attendant. The machine thus reduces very greatly the labor that otherwise would be required to perform the tempering operation, and it produces superior results since the tempering of the blanks is substantially uniform. It will also be appreciated that the stacking and feeding mechanisms can be used in other machines than that specifically disclosed, and that the specific embodiment of the invention herein shown and described can be modified in many particulars without departing from the spirit or scope of this invention.

The blank feeding mechanism per se is not claimed in this application but is claimed in my divisional application Serial No. 684,322, filed January 4, 1924.

What is claimed as new is:

1. In a machine for operating on counter blanks and the like, the combination of means for holding a supply of said blanks, means for operating on said blanks to modify their condition, mechanism for feeding blanks successively from said supply to said operating means, a slightly inclined support, and means for receiving the blanks thereon as they are discharged from said operating means and subsequently stacking them upon edge.

2. In a machine for operating on counter blanks and the like, the combination of a vertical magazine for holding a supply of said blanks, means for operating on said blanks to modify their condition, mechanism for feeding the blanks one at a time from the bottom of said magazine to said means, and a reciprocating stacker to which the blanks are horizontally delivered from said means and which is operative to stack the conditioned blanks on edge.

3. In a machine for operating on counter blanks and the like, the combination of means for holding a supply of said blanks, means for operating on said blanks to temper them, mechanism for feeding blanks successively from said supply to said operating means, a table for receiving the blanks as they are discharged from said operating means, and mechanism for stacking the blanks with their edges resting on said table.

4. A machine for tempering counter blanks and the like comprising, in combination, a magazine for holding a stack of said blanks, means for tempering said blanks comprising opposed rolls and means for supplying water thereto from above, and mechanism for feeding said blanks successively from said stack to said tempering means.

5. A machine for tempering counter blanks and the like comprising, in combination, a magazine for holding a stack of said blanks, means including liquid applying rolls for tempering said blanks, mechanism for feeding said blanks successively from said stack to said tempering means, and a stacking mechanism for receiving the blanks from said tempering means and stacking them.

6. A machine for tempering counter blanks and the like comprising, in combination, a magazine for holding a stack of said blanks, tempering rolls, means for driving said rolls, means for supplying a stream of water to said rolls, and mechanism for feeding the blanks successively from said magazine to said tempering rolls.

7. A machine for tempering counter blanks and the like comprising, in combination, a magazine for holding a stack of said blanks, a plurality of tempering rolls, means for driving said rolls, means for supplying water to said rolls, mechanism for feeding said blanks successively from said magazine to said tempering rolls, a pair of additional rolls to which the blanks are delivered by said tempering rolls, and means for driving said additional rolls.

8. A machine for tempering counter blanks and the like comprising, in combination, a magazine for holding a stack of said blanks, wetting means for said blanks, mechanism for feeding the blanks successively from said magazine to said wetting means, rolls through which the blanks are passed after they have been wet, and means for driving said rolls.

9. A machine for tempering counter blanks and the like comprising, in combination, a magazine for holding a stack of said blanks, a plurality of tempering rolls, means for driving said rolls, means for supplying water to said rolls, mechanism for feeding said blanks successively from said magazine to said tempering rolls, an additional pair of rolls to which the blanks are delivered by said tempering rolls, means for driving said additional rolls, and a stacking mechanism for said blanks to which they are delivered by said additional rolls.

10. In a machine for operating on counter blanks and the like, the combination of a magazine for holding a supply of said blanks, mechanism for operating on said blanks to modify their condition, means for feeding the blanks edgewise one at a time out of said magazine, and additional means for engaging each blank after it has been discharged from the magazine and carrying it endwise to said mechanism.

11. A machine for tempering counter blanks and the like, comprising, in combination, a magazine for holding a stack of said blanks, means for tempering said blanks, means moving continuously in one direction for feeding blanks out of said magazine one at a time, a conveyor for carrying said blanks to said tempering means, and supporting means for said conveyor and said feeding means permitting a relative adjustment between them.

12. A machine for tempering counter blanks and the like, comprising, in combination, a magazine for holding a stack of said blanks, means for tempering said blanks, mechanism for feeding said blanks edgewise one at a time out of said magazine, and a conveyor to which the blanks are delivered by said feeding mechanism, said conveyor being operative to carry the blanks endwise to said tempering means.

13. A machine for tempering counter blanks and the like, comprising, in combination, a magazine for holding a stack of said blanks, tempering means for said blanks including tempering rolls for engaging the opposite faces of a blank, driving mechanism for said rolls, mechanism for feeding said blanks edgewise one at a time out of said magazine, and a conveyor to which the blanks are delivered by said feeding mechanism, said conveyor being operative to carry the blanks endwise into engagement with said tempering rolls.

14. A machine for tempering counter blanks and the like, comprising, in combination, a magazine for holding a stack of said blanks, tempering means for said blanks including tempering rolls for engaging the opposite faces of the blanks and a pair of stripper rolls between which the blank is fed after leaving said tempering rolls, and mechanism for feeding counter blanks one at a time out of said magazine and delivering them to said tempering rolls.

15. A machine for tempering counter blanks and the like, comprising, in combination, a magazine for holding a stack of said blanks, means for tempering said blanks, mechanism for feeding said blanks edgewise one at a time out of said magazine, a conveyor to which the blanks are delivered by said feeding mechanism, said conveyor being operative to carry the blanks endwise to said tempering means, a support on to which said blanks are discharged from said tempering means in an inclined position, and a mechanism for stacking said blanks with their edges resting on said support.

16. A machine for tempering counter blanks and the like, comprising, in combination, a magazine for holding a stack of said blanks, means for tempering said blanks, mechanism for feeding said blanks one at a time out of said magazine and delivering them endwise to said tempering means, and a reciprocating stacker to which said blanks are delivered from said tempering means.

17. A machine for tempering counter blanks and the like, comprising, in combination, a magazine for holding a stack of said blanks, means for tempering said blanks, mechanism for feeding said blanks one at a time out of said magazine and delivering them to said tempering means, and a stacking mechanism to which said blanks are horizontally delivered from said tempering means, said stacking mechanism being operative to arrange the tempered blanks on edge in a substantially horizontal stack.

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