

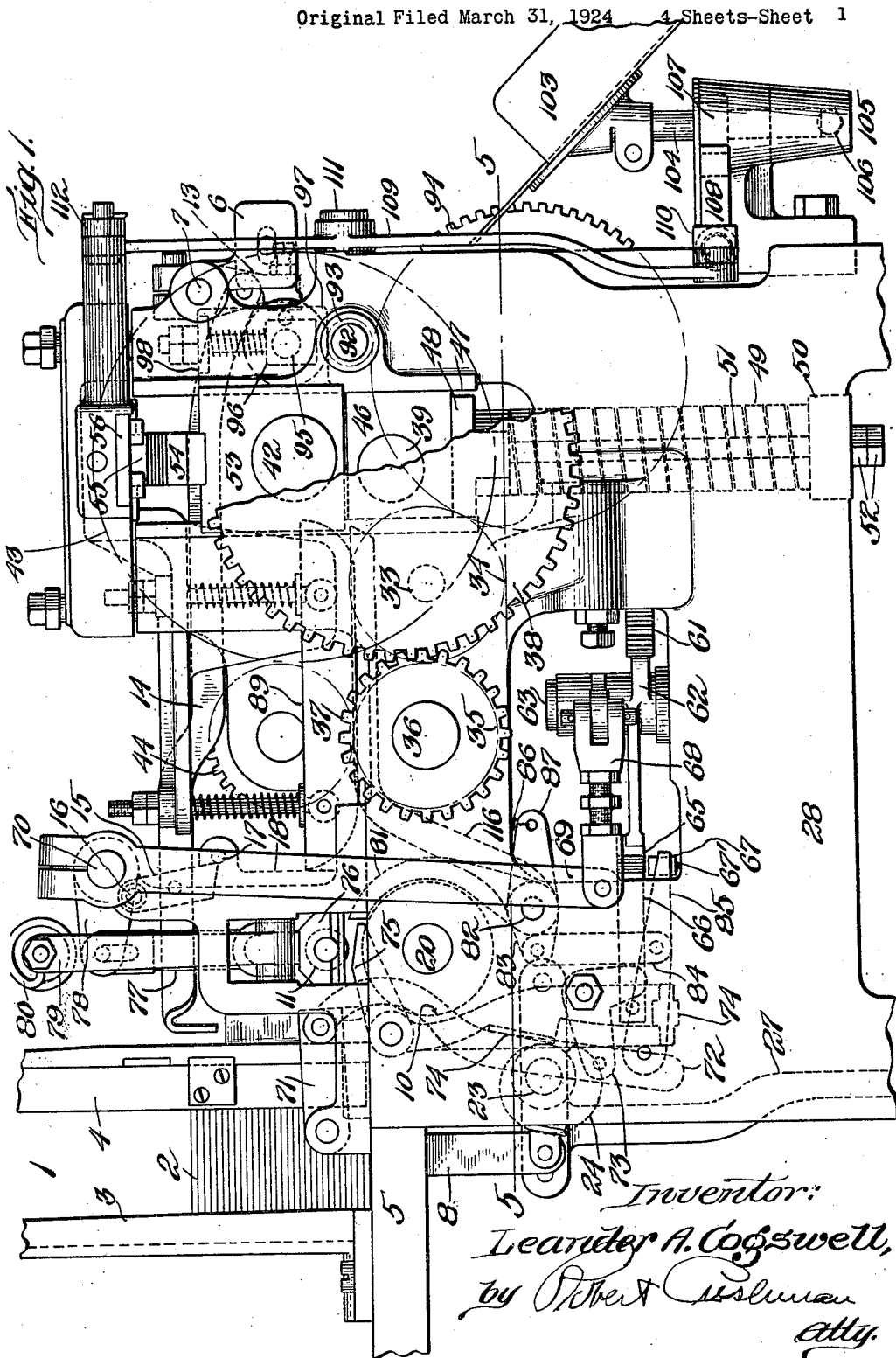
Dec. 11, 1928.

1,694,408

L. A. COGSWELL

GRADING AND DISTRIBUTING MACHINE

Original Filed March 31, 1924 4 Sheets-Sheet 1



Dec. 11, 1928.

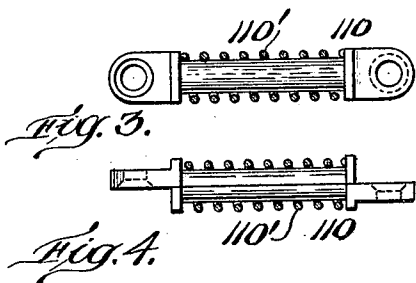
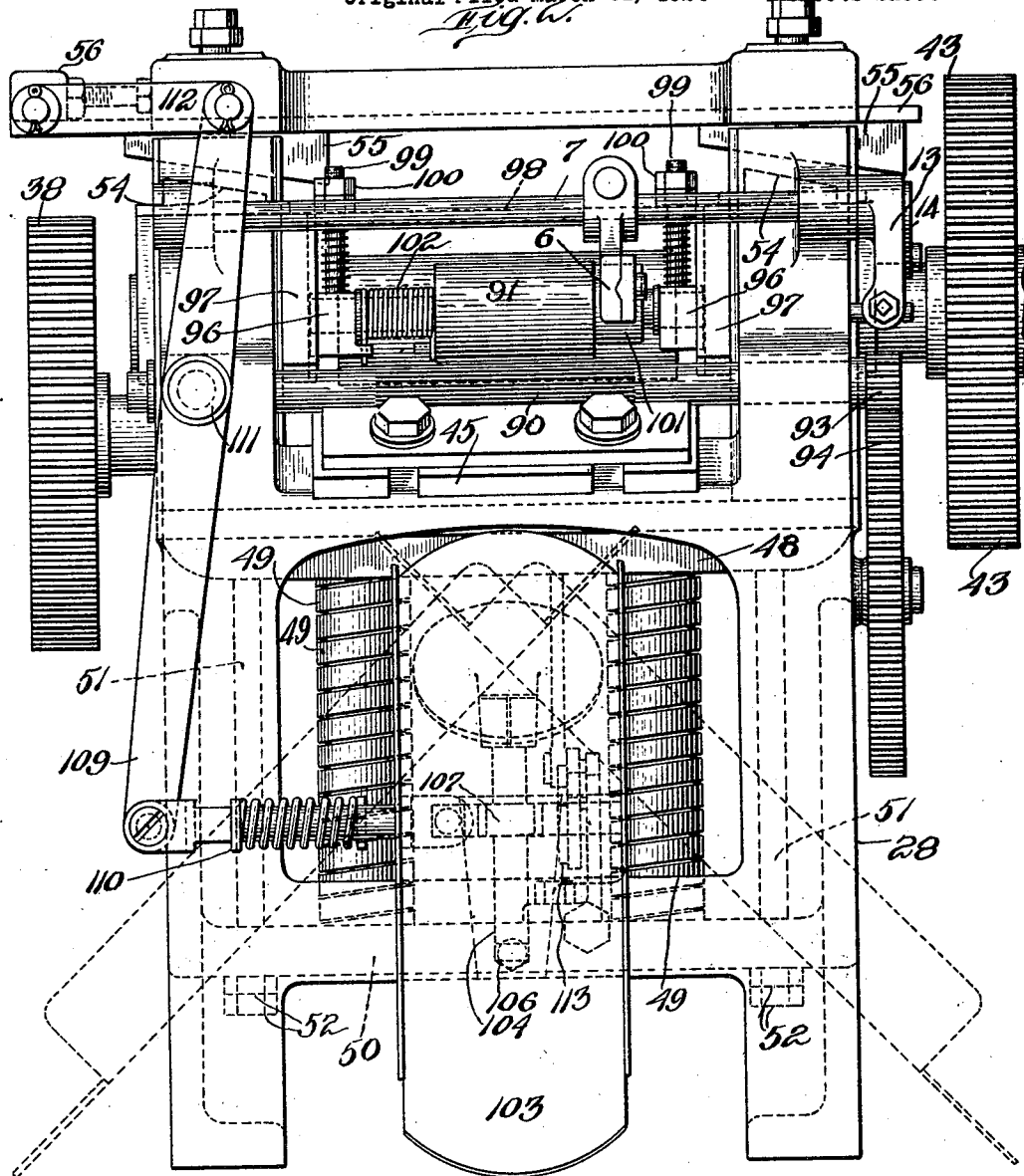
1,694,408

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GRADING AND DISTRIBUTING MACHINE

Original Filed March 31, 1924

4 Sheets-Sheet 2



Inventor:
 Leander A. Cogswell,
 by Robert Cushman
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Dec. 11, 1928.

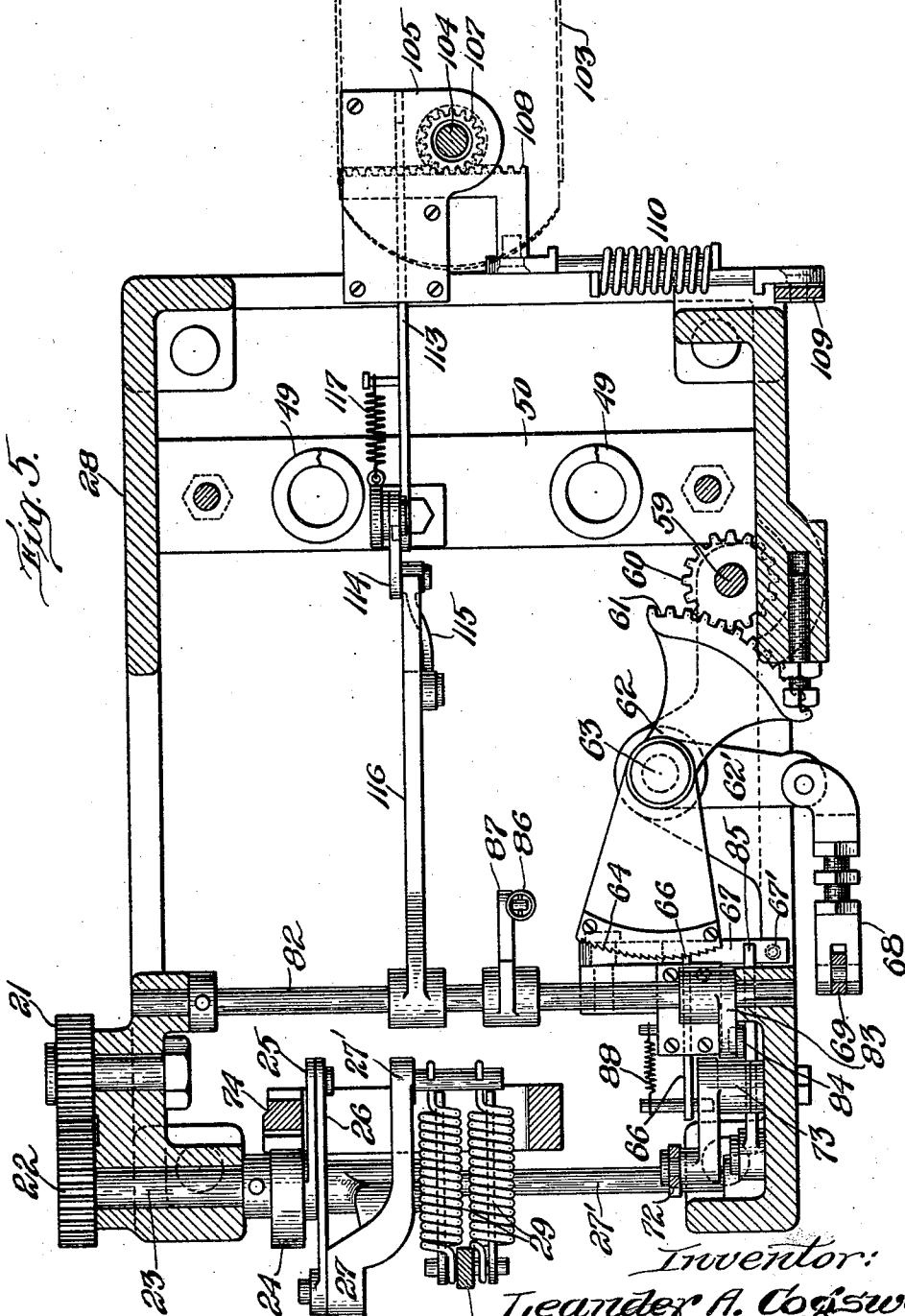
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GRADING AND DISTRIBUTING MACHINE

Original Filed March 31, 1924

4 Sheets-Sheet 3



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GRADING AND DISTRIBUTING MACHINE

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4 Sheets-Sheet 4



Fig. 7.

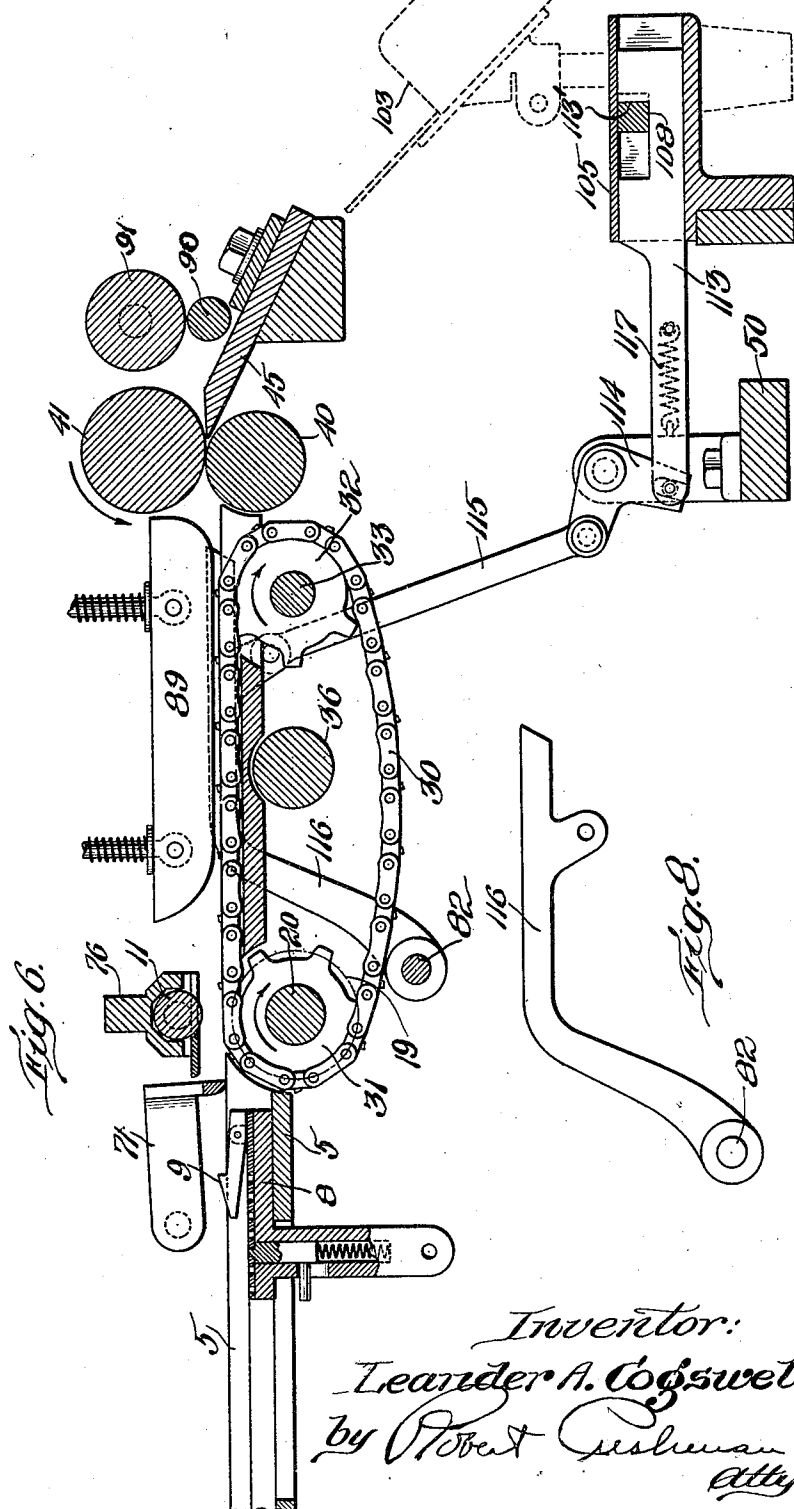


Fig. 6.

Fig. 8.

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UNITED STATES PATENT OFFICE.

LEANDER A. COGSWELL, OF MANCHESTER, NEW HAMPSHIRE, ASSIGNOR TO LACENE MANUFACTURING COMPANY, OF MANCHESTER, NEW HAMPSHIRE, A CORPORATION OF MAINE.

GRADING AND DISTRIBUTING MACHINE.

Application filed March 31, 1924, Serial No. 703,091. Renewed March 7, 1928.

This invention relates to grading machines of the well known Nicholas type by which the grade of successive blanks of stock, such as died out pieces of leather for soles, heel lifts, or the like, is measured or detected in accordance with the thickness of the thinnest spot felt off, and the grade so determined is utilized by grading means, responsive to the grade detection, for grading the stock, as by evening or skiving, stamping or marking, indicating, sorting or distributing, or performing all or any number of such grading operations.

The present invention has to do more particularly with sorting or distributing, and constitutes an improvement upon or modification of the invention described in an application for Letters Patent of the United States filed by me August 20, 1921, Serial No. 494,009, for an automatic top lift grading and distributing machine.

In the accompanying drawings,—

Fig. 1 is a side elevation of an evening and distributing machine embodying my invention;

Fig. 2 is an elevation of the delivery end of the machine;

Figs. 3 and 4 are details of the spring draw bar through which the distributing chute is actuated as hereinafter described;

Fig. 5 is a section in plan on line 5—5 of Fig. 1;

Fig. 6 is a partial, vertical, central, longitudinal section of the machine;

Fig. 7 is a plan view of the distributor locking bolt hereinafter described; and

Fig. 8 is a side elevation of the lever or shoe by which the distributor locking bolt is operated by the blanks passing through the machine.

The hopper or magazine 1 for holding a stack of top lifts or other blanks of stock 2 comprises uprights 3 and 4 adjustably mounted on a bracket 5 which serves as the bottom of the hopper and supports the stack of lifts in position between the uprights. During the operation of the machine a blank after leaving the evening mechanism at the delivery end of the machine (the right hand end as viewed in Fig. 1) effects a swinging movement of an arm 6 which is fast on a rock shaft 7. This results in a single reciprocatory movement being imparted to a feed slide 8 mounted in ways on the bracket 5. A pawl

9 on slide 8 engages the rear edge of the lowermost blank 2 in the stack when the slide 8 is moved to the left, and feeds the blank forward between the detecting rolls 10 and 11 when the slide 8 is moved to the right.

The mechanism by which the outgoing blank at the delivery end of the machine actuates the feeding mechanism includes the rock shaft 7 upon which is fixed the arm 6 and also an arm 13 outside of the frame. Arm 13 is connected by a link 14 with a latch lever 15 fulcrumed at 16 on the frame of the machine, and cooperating with a stud 17 on a clutch controlling arm 18. The clutch controlling arm 18, link 14 and latch lever 15 are all yieldingly urged toward the left by springs, not shown. The clutch mechanism is substantially similar to that shown in my said application Serial No. 494,009. Normally the clutch controlling arm 18 is held by its spring in a position to hold the clutch disengaged and maintain the feeding mechanism at rest. When, however, a blank leaves the delivery rolls 90, 91 the rotation of roll 91 acting through a cam (as hereinafter described) actuates the arm 6 and the connections just described to swing the clutch lever 18, thereby engaging the clutch and connecting the feeding mechanism to the continuously rotating shaft 20 of the lower detector roll 10 during one revolution thereof, at the end of which the clutch arm 18, which was only momentarily displaced by the outgoing blank, automatically disengages the clutch and so disconnects the feeding mechanism from the shaft. One clutch member is fast on shaft 20, and the other clutch member is the end or face of a gear 19 which is loosely and slidably mounted on shaft 20. When this gear is shifted by clutch lever 18 to connect it to the fixed clutch member on shaft 20, it acts through intermediate gear 21 to drive gear 22 on a short shaft 23 (see Fig. 5) which carries a cam 24 and a crank arm 25. The crank arm 25 is connected by a link 26 with the upper end of a rocker arm 27 pivotally supported on the lower part of the machine frame 28. Rocker arm 27 has a branch 27' connected by a pair of extensible spring links 29 to feed slide 8. The train of gears through which the shaft 20 drives the short shaft 23 is such as to impart one revolution to shaft 23 for each revolution of shaft 20, when clutched thereto.

Shaft 20 is mounted in immovable bearings on the frame and is driven by a continuously actuated feed chain 30 by which the blanks are transported from the detector rolls 10 and 11 of the skiving mechanism. The chain 30 runs on a sprocket wheel 31 fast on the shaft 20 at the middle thereof, and a sprocket wheel 32 fast on the middle of shaft 33 near the delivery end of the machine. The shaft 33 carries a gear 34 which is outside of the machine frame and is driven through suitable intermediate gearing, sprockets and chain (not shown) from a gear 35 fast on the main driving shaft 36. This main shaft 36 extends transversely through the machine and is provided with the usual tight and loose pulleys, not shown.

Driving shaft 36 also has fast on the end opposite to gear 35 a gear 37 which meshes with and drives a gear 38 fast on shaft 39 of the lower feeding roll 40 of the skiving or evening mechanism. The upper feeding roll 41 of the skiving or evening mechanism has a gear 43 on its shaft 42. Gear 43 is driven through an intermediate gear 44 by gear 35 on the main drive shaft 36, the gears 43 and 44 being relatively so disposed as to permit a limited vertical movement of gear 43 with roll 41.

The skiving mechanism includes a fixed knife 45, preferably of the single bevel type as shown, fastened rigidly to the frame of the machine with its cutting edge close to the normal line of contact between the two rolls 40 and 41 and at the delivery side of the latter so as to operate upon each blank as it emerges from between the rolls. The lower roll 40 has a roughened surface to engage the flesh side of the blank while the upper roll 41 which engages the grain side is made smooth.

The lower skiving roll 40 is journaled in bearing blocks 46 which slide in vertical ways 47 on the frame 28 of the machine. These bearing blocks are mounted on a bridge piece or yoke 48 which is supported by two massive springs 49, 49. Springs 49 are seated on a cross bar 50 which forms part of the machine frame.

Just outside of each spring 49 is a rod 51 fastened at its upper end to bridge piece 48, the lower end of each rod extending loosely through cross bar 50 and carrying nuts 52 which engage the under side of the cross bar to limit the upward movement of the lower roll 40 and thereby determine its normal position with relation to the cutting blade 45.

The upper skiving roll 41 is journaled in bearing blocks 53 mounted in the ways 47 on the frame 28. The blocks 53 normally rest on blocks 46. On the top side of each bearing block 53 there is fixed a hardened steel cam or wedge member 54 whose upper side is inclined and stepped as usual in the Nichols machines. These two stepped wedge members cooperate with two similar inverted

stepped wedge members 55 fastened to the under side of the slide bar 56 mounted on the cross head of the machine frame to slide transversely of the machine. One side of bar 56 is made as a rack as in my said former application, whose teeth mesh with a pinion fast on the upper end of an upright shaft 59 journaled in bearings on frame 28. At its lower end is fixed another pinion 60 which meshes with a segmental rack 61 forming part of a lever 62.

Lever 62 is fulcrumed at 63 on the machine frame. The opposite arm of lever 62 is provided at its extremity with a segment 64 of ratchet teeth facing in one direction, and also with another segment 65 of ratchet teeth on the under side of lever 62 and facing in the opposite direction. These two sets of ratchet teeth 64 and 65 cooperate respectively with two spring pressed locking pawls or latches 66 and 67, the former sliding in ways on the frame of the machine and the latter being pivoted on the frame. Lever 62 has another arm 62' which is connected by an adjustable link 68 to the lower end of an arm 69, which is fast at its upper end to a transverse rock shaft 70 journaled in bearings on the frame of the machine.

When a heel lift or other blank is fed from the machine 1 toward the detector rolls 10 and 11, it is pushed under a pivoted gate 71 connected by a link 72 to one arm of a bell-crank lever 73 fulcrumed on the frame of the machine. The other arm of lever 73 actuates the locking latch 66, through a pin extending from the side of the latch and retracts the latch from ratchet 64 on lever 62, thus freeing the slide bar 56 from latch 66. This unlocking action through the lifting of the gate 71 occurs during the single rotation imparted to the transverse shaft 23 by which the feed slide is operated, and at a time when the high part of cam 24 is in engagement with the bail-shaped lever or yoke 74 which it controls and operates. This yoke 74 is fulcrumed to opposite sides of the frame of the machine and has two arms 75 projecting under the trunnions of the upper detector roll 11, which are journaled in a vertically sliding bridge piece 76 mounted in vertical slideways on the frame of the machine. Each time the yoke lever 74 is actuated the upper detector roll 11 is lifted by the arms 75 to admit the blank being fed. Pivoted to the slide 76 are two links 77 which extend upwardly to a pair of arms 78 fast on rock shaft 70. The ends of arms 78 are connected to the upper ends of links 77 by pins and slots. A spring (not shown) yieldingly tends to hold the pins of arms 78 in the upper ends of the slots in links 77.

The slide 76 is pressed downward by a pair of bell-crank levers 79, as is common in the Nichols machines, the upper ends of the levers being held under the tension of a heavy

equalizer spring 80, as shown more in detail in my said application Serial No. 494,009. The surface of the lower detector roll 10 is roughened and, being continuously driven by feed chain 30, serves to carry the blank forward into position where it will be picked up by the chain and transported to the grading mechanism.

As the blank is fed forward into position between the detector rolls the forward end of the blank engages and swings an arm 81 fast on a rock shaft 82 journaled in bearings on the machine frame. This rock shaft also has fixed to it an arm 83 connected by a link 84 with a lever 85 which normally holds the locking latch 67 out of engagement with the segmental rack 65 on the bottom of the arm 62, the teeth of rack 65 facing in the opposite direction to the teeth of the rack 64, as more fully explained in Nichols Patent 1,046,213. This swinging of arm 81 lifts the lever 85 and permits the spring 67' to raise the latch 67 into engagement with rack 65. Latch 67 thus locks lever 62 against movement in the direction corresponding to the upward movement of the detector roll 11, but leaves it free to respond to any further downward movement of said upper detector roll so long as the gate 71 is held elevated by the blank, thus holding latch 66 out of engagement with rack 64.

It will thus be seen that after the blank has come into position between the two detector rolls and until the rear end thereof clears the gate 71, the lever 62 is automatically controlled by the upper detector roll 11 so as to be adjusted to accord with the thinnest part of the blank being felt of. This positioning of the lever 62 causes a simultaneous positioning of the slide bar 56 to which it is connected through the upright shaft 59, thereby adjusting the cam blocks or stepped wedges 55 so as to limit the upward movement of the stepped wedges 54 and consequently of the upper skiving roll 41 to such position that the knife 45 will reduce the lift or blank to a uniform thickness corresponding to the thickness of the thinnest part of the blank as determined by the detector rolls.

Gate 71 is positioned close to the upper detector roll so that practically the whole of the blank will have been measured by the two rolls 10 and 11 when the rear end of the blank clears the gate. A spring 86 connected with an arm 87 fast on rock shaft 82 (Figs. 1 and 5) holds the latter and the parts fastened to it in their normal position shown in Fig. 1.

When the rear end of the blank clears gate 71, a spring 88 (Fig. 5) restores the latch 66 to locking engagement with the rack 64 on lever 62 so that while the blank is traveling from said gate to the delivery end of the machine and until the gate is lifted by another blank, the latch 66 will remain in locking engagement with the lever 62.

From the foregoing it will be seen that when the blank is passing between the detector rolls, the upper detector roll 11 is forced down on the blank by the heavy spring 80, and the setting connection between the detector roll 11 and the slide bar 56 will cause the latter to shift toward the left as viewed in Fig. 2, as the detector roll 11 encounters successively thinner spots in the blank, each increment of thinness so determined by the detector roll 11 being taken up and retained by the latch and rack 67 and 65. In case the detector roll 11 encounters thicker spots in the blank being felt of, the detector roll 11 will rise idly on account of the pin and slot connection between arm 78 and links 77.

As the blank is moved forward from the detector rolls 10 and 11 by the feed chain 30, it passes under a spring-pressed shoe 89 which holds it firmly against the feed chain 30 and also serves another purpose that will presently appear. As the forward end of the blank enters between the continuously driven rolls 40 and 41 of the skiving mechanism, the upper roll 41 is lifted until the two stepped wedges 54 on the top of the journal boxes 53 seat themselves against the stepped wedges 55 on slide bar 56. This fixes the distance between the roll 41 and the cutting blade 45 and consequently the thickness to which the blank will be evened or skived corresponding to the thickness of the thinnest spot of the blank. Lower roll 40 yields downwardly to accommodate the thicker parts of the blank.

Upon emerging from the skiving mechanism the blank enters between the two delivery rolls 90 and 91 which eject the blank from the skiving mechanism and deliver it to the distributing or sorting mechanism. The lower roll 90 is fast on shaft 92 journaled in stationary bearings on the frame of the machine and carrying at one end thereof the pinion 93 that is continuously driven through an intermediate gear 94 by gear 34 fast on the chain-driving shaft 33. The upper roll 91 is fast on shaft 95 journaled in bearing blocks 96 which slide in vertical ways upon the inner faces of extensions 97 of the boxes 53 that carry the upper skiving roll 41. Fastened to the tops of these extensions 97 is a cross bar 98 made with two holes in which are loosely mounted two vertical stems 99. Each stem 99 is fastened at its lower end to one of the bearing blocks 96, and is provided at its upper end with adjustable stop nuts 100 which engage the cross bar 98 and limit the downward movement of the roll 91 under the influence of springs which surround the stems 99.

The roll 91 has fixed at one end a cam 101 which engages and operates arm 6. Roll 91 is normally at rest but is rotated by the blank as the latter passes between the two delivery rolls. When the upper roll 91 is thus rotated,

the cam 101 acts through arm 6, shaft 7, link 14 and the mechanism connected with shaft 7 already described to start the next blank on its travel through the machine from the magazine 1. A coil spring 102 surrounds the shaft of the upper delivery roll 91, one end of the spring being connected with the bearing block 96 and the other to the end of the roll. Normally this spring under slight stress holds the roll 91 with a shoulder (not shown) against a stop thus holding the cam 101 out of engagement with the arm 6. When the upper roll 91 is rotated by the passage of a blank between the two delivery rolls, this spring is wound up and as soon as the lift clears the delivery rolls, the spring acts to restore the roll 91 and its cam to their normal position.

When the blanks have been thus skived and ejected they are sorted or distributed in accordance with the grade detection and in accordance with the thicknesses to which they have been cut. The sorting and distributing mechanism comprises a chute 103, preferably made of light sheet metal fastened to the upper end of a spindle 104 that is journaled in a bracket 105 secured to the frame of the machine, the spindle resting at its lower end against a ball-thrust bearing 106. This spindle carries a pinion 107 engaged by a rack bar 108 which slides transversely of the bracket 105 and is connected to the lower end of a lever 109 by means of an extensible and contractible spring draw-bar 110. The lever 109 is fulcrumed between its ends to the frame of the machine at 111 and its upper arm is connected by a link 112 with the slide bar 56 so that the position of said lever varies with the adjustment of said slide bar in response to the detecting mechanism. Movement of the lever 109 with the slide bar 56 tends to act through the centralizing spring draw-bar connection 110 and rack 108 to angularly adjust the distributor 103, the latter occupying a different angular position for each of the several possible positions of the slide bar 56 and lever 109.

Both sets of ratchet teeth on the three-armed lever 62 through which the detecting mechanism adjusts or sets the slide bar 56 according to the thinnest portion of the incoming lift, are so cut that the angular distance between two teeth of either rack is proportionate to an adjustment of the slide bar 56 sufficient to vary the cutting or skiving action to a definite extent measured in "irons." It follows, therefore, that the lever 109 will be definitely and correspondingly positioned angularly by the detecting mechanism according to the thinnest spot of each blank, as the blank passes between the detecting rolls. The inclined or oblique faces of the wedge blocks 55 and 54, owing to the small scale upon which the drawings are made, appear in Fig. 2 to be flat surfaces but, as is usual in

the Nichols machines, these faces are stepped so that each step represents an adjustment of the skiving and distributing mechanisms of a definite amount measured in "irons."

At the completion of the gauging or detecting operation when the gate 71 drops off the rear end of the blank the latch 66 and spring 80 will hold the slide 56 and lever 109 in their adjusted positions against accidental displacement. The slide and lever remain in their adjusted positions until the next blank is fed forward from the hopper at which time the cam 24 raises the upper detecting roll and the sliding yoke 76, which is timed to occur immediately upon the completion of the skiving operation on the preceding blank and while the preceding blank is passing between the delivery rolls 90 and 91. This, of course, is before said preceding blank has reached the distributor chute 103. It is therefore necessary to retain the distributor chute 103 in its adjusted position until after the preceding blank, by which the chute was set, has left the delivery rolls 90 and 91 and descended the chute, and at the same time to permit the detecting mechanism to set or position the lever 62 and, in the present form of the invention, the slide bar 56 also, for the incoming blank. It is for this purpose that the centralizing spring draw-bar 110 is provided intermediate the chute and the detecting mechanism, said draw-bar being herein shown as forming part of the connection between the slide bar 56 and the chute. For this reason, also, there is combined with this yielding connection, means for holding the chute in the position to which it was adjusted for and by the preceding blank, notwithstanding the succeeding blank has already operated the detecting mechanism, until the preceding or out-going blank has descended the chute 103.

The chute holding or locking means just referred to comprises a bolt 113 sliding within a slot extending horizontally through the bracket 105 lengthwise of the machine. At its inner end this bolt has a pin and slot connection with one arm of a bellcrank lever 114 fulcrumed on the frame of the machine whose other arm is connected by a link 115 with one end of a lever or shoe 116 pivotally supported at its link opposite end by the rock-shaft 82. This shoe 116 occupies a position in the path of the blanks as they pass from the detecting mechanism to the skiving mechanism, and is yieldingly held up by a spring 117 between the bolt 113 and the machine frame. Spring 117 also normally holds the shoulder 113' of bolt 113 in engagement with the teeth of the rack 108 thus locking the chute 103 against angular movement. As a blank passes over the shoe 116 it is pressed and held down by the shoe 89, thus causing the blank to depress the shoe 116 and so unlock the bolt 113 from the rack 108. Thus the adjustment of the

chute 103 by any blank will be maintained until the next following blank has reached and operated the shoe 116, thereby affording ample time for the blank by which the chute was set to descend the chute. The following or incoming blank, however, will have already operated the detecting rolls so as to adjust the lever 62 and the slide bar 56 to accord with the thinnest spot of said blank while the chute was held locked for the preceding blank. This is made possible by the yielding draw bar 110 which permits the lever 109 to swing with the slide bar 56 in either direction. The operation of setting the lever 62 and the slide 56 for the incoming lift is started when the cam 24 of the feeding mechanism, acting through the lever 74, raises the upper detecting roll 11 and its slide 76, which momentarily shifts the slide 56 to the right (Fig. 2) to the limit of its movement in that direction.

Immediately thereafter the cam 24 lowers slide 76 and the upper detecting roll on to the forward end of the incoming blank resulting in a movement of the slide 56 to the left (Fig. 2) under the stress of spring 80, (Fig. 1). Thereafter the detecting mechanism and the setting mechanism will respond to the thickness of the blank as already described.

The centralizing spring draw-bar 110 is of that type which is both extensible and contractible, and whose spring 110' is compressed when the draw-bar is either extended or contracted; that is, the draw-bar comprises two parts overlapping and sliding one upon the other, each part having a pair of shoulders or abutments for the spring which surrounds both parts. (See Figs. 3 and 4.) Thus whether the two-part bar is extended or contracted the spring will be compressed between an abutment of one part and an abutment of the other part. Said spring 110' is of less strength than spring 80 so that whenever, during the operation of the machine, the two springs are opposed, the spring 80 will predominate. These two springs are opposed when the slide 56 is adjusted in a direction, and under conditions with respect to the position of chute 103, which require lever 109 to shorten or contract draw-bar 110 while the chute is locked by bolt 113. These conditions do not exist when, during the detecting operation the gauge roll 11 is moved upwardly by the blank, but do exist when, during said operation, the blank permits a downward movement of said roll and the chute 103 occupies a position requiring the lever 109 to shorten the draw-bar.

As soon as the bolt 113 unlocks the rack 108 the spring draw-bar, whether lengthened or shortened, assumes its normal, centralized position shown in Figs. 3 and 4, with the spring 110' in its most fully expanded position, thereby swinging chute 103 to the angular

position corresponding to the position of lever 109, that is, corresponding to the position of the setting mechanism and of the skiving mechanism as determined by the blank. Consequently it will be seen that as soon as a blank which has caused the adjustment of the slide bar 56 reaches and operates the shoe 116, the chute 103 which up to that time has been held locked in the position determined by the preceding blank, instantly flies under the influence of the centralizing spring draw-bar to the position determined by the blank last measured by the detecting means, unless that blank and the preceding blank call for the same grading, in which case no movement of the chute takes place.

The chute 103 has a possible range of swinging movement of about 180 degrees and as herein shown the connections between the chute and regulating slide 56 are constructed so that movement of slide 56 a distance effecting an adjustment of the skiving mechanism to the extent of one "iron", will shift the chute 103 one-eighth of its arc of movement. Therefore, the machine herein shown will produce and sort lifts of nine different grades. For this reason the pinion 107 is made with a number of teeth which is a multiple of eight so that the correspondingly spaced teeth of rack 108 may be properly engaged by the bolt 113 to lock the chute in any one of its nine different positions, said rack being moved one tooth for each adjustment of slide 56 corresponding to one "iron" in the thickness of the blank.

Since the capacity of the machine is such as to produce and distribute blanks of a definite number of different thicknesses or grades, in the present instance nine different grades, and since the rack 108 is engaged by the bolt 113 to hold the chute in adjusted position, in addition to performing the function of an actuator for the chute, a pitch is used for said rack and pinion 107 such that for each movement of one tooth of the rack the chute is adjusted angularly one-eighth of its range of movement. Therefore, the bolt 113 will accurately engage the rack 108 between two of its teeth when the chute occupies any one of its nine possible positions.

In the accompanying drawings the machine is shown in the condition that would exist upon exhaustion of the supply of lifts or blanks from the hopper, and under this condition the shafts 92, 39, 42, 33, 36 and 20, as well as the chain 30, will run idly, if the driving shaft is in motion, until the clutch lever 18 is manually operated. Manual operation of this clutch lever after loading the hopper results in feed slide 8 being operated which starts a blank through the machine, and since each blank upon being discharged from the machine, automatically occasions a feeding movement of said slide the machine will con-

tinue to operate upon blanks fed from the hopper until the supply within the latter is exhausted.

I claim:

1. A machine of the class described comprising grade detecting mechanism for detecting the grade of successive blanks of stock according to thickness, a movable distributor for delivering the blanks into different positions corresponding to their respective grades, setting mechanism including a transverse slide bar responsive to the detecting mechanism, distributor actuating mechanism connecting the slide bar and the distributor for adjusting the distributor in accordance with the adjustment of the slide bar, said distributor actuating mechanism including a yielding, centralizing spring member.

2. A machine of the class described comprising grade detecting mechanism for detecting the grade of successive blanks of stock according to thickness, a movable distributor for delivering the blanks into different positions corresponding to their respective grades, setting mechanism including a transverse slide bar responsive to the detecting mechanism, distributor actuating mechanism connecting the slide bar and the distributor for adjusting the distributor in accordance with the adjustment of the slide bar, said distributor actuating mechanism including a yielding, centralizing spring member, a rack, and a lock controlled by the passage of the blank through the machine for unlocking and locking the rack and distributor.

3. A machine of the class described comprising grade detecting mechanism for detecting the grade of successive blanks of stock according to thickness, a movable distributor for delivering the blanks into different positions corresponding to their respective grades, setting mechanism including a transverse slide bar responsive to the detecting mechanism, distributor actuating mechanism connecting the slide bar and the distributor for adjusting the distributor in accordance with the adjustment of the slide bar, and a lock for holding the distributor in adjusted position, said distributor actuating mechanism including a centralizing spring member adapted to permit a different adjustment of the slide bar while the distributor is locked and to move the distributor according to such different adjustment when the distributor is unlocked.

4. A machine of the class described comprising grade detecting mechanism for detecting the grade of successive blanks of stock according to thickness, a movable distributor for delivering the blanks into different positions corresponding to their respective grades, setting mechanism including a transverse slide bar responsive to the detecting mechanism, and distributor actu-

ating means operated by the slide bar comprising a lever fulcrumed to the machine frame, a connection between the lever above its fulcrum and the slide bar, and a connection including a centralizing spring member and a rack member between the lever below its fulcrum and the distributor.

5. A machine of the class described comprising grade detecting mechanism for detecting the grade of successive blanks of stock according to thickness, a movable distributor for delivering the blanks into different positions corresponding to their respective grades, setting mechanism including a transverse slide bar responsive to the detecting mechanism, and distributor actuating means operated by the slide bar comprising a lever fulcrumed to the machine frame, a connection between the lever above its fulcrum and the slide bar, and a connection including a centralizing spring member and a rack member between the lever below its fulcrum and the distributor, and a lock controlled by the passage of the blank through the machine for unlocking and locking the distributor.

6. A machine of the class described comprising grade detecting mechanism for detecting the grade of successive blanks of stock according to thickness, a movable distributor for delivering the blanks into different positions corresponding to their respective grades, setting mechanism including a transverse slide bar responsive to the detecting mechanism, and distributor actuating means connecting the slide bar and distributor including a lever fulcrumed to the machine frame, a link between the slide bar and the upper end of the lever above its fulcrum, a rack for moving the distributor and a centralizing spring member between the rack and the lower end of the lever below its fulcrum.

7. A machine of the class described comprising grade detecting mechanism for detecting the grade of successive blanks of stock according to thickness, a movable distributor for delivering the blanks into different positions corresponding to their respective grades, setting mechanism including a transverse slide bar responsive to the detecting mechanism, and distributor actuating means connecting the slide bar and distributor including a lever fulcrumed to the machine frame, a link between the slide bar and the upper end of the lever above its fulcrum, a rack for moving the distributor and a centralizing spring member between the rack and the lower end of the lever below its fulcrum, a locking bolt adapted to engage said rack, and means controlled by the passage of the blank through the machine for actuating said locking bolt.

8. A machine of the class described comprising grade detecting mechanism for detecting the grade of successive blanks of stock

according to thickness, a movable distributor for delivering the blanks into different positions corresponding to their respective grades, setting mechanism including a transverse slide bar responsive to the detecting mechanism, distributor actuating mechanism connecting the slide bar and the distributor for adjusting the distributor in accordance with the adjustment of the slide bar, said distributor actuating mechanism including a centralizing spring member, and a lock for holding the distributor in adjusted position while leaving the slide bar free to respond to a succeeding blank.

9. A machine of the class described comprising grade detecting mechanism for detecting the grade of successive blanks of stock according to thickness, a movable distributor for delivering the blanks into different positions corresponding to their respective grades, setting mechanism including a transverse slide bar responsive to the detecting mechanism, distributor actuating mechanism connecting the slide bar and the distributor for adjusting the distributor in accordance with the adjustment of the slide bar, said distributor actuating mechanism including a centralizing spring member, a lock for holding the distributor in adjusted position while leaving the slide bar free to respond to a succeeding blank, and means con-

trolled by the passage of a blank through the machine for actuating said lock.

10. A machine of the class described comprising grade detecting mechanism for detecting the grade of successive blanks of stock according to thickness, a movable distributor for delivering the blanks into different positions corresponding to their respective grades, setting mechanism including a transverse slide bar responsive to the detecting mechanism, distributor actuating mechanism connecting the slide bar and the distributor for adjusting the distributor in accordance with the adjustment of the slide bar, said distributor actuating mechanism including a centralizing spring member, a lock for holding the distributor in adjusted position, and means controlled by the passage of a blank through the machine to unlock the distributor to permit it to move to the position corresponding to said blank under the influence of said centralizing spring, and thereafter to lock the distributor to permit the detecting and setting mechanisms to respond to a succeeding blank without disturbing the distributor before the first blank has left the distributor.

Signed by me at Manchester, New Hampshire, this 28th day of March, 1924.

LEANDER A. COGSWELL.