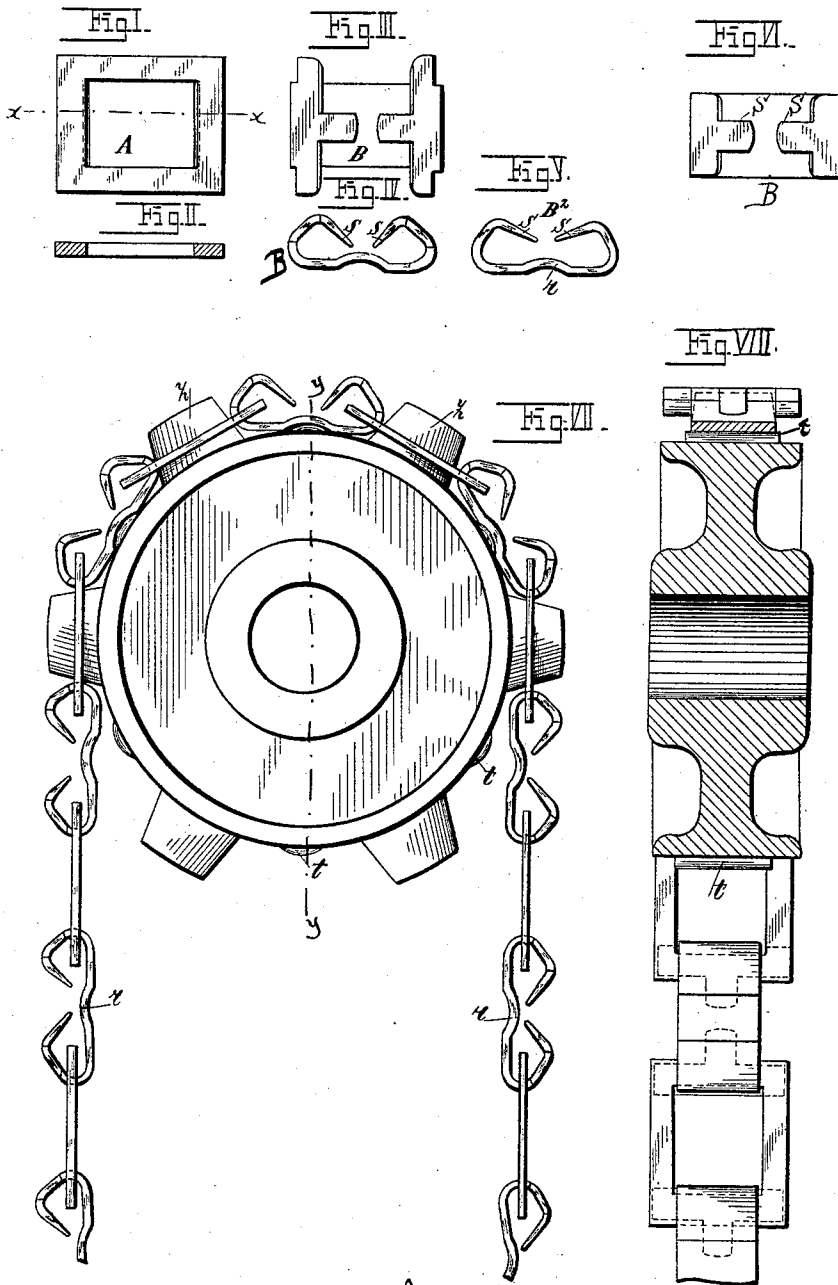


(No Model.)

H. O. KÖTTER.
SPROCKET CHAIN AND GEARING.

No. 452,122.

Patented May 12, 1891.



Witness:
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UNITED STATES PATENT OFFICE.

HERMANN OTTO KÖTTER, OF BARMEN, GERMANY.

SPROCKET-CHAIN AND GEARING.

SPECIFICATION forming part of Letters Patent No. 452,122, dated May 12, 1891.

Application filed January 26, 1891. Serial No. 379,161. (No model.)

To all whom it may concern:

Be it known that I, HERMANN OTTO KÖTTER, manufacturer, of Barmen, in the Kingdom of Prussia and German Empire, have invented new and useful Improvements in Sprocket-Chains and Gearing, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to improvements in driving-chains with frame and hooked link.

The improvements in driving-chains and chain-wheels according to this invention are represented in the annexed sheet of drawings, wherein—

Figure I is a plan view of one of the rectangular links. Fig. II is a vertical section of the same along the line xx of Fig. I. Fig. III is a plan view of one form of my connecting-link, and Figs. IV and V are profile views of the same. Fig. VI is a plan view of a modified form of link. Fig. VII is a profile view of my improved sprocket-wheel and drive-chain. Fig. VIII is a vertical section of the same through the line yy of Fig. VII.

These improvements consist, so far as the chain is concerned, of two parts—a frame-link A, constructed as shown in Figs. I and II, and a double hook-shaped link B, constructed as shown in Figs. III and IV, which said parts A and B follow one another alternately in making up the chain. The frame-shaped links A are of such dimensions that the strain on the material is not too great in proportion to the force acting thereon, and the inner opening of the same is so proportioned as to fit or connect with the neighboring links.

Hook-shaped links, according to the invention, are, before being placed in the chain, in the form shown at B², Fig. V—that is, in the finished chain, the hook-points S S are bent together at the bulge r , so as to lie tightly against the same. The distance of the points S S from the bulge r before fixing is great enough to admit of the hanging in of the neighboring link. If the chain-links are made of a material, such as soft forged sheet-steel, the points S S can be bent down after introducing the links A, and also can be opened repeatedly when required to disconnect them without materially injuring the strength. On the other hand, the construction of the

chain-links admits of the use of forged or wrought iron or other metal instead of cast-iron or other metal ordinarily used for such kinds of chains.

The above-mentioned shape of hook of the chain-link forms part of the invention here dealt with, and has for its object the prevention (in case of the chain becoming slack) of the disconnection of the individual links, as has been hitherto the case with the ordinary chain construction.

In connection with this improvement there is the advantage that it becomes possible to do without the four side wings shown in Fig. III. Without these side wings the hook-link has the appearance shown in Fig. VI. The hook-link B has also in the middle a groove-shaped in-bend r , Fig. IV, the object of which is to transfer the motion of the chain to the chain-wheel, which is attained by the bend r laying itself onto a corresponding projection t (see Fig. VIII) on the chain-wheel, producing in this manner a kind of tooth-wheel action. By this mode of action of the chain on the wheel further advantages are attained. First, that the chain and wheel work without noise, as the grooves r lay themselves without slipping onto the projection t , and, secondly, that the locking of the links is prevented by doing away with the action of slipping.

A driving-chain composed of the above-described links is represented in Figs. VII and VIII, also the chain-wheel belonging thereto. z designates the teeth customary in the constructions now in use, and they lie into the links A without gripping, and serve only for greater security in the action, preventing, in cases of violent shocks or oscillations, the disengagement of the chain.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. In a driving-chain, the combination of a link A, having a rectangular aperture therein, with a link B, made of pliable metal and having tongues S, bent to inclose the adjacent ends of the said links A, and a raised portion r in the back of the said link B, adapted to engage in a projection on the sprocket-wheel, substantially as described.

2. The combination, with a driving-chain having alternately links A with rectangular

apertures therein, and links B, made of pliable metal, with cavities in the back of the said links B, of a sprocket-wheel having teeth z , engaging the said links A, and projections l , engaging said cavities in the links B, substantially as described.

3. The combination, with a driving-chain having alternately links A with rectangular apertures therein, and links B, made of pliable metal, said links B having cavities in their backs and having tongues S bent to in-

close the adjacent ends of the said links A, of a sprocket-wheel having teeth z , engaging the said links A, and projections l , engaging said cavities in the links B, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

HERMANN OTTO KÖTTER.

Witnesses:

RUDOLPH FRICKE,
ALEX. ESSENWEIN.