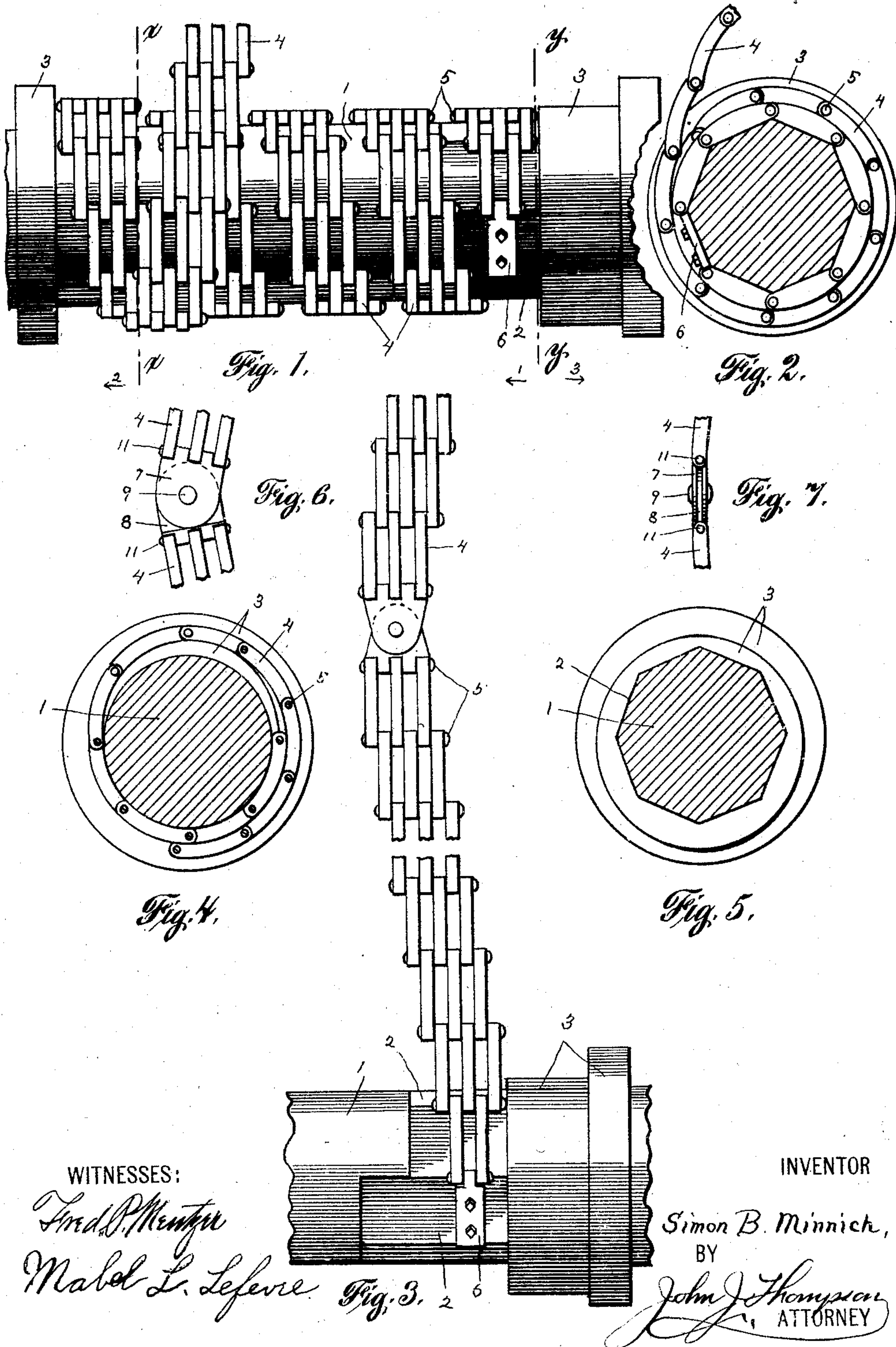


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CHAIN.

APPLICATION FILED FEB. 26, 1908.

907,080.

Patented Dec. 15, 1908.



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CHAIN.

No. 907,080.

Specification of Letters Patent.

Patented Dec. 15, 1908.

Application filed February 26, 1908. Serial No. 417,892.

To all whom it may concern:

Be it known that I, SIMON B. MINNICH, a citizen of the United States, residing at Landisville, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Chains, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to a chain of that class designed to be wound upon a multi-sided shaft such as is used in presses, etc., and the objects of my invention are to produce a cheap, durable and strong chain, capable of being wound upon a multi-sided shaft without danger of injury to its links, and with the proper lead to clear itself upon each consecutive wrap and also by its novel construction it may be made to change its directions of travel and wind back upon itself and by the introduction of a swivel link at the point where it changes its direction, said chain will extend from the shaft in a straight line.

With these and other objects in view my invention consists in the new and novel combination of parts as hereinafter more fully described and claimed.

While I have herein described my invention as herewith illustrated I do not confine myself to the exact design as shown, as slight changes may be made in its construction without departing from the spirit of the invention.

Like reference figures indicate corresponding parts in all the figures of the drawings.

In the drawings:—Figure 1, is a plan view showing a round shaft with a hexagonal portion with the chain partly wrapped back upon its first course and showing the novel shaft eccentric steps to guide said chain up upon its next course. Fig. 2, is an end view of Fig. 1, on the line *y y*, in the direction of the arrow 1, showing the shaft in section. Fig. 3, is a plan view of a portion of the shaft and chain with said chain unwrapped and extended. Fig. 4, is a cross section of Fig. 1, on the line *x x*, in the direction of the arrow 2. Fig. 5, is a cross section of Fig. 1, on the line *x x*, in the direction of the arrow 3. Fig. 6, is a plan view of the swivel link. Fig. 7, is a side elevation of the swivel link.

Referring to the drawings:—1, indicates a multi-sided shaft, here shown as round

with a portion near one end formed with flattened sides 2, in the form of a hexagon and having its ends terminating in the stepped eccentrics 3.

The chain is made up of a series of parallel links 4, off-stepped and joined together by the pivot pins 5, the length and width of the links being determined by the diameter of the shaft, and it will here be noted that the length of the links must be such that when used on a multi-sided shaft that their pivot centers will register with the edges of the sides of said shaft, while their width must be such that said chain will make a complete wrap around said shaft with the proper lead desired so as not to overlap upon itself.

I have here shown the chain as secured to the shaft by the clevis 6, but it may be secured in any suitable manner, and I have also provided the hexagonal portion of said shaft as affording a firmer starting point for said chain than the round surface of said shaft, but it is understood that the chain may be attached to a shaft of any number of sides above three.

As the chain reaches the point where it is desired to have it wind back upon itself, the direction of the links is changed or off-stepped on the opposite side, and to provide for the chain extending in a straight line I provide at this point in the change of direction of the off-step, a swivel link composed of the two parts 7, and 8, which are pivoted together by the pin 9, and are provided on their ends with slots, for the reception of the ends of the links 4, which are retained therein by the pin 11, placed at right angles to the pin 9; and the shaft is provided with the stepped eccentric 3, or with its first step of larger diameter than said shaft or equal to the diameter of said shaft plus the height of the chain links. It will then be seen that said eccentric affords a guide to force the chain to wind back upon its first course, and the change of off-step will change the direction of travel so that said chain will wind back upon itself until it arrives at the starting place where it can again be changed in direction and guided to another wrap by the next step of the eccentric which is of greater diameter than the preceding one or equal to the first plus the height of said chain links, and this operation may be repeated as many times as desired.

Having thus described my invention what

I claim as new and desire to secure by Letters Patent is:—

1. In a device of the class described, a chain comprising a series of links, arranged
5 and joined in an off-stepped relation, each to the preceding one and adapted to wind upon a multi-sided shaft.

2. As an article of manufacture, a chain composed of a series of links arranged in
10 sets, each set off-stepped and hingedly joined to the preceding set.

3. In a chain of the class described, composed of a series of links, off-stepped, first to one side and then to the other side, a swivel
15 link joining the links of said chain at its point of change in direction.

4. In a chain of the class described, a swivel link composed of two members, slotted upon their rear ends and pierced by a

transverse pin to secure the links of said 20 chain, and pivoted each to the other by a pivot pin, piercing said members at right angles to said chain connection.

5. As an article of manufacture, a chain composed of a series of links joined in an
25 off-stepped relation to each preceding link, said chain being adapted to wind upon a multi-sided shaft, the length and width of said links being in proportion to the diameter of said shaft, so that said chain will 30 have the proper lead for clearance.

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

SIMON B. MINNICH.

Witnesses:

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CHAS. F. BOWMAN.