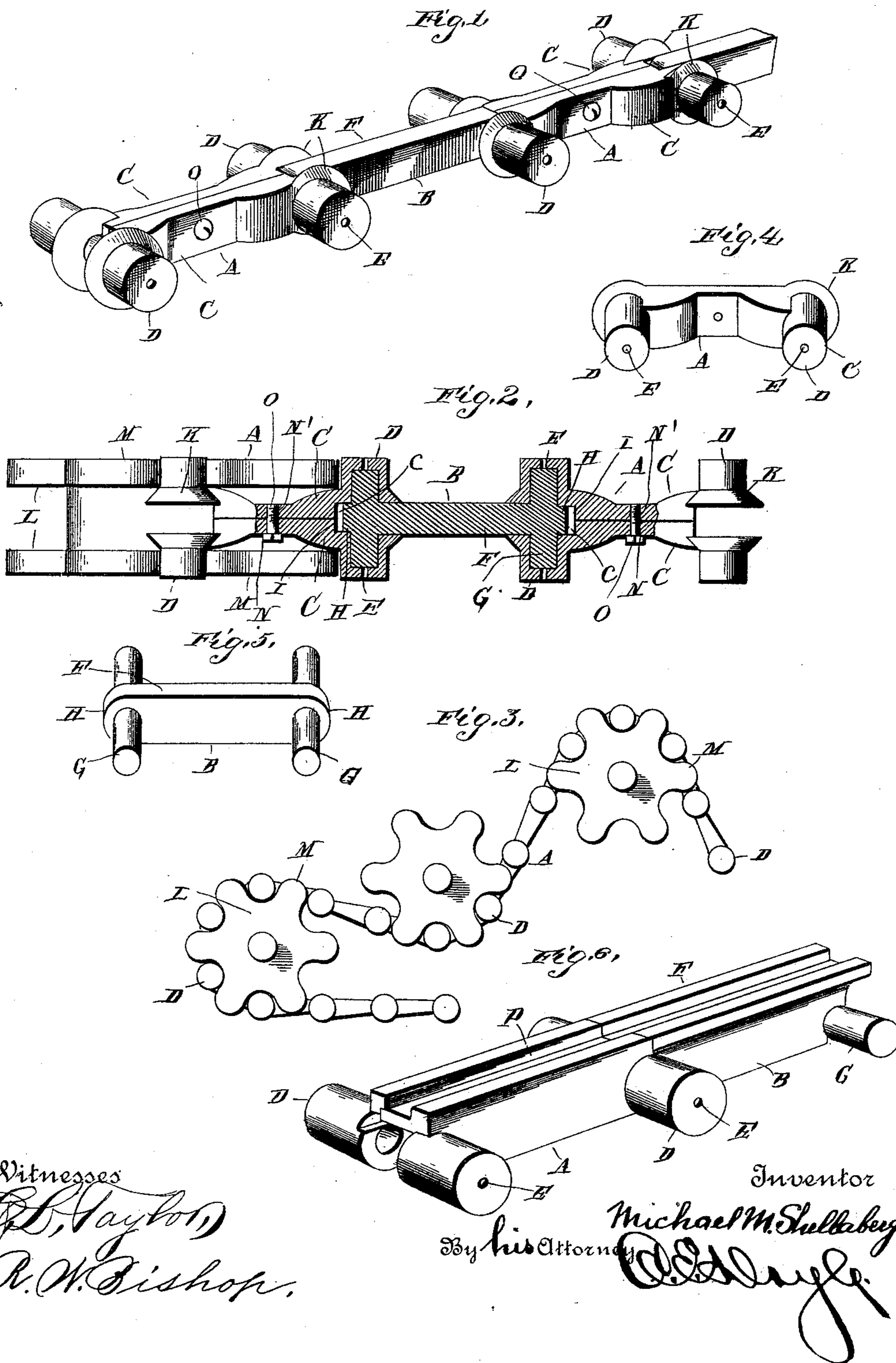


(No Model.)

M. M. SHELLABERGER.
DRIVE CHAIN.

No. 415,300.

Patented Nov. 19, 1889.



Witnesses
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UNITED STATES PATENT OFFICE.

MICHAEL M. SHELLABERGER, OF BEAVER FALLS, PENNSYLVANIA.

DRIVE-CHAIN.

SPECIFICATION forming part of Letters Patent No. 415,300, dated November 19, 1889.

Application filed May 3, 1889. Serial No. 309,452. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL M. SHELLABERGER, a citizen of the United States, residing at Beaver Falls, in the county of Beaver and State of Pennsylvania, have invented certain new and useful Improvements in Drive-Chains; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to an improved drive-chain designed for use as a conveyer of power in all varieties of machines in which a strong, light, and easy-running chain is desirable, and also designed for use in hoisting-machines, elevators, pumps, &c.

The primary object of the invention is to provide a chain the links of which may be connected and disconnected readily and conveniently without requiring the chain to be in a loose or slack condition on the pulleys or sprocket-wheels.

Furthermore, the object of the invention is to provide a chain in which no projections appear on either its upper or lower face, thereby enabling it to run on either side or traverse the pulleys in either direction with equal facility.

Furthermore, the object of the invention is to provide a chain which is braced or sustained laterally, whereby it may traverse horizontally-disposed pulleys without cramping or jamming; and, furthermore, the object of the invention is to provide a chain wherein the joints between the links are dust-proof.

These objects are attained in the improved chain, which is fully described hereinafter in connection with the accompanying drawings, wherein similar letters of reference denote corresponding parts in all the figures.

Figure 1 is a perspective view of the improved chain. Fig. 2 is a top plan view of the same, partly broken away to show the journals in the housing-links, and also showing a pulley or sprocket-wheel traversed by the chain. Fig. 3 is a side view of the chain passing around a series of pulleys or wheels to show that it is capable of traversing the

latter on either side. Fig. 4 is a detail perspective view of one of the sections of the housing-link. Fig. 5 is a similar view of one of the cross-head links; and Fig. 6 is a perspective view of a slightly-modified form of the chain adapted especially for carrying dies, for which purpose it is provided with a way or groove on one side, said modified form being constructed to embody the most important features of the first form.

The improved chain consists, essentially, of a series of housing-links A and cross-head links B arranged alternately and connected together in the manner hereinafter set forth.

The housing-links each consists of two similar independent sections C C, which may be cast from the same mold, and are provided at their opposite ends with the laterally-extending journal boxes or housings D D, arranged so as to register with each other in pairs when the sections are united, as shown in Figs. 1 and 2 of the drawings. These journal boxes or housings are arranged on the outer sides of the link-sections, and are provided with closed outer ends having central perforations E to permit of the introduction of lubricants.

The cross-head links B are each formed in a single piece, and consist of a shank F, provided at its opposite ends on both sides with lateral integral trunnions G G. The inner sides of the link-sections C C at their extreme ends are recessed or cut away, as at c c, to admit the ends of the shanks of the cross-head links, and the trunnions of the latter project into and fit snugly in the journal boxes or housings. The shanks of the cross-head links are extended slightly beyond the trunnions to form small tongues H, and the recesses c c in the ends of the housing-links are extended inward somewhat to form cavities I, to provide clearance for said tongues. The tongues fit snugly in the cavities, and their opposite parallel sides or faces bear against and operate in contact with the contiguous sides of the cavities, thereby strengthening the chain laterally and preventing side strains from distorting or bending the links out of their true alignment.

I also provide the housing-links with annular cheeks or strengthening-ribs K, which surround the journal boxes or housings and bear against the opposite sides or faces of the

shanks of the cross-head links, thereby still further bracing the chain against lateral strains. These cheeks or bracing-ribs are chamfered or rounded on their exposed sides, so as to offer no obstruction to the teeth of the pulleys or sprocket-wheels, which preferably consist each of two parallel simultaneously-revoluble disks L L, provided with peripheral teeth M. The bodies or shanks of the links pass between the opposing faces of said disks, and the chamfered cheeks or ribs K act as guides to prevent the chain from running out of alignment and becoming jammed on the disks.

The tongues H perform the additional function of completely excluding dust from the journal boxes or housings. It will be observed by reference to the drawings that the width of the shanks of the cross-head links is greater than the diameter of the interior or bore of the journal boxes or housings, and that the tongues (which are rounded concentrically with the trunnions) overlap the inner ends of the said boxes or housings, thereby preventing dust which may enter the cavities I from working into the bearings.

The sections of the housing-links are provided at their centers with registering apertures, one of which N is smooth and the other N' threaded to receive the cap-screws O. There is no strain on this screw when the chain is in operation, and by loosening the same the links of the chain may be disconnected.

From the above description it will be seen that no pivots are employed to connect the links, and the adjacent ends of a chain constructed in accordance with my invention are united and separated by a simple lateral movement of one of the sections of the housing-link. Therefore in removing my chain from the sprocket-wheels (or applying the same thereto) it is only necessary to draw the upper (or corresponding) sides of said wheels slightly toward each other, in order to reduce the tension on the chain to enable the cap-screw to be removed or inserted.

The improved chain need not be applied to the wheels in a loose or slack condition, as no appreciable slackness is required to enable the links to be connected or disconnected.

It will be apparent that the chain will traverse horizontally-disposed pulleys with the same facility and smoothness that it traverses vertically-disposed pulleys, owing to its lateral

stiffness or rigidity. It should also be noted that the shanks or bodies of the links are of the same width, (vertically,) thus bringing their upper and lower sides in the same plane, whereby the chain has an unbroken upper and lower surface.

In the modification of my invention shown in Fig. 6 the upper or outer surfaces of the links are provided with a groove or channel P, adapted to receive dies (not shown) of any desired pattern. It will be seen that the essential features of construction in the modification are the same as those in the form shown in Fig. 1, the differences being such as to adapt it for the special purpose named. The specific construction of this form of chain is fully described and claimed in a separate application of subsequent date.

Having thus described the construction, operation, and advantages of my improved chain, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The herein-described chain having housing-links A, divided longitudinally to form the similar sections C C, which are provided at their ends with the lateral cylindrical journal boxes or housings D D, arranged to register with each other when the sections are in the operative position, the removable cap-screws O, engaging registering perforations in the center of the said sections, and the cross-head links B, provided with lateral trunnions G, which fit snugly in the said journal boxes or housings, substantially as specified.

2. In a chain, the combination of the housing-links consisting of separable sections having registering housings closed at their outer ends and provided with perforations E, and the cross-head links provided with trunnions fitting in said housings, substantially as specified.

3. In a chain, the combination, with cross-head links provided with lateral trunnions, of the housing-links having registering housings fitting on the said trunnions and provided around said housings with annular cheeks rounded or chamfered on their exposed sides, substantially as and for the purpose specified.

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

MICHAEL M. SHELLABERGER.

Witnesses:

J. F. MERRIMAN,

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