

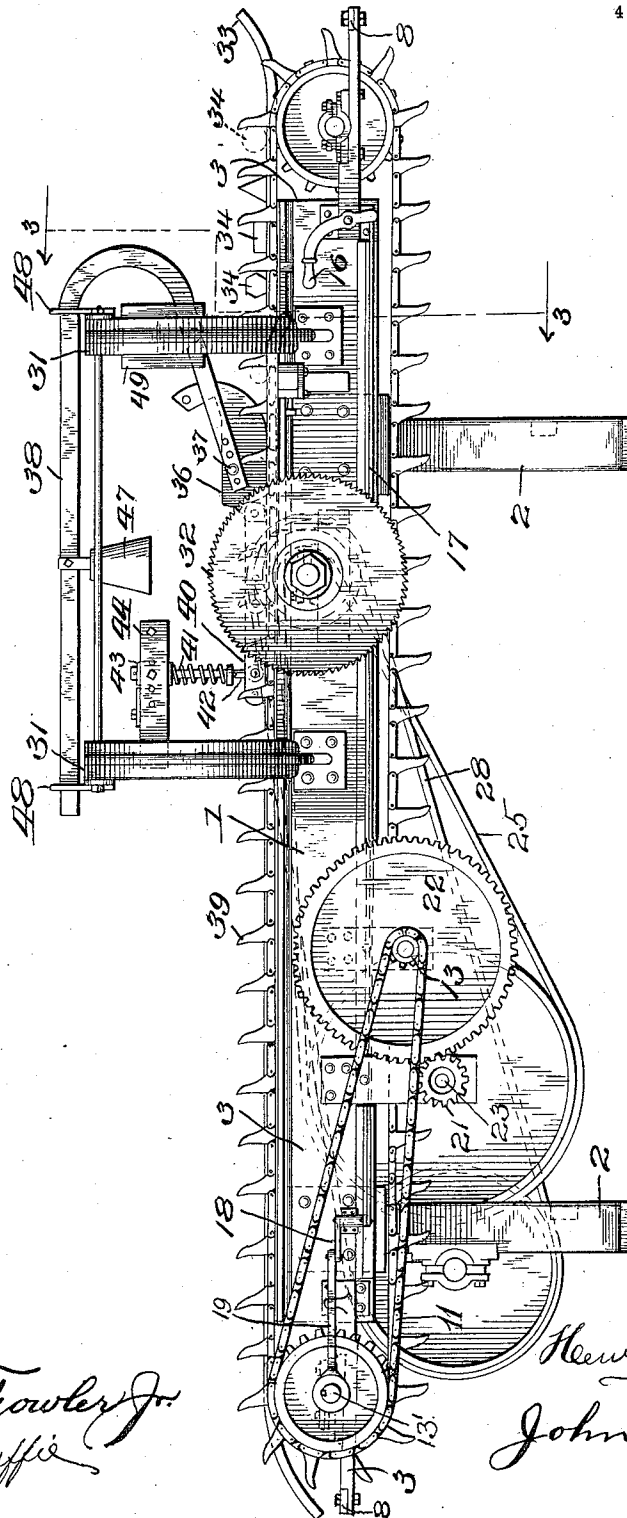
H. SEGRAVES.
SPOKE EQUALIZING MACHINE.
APPLICATION FILED JAN. 9, 1912.

1,060,793.

Patented May 6, 1913.

4 SHEETS—SHEET 1.

FIG. 1.



Witnesses

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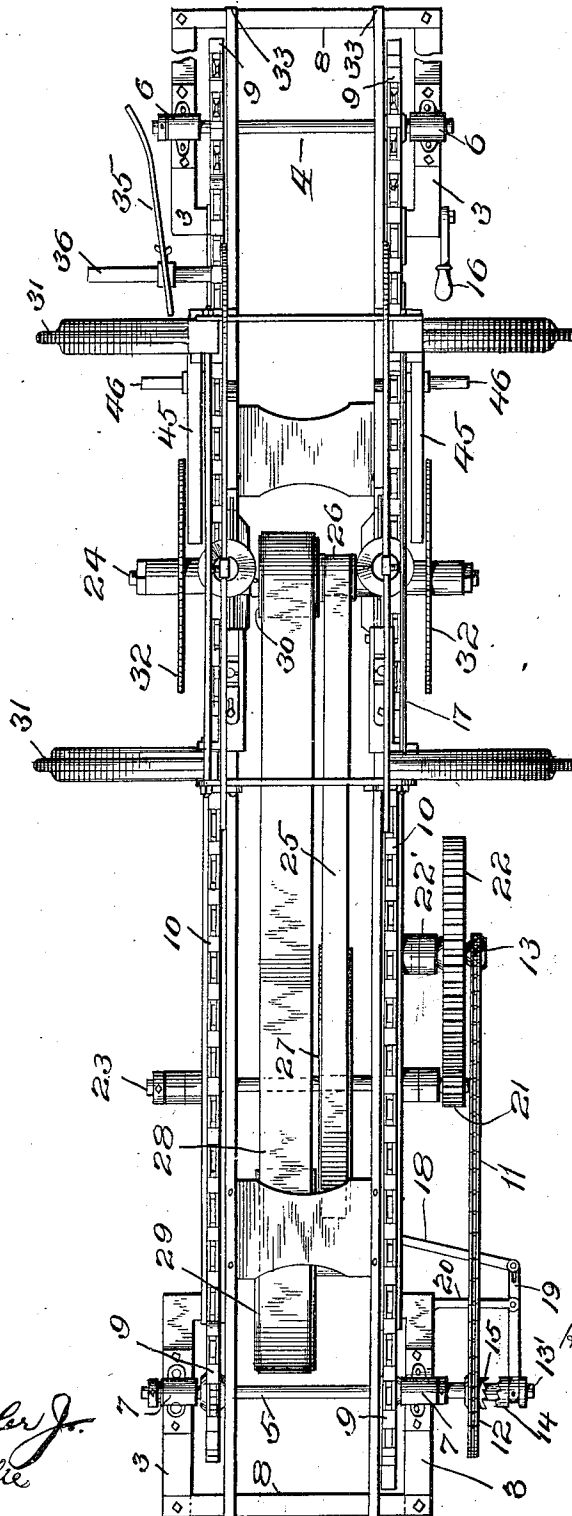
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4 SHEETS—SHEET 2.

FIG. 2.



Witnesses

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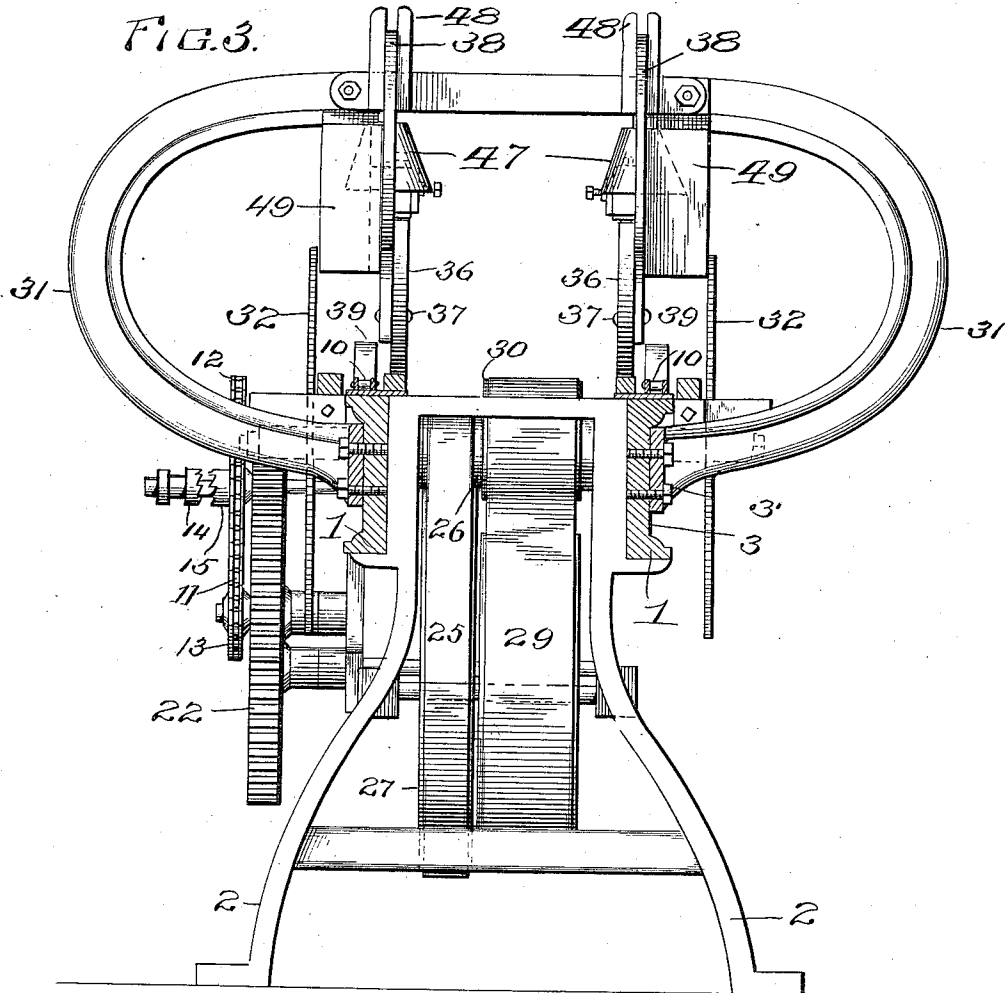
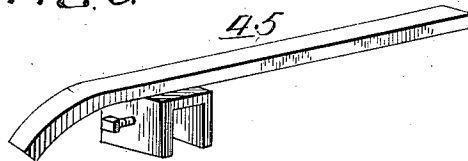


FIG. 6.



Witnesses

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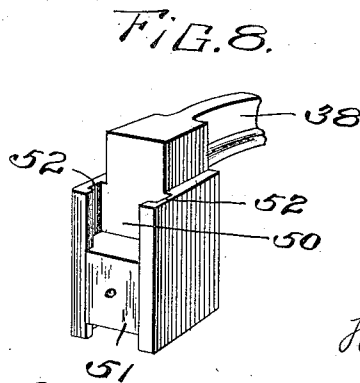
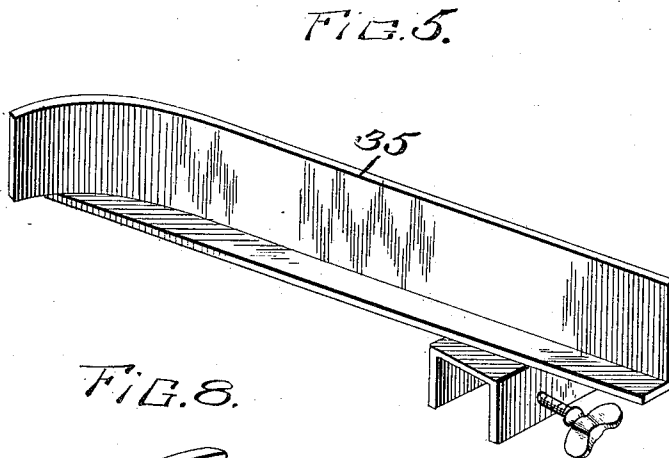
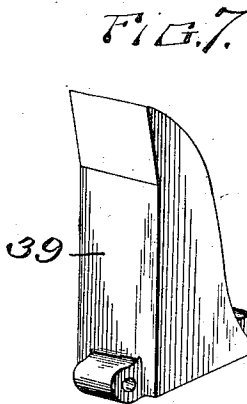
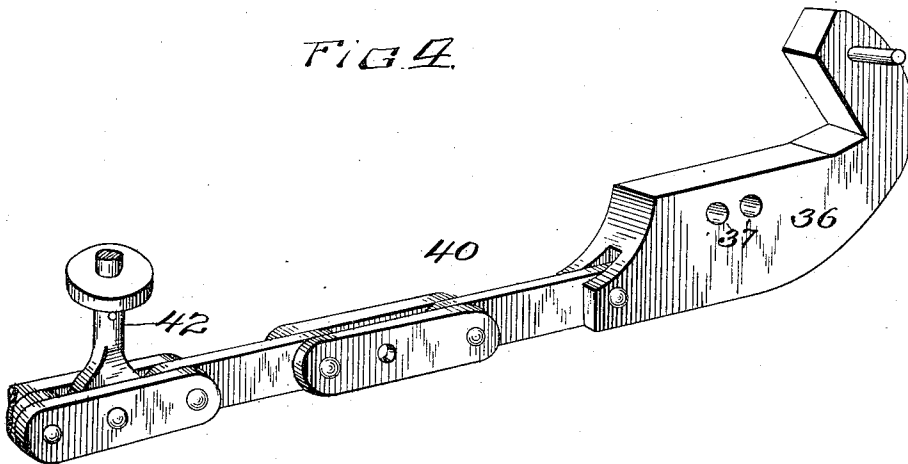
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4 SHEETS—SHEET 4.



Witnesses

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UNITED STATES PATENT OFFICE.

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SPOKE-EQUALIZING MACHINE.

1,060,793.

Specification of Letters Patent.

Patented May 6, 1913.

Application filed January 9, 1912. Serial No. 670,148.

To all whom it may concern:

Be it known that I, HENRY SEGRAVES, a citizen of the United States, residing at Pikeville, in the county of Pike and State of Kentucky, have invented certain new and useful Improvements in Spoke-Equalizing Machines, of which the following is a specification.

This invention has relation to new and useful improvements in spoke equalizing machines and the main object thereof is to produce a device of this nature that will equalize spokes from billets of different shapes and sizes, speedily and accurately.

A further object of my invention is to obviate to the greatest extent possible the danger incident to machines of this nature without lessening in any degree but rather increasing the efficiency and speed of the machine in its operation.

In attaining the above objects I employ a combination of old and well known parts in conjunction with new parts or elements, which will be described more fully herein-after.

With the foregoing and other objects in view, my invention consists of the novel features of construction, combination and arrangement of parts as are described in this specification, illustrated in the accompanying drawings forming a part thereof and particularly pointed out in the claims hereunto appended.

Reference being had to the drawings: Figure 1 is a side elevational view of my invention in readiness for operation. Fig. 2 is a top plan view thereof. Fig. 3 is a vertical, transverse, sectional view of my machine on the line 3—3 of Fig. 1, looking in the direction of the arrows. Fig. 4 is a perspective view of the spoke receiver and safety hold-down links connected therewith. Fig. 5 is a perspective view of the spoke guide. Fig. 6 is a perspective view of the timber rest. Fig. 7 is a perspective view of one of the right-angular attachments to the conveying chains, each attachment being interposed between the meeting ends of each two adjacent links, each attachment constituting in itself a link adapted to receive a tooth of the sprocket wheel upon which it travels. Fig. 8 is a detailed perspective view of a slide and groove used in the machine.

Referring more particularly to the drawings, in which like numerals designate like

parts throughout, my invention is described as follows: The machine primarily consists of a frame 1, which frame is supported by the legs or standards 2. Provided adjacent to the ends of the longitudinal beams 3 of the frame are the spindles 4 and 5 which are rotatably mounted in respective bearings 6 and 7 provided with said longitudinal beams. The transverse beams 8 are secured by suitable means such as nut and bolt connections, to the ends of the longitudinal beams 3 constituting part of the framework 1 of the device.

Provided within and adjacent to the longitudinal beams 3 of the device are the sprocket wheels 9 two of each being keyed to each of the spindles 4 and 5. Traveling upon respective sprocket wheels 9 are the carrying chains 10, power being transmitted to the carrying chains from the sprockets keyed to said spindles 5 while power is transmitted to the spindle 5, when desired, by the sprocket chain 11 which travels upon a sprocket wheel 12 and a small sprocket wheel 13. The sprocket wheel 12 is loosely mounted upon the extending portion 13' of the spindle 5, which portion is outside the frame 1.

When it is desired to transmit power to the spindle 5 a clutch 14 which is splined to the spindle 5 is thrown into engagement with the clutch member 15 on the sprocket wheel 12 by means of the operation of a lever 16 fulcrumed adjacent to the forward end and to the framework of the machine in easy reach of the operator. A rod 17 is interposed between the lower end of the lever 16 and the inner end of the lever 18, which lever is fulcrumed to the frame 1 of the device, the outer end of the rod 18 being pivotally connected to the lever 19 at its forward end, which lever 19 is fulcrumed to the outer end of the outwardly extending rod 20, the rear end of said lever 19 being provided with a collar which engages said friction clutch 14 loosely or in such manner as to permit the latter to rotate with the spindle 5. Power is transmitted to said sprocket wheel 13 by means of a small gear wheel 21 and a large gear wheel 22, which intermesh, the large gear wheel 22 rotating upon a counter-shaft 22', said sprocket wheel 13 being bolted to said gear wheel 22, thereby transmitting to the conveying chains 10 a reverse motion to that which would be had if said gear wheels 21 and 22 were not em-

played. Power is transmitted to the shaft 23 from the saw mandrel 24 by means of a belt 25 which travels upon a small pulley 26 secured to said mandrel and a large pulley 27 secured to the spindle 23. Power is in turn transmitted to the saw mandrel 24 by means of a belt 28 traveling upon a large pulley 29 and a small pulley 30, the latter being secured to said saw mandrel 24.

It will be seen that in transmitting power from the pulley 29 to the pulley 30, the speed of the saw mandrel is increased but that the power that is transmitted from the pulley 26 secured to the saw mandrel 24 finally to the spindle 5 as heretofore explained is many times increased while the speed is reduced in reverse proportion and the direction of power is necessarily reversed by the introduction of the gear wheels 21 and 22, as explained, in order to cause the conveying chains 10 to travel in the proper direction and at the proper speed required.

Secured to the longitudinal beams 3 by suitable means such as nut and bolt connections 3' and spaced apart at proper intervals, are a pair of G-shaped supports 31, one of said supports being placed in front of the circular saws 32, which are secured to said saw mandrel 24, while the other is placed in the rear thereof. Secured to the transverse beams 8 of the frame 1, adjacent to each of the conveying chains 10 is a chain guide 33, said guide being slightly higher, approximately one-fourth of an inch, than the upper edge of the chain links thereby relieving the carrying chains of all downward pressure, they being therefore required to offer a pulling pressure only upon billets 34 which pass through the machine to be equalized.

A spoke guide 35 is adjustably secured to an outwardly extending arm 36, which guide is for the purpose of causing the billets as they pass along the chain guides 33 to be guided, said guide being so arranged as to permit a certain amount to be cut from the end of the billet by the saw which is provided upon that side of the machine to which the guide is secured, thereby enabling the operator to preserve the best end of a billet and cause the poorer end, which may probably contain defects or knots, to be cut away.

As soon as the billets pass beyond the spoke guide or centering device 35 they pass through the forward G-shaped support 31 whence they pass under a pair of spoke receivers 36, which spoke receivers contact respective chain guides 33, normally. As the billets are received by the spoke receivers 36, the forward curved ends thereof are raised by the action of the first billet contacting the same, rotating upon respective pivots 37 at which points they are connected to respective controlling levers 38, said controlling levers each being raised as said first

billet is being received. As the billet passes farther along the chain guides 33 the spoke receiver 36 is raised more and more until it assumes a height above the chain guides which they respectively contact when in a normal position equal to the greatest height of the billet which they receive. The greatest height of each spoke receiver above the chain guide upon which it rests will be reached when the billet is directly under the pivots 37, when the forward curved end of each spoke receiver 36 is allowed to gradually descend, if necessary, to a point where it will contact the next billet being conveyed rearward by vertical uprights 39 of the conveying chains 10. The ends of the first billet will, in the meanwhile, be partly cut away by respective circular saws 32, the ends of the said billet simultaneously passing under the safety hold-down chains 40 against the action of the coil or helical spring 41 which spring encircles a vertically disposed plunger 42, which reciprocates in the pivoted bearing 43 of the horizontal support 44, which support is secured to the rear G-shaped support 31. In order that the billets will be provided with a firm support as they are being sawed, timber rests 45 are secured to the longitudinal beams 3 outside the frame to outwardly extending arms 46 whereupon they may be adjusted to suit the adjustment of the circular saws 32. As the billets pass directly between the saw blades they will necessarily raise the safety hold-down links, the forward ends of which are directly connected to the forward ends of respective spoke receivers, to a height which is equal to the greatest thickness of the billet or billets which are passing thereunder, which will pull the chain and draw the lower end of the plunger 42 forward and, at the same time, force it upward, which action will contract the spring 41 as the plunger reciprocates through said pivoted bearing 43. As the first billet passes from under the safety hold-down links there will be a second and third and fourth billet and so on to take the place of the next preceding billet, the spoke receivers together with their respective safety hold-down links adjusting themselves to the billet according to their sizes and shapes. As the billets pass from under the safety hold-down links they will have been cut to exactly the proper length that is desired. They will then pass under the rear G-shaped support 31, along the chain guides 33 to the rearward extremity thereof, when they will be received by a receptacle at the rear end of the machine provided for that purpose (not shown). Referring again to said controlling levers 38 it will be stated that they are weighted to the amount desired by means of a weight 47 connected to each centrally. Said controlling levers are each supported by a pair of forks 48 secured

to each of said G-shaped supports 31 in corresponding positions, said forks 48 permitting the vertical movement of the levers held therein.

5 The forward G-shaped support has integral therewith tongues 49 extending downward therefrom. Provided in each is a vertical slot 50 which receives a slide 51 reciprocally. Each of said controlling levers is
10 connected to a vertical slide 51 by suitable connecting means, such as a bolt passing through corresponding holes in each controlling lever and its respective slide. Said slides are permitted to slide as far as is
15 necessary to accommodate the reception of the various sized billets. Each slide 51 is held against removal from its respective slot by the employment of grooved ways 52.

Although I have specifically described the
20 novel features of construction, combination and arrangement of the several parts of my invention, yet I do not confine myself to such specific construction, combination and arrangement of parts, but reserve and may exercise the right to make such changes therein
25 as do not depart from the spirit of the invention or the scope of the appended claims.

Having described my invention what I claim as new and desire to secure by Letters
30 Patent, is:

1. A machine of the type described, including an endless carrier, rotary saws arranged for coöperation with said carrier, work-guides paralleling the plane of the
35 upper rim of said carrier, spoke-receivers superposed with respect to said carrier, angular levers for controlling said spoke-receivers, pivotally connected to the latter, near their forward ends, tongues supported in
40 elevated position, said levers being provided with slides received by and vertically movable within said tongues and controlling means for the rear ends of said spoke receivers.

45 2. A machine of the type described, including an endless carrier, rotary saws arranged for coöperation with said carrier, work-guides paralleling the plane of the upper rim of said carrier, spoke-receivers

superposed with respect to said carrier, angular levers having pivotal connection with
50 said spoke-receivers at their forward ends, forks supported in elevated position, tongues similarly supported, said angular levers being received by said forks and having
55 depending slides received by and vertically movable within said tongues, and controlling means for the rear ends of said spoke-receivers.

3. A machine of the type described, including an endless carrier, rotary saws arranged for coöperation with said carrier, work-guides paralleling the upper rim of
60 said carrier, spoke-receivers superposed with respect to said carrier, approximately G-shaped supports arranged fore and aft of said saws, angular levers for controlling said
65 spoke-receivers, pivotally connected to the latter, near their forward ends, tongues supported from said approximately G-shaped
70 supports, said levers being provided with slides received by and vertically movable within said tongues, and controlling means for the rear ends of said spoke-receivers.

4. A machine of the type described, including an endless carrier, rotary saws arranged for coöperation with said carrier, work-guides paralleling the upper rim of
75 said carrier, spoke-receivers superposed with respect to said carrier, upright supports arranged fore and aft of said saws, angular levers for controlling said spoke-receivers, pivotally connected to the forward ends of
80 said spoke-receivers, tongues supported from said upright supports, said levers being provided with slides received by and vertically movable within said tongues, and means for
85 controlling the rear ends of said spoke-receivers, comprising resiliently actuated rods supported from one of said upright
90 supports and pivotally connected to said ends of said spoke-receivers.

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

HENRY SEGRAVES.

Witnesses:

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N. E. GARNER.