

(No Model.)

2 Sheets—Sheet 1.

E. BENJAMIN.

FEEDING ATTACHMENT FOR WOOD WORKING MACHINES.

No. 440,735.

Patented Nov. 18, 1890.

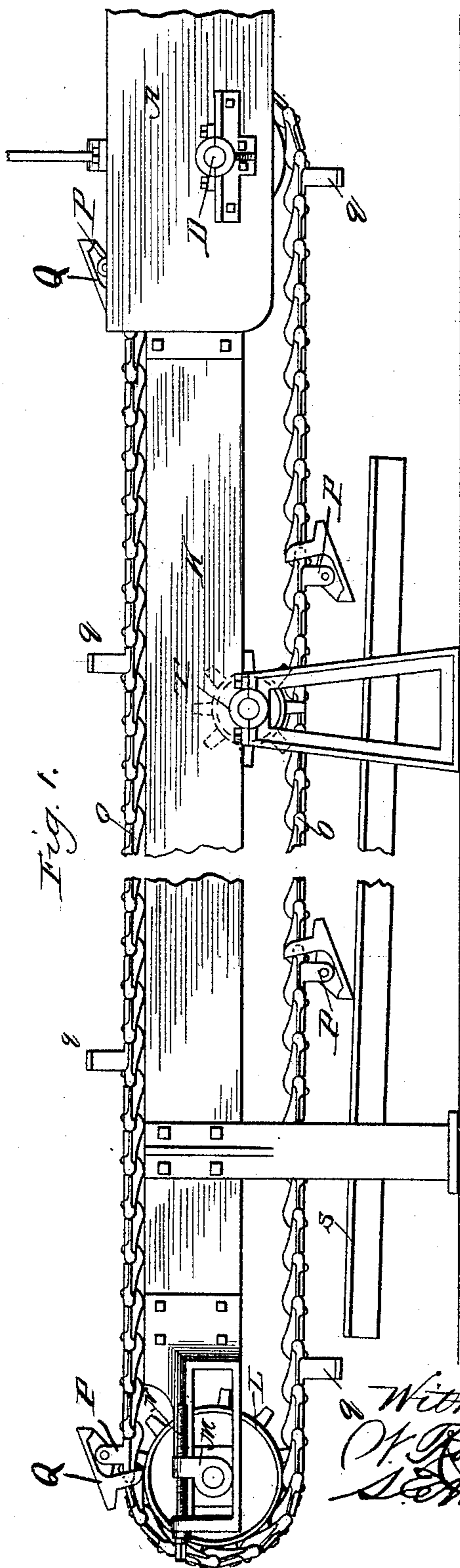


Fig. 1.

Witnesses
A. R. R. R.
S. Magill

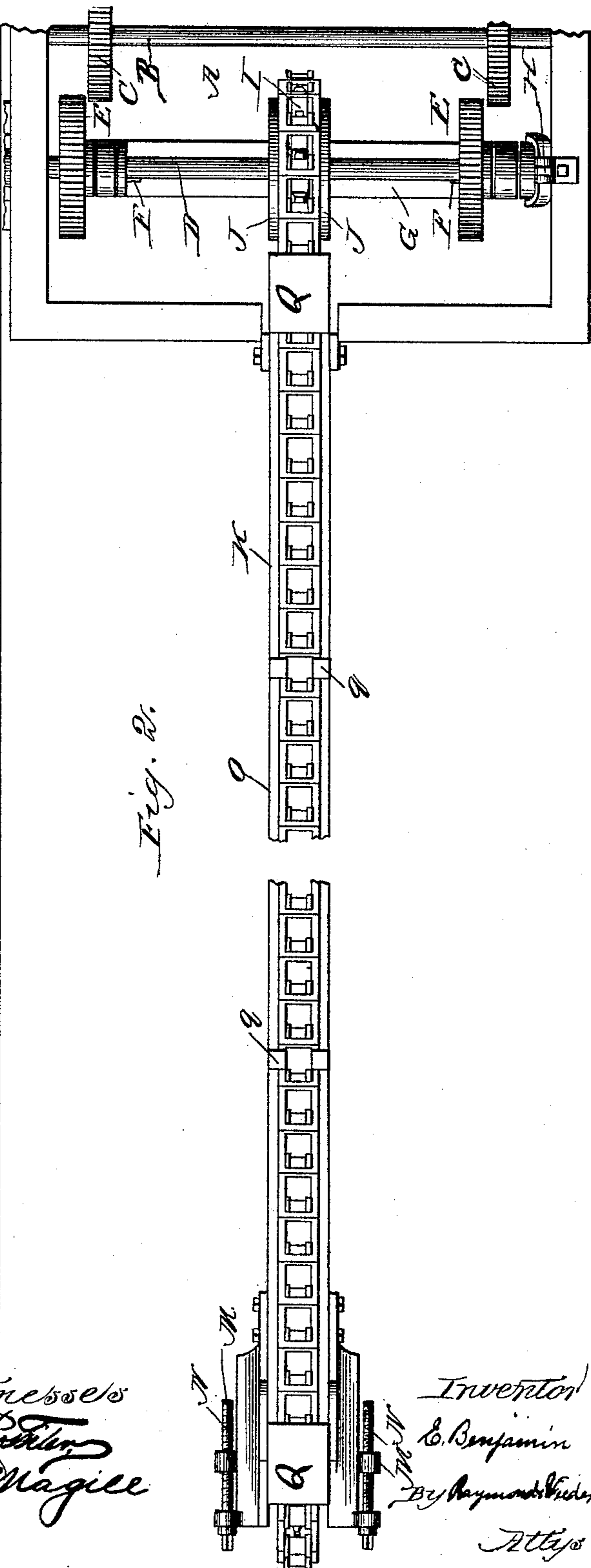


Fig. 2.

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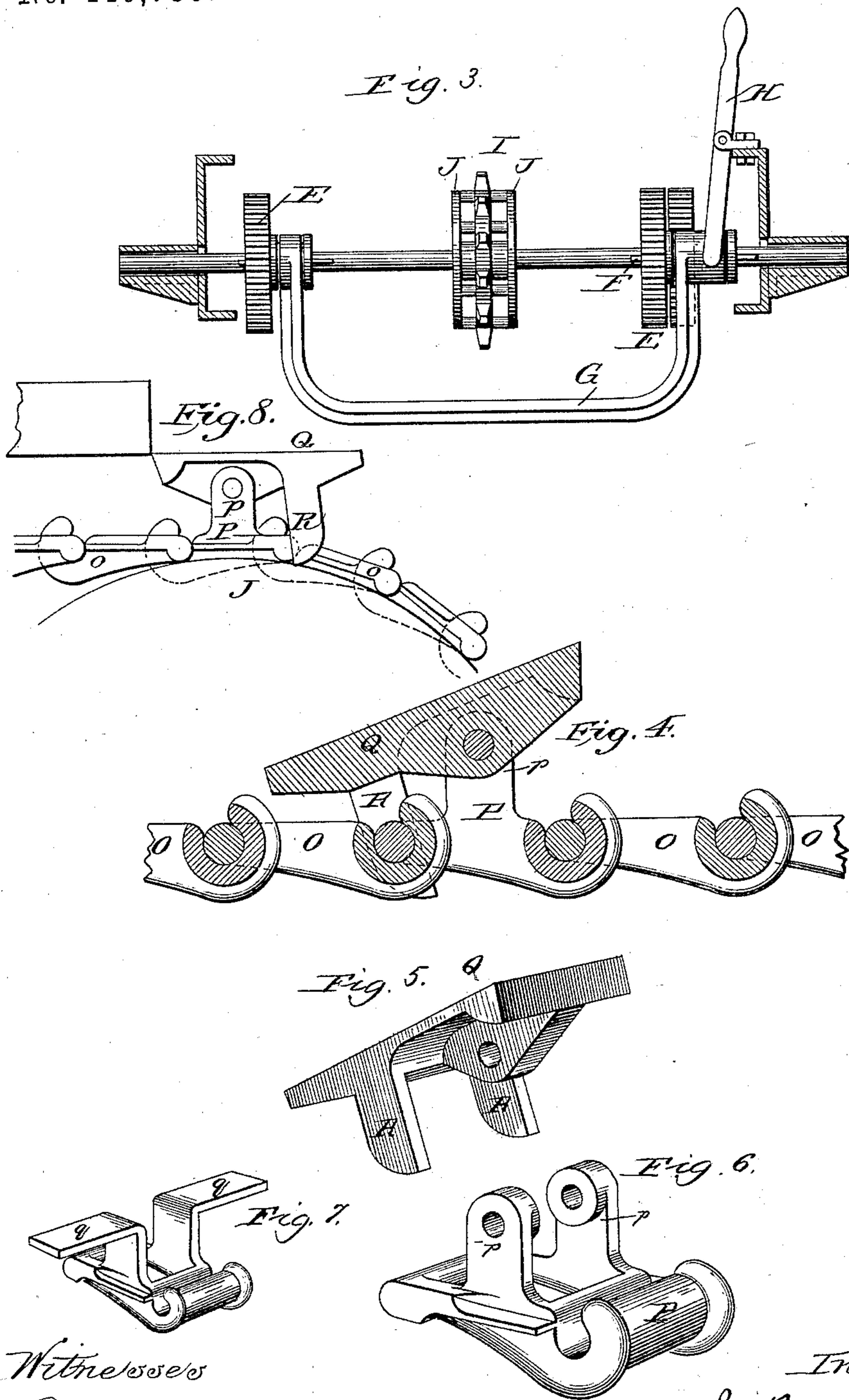
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2 Sheets—Sheet 2.

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FEEDING ATTACHMENT FOR WOOD WORKING MACHINES.
No. 440,735.

Patented Nov. 18, 1890.



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UNITED STATES PATENT OFFICE.

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FEEDING ATTACHMENT FOR WOOD-WORKING MACHINES.

SPECIFICATION forming part of Letters Patent No. 440,735, dated November 18, 1890.

Application filed February 10, 1890. Serial No. 339,833. (No model.)

To all whom it may concern:

Be it known that I, EDWIN BENJAMIN, of South Evanston, in the county of Cook, in the State of Illinois, have invented certain new and useful Improvements in Feeding Attachments for Wood-Working Machines, of which the following is a specification.

My invention is designed especially for application to machines for planing or dressing sticks of timber. It is well known that owing to the weight of the timber and to the amount of material to be removed, especially when the timber is dressed simultaneously on all four sides, it is difficult to feed the timber steadily and without slipping, especially at the beginning, before the timber has well entered all of the feed-rolls.

My invention is intended to insure the proper feeding of the timber from the start. While its chief use is intended to be in feeding heavy timber, it of course can be applied to any machine where it seems desirable.

In the accompanying drawings, Figure 1 is a side view of my improved attachment and a portion of the machine to which it is affixed. Fig. 2 is a plan view of the same. Fig. 3 is an end view showing a portion of the machine-frame in section, in which is mounted the driving-shaft for the feeding attachment. Fig. 4 is a section of a portion of the feed-chain. Figs. 5, 6, and 7 are views of detached links of the feed-chain. Fig. 8 is a side view of the sprocket-wheel on the driving-shaft and a portion of the feed-chain, the point of view being on the opposite side from that of Fig. 1.

A is a portion of the frame of the planer or other machine to which my improved feed-gearing is attached.

B is a shaft, which may be driven in any suitable manner. Upon the shaft B are gear-wheels C C.

D is a shaft journaled in the frame A, upon which are gears E E, connected to the shaft by feathers F, (*vide* Fig. 3,) so as to be capable of longitudinal motion upon the shaft. The forked piece G connects the gears E, and may itself be shifted by the hand-lever H, provision being thus made for starting and stopping the shaft D.

Keyed to the shaft D is a sprocket-wheel I, having flanges J J on each side of the sprockets. From the end of the bed A a girder K extends, at the outer end of which is a second sprocket-wheel L, mounted in movable bearings M, the adjustment of the said bearings being provided for by the screws N, which are journaled in the end of the girder K and are tapped into box M. Around the sprocket-wheels I and L the endless chain O passes. The said chain may have the greater number of its links constructed in any suitable manner; but I prefer the form shown in the drawings, which is a well-known form of detachable link; but at intervals upon the chain I place a link P of peculiar construction. (Best shown in Figs. 4 to 7.) Said link P has upwardly-projecting jaws *p*, in which is pivoted a dog Q, the rear end of said dog overbalancing the forward end and being provided with one or two downwardly-projecting lugs R, only one being essential, though two are preferable for the sake of symmetry. Said downwardly-projecting lugs prevent the tilting of the dogs Q farther than is desired. The lugs R are so spaced as to come in contact with the flanges J upon the sprocket-wheel I when the links which carry them engage with the sprocket-wheel I. In alternation with the peculiarly-formed links P, provided with the dogs Q, I prefer to use links *q*, which project upward beyond their neighboring links to a height substantially equal to that of the links P when the dog Q is in a horizontal position, the links *q* thus serving to relieve the dogs Q partially from the weight of the timber.

In order to steady the chain O, so as to prevent jerking without making its tension too great, I prefer to support the lower side upon a rail S, (see Fig. 1,) along which it may slide, and to place an idler T above it near the middle of the lower side.

The operation is as follows: When a stick of timber is placed upon the machine A, its rear end projects over the chain O. The dogs Q underneath the timber will be brought to a horizontal position, while the dog immediately in the rear of the timber will by its own weight be tilted sufficiently to bring its front end in contact with the timber and force it

forward if the chain be set in motion by throwing the gears E E in mesh with the gears C C. By the time the last-named dog reaches the sprocket-wheel I the greater portion of the timber will have passed through the machine and will be easily fed forward by the usual feed-rolls. The contact of the lugs R R of said dog with the flanges J J on each side of the sprocket-wheel I will raise the rear end of the dog and depress the front end, so as to release it from the timber, and will also insure that the dog will not by swinging outward on its pivot come into contact with the shaft B, as might otherwise happen. (See Fig. 8.)

While I have described the feed-chain constructed in the manner shown and set forth as an auxiliary to the ordinary feed-rolls, I do not wish to be limited to that use only, for a feed-chain of this construction, if properly located, would suffice of itself to feed the work, the rollers being necessary in this case only for guiding; but I prefer to employ it as an auxiliary to the ordinary power-driven feed-rolls.

I am aware that feed-chains having dogs which engage the lumber to be fed are not new, broadly, in connection with wood-working machines; but in such devices of which I am aware the feed-chain either overlies the lumber—a construction not at all suited to handling heavy timber by reason of the inconvenience of placing the timber under the chain—or else the construction of the dogs is such as to permit them to drive only pieces short enough to lie in the spaces between the dogs. My construction, however, is suited to the feeding of all sizes and lengths of material.

I am aware that feed-chains have heretofore been devised having dogs upon which the timber might rest; but said dogs differ from those herein shown and claimed in being rigid with the link or carrier, so that they depend on their penetration of the lower surface of the timber for their hold, a method

unsuitable for my purpose, as the marks thereby produced would not all be removed in the planing process; but my device employing pivoted tilting dogs affords a flat broad surface for the timber to rest on, while the driving is accomplished by the raised front end of the inclined dog in the rear of the timber.

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

1. The combination, with a wood-working machine, of a feed-chain provided at intervals with tilting dogs, upon which the lumber may rest, said dogs being pivoted to the feed-chain, so that when free their upper surfaces are inclined and their front ends are elevated above the horizontal line formed by the dogs, upon which the lumber rests, substantially as described.

2. The combination, with a wood-working machine, of a sprocket-wheel, a feed-chain driven thereby, pivoted dogs arranged upon said feed-chain and adapted to feed the lumber by their elevated front ends and having downwardly-projecting lugs at their rear ends, and flanges upon the sprocket-wheels adapted to make contact with said lugs and release said dogs from the lumber, substantially as described.

3. The combination, in a wood-working machine, of an auxiliary feed-chain mounted on a girder extending rearwardly from said machine, pivoted tilting dogs mounted at intervals upon said chain, adapted to carry the timber on their upper surfaces and to engage by their raised front ends with the rear end of the timber, a sprocket-wheel over which said chain passes, mounted loosely on a shaft of said machine, and a clutch connecting said sprocket-wheel and shaft, substantially as described.

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Witnesses:

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