

Oct. 6, 1925.

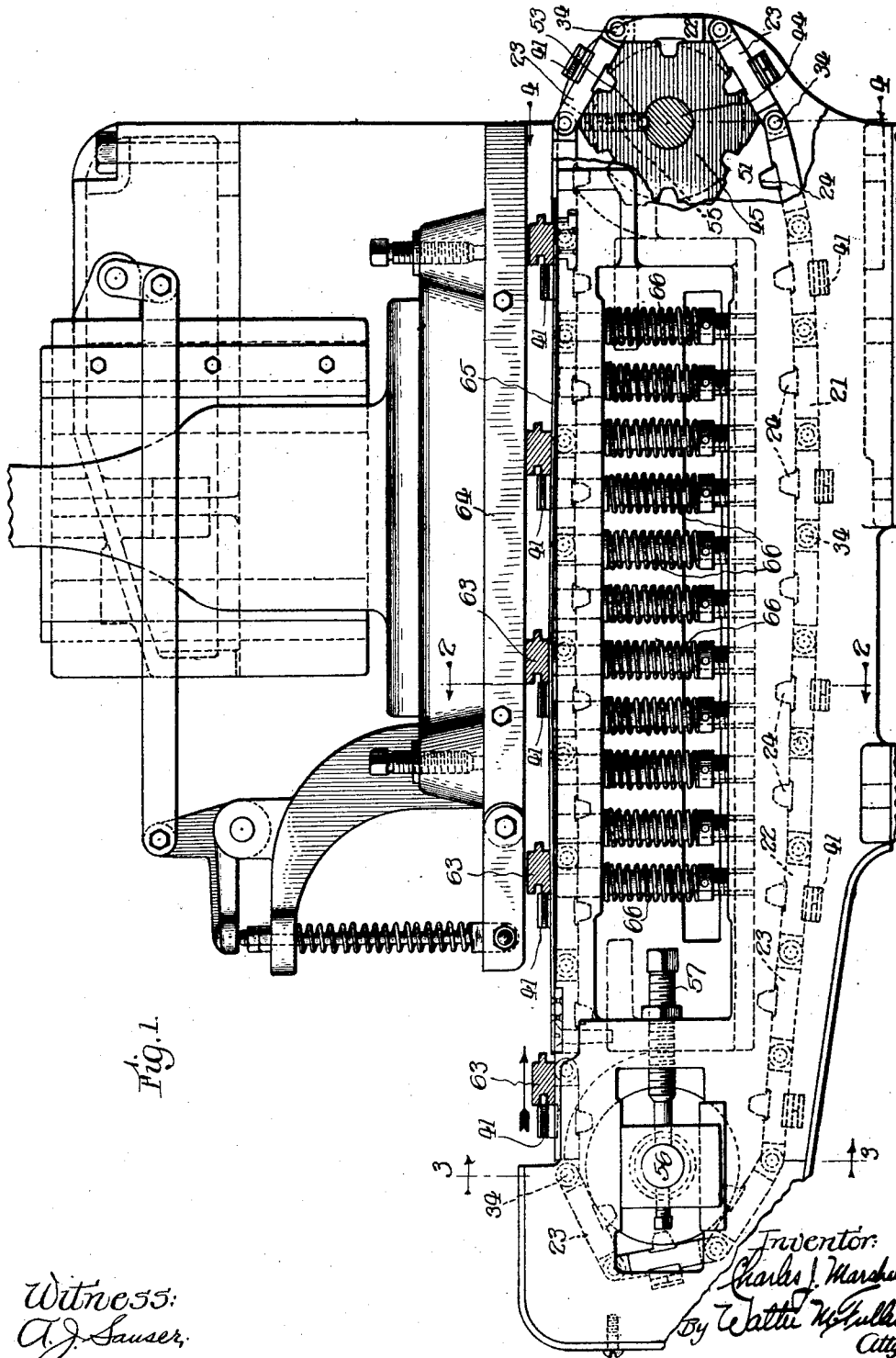
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C. J. MARSHALL

ENDLESS CONVEYER

Filed April 14, 1923

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Fig. 2.

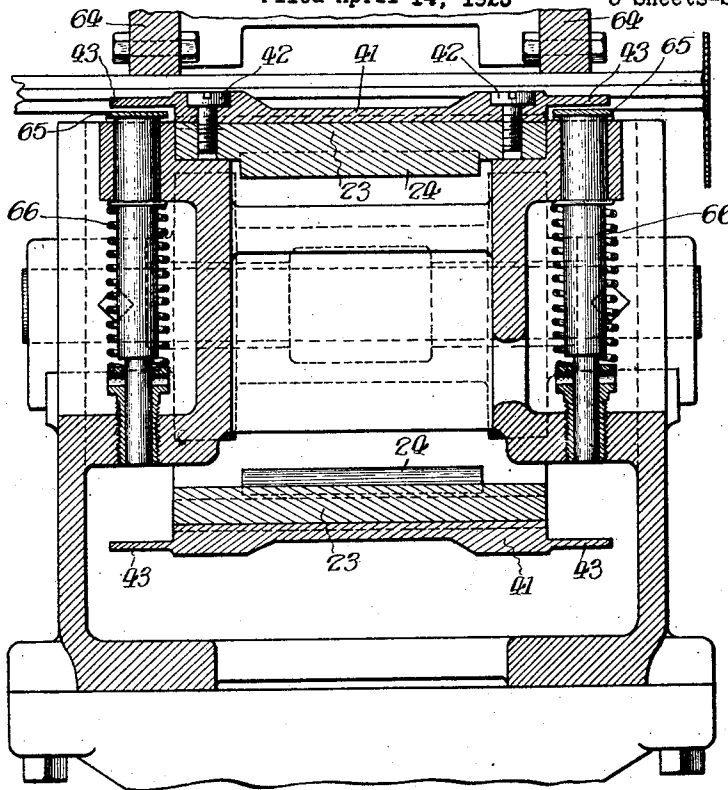


Fig. 3.

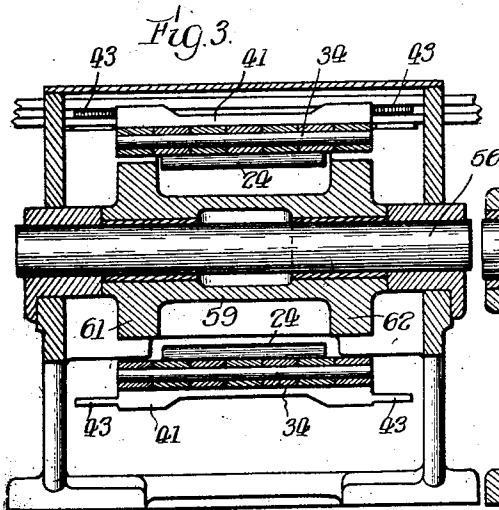
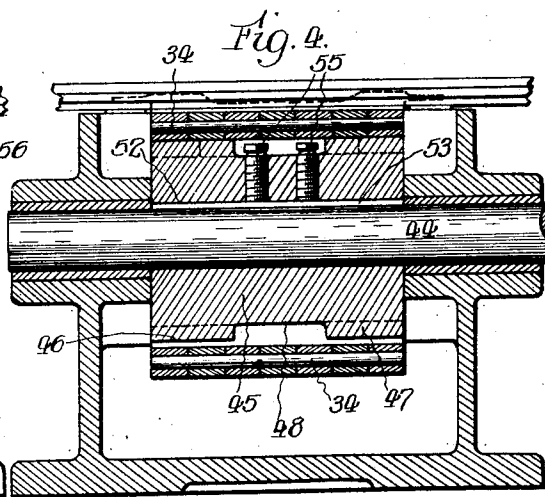


Fig. 4.



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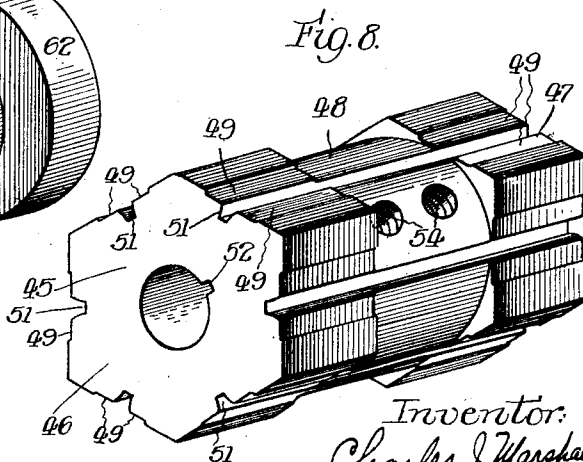
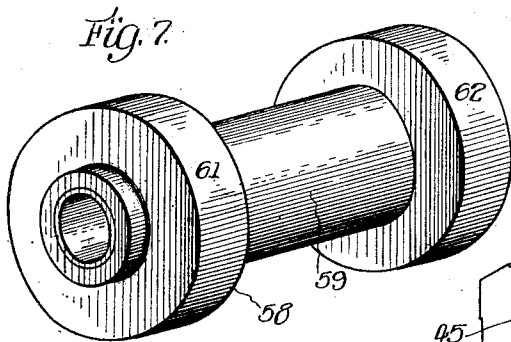
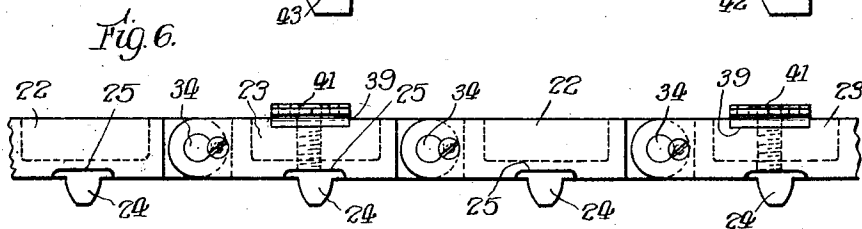
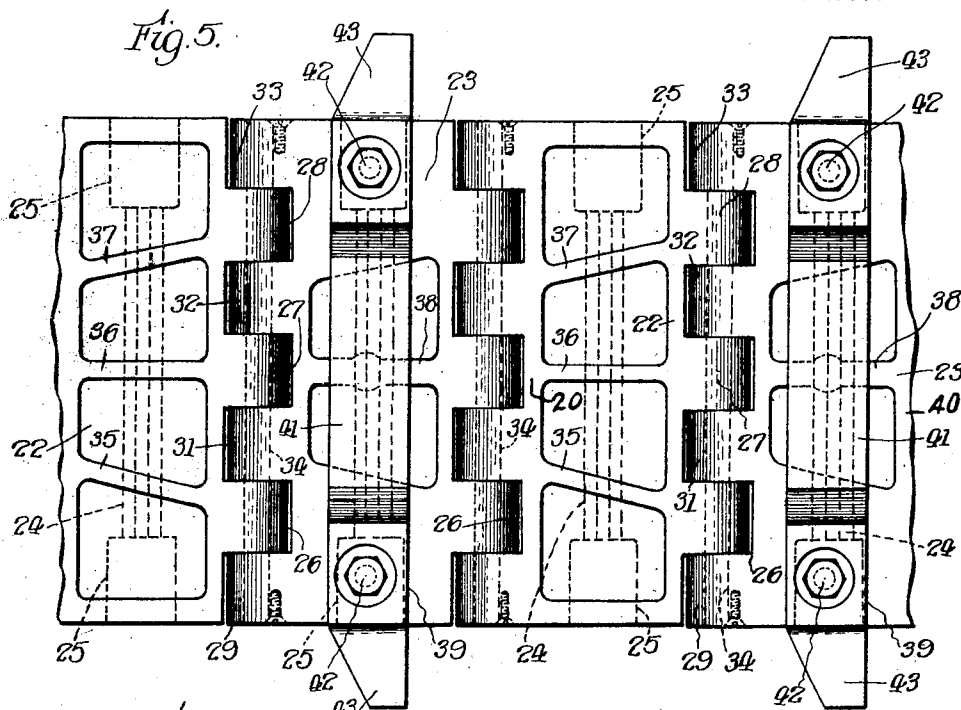
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ENDLESS CONVEYER

Filed April 14, 1923

3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE.

CHARLES J. MARSHALL, OF BELOIT, WISCONSIN, ASSIGNOR TO P. B. YATES MACHINE COMPANY, OF BELOIT, WISCONSIN, A CORPORATION OF WISCONSIN.

ENDLESS CONVEYER.

Application filed April 14, 1923. Serial No. 631,973.

To all whom it may concern:

Be it known that I, CHARLES J. MARSHALL, a citizen of the United States, residing at Beloit, in the county of Rock and State of Wisconsin, have invented certain new and useful Improvements in Endless Conveyers, of which the following is a specification.

My invention relates to endless-chain and similar conveyers for feeding stock to a machine, and concerns more particularly a mechanism of this general kind especially, but not restrictedly, adapted to advancing boards in spaced relation to an end-matching machine which provides their ends with tongues or grooves as the case may be.

In an appliance of this kind it is of great importance that correct alignment or proper register of the boards with the saws or other tools which act on them should be maintained at all times, and, consequently, in this improved and novel structure means are provided to meet this condition and to prevent mal-alignment or incorrect positioning of the boards even though the parts of the mechanism may become somewhat worn with use.

To enable those acquainted with this art to obtain a full understanding of this invention both from its structural and functional standpoints, I have illustrated a desirable and preferred embodiment of the invention in the accompanying drawings forming a part of this specification and for simplicity like reference characters for the same parts have been used throughout the several views.

In these drawings—

Figure 1 is a fragmentary side elevation of a portion of an end-matcher equipped with one of the new styles of conveyer chain feeders, a portion of the structure being broken away to more clearly illustrate the construction;

Figure 2 is a vertical cross-section on line 2—2 of Figure 1, the parts being viewed in a direction indicated by the arrows;

Figure 3 is a similar cross-section on line 3—3 of Figure 1;

Figure 4 is also a vertical transverse section on line 4—4 of Figure 1;

Figure 5 is a fragmentary plan-view of a portion of the conveyer chain;

Figure 6 is a side elevation of that part of the chain shown in Figure 5;

Figure 7 is a perspective view of the roller

or drum for supporting one end of the conveyer chain; and

Figure 8 is a similar view of the sprocket-wheel for supporting the other end of the conveyer chain and by means of which the feeding appliance is driven.

Referring to these drawings, it will be perceived that the continuous or endless conveyer chain, characterized as a whole 21, is composed of two styles of alternating, comparatively-wide links 22 and 23, each having across the center of its inner face a tooth 24 of less length than the width of the link, recesses 25, 25 being provided in such faces of the links from the ends of their teeth to the corresponding edges of the links.

Each link 22 has spaced projections 26, 27 and 28 interfitting with corresponding projections 29, 31, 32 and 33 of the next adjacent link 23, these mating ears or lugs being apertured in register and hinged together by suitable hinge-pins 34.

On its top face, each of such links 22 has a plurality of reinforcing ribs 35, 36, and 37 joining together opposite portions of a marginal rib 20 of the link, and each link 23 has a central longitudinal stiffening and strengthening rib 38 connecting together parts of the more substantial rib 40 extended around the top face of such link.

Each link 23 on its top face has a transverse groove 39 accommodating a feeder bar or pusher 41 held in place by two screws 42, 42 extended through the bar and taking in threaded holes in the link as will be readily understood, each of such bars having ends or terminal portions 43, 43 extended side-wise beyond both edges of the chain.

A drive-shaft 44, rotated by any approved power means, is mounted on the table of the machine in an appropriate manner and on this is secured a sprocket-wheel, characterized as a whole 45, having two hexagonal end portions or heads 46 and 47 with an intermediate cylindrical section 48, such double or duplex sprocket-wheel being preferably formed of a single piece of metal.

Each of the flat faces of the angular heads or terminal parts 46 and 47 is slightly recessed at 49 and a sprocket-tooth groove 51 extends the full length of the double sprocket-wheel at the center of each angular face thereof.

The member 45 is provided with a keyway

52 receiving the key 53 of the shaft 44 thereby assuring the rotation of the sprocket-wheel with the shaft, and, in order to prevent longitudinal movement or displacement of the element 45 on the shaft, the middle section 48 thereof is supplied with two screw-threaded holes 54 accommodating set-screws 55, 55 the inner ends of which bear on the key of the shaft.

10 At the other end of the table I provide a shaft 56, adjustable in any approved manner toward and from the companion shaft 44 by screws 57, and rotatable on such shaft is a drum or spool-shaped member 58 having an intermediate reduced-diameter section 59 of a length slightly greater than the length of the teeth 24 and having enlarged, cylindrical ends 61 and 62 adapted to coact with the faces of the chain links outwardly beyond the ends of their teeth 24.

20 The end-matcher for the lumber with which such a feeder or conveyer is desirably associated comprises a pair of horizontal gauge or hold-down bars 64 against the bottom faces of which the boards 63 fed forwardly by the blocks 41 of the conveyer are held pressed by a pair of flexible bands or straps 65 below the gauge bars 64 fastened at their ends and forced upwardly by a series or group of spring-pressed plungers 66.

In an appliance of this type exact and correct alignment of the parts is essential if the boards are to be fed properly and accurate work performed.

35 This requirement is met in this improved conveyer or endless feeder because the duplex sprocket-wheel 45 is composed of a single metal body and the teeth receiving grooves or recesses are cut therein throughout its entire length, hence there is no possibility of mal-alignment of the two end sections of such member.

45 Furthermore, owing to the flat, angularly-disposed faces of such sprocket-wheel on which the links of the chain bear, a substantial amount of the strain is removed from the teeth of the chain hence reducing wear thereon.

50 Also, these teeth and the grooves of the sprocket-wheel which accommodate them may be considered in large measure as aligning means for maintaining the conveyer chain true under all conditions.

55 It is to be observed, in addition, that the links of the chain are not weakened by providing therein any grooves or recesses to receive teeth on a sprocket-wheel, and also that the teeth-receiving grooves of the sprocket-wheel are milled or cut in a body of substantial strength, hence avoiding danger of breakage of either one of these parts.

While I have shown and described only one particular embodiment of the invention, it will be understood by those skilled in this art that it is susceptible of a variety of embodiments and that many minor mechanical changes may be made in the structure illustrated and described in detail without departure from the substance and essence of the invention and without the sacrifice of any of its substantial benefits and advantages.

I claim:

1. In a stock-feeding appliance of the character described, the combination of an endless-conveyer sprocket-chain composed of links hinged together having inwardly-projecting transverse teeth of less length than the width of the links, a sprocket-wheel adapted to support one end of said chain and having transverse grooves in its periphery to receive said chain teeth, means to rotate said sprocket-wheel, and revoluble means to support the other end of said conveyer chain and bearing on its links only beyond the ends of said teeth.

2. In a stock-feeding appliance of the character described, the combination of an endless-conveyer sprocket-chain composed of links hinged together and having inwardly-projecting transverse teeth of a less length than the width of the links, a sprocket-wheel adapted to support one end of said chain and having flat peripheral faces at an angle to one another and with transverse grooves in said faces to receive said chain teeth, means to rotate said sprocket-wheel, and revoluble means to support the other end of said conveyer chain by bearing on its links outwardly beyond said chain teeth.

3. In a stock-feeding appliance of the character described, the combination of an endless-conveyer sprocket-chain composed of links hinged together having inwardly-projecting transverse teeth of less length than the width of the links, stock-engaging means on said chain, a unitary sprocket-wheel coacting with said chain having two enlarged end sections each with faces disposed at an angle to one another and with aligned grooves in said faces to receive said chain teeth, means to revolve said sprocket-wheel, and a revoluble drum cooperating with said chain having enlarged cylindrical end portions adapted to coact with the faces of said chain links outwardly beyond said teeth and having an intermediate section of a length and reduced diameter size to permit passage of the chain teeth around the drum without interference.

In witness whereof I have hereunto set my hand.

CHARLES J. MARSHALL.