T. A. SHEA.

END PLATE FOR SPRINGS.

APPLICATION FILED OCT. 6, 1909.

993,114. **Patented May 23, 1911.**

Fig. 1.

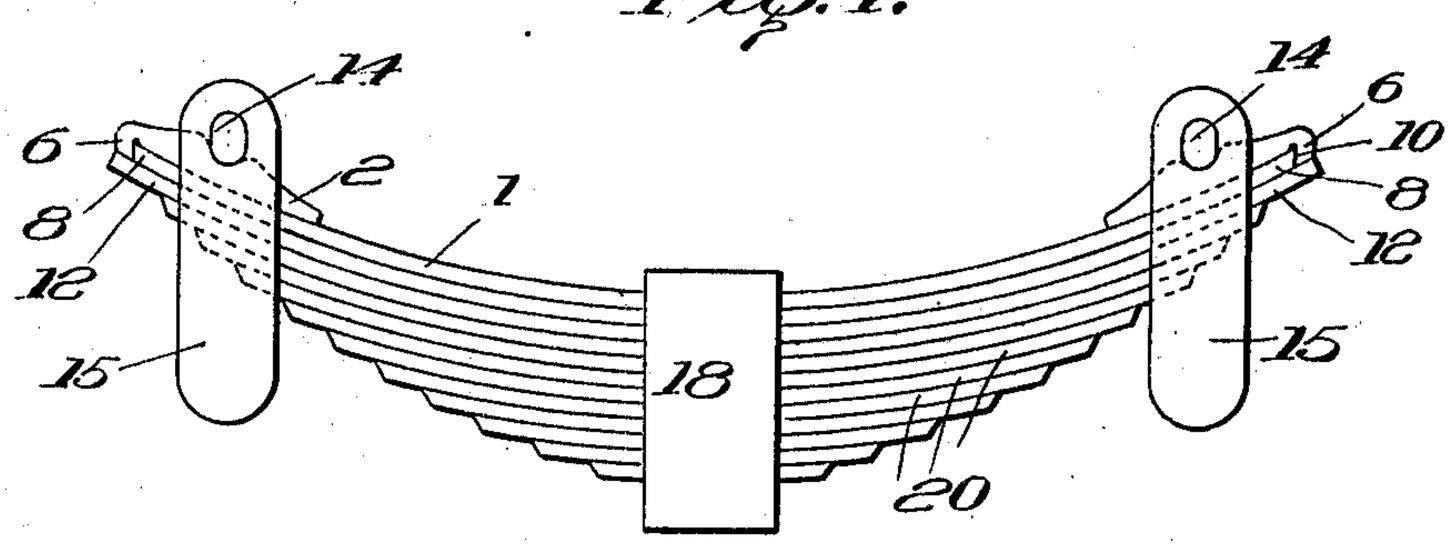


Fig. 2.

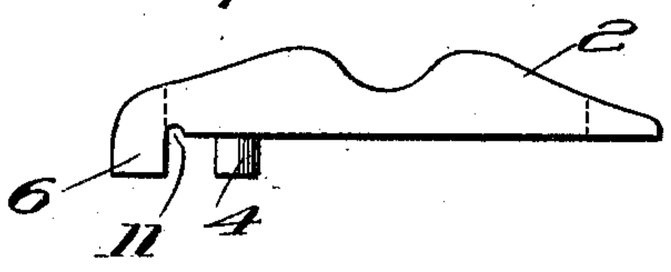


Fig. 3.

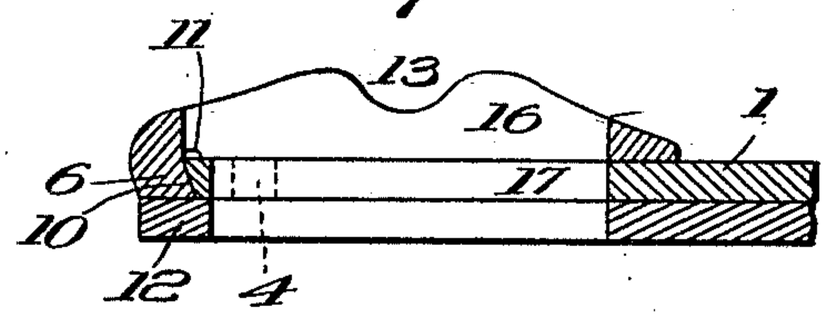


Fig. 4.

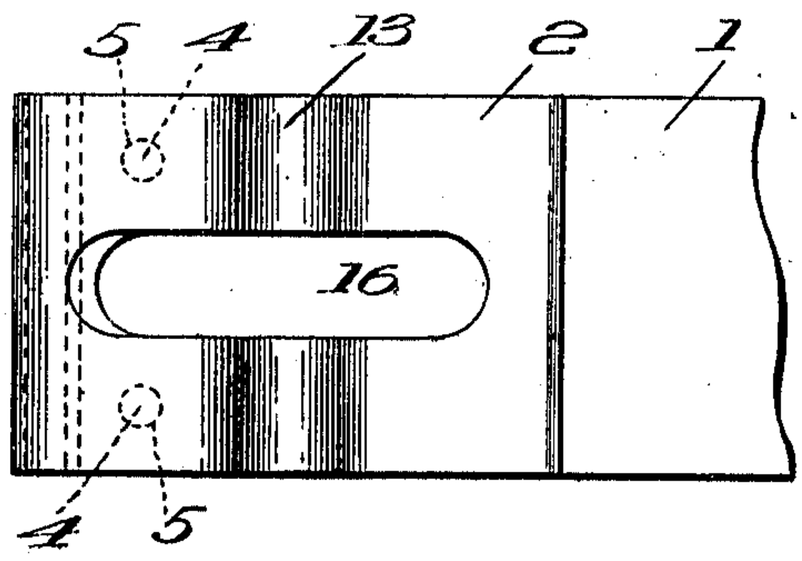
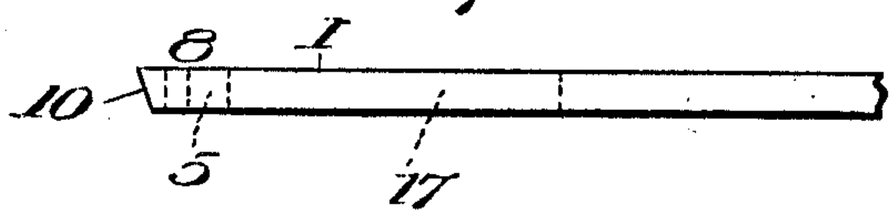


Fig. 5.



WITNESSES:

Allan A. Fraser.

J. W. McIlvaine

INVENTOR

Thomas A. Shea

BY

Alfred Wilkinson

ATTORNEY

UNITED STATES PATENT OFFICE.

THOMAS A. SHEA. OF HAMMOND. INDIANA.

END PLATE FOR SPRINGS.

993,114. Specification of Letters Patent. Patented May 23, 1911.

Application filed October 6, 1909. Serial No. 521,296.

To all whom it may concern:

Be it known that I, THOMAS A. SHEA, a citizen of the United States, residing at Hammond, in the county of Lake and State of Indiana, have invented new and useful Improvements in End Plates for Springs, of which the following is a specification.

This invention relates to end plates for semi-elliptic springs, to which the usual stirrup for carrying the load is fitted and consists of an end plate formed particularly to facilitate permanent securement in position on the spring without requiring any inconvenient modifications of, or in any way weakening, the spring. To accomplish this in the simplest possible manner the end plates of my invention are provided with an extension on their outer ends in the form of a downwardly extending lip adapted to be bent inwardly into locking engagement with the outer main leaf end, which is suitably inclined to permit of the locking engagement; this being accomplished in a most convenient manner by a simple operation; the plates being formed to permit of the greatest economy in manufacture and adapted to be conveniently adjusted and securely fastened in position. These and other features of my invention will be understood by reference to the drawings herewith, in which the reference numerals of the description indicate corresponding parts in all the views.

In the drawing Figure 1 is an elevation showing my invention in position on a spring. Fig. 2 is an elevation, enlarged, of my improved end-plate. Fig. 3 is a corresponding sectional view illustrating my invention as clamped in position. Fig. 4 is a plan view thereof and Fig. 5 is an elevation of the main leaf end as formed to coöperate with my improved end-plate.

In the figures, 1 indicates the main spring-leaf and 2 the end-plate or bearing-plate of my invention supported thereon. This plate may be economically made of wrought or malleable iron and formed as shown with the guide and securing lugs or dowels 4—4 to engage apertures 5—5 of the main-leaf 1 whereby the plate is adjusted in position upon the leaf to be permanently secured thereon by the retaining extension or lip 6. Preferably the retaining-lip 6 is in the form of an integral downward extension substantially equal in depth to the thickness of the main leaf, formed on the outer plate end at right angles to the plate, in position of engagement with the outer main-leaf end 8; the main-leaf end being suitably formed to permit clamping of the plate thereon upon bending inwardly of the retaining lip, for this purpose being here shown beveled to provide inclined tip 10 engaging the bent-in lip as shown in Fig. 3. A small groove 11 may be formed adjacent to the lip during casting of the plate to insure against fracture or weakening of the plate during bending of the lip.

The second leaf 12 may, as shown, be elongated to be flush with the outer edge of the end-plate in which position it will afford a protection against disengagement of the bent-in retaining lip from the contact of foreign bodies.

The features of my invention may be employed in end-plates of any suitable construction, being here shown embodied in a so called "gib" end plate. The end-plate being grooved or recessed at 12 to receive the pin 14 of the usual hanger 15, depending through slots 16 and 17 in the end plate and main-leaf provided therefor.

18 is the central spring leaf binder employed to bind the usual series of leaf-springs 20.

My improved plates readily adjust themselves in position on the spring by the engagement of the securing lugs or dowels with their slots when permanent securement is accomplished upon merely inwardly bending of the retaining lip, clamping the main-leaf in a manner contributing to its secureness and rigidity, the bending of the lip being conveniently accomplished without the employment of any special tool.

Having thus described my invention, what I claim is:

1. As a new article of manufacture, an end plate for springs provided with a downwardly extending lip adapted to be bent into clamping engagement with the end of the spring leaf permanently to secure the plate thereon.

2. As a new article of manufacture, an end plate for semi-elliptic springs provided with dowels for engagement with the spring leaf and provided on its outer end with a downwardly extending lip adapted to be bent into clamping engagement with the spring-leaf end permanently to secure the plate thereon.

3. As a new article of manufacture, an end plate for springs provided at its end with an integral downwardly extending lip adapted to be inwardly bent into clamping engagement with the spring leaf end permanently to secure the plate thereon, said plate being transversely grooved on its under portion immediately adjacent to said lip.

4. As a new article of manufacture, an end plate for semi-elliptic springs provided with dowels for engagement with the spring leaf, said plate having an integral downwardly extending lip on its outer end adapted to be inwardly bent into locking engagement with the spring-leaf end permanently to secure the plate thereon.

5. In a semi-elliptic spring the combination with the main leaf having an inclined end, of an end plate provided with a downwardly extending lip immediately adjacent to the main-leaf inclined end to be bent into clamping engagement therewith permanently to lock the plate to the main leaf.

6. In a semi-elliptic spring, the combination with the main leaf having an inclined portion, of an end plate provided with an integral downwardly extending lip immediately adjacent to the main leaf inclined end to be bent into clamping engagement therewith permanently to lock the plate to the main leaf and the spring second leaf being adapted to underlie said lip when in locking engagement.

7. In a semi-elliptic spring, the combination with the main leaf having an inclined outer end, of an end plate provided on its outer end with an integral downwardly extending lip adapted to be inwardly bent into clamping engagement with the inclined main leaf end permanently to secure the plate thereon and the spring second leaf being elongated to be substantially flush with the plate end to underlie the lip substantially as described.

8. In a semi-elliptic spring, the combination with the main leaf having its end beveled on its underside and suitably apertured, of a plate provided with dowels engaging leaf apertures to position the plate thereon, said plate being provided on its outer end with an integral downwardly extending lip substantially the thickness of the leaf and adapted to be inwardly bent into clamping engagement with the main leaf beveled end permanently to secure the plate thereon, said plate being transversely grooved on its under portion immediately adjacent to said lip and the spring second leaf being elongated to be substantially flush with the plate outer end underlying the bent-in lip substantially as described.

9. As a new article of manufacture, an end plate for springs having securing lugs for engagement with the spring leaf and provided on its end with a downwardly extending lip adapted to be bent into clamping engagement with the spring leaf permanently to secure the plate thereon.

10. As a new article of manufacture, an end plate for springs having securing lugs for engagement with the spring leaf and provided on its end with a single downwardly extending lip adapted to be bent into clamping engagement with the spring leaf permanently to secure the plate thereon, said lip extending substantially the full width of the plate.

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

THOMAS A. SHEA.

Witnesses:

JOHN BIELAWA,

PAUL B. LIPINSKI.