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PATENTED JULY 10, 1906.

C. G. ULLIN.
COLUMN STAVE STICKER.
APPLICATION FILED SEPT. 28, 1905.

2 SHEETS—SHEET 1.

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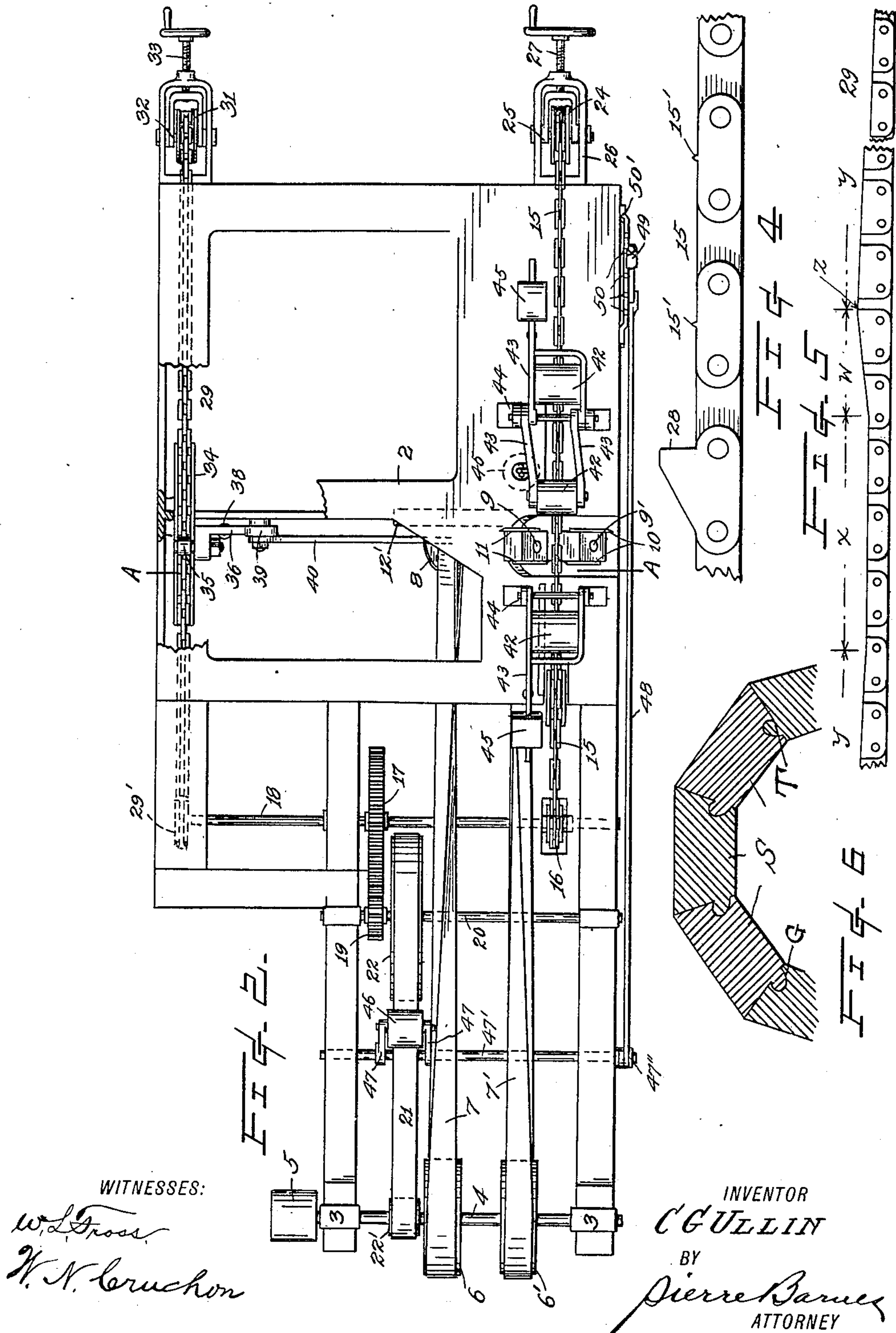
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UNITED STATES PATENT OFFICE.

CARL G. ULLIN, OF BALLARD, WASHINGTON.

COLUMN-STAVE STICKER.

No. 825,622.

Specification of Letters Patent.

Patented July 10, 1906.

Application filed September 28, 1905. Serial No. 280,467.

To all whom it may concern:

Be it known that I, CARL G. ULLIN, a citizen of the United States, residing at Ballard, in the county of King and State of Washington, have invented certain new and useful Improvements in Column-Stave Stickers, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

Figure 1 is a side elevation of a machine embodying my invention. Fig. 2 is a plan view of the same, shown partly broken away; and Fig. 3 is a fragmentary cross-sectional view thereof, taken on line A A. Figs. 4 and 5 are respectively enlarged detail views of chains employed for feed and set services in the machine. Fig. 6 is a detail sectional view of a porch-column or the like constructed of a plurality of interfitting staves.

The object of my invention is the provision of mechanism whereby the side edges of column-staves may be accurately formed to predetermined curved or tapering lines and with oppositely-disposed interlocking tongues and grooves which extend the entire lengths of the staves.

To this end the invention consists in the novel construction, adaptation, and combination of machine parts, as will be hereinafter described, and more particularly pointed out in the appended claims.

In the drawings the reference-numeral 2 designates the framework of the machine, which is suitably constructed to receive the working parts thereof.

Journaled in bearings 3 at one end of the frame is a shaft 4, which is driven by means such as a belt passing around a pulley 5 and leading from a power-shaft. (Not shown.) Provided on the shaft 4 are pulleys 6 6', which are operatively connected by belts 7 7' with pulleys 8 8' of inclined arbors 9 9', which carry also at their upper extremities heads to which cutter-knives 10 and 11 are adjustably secured by bolts, as ordinary. These arbors (see Fig. 3) are journaled in bearings 12 13 of frames 12' 13', which are reciprocally mounted upon guideways 14, formed or provided upon the frame. The cutting edges upon the knives of one said head are each formed with a detent 10', corresponding to the shape of the tongue T, which is cut thereby from the face of the work presented, while each cutting edge of the knives 11 upon the other head is formed with a protruding tongue 11' for shaping the

opposite face of the work with a groove G therein. The work or stave being operated upon is fed to the revolving knives in any suitable manner, desirably by being engaged by a drag-chain 15, passing between said heads. This engagement of the chain with a stave may advantageously be accomplished by providing fangs 15' upon the former, which penetrate into the staves at their under sides and is reliably drawn thereby. The feeding movement of the chain is effected by suitable connection between the aforesaid shaft 4 and a sprocket-wheel 16, which meshes with the chain, and such connection may comprise a driven toothed gear-wheel 17 on the shaft 18 of the sprocket-wheel, a pinion 19, coupled with the gear-wheel, and is fixedly mounted upon an intermediate shaft 20, which is driven from shaft 4 by a belt 21, passing about pulleys 22 and 22' upon the respective last-named shafts, or otherwise. The chain is desirably of somewhat greater length than twice that of the stave being formed and travels lengthwise above and below the top of the machine, as shown, and about the pulleys 23 and 24, the latter being mounted in a slide 25, which is adjustably moved in a slotted frame 26 by a screw 27 for taking up the slack of the chain or to compensate for any changes which may be made in the length thereof. The chain is likewise provided with one or more abutment attachments 28, against which the advance ends of the respective staves are pressed to cause them to be properly positioned for feeding coincidently and in harmony with the progress of the setting-chain, which effects the inward and outward movements of the cutting-knives. This setting-chain 29 is formed of links of varying depths arranged in preferably two series of groups, which are each further divided in the illustrated example into a portion *x* of uniform depth throughout, from which the links in the adjacent portion *y* regularly increase in depth to a maximum at *z* and thence are of diminishing depths in the following portion *w* until they merge with the parallel portion *x* of the adjoining series, as clearly shown in Fig. 5.

The setting-chain is driven by a sprocket-wheel 29', which may be fixedly mounted upon the shaft 18, and thence the chain passes around guide-pulleys 30 and a take-up pulley 31, which is mounted in a slide 32, adjustably movable by a screw 33, similarly to the like member of the other chain. This

setting-chain is guided and supported in a grooved bracket 34, formed or provided in the machine-framework, and passes directly below an antifriction-roll 35, carried by the lateral arm 36 of a T-shaped lever, which is fulcrumed at 37 and resiliently held to maintain said roller continuously in contact with the chain by a dependent weight or helical spring 38, as shown. The other two arms 39 and 39' of the lever are respectively connected by reach-rods 40 and 40' with the aforesaid slidable frames 12' and 13'. By these means the arbors carrying the cutter-knives are coincidentally drawn toward or separated from each other to move the knives and plane, the edges of the stave being operated upon to the proper slants or curvatures.

To vary the amount of curvature to meet special requirements, the slots 41 of said lever-arms and likewise the slots 41' of the frames 12' and 13' are made elongated to enable the bolts which are seated therein and by which the reach-rods are connected to said parts which are to be moved—that is, the cutter-heads and the knives—for regulating their extreme and intermediate positions and also the rate of travel to be given thereto.

Presser-rolls 42 are included in the machine for holding the work firmly against the feed-chain, and for which purpose they may be hung upon swinging arms 43, pivotally supported in angle-lugs 44 and forced down by weights 45 or their equivalent.

The belt 21, by which both of the chains are driven through the medium of the shaft 18, is desirably normally slack and is thus incapable of transmitting motion to the latter until its frictional contact with the driven pulley 22 thereon is increased by the deflection of the belt, which may be accomplished through the operative movement of a tightener-pulley 46. This movement of the pulley 46 is attained by supporting its axle in swinging arms 47 of a rock-shaft 47', having another arm 47'' at the front of the machine and connected by a rod 48 to a lever 49 within convenient reach of the operator. To lock this lever either in its engaged or disengaged positions, it is desirably provided with a hand-actuated spring-pressed latch 49', adapted to engage in any of the notches 50 of an arc-plate 50', secured to the machine-frame.

The operation of the invention is as follows: A stave S is placed upon the feed-chain with its advance end bearing against one of said abutment attachments thereof, and if the feed-chain is not already moving the tightener-pulley is brought to bear against the belt 21 by manipulating the lever 49. The stave is by its engagement with the fangs of the feed-chain caused to be moved therewith to pass within the range of there-
volving cutter-knives, which are moved to-

ward or from each other by the tilting of the aforesaid T-lever, due to the opposing action of the connected spring and the varying depths of the set-chain links, which are disposed in such relative positions as to move in harmony with the feed-chain—that is to say, the straight part of the set-chain would be operatively engaged with the tiltable T-lever at the first portion of the travel of the stave through the cutting plane and is followed by the ascending portion—and when this has passed beneath the lever-roller the latter descends to the adjacent straight portion of the chain, and by thus successively passing over and being affected by the chain the cutter-knives are moved to cut the stave edges in corresponding lines to that taken by the roller acting upon this chain.

In practice, as heretofore stated, I desirably use two abutments on the feed-chain and two series or groups of links in the setting-chain, one for each abutment, to enable two staves to be run through the machine during each "complete revolution," so to speak, of the chain, and, further, the chain is desirably of such length as to effect the cutting of staves of the greatest length for which the machine is designed, and shorter lengths can upon occasion be operated upon by simply shortening both the chains or by changing the positions of the abutment attachments of the feed-chain.

It is evident that the shape or contour of the opposite faces of a stave may be made to conform with special requirements, for example, by changing the depths and relation of the links of the set-chain to present a continuous curved upper surface a like curve will be planed in the stave edges and of more or less curvature, according to the disposition of the rods in their connection with the slidable frames and the tiltable lever.

While I mention several modifications and changes which are capable of being made in the adjustments of the machine parts, I do not wish to be understood as confining myself to the specific devices shown and described, for changes may obviously be made therein, as by the substitution of equivalents, without departing from the spirit of the invention or sacrificing its advantages.

What I do claim as new, and desire to secure by Letters Patent, is—

1. In a machine of the character described, the combination with the framework, a shaft journaled thereon, the inclined arbors journaled in frames slidably mounted in said framework and carrying cutter-knives, and means to drive said arbors from said shaft, of a T-lever fulcrumed to the framework, a rod connecting each said slidable frame to oppositely-disposed arms of the lever, a roller mounted upon the extremity of the other arm of the lever, means contacting with the roller for imparting a tilting movement to

the lever, a spring adapted to maintain such contact between said means and the roller, and means to actuate the means for effecting said tilting movement of the lever.

5 2. In a machine of the character described, the combination with the framework, the arbors carrying heads, means to drive the arbors, said heads, and knives carried by the heads, such knives on one head being formed
10 with a protruding tongue and those of the other head with a detent in the respective cutting edges, of a chain passing between said heads, means carried by the chain whereby a stave is engaged for progressively moving it therewith, another chain provided with
15 links of varying depths, slidable carriers for the said arbors, a tiltable T-lever, adjustable connections between said tiltable T-lever and said carriers which is actuated by the
20 moving contact with the last-named chain for imparting a reciprocating movement to said arbors and the heads carried thereby, and means for coincidently driving said chains.

25 3. In combination with movable stave-cutting mechanism, a T-lever connected thereto, a guideway underlying one leg of said lever, a chain for operating said leg in said guideway, and means for sustaining said
30 leg in engagement with said chain.

4. In combination with a pair of movably-mounted stave-cutting mechanisms, a T-lever having its head connected to each of said mechanisms, and a chain underlying the leg of said lever to operate the latter.

5. In combination with a pair of cutting mechanisms, one arranged in advance of the other, a tilting device connected to each of said mechanisms at opposite sides of its fulcrum for operating the same in unison, and
40 means for operating the device connected thereto on another side of said fulcrum.

6. In combination with a pair of cutting mechanisms, a tiltable element having rods connected at opposite sides to each of said
45 mechanisms, and means for actuating said element at a third point.

7. In combination with a pair of cutting mechanisms arranged one in advance of the other, a pivoted device connected at opposite
50 sides of its pivotal point to each of said mechanisms for actuating the same in unison, and means for vertically moving another side of said device.

In testimony whereof I affix my signature
55 in presence of two witnesses.

CARL G. ULLIN.

Witnesses:

PIERRE BARNES,
GUY M. THOMPSON.