(Model.)

S. D. LOCKE.

DRIVE CHAIN.

No. 377,811. Patented Feb. 14, 1888.

Fig. 1

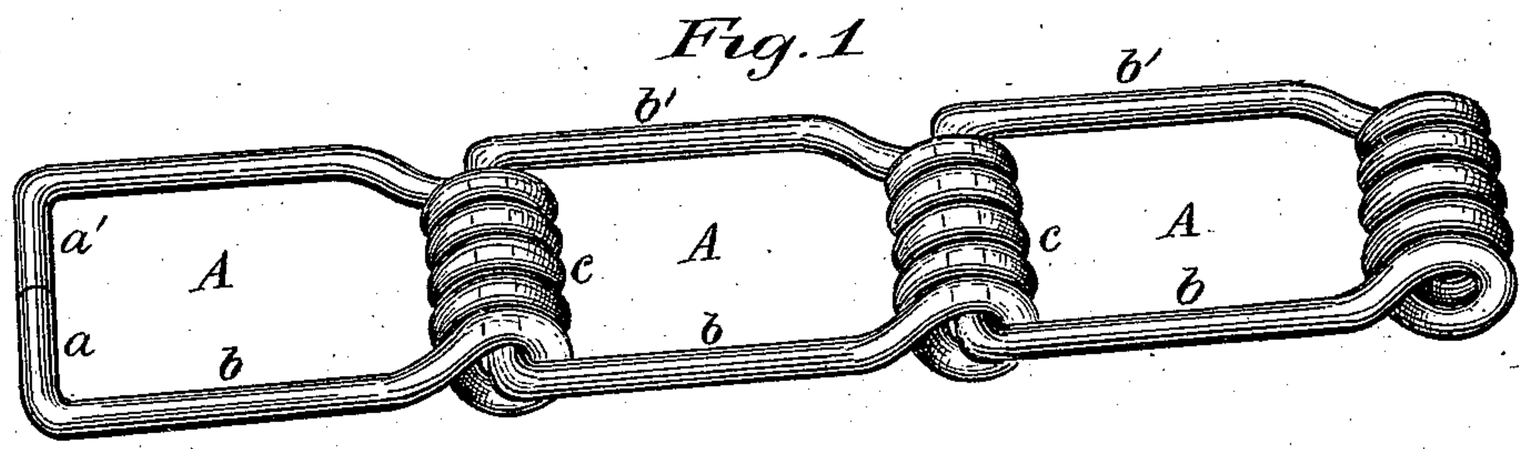


Fig. 2

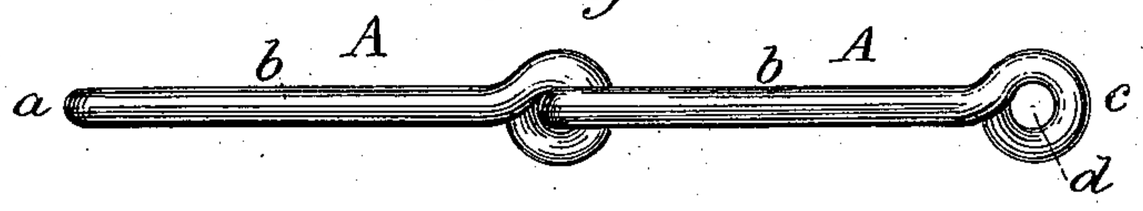


Fig. 3

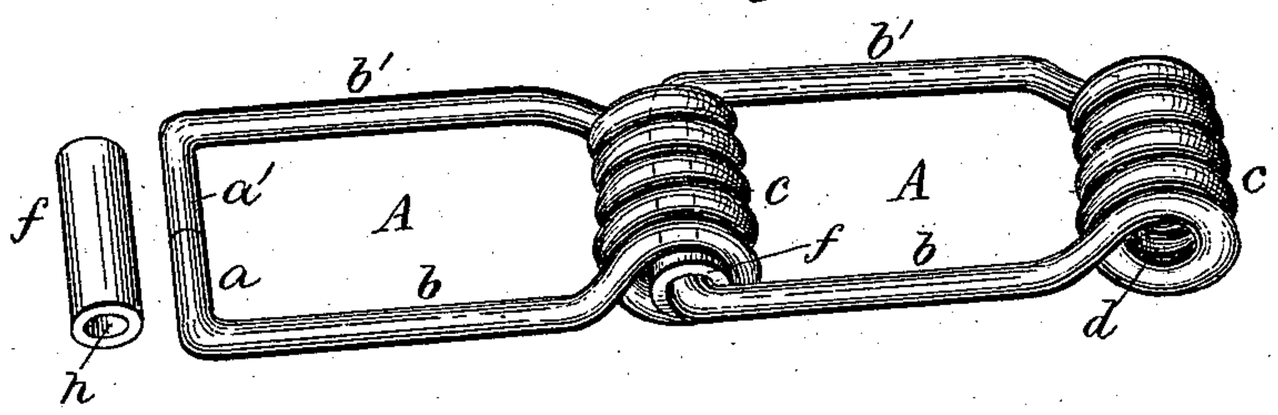
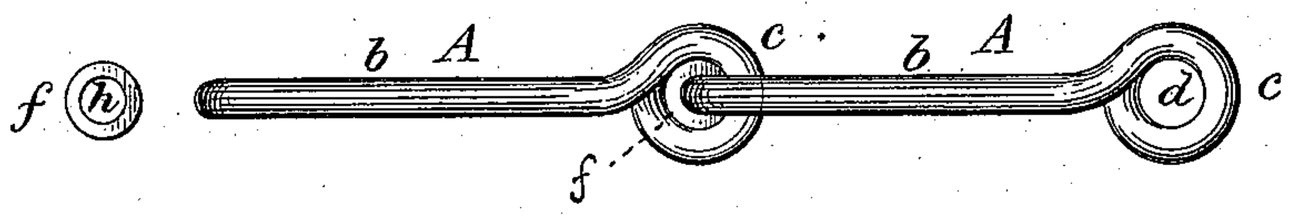


Fig. 4



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DRIVE-CHAIN.

SPECIFICATION forming part of Letters Patent No. 377,811, dated February 14, 1888.

Application filed November 21, 1887. Serial No. 255,721. (Model.)

To all whom it may concern:

Be it known that I, SYLVANUS D. LOCKE, of Hoosick Falls, in the county of Rensselaer and State of New York, have invented a new and useful Improvement in Chain-Links and Chains; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a view in perspective showing three of my links united in a chain. Fig. 2 is a view in elevation of the side or edge of the chain shown in Fig. 1. Fig. 3 is a view in perspective showing the chain or the link constructed with a "collar" over the pivot-bar and with a pivot-bar detached, and Fig. 4 is a view in elevation of the side or edge of the parts shown in Fig. 3.

My invention relates to an improved construction of chain-links from iron, wire, or other rolled material, and making chains therefrom for driving machinery or for other uses; and it consists, first, in providing the divided pivot-bar of a rectangular wire link with a closely-fitting cylindrical collar that shall freely take bearing and turn in the helical coil of a sprocket-bar, and, second, in such other and further details and combinations as are hereinafter set forth and claimed.

In the drawings, A A A are the links, and *a a'* represent the two sections of the divided end bar, which I call the "pivot-bar," *b* and *b'* the two side bars, and *c* the larger end bar, which I call the "sprocket-bar," of one of my chain-links.

The whole link, it will be seen, is made from a single piece of wire with the sprocket-bar in the center, and consisting simply of a closely-wound helical coil. The ends of the piece of wire, after leaving the coil, are first bent back to form the parallel side bars, and then turned in toward each other at right angles to the side bars until they meet to form the pivot-bar, as shown in the drawings. The inner diameter of the coil forming the sprocket-bar, or the core-hole *d* therethrough, is shown in Figs. 1 and 2 of a size to receive the divided pivot-bar and allow it to freely pivot therein.

The helical coil of the sprocket-bar serves three purposes or has three functions, namely: first, it secures a large circular bearing in the sprocket-wheels over which it runs, so reducing to the minimum the wear of the sprocket-wheels and chain; second, it provides a secure pivot seat or bearing in forming a chain for the pivot-bar of another link, and, third, it is a spring allowing the side bars to be pulled apart to permit the sections of the pivot-bar to enter the core-hole of a sprocket-bar, and then, when the side bars are released, it crowds the pivot-bar firmly therein and prevents its escape therefrom.

In Figs. 3 and 4 I have shown the links provided with a sleeve or roll, which is designed to overcome certain defects in the construction of the links represented by Figs. 1 and 2. These defects are, first, a weakness of the pivot-bars, due to their being cut in two; second, cramping and wearing of the links at their pivot-points, due to the springing and bending of the two sections of the pivot-bars, and, third, the pivot-bar, of the same size of the side bars, is too small to wear well under the great stress the side bars can carry. To cure all of these defects, I use a collar, *f*, that is loosely fitted so as to turn freely in the enlarged core-hole *d*, Figs. 3 and 4, and that tightly fits over the sections *a a'* of the pivot-bars as the latter are driven into the hole or bore therein, *h*. This collar, also, by enlarging the helical coil of the sprocket-bars, gives more spring movement of the side bars and so reduces the chances of the links getting out of form in making up or taking apart a chain. Where very great stress is to be met, I prefer to make the links with a tightly-fitting collar over the pivot-bars and a tightly-fitting sleeve driven into the sprocket-bars, so fitted that all the turning and all the friction will be between the collar and the sleeve. In this case the sleeve would stiffen and support the coil; but in light work no collar or sleeve is necessary.

In making up a chain it is evident that by slightly twisting a link one section of its pivot-bar may first be inserted in the sprocket-bar of another link, and then the other section is more easily sprung in.

It is also evident, with the use of a collar having a core-hole conforming to the size and form of the wire used, that the links of this chain may be made of rectangular wire or of any other form of wire desired.

There are two ways in which these links may be easily and quickly coupled. First, put the sleeve in the coil of the sprocket-bar and then spring, one after the other, the ends of a pivot-bar over the ends of a coil and insert them in the sleeve; second, put the sleeve over one end of the pivot-bar and then spring that end with the sleeve into the coil, when the other end of the bar may be easily sprung over the end of the coil into the sleeve.

What I claim is—

A chain-link formed from a single piece of wire having two side bars joined at one end by a hollow cylindrical coil constituting a sprocket-bar, and formed at the other end with a substantially centrally divided pivot-bar, in combination with a sleeve, substantially as described.

SYLVANUS D. LOCKE.

Witnesses:
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