(No Model.)

W. DUNN.

NUT FASTENER.

No. 270,877. Patented Jan. 16, 1883.

Fig. 1.

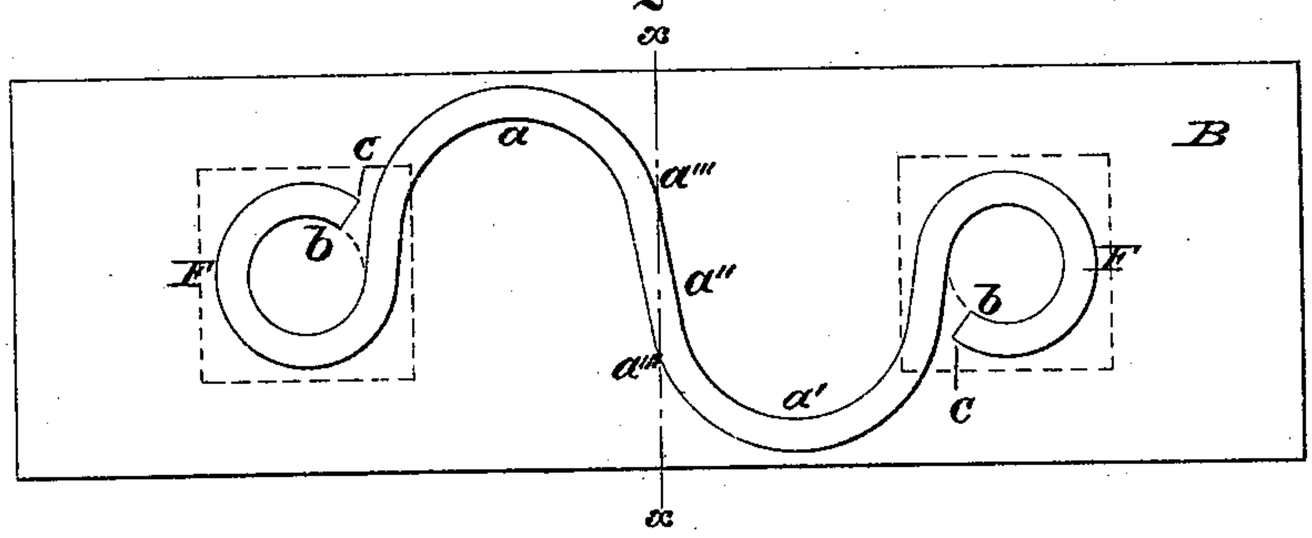


Fig. 2.

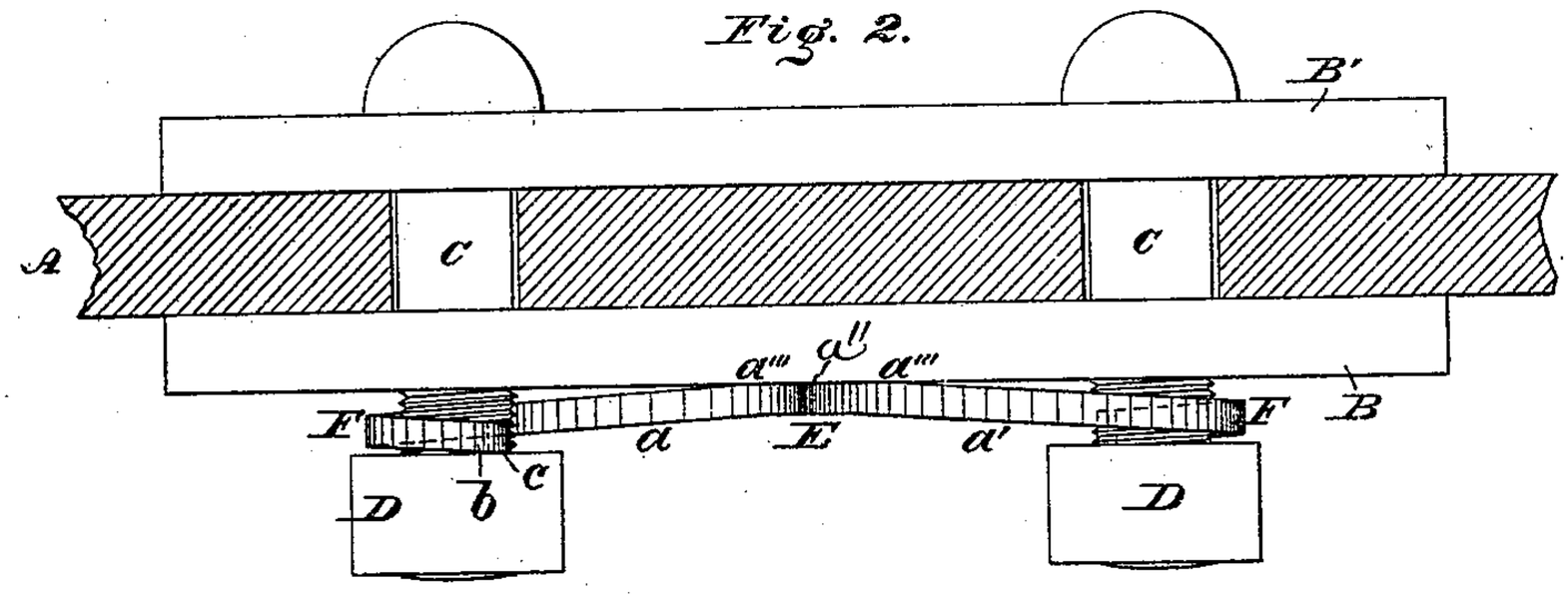
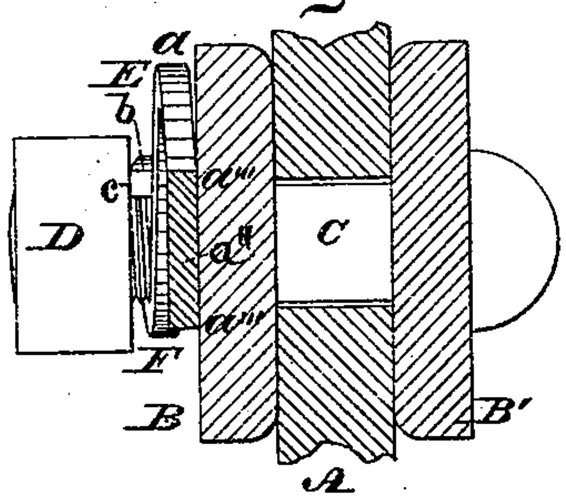


Fig. 3.



WITNESSES:
L. Douville
W. F. Kircher

INVENTOR:
William Dunn,
BY John A. Wiedersheim ATTORNEY.

UNITED STATES PATENT OFFICE.

WILLIAM DUNN, OF PHILADELPHIA, PA., ASSIGNOR OF TWO-THIRDS TO DANIEL B. RUFFNER AND GIDEON S. BOLTON, OF SAME PLACE.

NUT-FASTENER.

SPECIFICATION forming part of Letters Patent No. 270,877, dated January 16, 1883.

Application filed November 28, 1881. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM DUNN, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Springs for Fastening Nuts and Taking Up of the Slack of Fish-Plates, &c., which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a side elevation of the spring embodying my invention. Fig. 2 is a top view thereof, the rail being shown in horizontal section. Fig. 3 is a vertical section in line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists of a spring which is curved in reversed directions upwardly and downwardly, the connecting-arm of the reversed curves resting on the fish-plate, at the terminations of which part the reversed curves are bent outwardly, thus producing the resiliency of the spring, the lengthened surface of the spring increasing said resiliency without increasing the dimensions of the spring from bolt to bolt, the connecting-arm of the reversed curves bearing on the fish-plate, so that the resiliency of the reverse curves begins at the upper and lower parts of said arm, thus leaving the arm strong and durable and bearing on the surface of the fish-plate above and below the center thereof.

It also consists in throwing out the ends of the eyes of the springs, whereby the sharp edges or angles of said ends are presented to the rear faces of the nuts, so as to bite thereagainst, thus increasing the holding power of the springs on the nuts.

Referring to the drawings, A represents a railroad-rail or other rail to be spliced or fished.

B B′ represent the splice or fish pieces or plates, and C the fastening-bolts, having tightening-nuts D.

E represents a curved spring, which is of skeleton form, and has eyes, which are fitted on the bolts C. The spring is constructed of a rod, bar, or piece of suitable metal, having its body of S, sinuous, or serpentine form, curved in the direction of its length, and its ends are bent to constitute the eyes for the bolts C. It will be noticed that the curves of the spring are in reversed directions upwardly and downwardly, as at *a a′*, between said eyes. The reverse curves *a a′* are joined by a somewhat vertical bar, *a″*, which extends between the points *a‴ a‴* and rests flat on the fish-plate, said curves thus beginning at the points *a‴* and bending outwardly therefrom. Each eye F of the spring has its end turned outwardly, as at *b*, so as to present the extreme edge or angle *c* to the back of the nut and bite thereagainst, said eyes being formed by bending the ends of the piece of which the spring is constructed in reversed directions, as continuous of the curves *a a′*.

When the fish-plates, bolts, and springs are properly located the nuts D are applied and tightened, thus compressing the spring and firmly clamping the rail and plates. The friction created by the spring serves to hold the nuts and prevent their rotation, and when the rails, plates, &c., wear from service the slack is taken up, and thus the parts continue to be held, and rattling of the same is prevented.

As the spring is of S or serpentine shape, it will be found to possess a lengthened surface between the eyes without increasing the dimension of the spring from bolt to bolt. This increases the resiliency and power of the spring, and also renders the same strong, light, and inexpensive, as it is not weakened by joints or piercing, and a heavy piece of metal is not required to form the same. The central bar, *a″*, also provides a large bearing-surface for the spring on the fish-plate, and rests against the main portion of the fish-plate, above and below the center of the same, in the vertical direction thereof, so that the center of the spring is strong and durable and bears firmly against the fish-plate on a large surface thereof.

I am aware that it is not new to form a nut-fastening spring of a bar bent backward and forward, so that several arches are presented, all of which bear on the fish bar or plate; but I am not aware of any spring formed, as in my case, of a central vertical part, *a″*, from the top and bottom parts, *a‴*, of which there extend the body portions *a a′* in reversed directions upwardly and downwardly, so that said reversed curved portions also stand out from the central vertical part, *a″*. This lengthens the

spring and increases the resiliency of the same, and leaves the body standing well out from the fish-plate from the top and bottom of the central part to the extreme ends. Furthermore, the central part has a long bearing-surface extending above and below the center of the fish-plate, thus providing a long bearing for the center of the spring, which prevents turning of the spring and increases the strength thereof.

I am also aware that it is not new to provide the ends of the eyes of the spring with tongues which are turned up and embrace the sides of the nut; but in my case the extreme ends of the bar or terminals of the eyes are turned outwardly, so as to present their sharp edges to the backs of the nuts, thus avoiding the tongues and causing said sharp edges to increase their hold or bite as the nuts are tightened. In view of these facts I have made an improvement in the art.

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

1. The nut-fastening and fish-plate spring, consisting of a body having curved portions *a* *a'*, which extend in reversed directions upwardly and downwardly from the central connecting-bar, *a''*, from the upper and lower parts of which said curved portions are bent outwardly, substantially as and for the purpose set forth.

2. The bent spring having a central bearing part and eyes at the end, the extreme end or angle of each of which projects outwardly, so as to bite the back of the nut, substantially as and for the purpose set forth.

WILLIAM DUNN.

Witnesses:
JOHN A. WIEDERSHEIM,
W. F. KIRCHER.