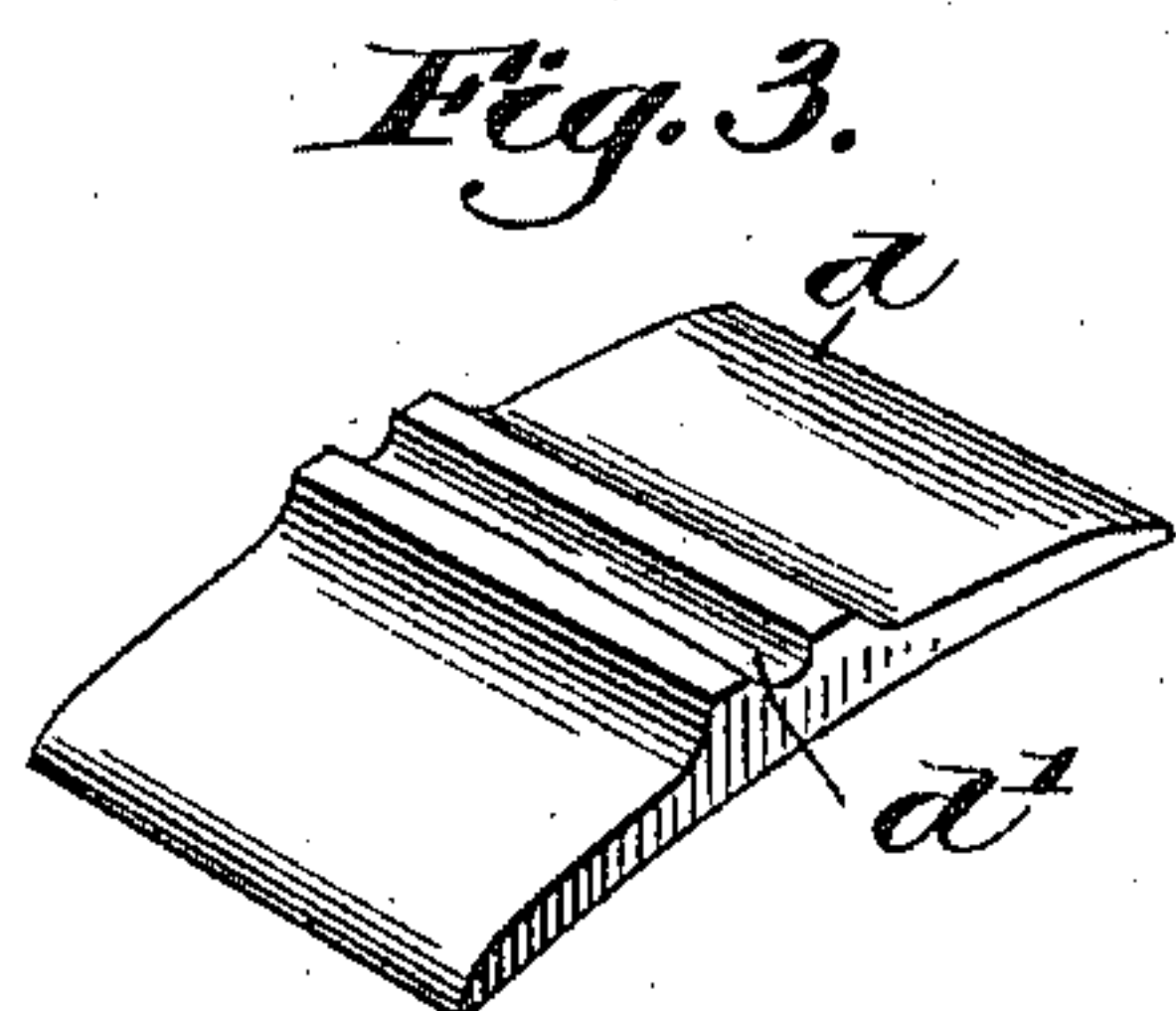
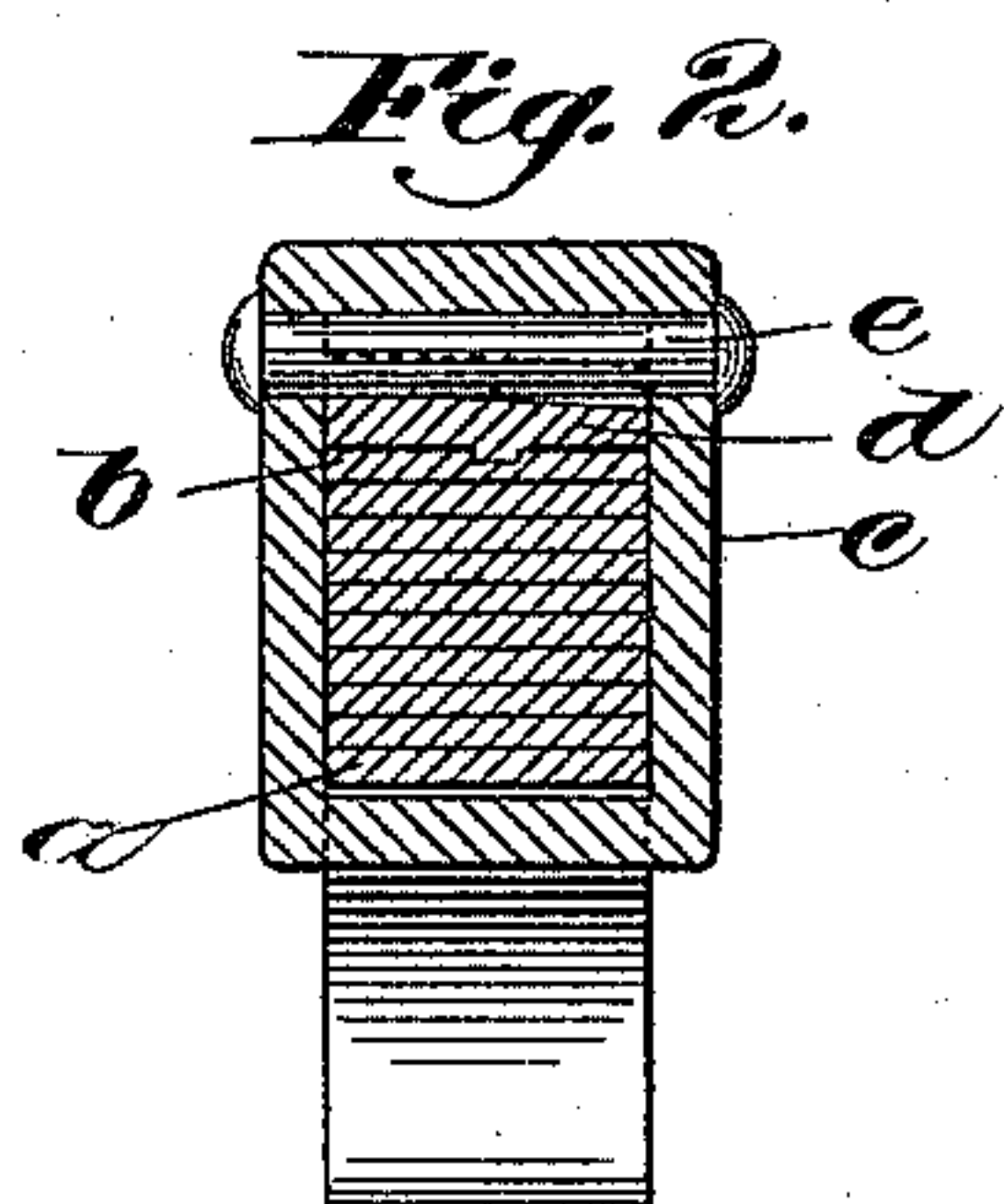
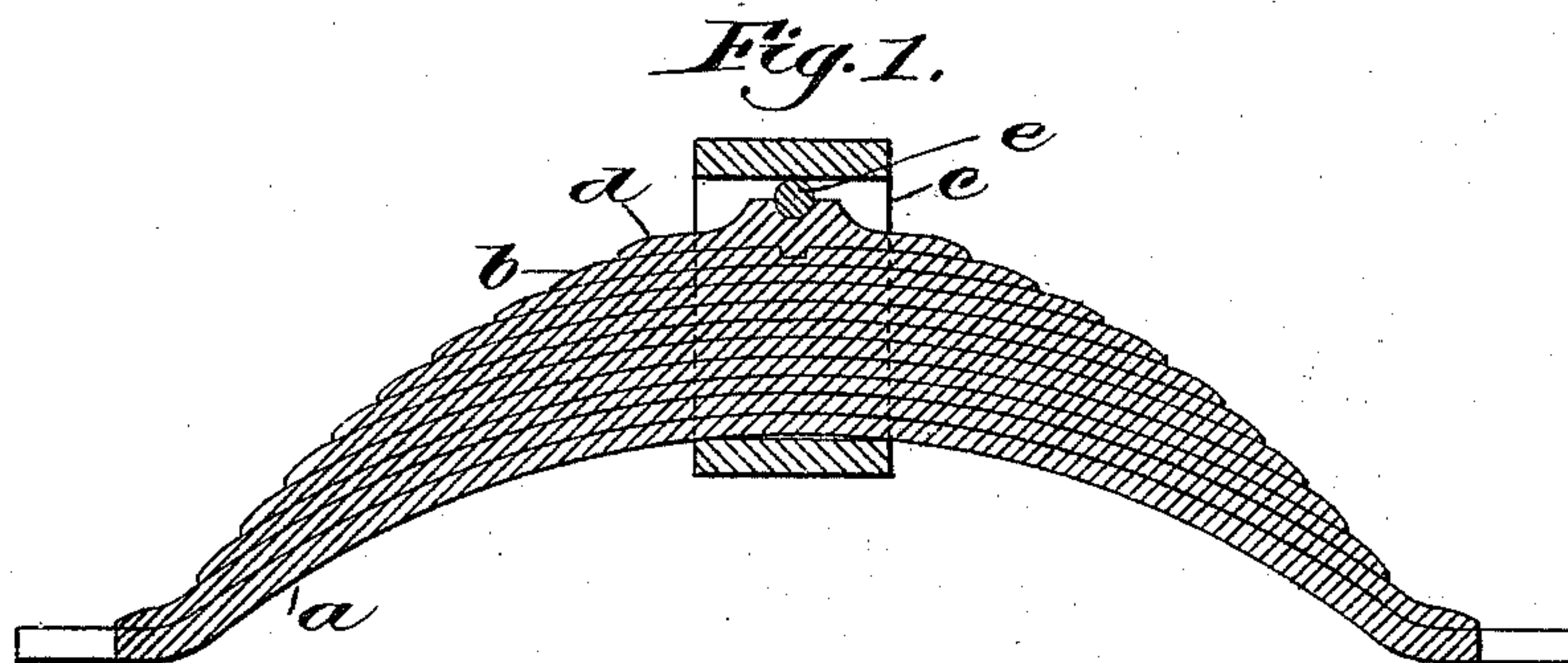


(No Model.)

G. H. WILLIAMS.
LEAF SPRING.

No. 573,121.

Patented Dec. 15, 1896.



Witnesses:

A. C. Harmon,
Thomas J. Drummond,

Inventor:

George H. Williams.
by Crosby Gregory, attys.

UNITED STATES PATENT OFFICE.

GEORGE H. WILLIAMS, OF BOSTON, MASSACHUSETTS.

LEAF-SPRING.

SPECIFICATION forming part of Letters Patent No. 573,121, dated December 15, 1896.

Application filed April 6, 1896. Serial No. 586,321. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. WILLIAMS, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Leaf-Springs, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

In the manufacture of heavy leaf-springs for use in connection with locomotives and other cars the leaves of the spring when curved, set, and tempered are laid in a pile and are secured together by a strong metallic band, which, having been heated, is driven onto the pile, after which the band is shrunk on the pile to confine the leaves in place, cold water or other fluid being used in the cooling. The shrinking of the band on the already-tempered leaves results in heating the leaves centrally, which seriously disturbs the previous tempered condition of the spring, and in use they frequently break close to the band.

I have tried to obviate the breaking of the springs due to drawing the temper, and I have effected my purpose.

In accordance with my invention the leaves of the spring are curved, set, and tempered and piled as usual, and a loop-shaped band of a size to fit closely the sides of the pile is applied thereto, the shortest leaf of the pile having applied to it a rocker with which co-operates a key supported by the band, the key sustaining the rocker and acting as a pivot therefor, the insertion of the key forcing the rocker and leaves closely together, holding the leaves as securely as by the usual shrinking operation, but in my invention the temper of the leaves is in no way changed or affected, and the springs will wear longer and better than in the old way.

Figure 1, in longitudinal section, shows one of my improved springs; Fig. 2, a cross-section in the line xx , Fig. 1. Fig. 3 shows a rocker detached, and Fig. 4 shows one form of key.

The spring is composed of a series of steel leaves from a to b of any desired length, width, and curvature, the said leaves being tempered when set and put into the pile. To surround and hold the pile, I employ a closed band c of a width to just fit the side edges of

the pile, the space in the band being a little longer than the thickness of the superimposed leaves of the pile, and on the shortest leaf of the pile, inside the band, I apply a rocker d , shown as provided with a key-seat d' , and in this seat I apply a key, which may be a tapered pin e , the pin entering holes in the opposite sides of the band and coöperating with the seat of the rocker, the movement of the key, as when it is driven in, acting in the seat to force the rocker and leaves firmly together and confine them absolutely in the band, so that there is no possible chance of one leaf turning or moving on another leaf, but the whole pile of leaves may rock to a limited extent with the rocker on the key without the leaves striking the square corners of the band.

The part of the seat of the rocker which is acted upon by the key is slightly tapered, so that the rocker is moved in the direction of the length of the space in the band.

The key e shown, when fully driven in, may be cut off and its end may be upset.

Prior to my invention I am not aware that the band has ever been applied to the pile of leaves of a spring by a rocker and key, so as to permit a rocking motion about the key as a pivot, and my invention is not, therefore, limited to the exact shape shown for the rocker or of the key, and instead I may use any equivalent devices having the same principle of operation.

The spring may be and is commonly used either side up, according to the particular part of a car with which it is used.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A spring composed of a pile of curved, set and tempered leaves, and a surrounding band, combined with a rocker interposed between the shortest leaf and the band, and a pin carried by the band to act as a pivot for the rocker and effect the clamping of the leaves in the band, substantially as described.

2. A spring composed of a pile of curved, set and tempered leaves, a closed surrounding band, and a rocker interposed between the shortest leaf and the band and having a key-seat, combined with a key entering said seat to act on said rocker and clamp the leaves in

the band, and adapted to act as a pivot for the rocker, substantially as described.

3. A spring composed of a closed band, a
5 closed within the band, a rocker mounted on the shortest leaf and a pin adapted to serve as a pivot for the rocker, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of 10 two subscribing witnesses.

GEORGE H. WILLIAMS.

Witnesses:

GEO. W. GREGORY,
MARGARET A. DUNN.