

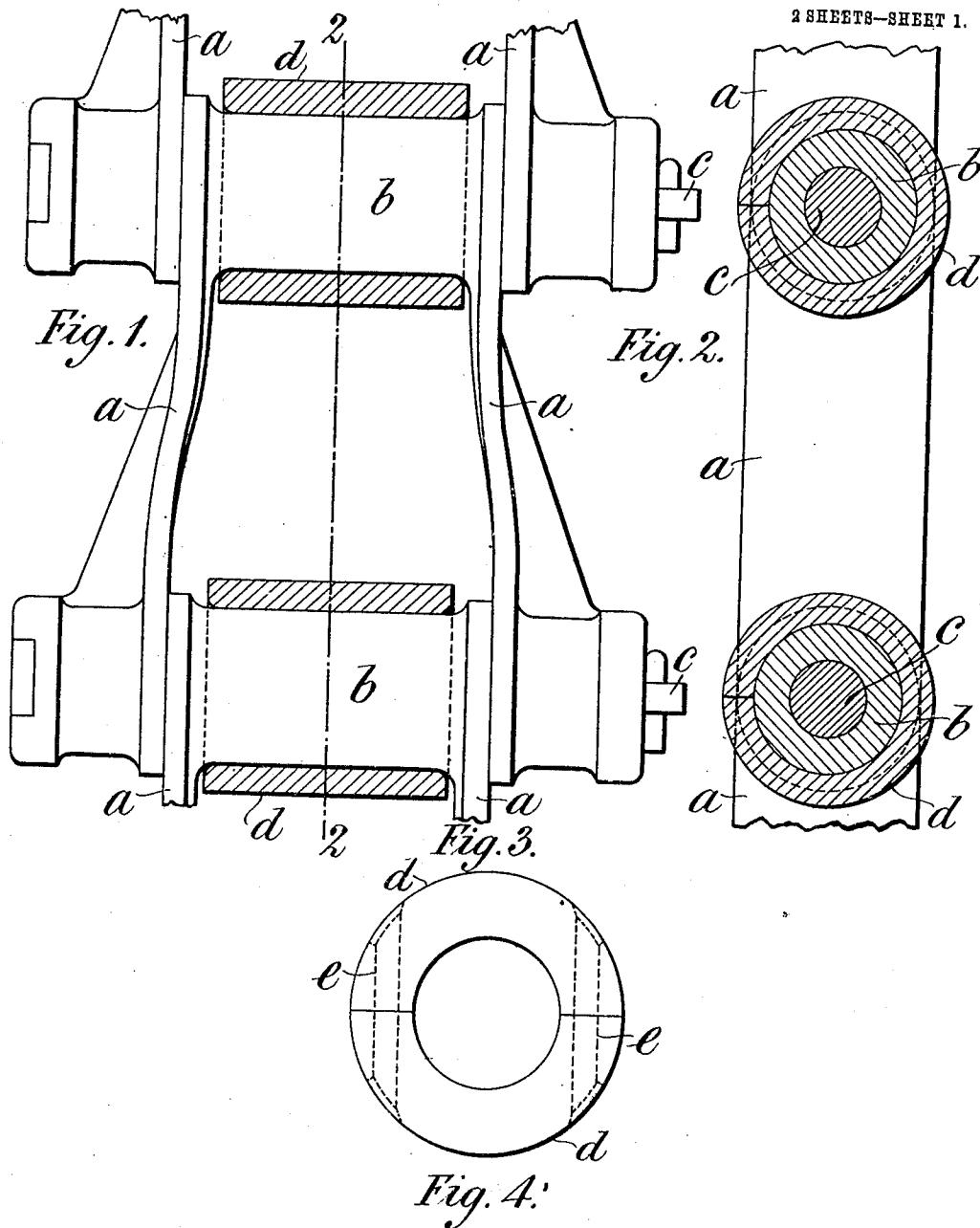
No. 871,796.

PATENTED NOV. 26, 1907.

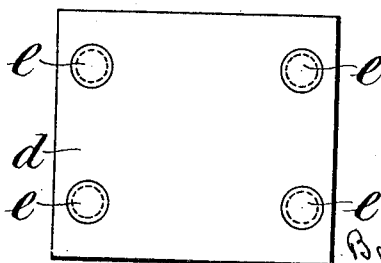
H. M. GRAY.  
CHAIN.

APPLICATION FILED JULY 1, 1907.

2 SHEETS—SHEET 1.



Witnesses.  
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2 SHEETS—SHEET 2.

Fig. 5.

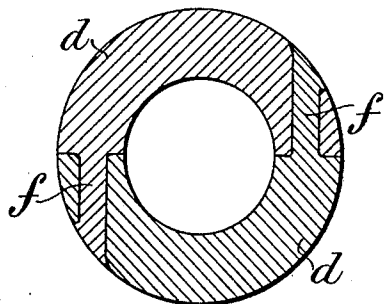


Fig. 6.

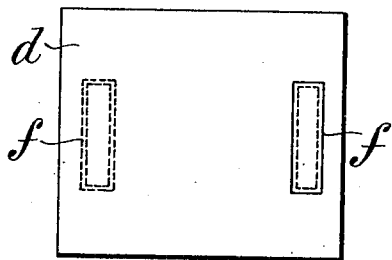


Fig. 9.

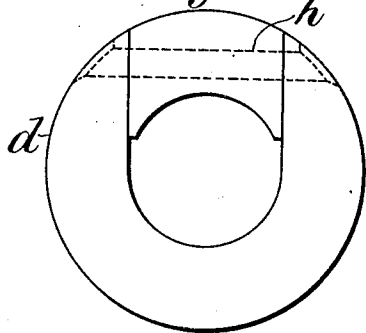


Fig. 10.

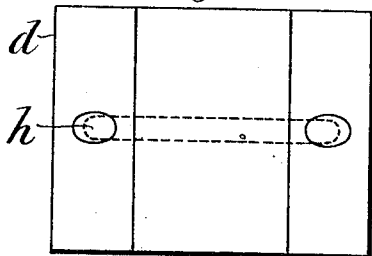


Fig. 7.

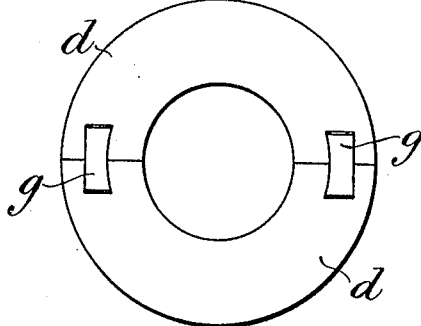


Fig. 8.

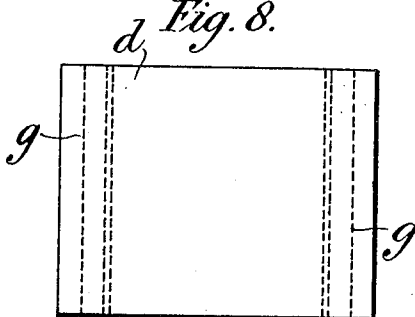


Fig. 11.

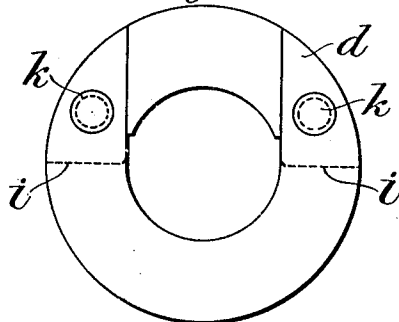
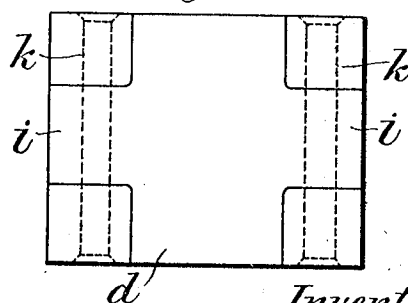


Fig. 12.



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# UNITED STATES PATENT OFFICE.

HENRY MILLAR GRAY, OF DUFFIELD, ENGLAND.

## CHAIN.

No. 871,796.

Specification of Letters Patent.

Patented Nov. 26, 1907.

Application filed July 1, 1907. Serial No. 381,752.

*To all whom it may concern:*

Be it known that I, HENRY MILLAR GRAY, a subject of the King of Great Britain, residing at Broompark, Duffield, Derbyshire, England, have invented new and useful Improvements in Chains, of which the following is a specification.

This invention relates to that class of chains in which each link of the chain is made in one piece and consists of two side plates and a tubular head at one end connecting together the side plates, adjacent links being connected together by pins passing through the tubular head.

According to this invention the tubular head has placed around it a roller made either of one piece of metal and bent round the head, or of segments which are connected together either by pins passing through both segments and riveted over, or by means of feathers on one segment passing through holes in the other and riveted over, or by dovetail or like keys passing through keyways formed in abutting surfaces of the segments, or one segment may be made to slide radially in a slot in the other and be retained by a pin passing through both and riveted over, or the radially sliding segment may be formed with projections to fit into parts cut away from the other and the two secured by pins passing through the interlocking parts of both. Bushes may be provided between the pin and the tubular head and between the tubular head and the roller.

The drawings illustrate links made in accordance with this invention.

Figure 1 is an elevation and Fig. 2 a section on the line 2—2 Fig. 1 of links in which the roller is made of one piece of metal bent round the head. Fig. 3 is a side elevation and Fig. 4 is a plan of a roller made in seg-

ments, Figs. 5 and 6, 7 and 8, 9 and 10, 11 and 12 are similar views of modifications of the same figures.

*a a* are side plates connected together by a tubular head *b*, adjacent links being connected by pins *c*. The tubular head *b* has placed around it a roller *d*, which is made of one piece of metal bent round the head.

The roller may be made in segments as is shown in Figs. 3 to 12. The segments are connected together by pins *e e* passing through both segments and riveted over as is shown in Figs. 3 and 4; or by means of projections *f f* passing through holes in the other and riveted over as is shown in Figs. 5 and 6; or by dovetail keys *g g* passing through keyways formed in abutting surfaces of the segments as is shown in Figs. 7 and 8 or one segment is made to slide radially in a slot in the other and be retained by a pin *h* passing through both and riveted over as is shown in Figs. 9 and 10; or the radially sliding segment may be formed with projections *i i* to fit into parts cut away from the other and the two secured by pins *k k* passing through the interlocking parts of both as is shown in Figs. 11 and 12.

What I claim is:—

1. In chains a link made in one piece consisting of side plates connected together by a tubular head and a roller surrounding the tubular head.

2. In chains a link made in one piece consisting of side plates connected together by a tubular head, a roller surrounding the tubular head and made in segments and means for connecting the segments to each other.

HENRY MILLAR GRAY.

Witnesses:

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