A. B. DAY.

SPRING LINK.

APPLICATION FILED MAR. 18, 1909.

936,865. Patented Oct. 12, 1909.

Fig. 1.

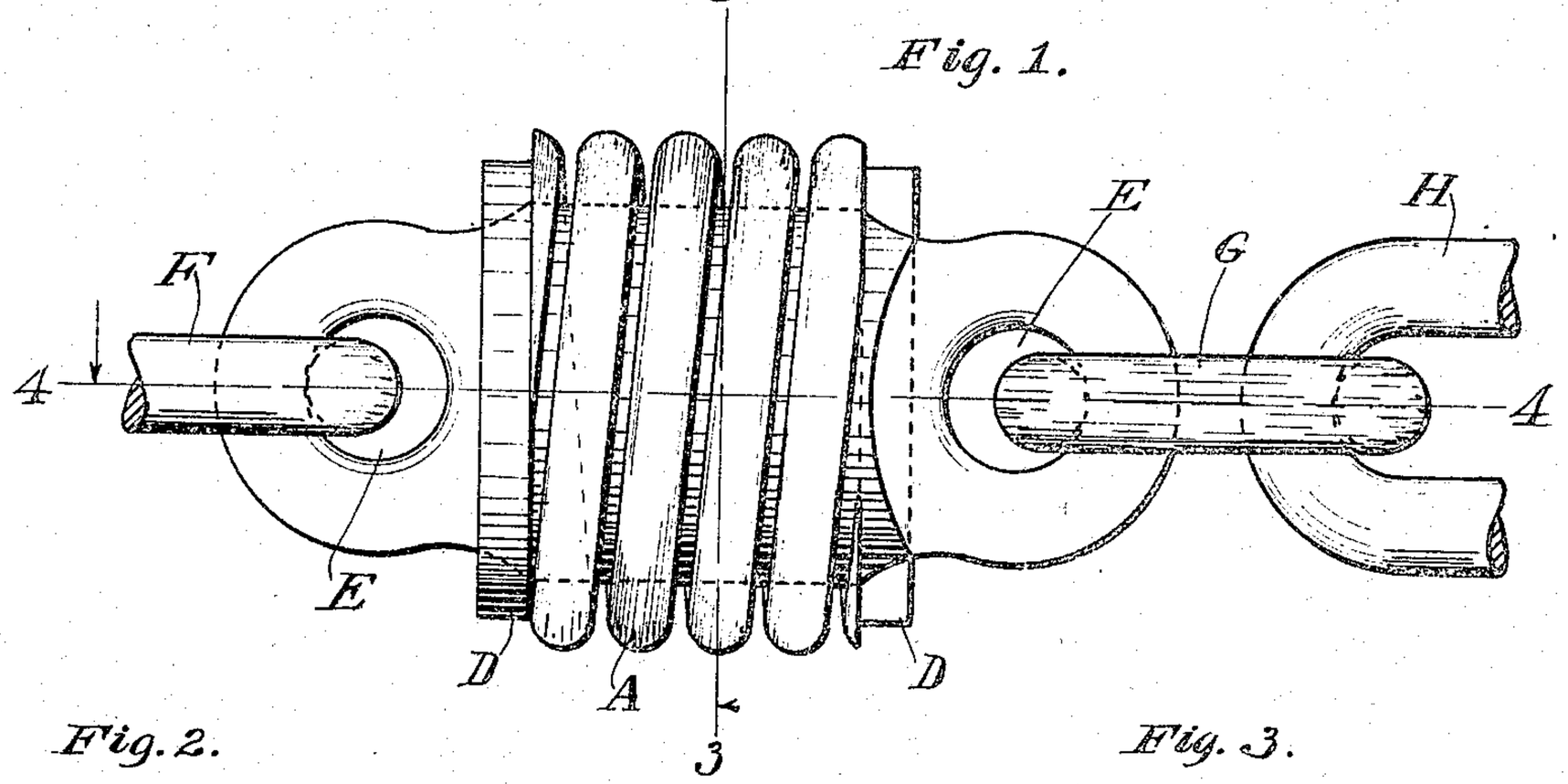
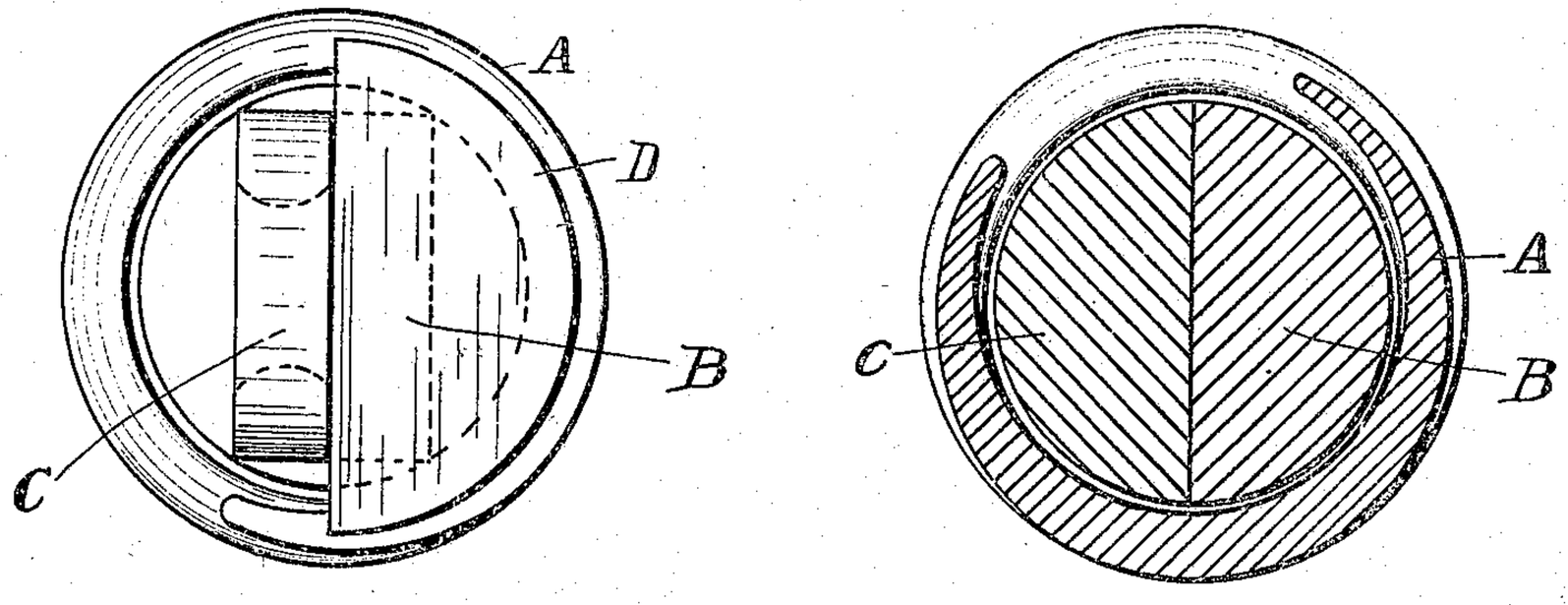


Fig. 2.

Fig. 3.



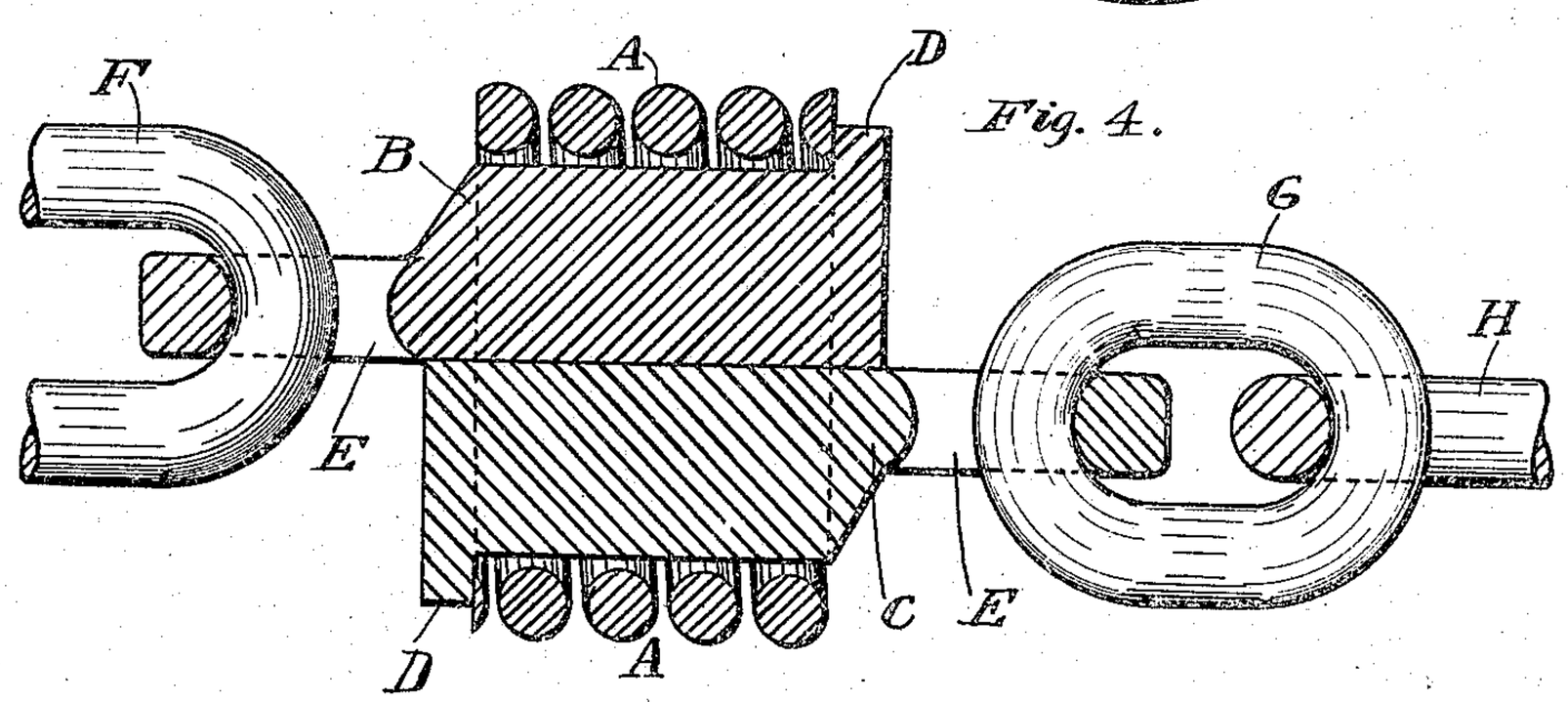


Fig. 4.

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UNITED STATES PATENT OFFICE.

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SPRING-LINK.

936,865. Specification of Letters Patent. Patented Oct. 12, 1909.

Application filed March 18, 1909. Serial No. 484,310.

To all whom it may concern:

Be it known that I, ALFRED B. DAY, a citizen of the United States, residing at Knoxville, in the county of Knox and State of Tennessee, have invented a new and useful Improvement in Spring-Links, of which the following is a specification, reference being had to the accompanying drawing.

My improvement relates particularly to links adapted to be used as a portion of a mine car coupling.

The object of the invention is to produce a link which will yield to an effective extent to abnormal strains and which may be easily and cheaply made and which is composed of parts which may be made separately and afterward assembled and which are separable and interchangeable, in order that a broken part may be easily replaced by a new part.

In the accompanying drawings, Figure 1 is a side elevation of a portion of a car coupling embodying my improved link; Fig. 2 is an end elevation of the same link; Fig. 3 is a section on the line 3—3 of Fig. 1, looking toward the left; Fig. 4 is a section on the line 4—4 of Fig. 1, looking in the direction of the arrow.

My improved link consists of three members, namely, a spring, A, a plate, B, and a plate, C. The spring is a tube-form, spiral coiled spring having the coils of substantially uniform diameter and separated from each other so as to adapt the spring for endwise compression under strains large enough to overcome the strength of the spring. The plates, B and C, are duplicates one of the other and they may be identical castings or drop forgings. The body of each of said plates is so formed as to adapt it to bear against the body of the other of said plates. And each such body is preferably as wide as the interior diameter of the tube-form spring, but not wider, in order that it may be placed into the tube-form spring, as will be hereinafter described. And each of said plates is provided at one end with a semi-circular flange, D, extending along one side and the upper and lower edges of the body of the plate. And each of said plates has at its opposite end a transverse aperture or eye, E, the distance between said eye and the flange, D, being a little more than the normal length of the spring, A. The spring and said two plates are assembled by pushing the eye end of each of said plates lengthwise through the spring, one of said ends being entered at one end of the spring and the eye end of the other plate being entered at the opposite end of the spring and the two plates being placed flatwise against each other with the flanges, D, of each such plate directed away from the other plate. When these parts have been thus assembled to constitute the link and a pulling strain is applied at the eye of each plate and away from the spring, each semi-circular flange, D, will bear against the adjacent end of the spring, and if such pulling is with sufficient force, the spring will yield and become compressed through the movement of the two flanges, D, toward each other and parallel to the link axis.

The plates, C, are retained within the spring by common links or clevises, or similar power-transmitting members, extending through the eyes, E, of said plates, each of said common links or clevises being too large to pass through the spring while the opposite plate is in the spring. Thus each such common link or clevis serves as a key for holding one of the plates, C, within the spring. In the left hand portion of Figs. 1 and 4, F is such a key consisting of a portion of a common link or clevis. And in the right hand portion of Figs. 1 and 4, G is such a key in the form of a common link to which is applied a link or clevis, H.

When the common link or clevis, F, is drawn toward the left and the common link, G, is drawn toward the right, with sufficient force, the plate, B, will be drawn toward the left while the plate, C, is drawn toward the right, the flanges, D, approaching each other to the extent that the spring is compressed by said flanges.

If so desired, a common link may be applied to one of the plates before the latter is put into the spring, provided said link is made narrow enough to pass through the spring.

Should it be desired to separate the members of my improved link, this may be readily done after the removal of the common links or clevises constituting the keys which extend through the eyes, E.

In use, when strain is abruptly applied to one of two cars between which my improved link is used as a part of a coupling, the transmission of said strain is gradual.

I claim as my invention:

A link comprising a tubular coiled spring

adapted for endwise compression and two rigid members extending side-by-side through said spring and having at alternate ends a flange integral with its member and directed laterally away from the link axis at opposite sides of the latter and bearing against opposite ends of the spring and said members having their ends opposite the end bearing the flange formed for engagement with a transmitting member and small enough transversely to pass through the spring, substantially as described.

In testimony whereof I have signed my name, in presence of two witnesses, this fifteenth day of March, in the year one thousand nine hundred and nine.

ALFRED B. DAY.

Witnesses:
CYRUS KEHR,
C. A. MORSE.