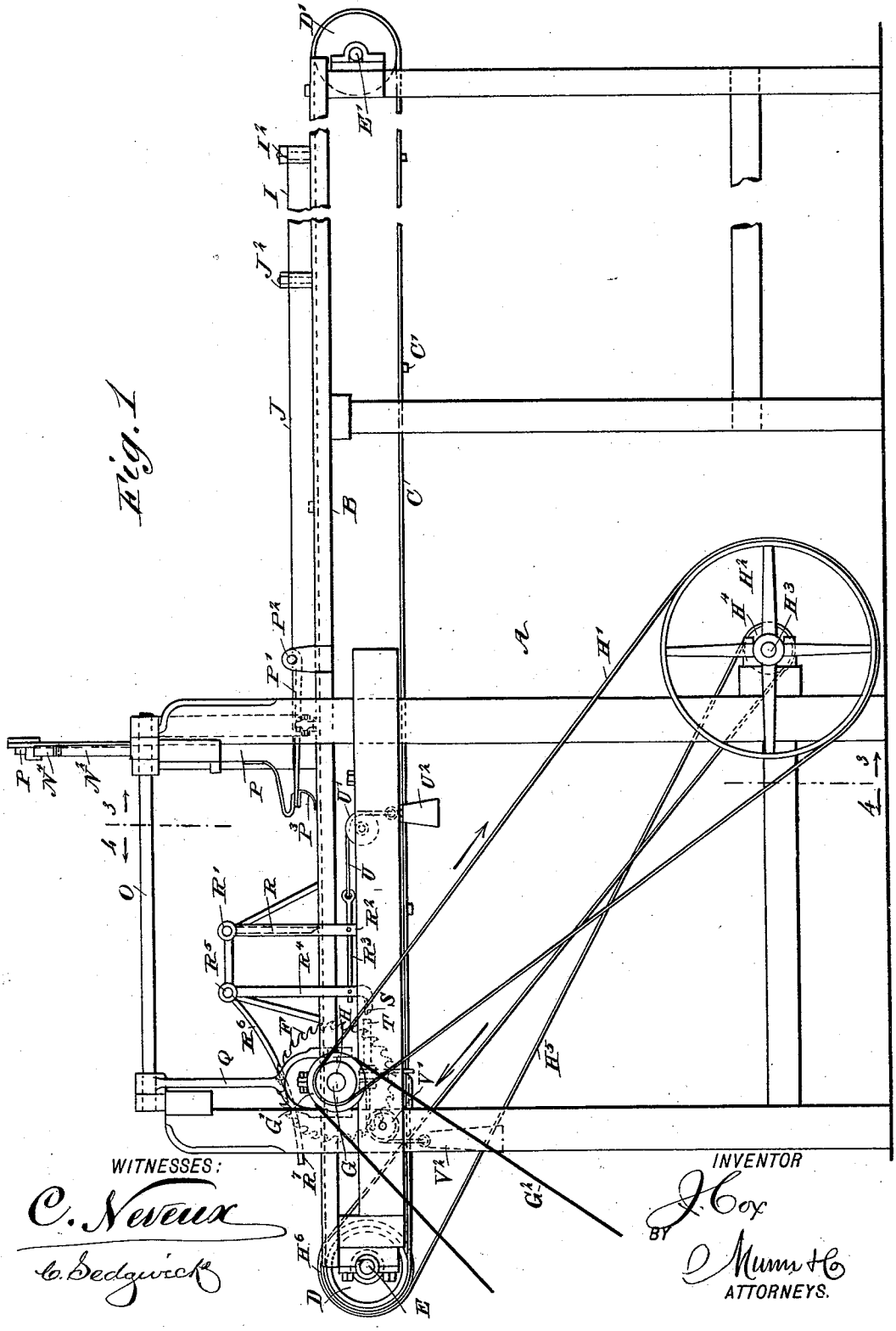
(No Model.) 3 Sheets—Sheet 1.

J. COX.

EDGER.

No. 544,158. Patented Aug. 6, 1895.

Fig. 1.



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(No Model.) 3 Sheets—Sheet 2.

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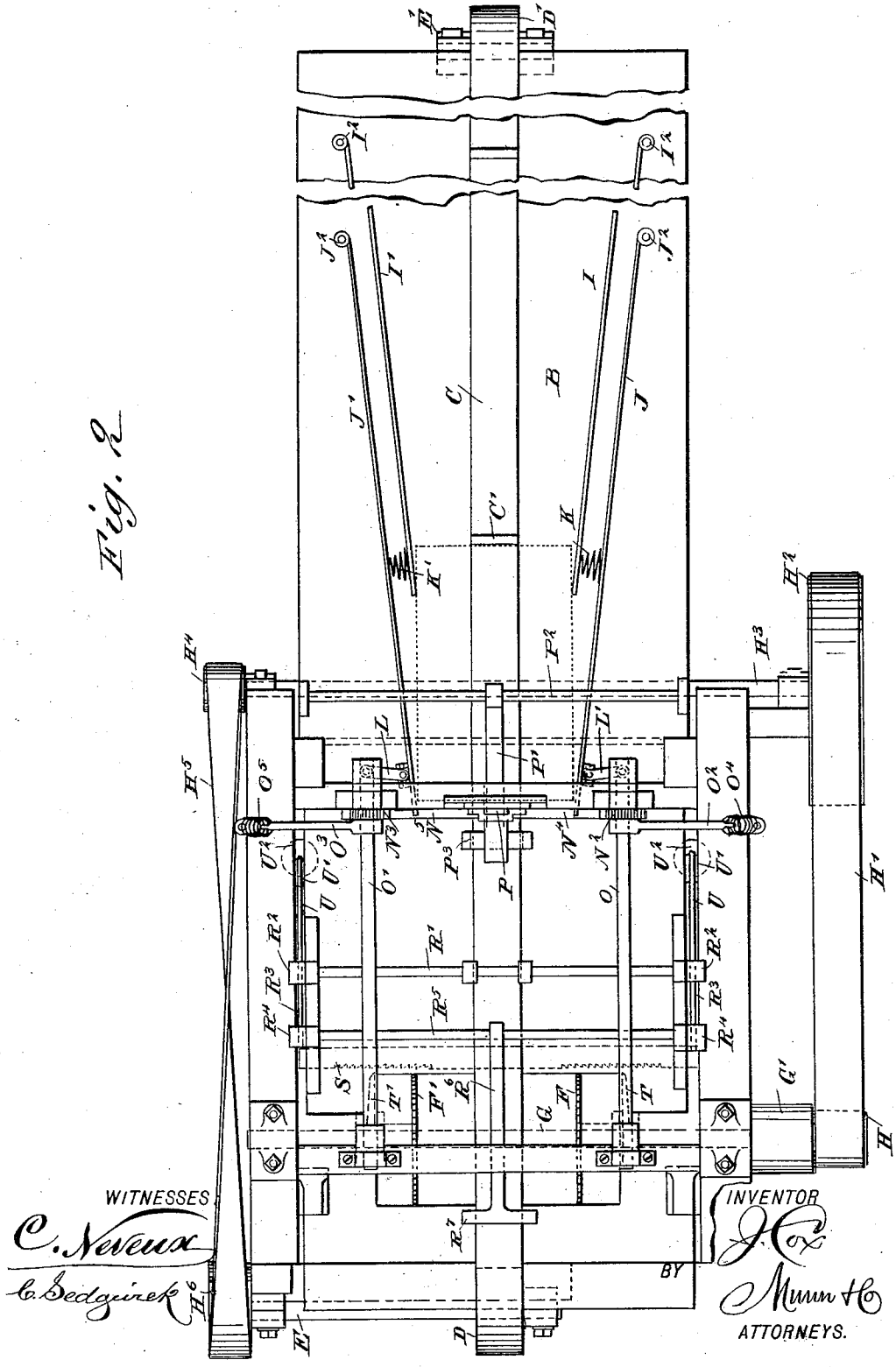
Fig. 2.



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(No Model.) 3 Sheets—Sheet 3.

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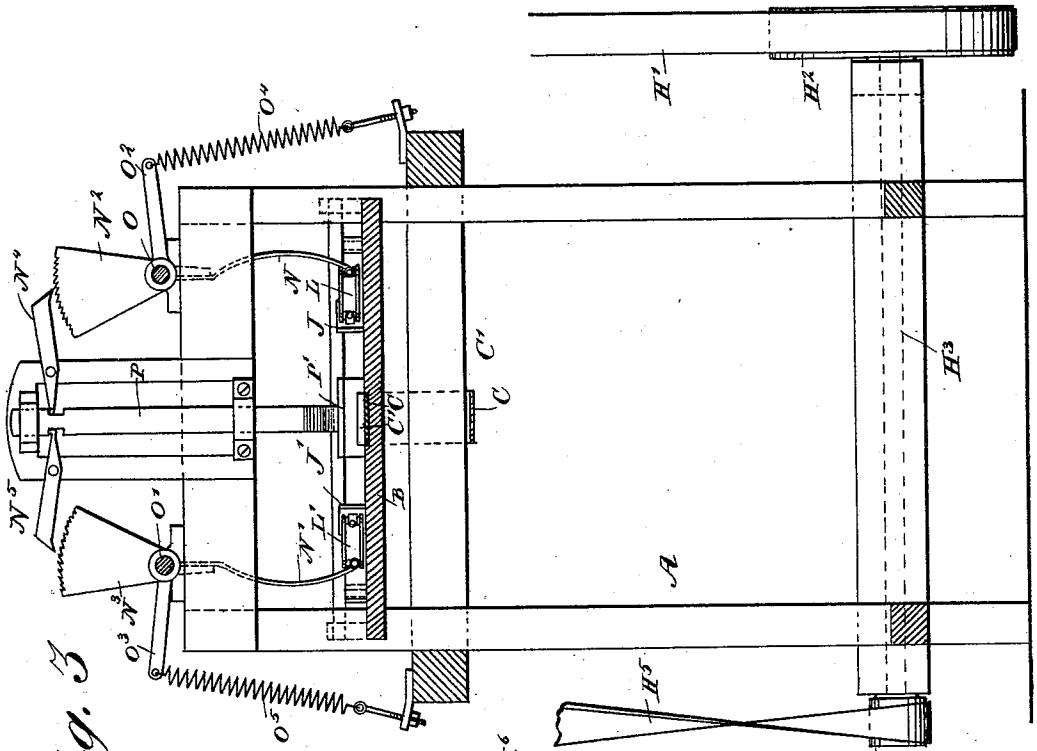

Fig. 3

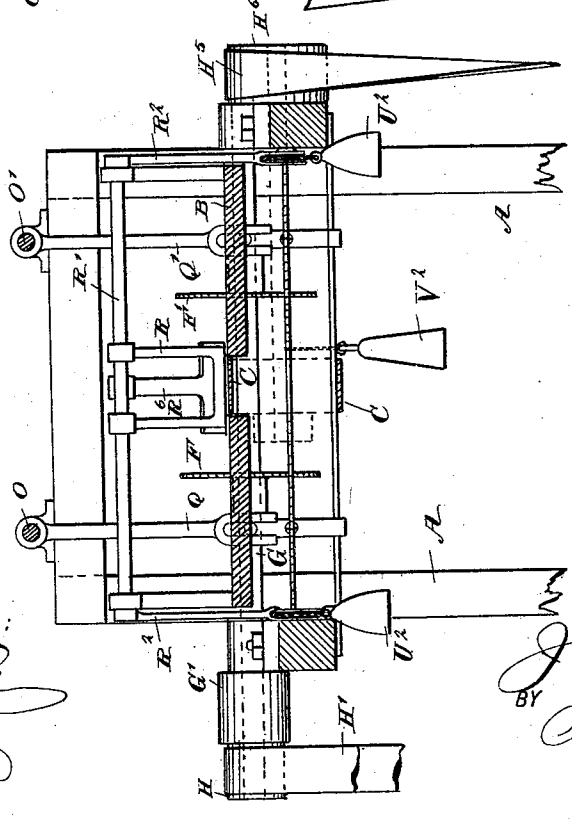

Fig. 4

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UNITED STATES PATENT OFFICE.

JOHN COX, OF VICTORIA, CANADA.

EDGER.

SPECIFICATION forming part of Letters Patent No. 544,158, dated August 6, 1895.

Application filed December 13, 1894. Serial No. 531,689. (No model.)

To all whom it may concern:

Be it known that I, JOHN COX, of Victoria, British Columbia, Canada, have invented a new and Improved Edger, of which the following is a full, clear, and exact description.

The invention relates to wood-working machinery; and its object is to provide a new and improved edger, which is simple and durable in construction, very effective in operation, and designed for properly cutting parallel edges on shingles, boards, and other articles.

The invention consists of shifting devices actuated by the forwardly-moving article to be edged to set the saws transversely on their spindle according to the width of the article.

The invention also consists of certain parts and details and combinations of the same, as will be hereinafter described, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improvement. Fig. 2 is a plan view of the same. Fig. 3 is a transverse section of the same on the broken line of Fig. 1 looking in the direction of the arrows 3 3, and Fig. 4 is a like view of the same on the broken line of Fig. 1 looking forward in the direction of the arrows 4 4.

The improved machine is provided with a suitably-constructed frame A supporting a table B, over which passes an endless carrier-belt C having transverse ribs C′ for conveniently moving the article to be edged forward over the table B. The endless carrier-belt C passes over pulleys D and D′, arranged at the ends of the frame A and secured on shafts E and E′, respectively, journaled in suitable bearings on the said main frame A.

The shingles or other articles to be acted on are fed onto the carrier-belt C near the rear end of the table B at the pulley D′, the said belt carrying the article to two circular saws F and F′, held transversely adjustable on a spindle G journaled in suitable bearings on the main frame A and provided at one outer end with a pulley G′, over which passes a belt G^3 connected with suitable machinery for imparting a continuous rotary motion to the said spindle G. The pulley D previously mentioned is rotated from the spindle G, and for this purpose the latter is provided with a pulley H, over which passes a belt H′, also passing over a large pulley H^2 secured on a transversely-extending shaft H^3 journaled in suitable bearings in the lower part of the frame A near the middle thereof, as plainly shown in the drawings.

On the shaft H^3 is secured a small pulley H^4 connected by a crossed belt H^5 with a pulley H^6 secured on the shaft E carrying the pulley D, so that the latter is rotated when the spindle G is set in motion. The rotary motion given to the pulley D causes a traveling of the belt C, so as to carry the article to be cut forward to the saws F to be edged by the latter. In order to shift the saws F laterally according to the width of the article to be edged the following tripping devices are employed.

On the table B, on opposite sides of the belt C, are arranged the obliquely-extending arms I and I′, pivoted at their rear ends at I^2 on top of the table B. Parallel to the arms I and I′ are arranged the arms J and J′, respectively, connected with the latter by springs K and K′, respectively, the said springs being arranged near the front ends of the arms I to engage the other arms near the middle, as will be readily understood by reference to Fig. 2. The rear ends of the arms J and J′ are pivoted at J^2 on top of the table B in front of the pivots I^2 for the arms I and I′. The ends of the sets of arms I J and I′ J′ are suitable distances apart, so as to conveniently guide and hold the shingle or other article in the proper position on the belt C. (See dotted lines, Fig. 2.)

The front or free ends of the arms J and J′ are pivotally connected at their outer faces by the links L and L′, respectively, with the spring-arms N and N′, respectively, secured on shafts O and O′, respectively, arranged longitudinally above the table B and journaled in suitable bearings held on the main frame A. The shafts O and O′ are spring pressed, and for this purpose the said shafts are provided with outwardly-extending arms O^2 and O^3, respectively, connected with coil-springs O^4 and O^5, respectively, held on bolts attached to the main frame A. (See Fig. 3.)

On the shafts O and O′ are also secured the upwardly-extending ratchet-sectors N^2 and N^3, respectively, adapted to be engaged by pawls N^4 and N^5, respectively, fulcrumed on a bracket on the frame A, and having their inner ends engaged by notches of a vertically-sliding bar P, resting with its lower end on a tripping-lever P′, arranged over the belt C at the front ends of the arms J and J.′ (See Figs. 1 and 2.) The pivot P^2 of the lever P′ extends transversely over the table B and is journaled in suitable bearings attached to the sides of the table, as shown.

On the front end of the tripping-lever P′ is arranged a downwardly-extending and forwardly-curved foot P^3, normally resting on the belt C, and adapted to be lifted by the shingle or other article carried forward by the belt. On the forward ends of the shafts O and O′ (see Figs. 1 and 4) are secured the downwardly-extending shifting-forks Q and Q′, engaging the hubs of the saws F and F′, respectively, so as to shift the latter transversely on the spindle G, according to the movement given to the shafts O and O′ to set the saws according to the width of the article to be edged.

Between the saws F and the tripping-lever P′ is arranged a tripping-arm R held normally in a vertical position directly above the belt C, the said arm projecting downwardly from a transversely-extending shaft R′ journaled at its ends in suitable bearings attached to the main frame A. The outer ends of the shaft R′ support downwardly-extending arms R^2, pivotally connected by links R^3 with a second set of arms R^4 depending from a transversely-extending shaft R^5, arranged parallel to the shaft R′, and also supported in bearings of the main frame A. From this shaft R^5 extends forwardly and downwardly a third tripping-arm R^6, reaching with its front end beyond the saws F, the free end of the said arm being provided with a forwardly and downwardly curved foot R^7 similar to the foot P^3, and also resting normally on the belt C to be engaged by the forwardly-moving shingle or other article after the same has been edged by the saws.

The arms R^4 support, below the table B, a transversely-extending notched bar S, (see Fig. 2,) the said bar being adapted to be engaged by forwardly-projecting pins T and T′ secured to the collars of the saws F and F′ respectively. Thus, when a forwardly-swinging motion is given to the tripping-arm R by the shingle or other article carried on the belt C, then a like forwardly-swinging motion is imparted to the arms R^2 and R^4, so that the notched bar S is moved in contact with the locking-pins T and T′ to securely lock the saws F and F′ in position to prevent transverse movement or shifting of the same on their spindle G, without, however, preventing their rotary movement.

In order to return the tripping-arms R and R^6 and the arms R^2 and R^4 and notched bar S, I connect the arms R^2 with rearwardly-extending ropes U passing over pulleys U′, held on the frame A, the downwardly-extending parts of the ropes supporting weights U^2, so that when the foot R^7 trips off the rear end of the forwardly-moving shingle then the weight U^2 will cause a return movement of the several parts to move the notched bar S out of engagement with the pins T and T′.

The operation is as follows: The shingle or other article passing onto the traveling belt C at the rear end of the table B is moved forward by the said belt as one of the ribs or cleats C′ engages the rear edge of the shingle, as shown in dotted lines in Fig. 2. The shingle in its forward movement over the table B comes in contact with the arms I I′ and also with the free ends of the arms J J′, so that the latter are swung outward or inward according to the width of the shingle, whereby a transverse movement is given to the links L L′ to impart a swinging motion to the arms N N′, so as to rock the shafts O O′, thus causing a lateral shifting of the saws F and F′ on the spindle G to move the said saws a distance apart corresponding to the smallest width of the shingle carried by the bolt C. As soon as the shingle passes under the first tripping-foot P^3 of the tripping-lever P′, then the latter swings upward and thus imparts an upwardly-sliding movement to the bar P, so that the pawls N^4 and N^5 engage the sector-ratchets N^2 and N^3 to lock the latter in place to prevent an outward sliding of the saws F and F′, as a rocking of the shafts O and O′ to accomplish this movement is entirely prevented. The pawls N^4 and N^5, however, permit the ratchets N^2 N^3 to move outward, to cause an inward movement of the saws F and F′, respectively, whenever a portion of the shingle of less width than the one first engaged by the arms I I′ and J J′ comes in contact with the said arms. In this manner the saws will be adjusted to a distance corresponding to the narrowest portion of the shingle. In case a projection or other prominence is in an edge of the shingle, then the spring-pressed arms O^2 and O^3 will yield sufficiently to permit the shafts O and O′ to rock outwardly, without affecting, however, the position of the saws. The shingle in its further forward movement engages the tripping-arm R, whereby movement is given to the notched bar S, as previously described, to engage the pins T to prevent shifting of the saws outward or inward. Thus, by the time the shingle passes to the saws, the latter are in the proper position to admit the edges of the shingle, so as to cut the same parallel and to a size corresponding to the narrowest width of the shingle. When the shingle has R^7 finally been cut by the saws and left the foot of the last tripping-arm R^6, then the weights U^2 unlock the saws F to permit shifting of the same according to the width of the next following shingle carried forward by the belt.

It is understood that as soon as the shingle

has left the foot P^3 of the first tripping-lever P′ the lever P′ swings downward to permit dropping of the bar P, which disengages the pawls N^4 and N^5 from the ratchets N^2 and N^3 to permit rocking of the shafts O and O′ in either direction.

It will be understood that the saws F F′ are located far enough in the rear of the saw-adjusting mechanism—to wit, the arms I I′ J J′—to allow the material to be operated upon to pass completely beyond the said arms before the saws begin to operate upon the material.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. An edger comprising a carrier belt for moving the article forward to the saws, and shifting devices actuated by the forwardly-moving article to set the saws transversely on their spindle according to the width of the article to be cut, substantially as shown and described.

2. An edger comprising a revoluble spindle, saws mounted to be shifted on the said spindle and revolving with the same, and shifting devices adapted to be actuated by the forwardly-moving article to be edged, the said devices being connected with the said saws to shift the latter transversely on their spindle, substantially as shown and described.

3. An edger comprising an endless feed belt for carrying the articles to be edged, forward, a spindle mounted to revolve, saws mounted to turn with the said spindle and fitted to slide transversely thereon, tripping devices adapted to be actuated by the article carried on the said belt, the said tripping devices being connected with the said saws to shift the latter transversely on their spindle, substantially as shown and described.

4. An edger comprising an endless feed belt for carrying the articles to be edged, forward, a spindle mounted to revolve, saws mounted to turn with the said spindle and fitted to slide transversely thereon, tripping devices adapted to be actuated by the article carried on the said belt, the said tripping devices being connected with the said saws to shift the latter transversely on their spindle, and means, substantially as described, for returning the said tripping devices to their normal position after the article has passed the said tripping devices, as set forth.

5. An edger comprising a carrier for moving the article forward to the edging tools, shifting devices actuated by the forwardly-moving article to adjust the said tools transversely corresponding to the width of the article and a locking device actuated by the moving article, for preventing outward movement of the edging tools, yet allowing inward movement thereof, substantially as described.

6. An edger comprising a carrier for moving the article forward to the edging tools, shifting devices actuated by the forwardly-moving article to adjust the said tools transversely corresponding to the width of the article, a locking device actuated by the moving article, for preventing outward movement of the edging tools, yet allowing inward movement thereof, and another locking device actuated by the moving article after the first named locking device, for holding the edging tools against both inward and outward movement, substantially as described.

JOHN COX.

Witnesses:
J. ST. CLAIR BLACKETT,
JOHN MILLS.