

(No Model.)

J. A. WENDLICK & P. LYNCH.
LOCOMOTIVE SPRING.

No. 410,868.

Patented Sept. 10, 1889.

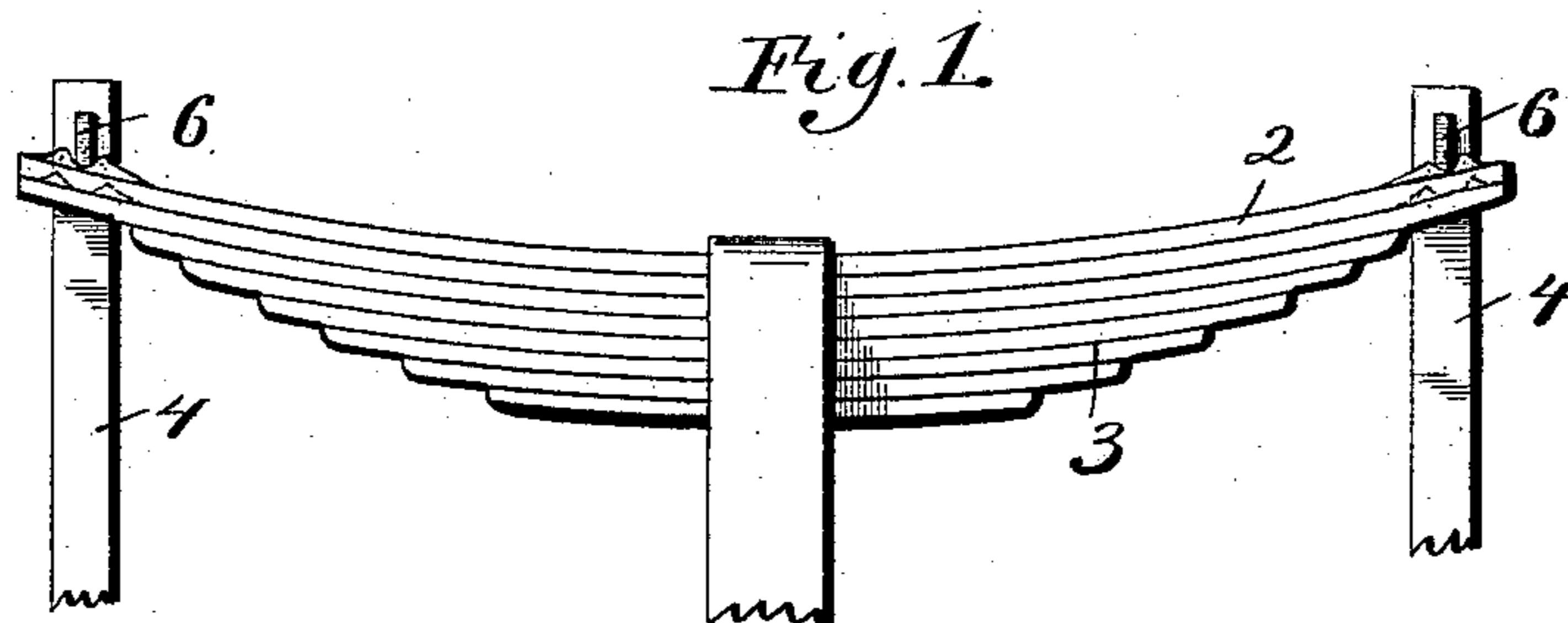


Fig. 6.

Fig. 7.

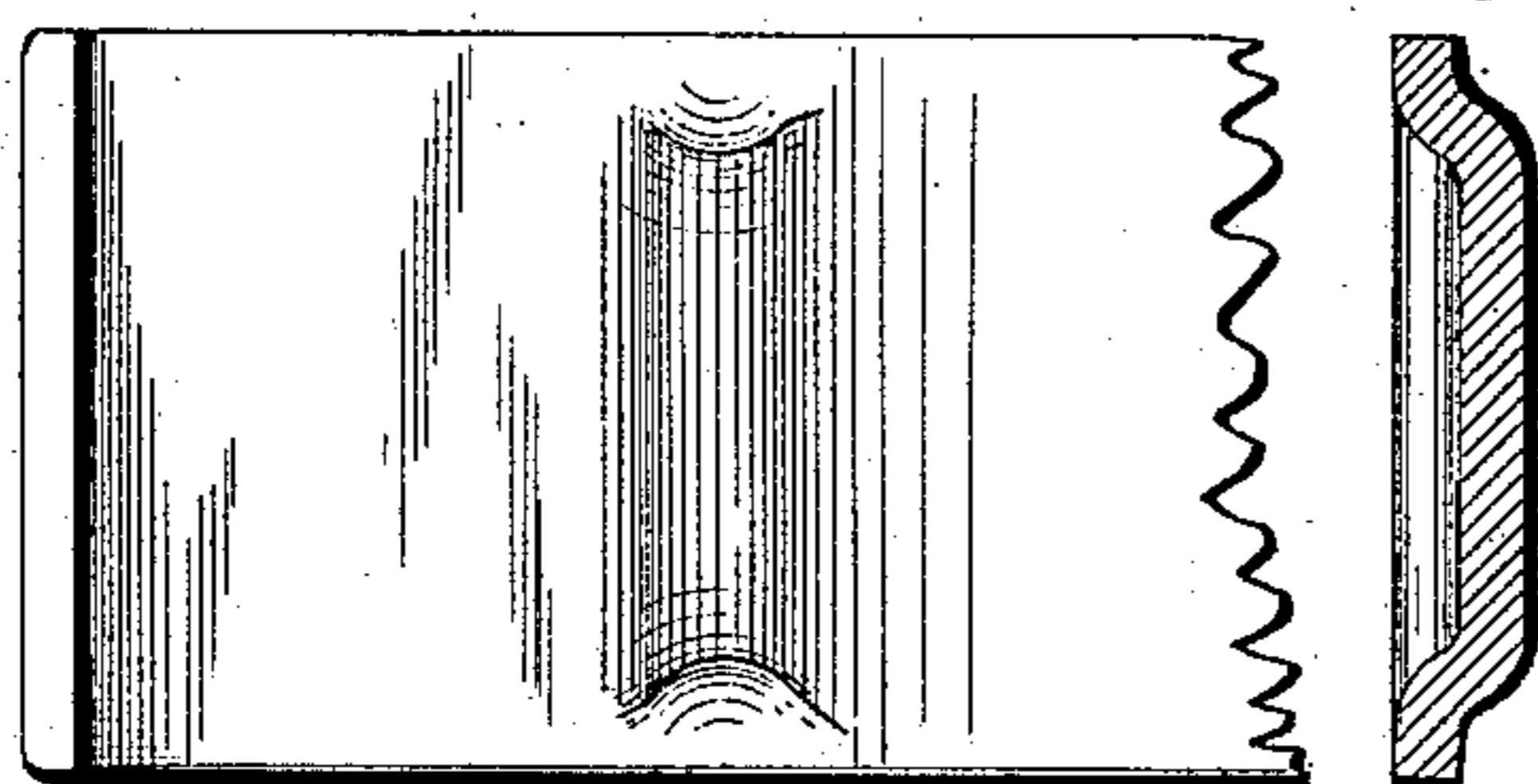


Fig. 4.



Fig. 2.

Fig. 3.

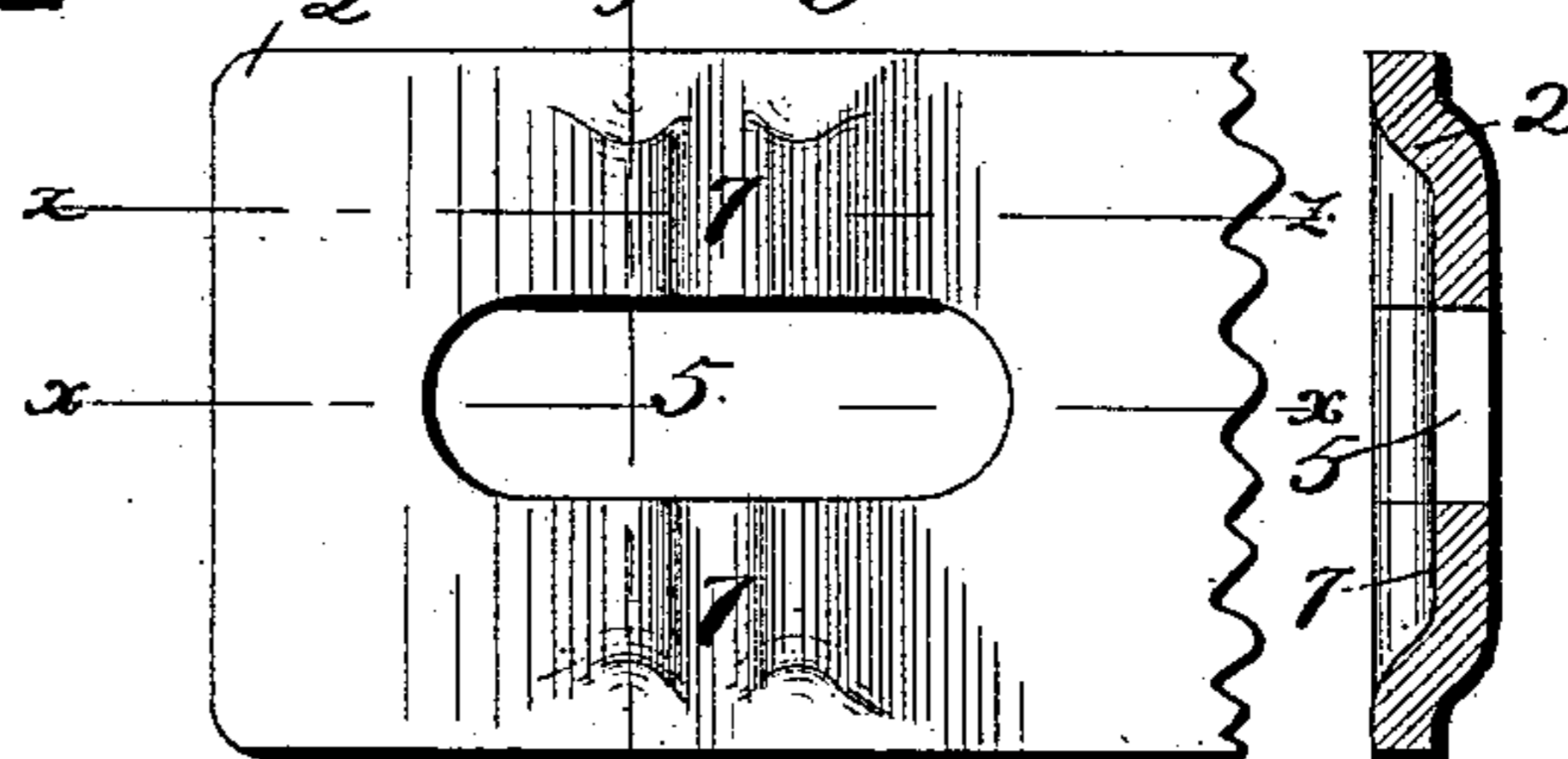


Fig. 8.



Fig. 10.

Fig. 9.

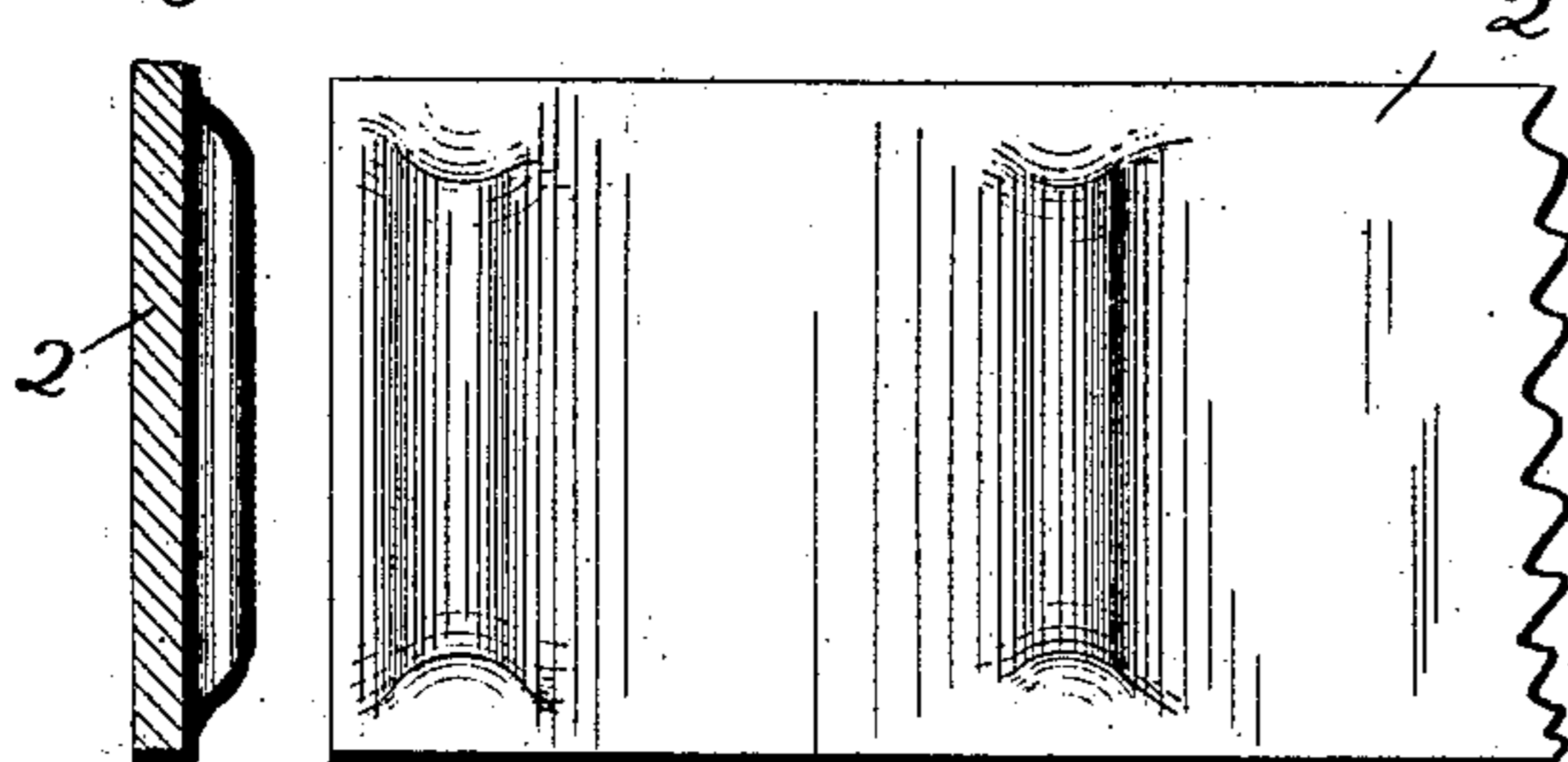


Fig. 5.



Fig. 11.



Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN A. WENDLICK AND PETER LYNCH, OF ST. PAUL, MINNESOTA.

LOCOMOTIVE-SPRING.

SPECIFICATION forming part of Letters Patent No. 410,868, dated September 10, 1889.

Application filed July 12, 1889. Serial No. 317,487. (No model.)

To all whom it may concern:

Be it known that we, JOHN A. WENDLICK and PETER LYNCH, both of St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Locomotive-Springs, of which the following is a specification.

Our invention relates to the supporting-springs of locomotive-engines; and it consists in the improved construction of the main or supporting leaves of said springs. As ordinarily constructed, the upper or main leaf of the spring, in order to furnish a suitable shoulder or recess at each end to hold in position the connecting link-key or stirrup, has welded to each end, on its upper surface, a grooved or otherwise properly-shaped block of iron, formed either by hand or by means of dies, or has the end upset and the thickened portion then formed into the proper shape to give the desired support. This method of forming the spring is objectionable for several reasons. The mass of metal is increased by the added thickness to the leaf, so that the operation of tempering cannot be performed uniformly for the whole leaf, and while the body of the leaf is brought to a proper temper the thickened end is left too hard, and therefore the more liable to breakage, and when the end of the leaf is turned back on itself and welded the cutting away of a groove to receive a link-key or stirrup weakens the overlapping portion, so as to make it liable to breakage. Another serious objection is the amount of labor required in this work, which, together with the expense of materials, adds materially to the cost of the spring. By our improved construction the leaf is left of substantially the same thickness throughout, so as to receive a uniform temper, while the cost of forming is reduced to a minimum, because the work is performed by means of dies to shape the leaf itself, without the addition of other pieces, and no welding or repeated heatings are required, a single heat to a cherry red being all that is necessary for the whole operation. In this construction, also, there is no danger

from breakage because of imperfect welding, or injury to the steel by overheating or burning.

In the accompanying drawings, forming a part of this specification, Figure 1 is a side elevation of our improved spring, showing the supporting links and keys in position. Fig. 2 is a detail plan view of the end of main leaf. Fig. 3 is a cross-section of the same on line *y y* of Fig. 2. Figs. 4 and 5 are longitudinal sections of the same respectively on lines *z z* and *x x* of Fig. 2; and Figs. 6, 7, 8, 9, 10, and 11 are details of modified forms of the same.

In the drawings, 2 represents the main or upper leaf of the spring 3, at either end of which is supported a suitable hanger or link 4, which passes through the slot 5, and is held in position by means of the key 6, which rests in the groove 7, formed transversely of the leaf.

In order to form the support for the key in the construction shown in Figs. 1 to 5, inclusive, or the shoulders or saddles shown in Figs. 6 to 11, inclusive, the leaf is subjected to a suitable heat, preferably cherry red, and then, by means of suitable dies under a trip, drop, or steam hammer, the central portion of the leaf, near the end, or at a point where the support is required, is impressed with the dies, so as to form a depression or socket on the under side and a raised portion or projection on the upper side, while the alignment of the edge of the leaf is unchanged.

Any form of impression desired may be given to the leaf by suitable dies; but those shown in the drawings are the ordinary and preferable styles.

It is apparent that a leaf formed in the manner described, instead of being weakened at the place of support by the shaping process, is, on the contrary, rather strengthened to resist breakage, and the simple work of forming is completed in a single brief operation at the expenditure of a small fraction of the labor and material usually employed.

We claim—

As an improved article of manufacture, a

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locomotive-spring having its upper or sup-
porting leaf formed at the ends by means of
dies to receive suitable hangers or links,
whereby the central portion of the body of
5 the leaf is given the desired shaping or curva-
ture, while the edges of the leaf are left
straight or in alignment with the main body
of the leaf, substantially as described.

In testimony whereof we have hereunto set
our hands this 29th day of June, 1889.

JOHN A. WENDLICK.
PETER LYNCH.

In presence of—

A. M. GASKILL,
T. D. MERWIN.