(No Model.)

J. H. LAWRENCE.

STRAP HINGE.

No. 588,925. Patented Aug. 24, 1897.

Fig. 1.

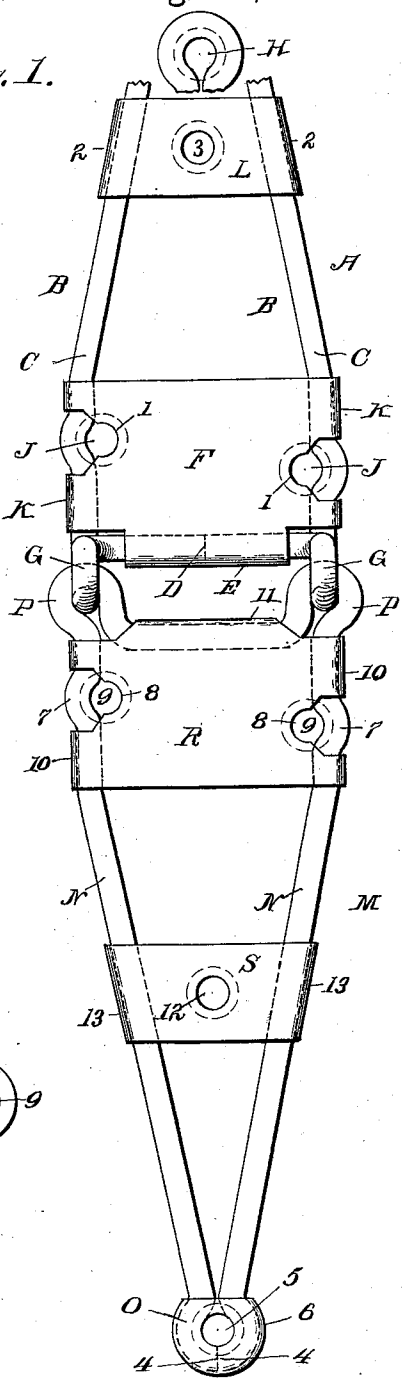
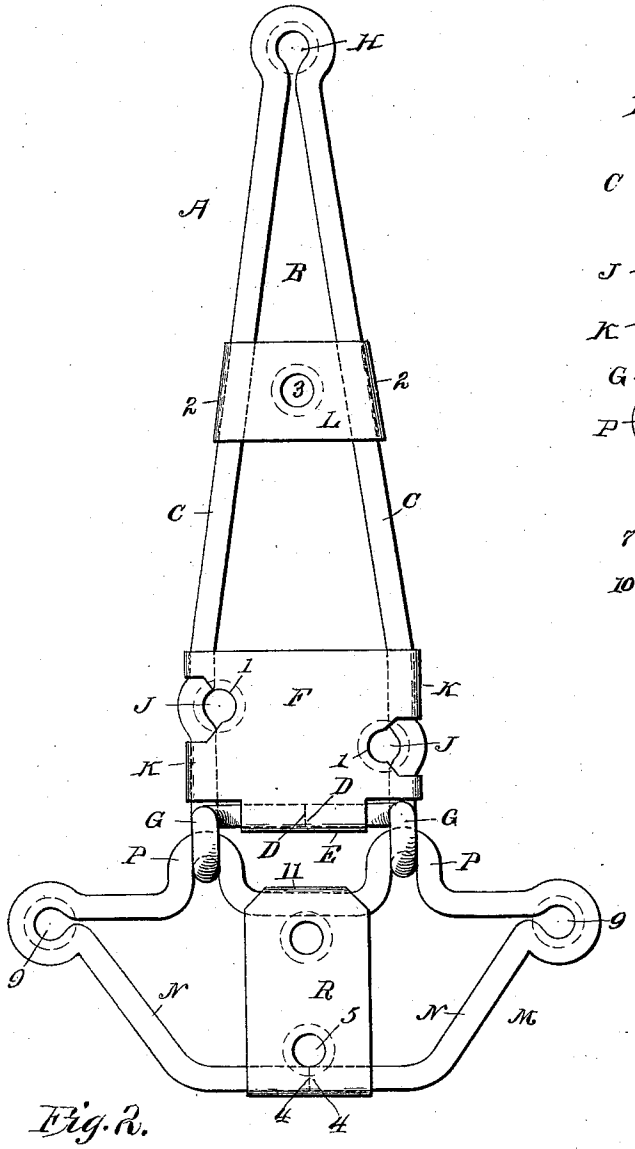


Fig. 2.



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STRAP-HINGE.

SPECIFICATION forming part of Letters Patent No. 588,925, dated August 24, 1897.

Application filed March 21, 1896. Serial No. 584,313. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. LAWRENCE, a citizen of the United States, residing at Sterling, in the county of Whiteside and State of Illinois, have invented certain new and useful Improvements in Strap-Hinges; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention has reference to improvements in strap-hinges, and has for its purpose, by means of a novel construction, to provide a hinge which shall cheaply and in simple form embody the desirable qualities of strength and durability, and at the same time be constructed without any waste of material.

My invention consists of hinge-leaves formed, mainly, of round wire bent into the proper conformation and suitably braced and reinforced at proper localities with steel plates forcibly seated on said wire.

I attain the above-named objects and results by the construction illustrated in the accompanying drawings, in which—

Figure 1 is a perspective of my invention as embodied in one form of strap-hinge. Fig. 2 is a perspective of my invention as applied to another form of strap-hinge, usually termed a "T-hinge."

Similar letters refer to similar parts in each of the views.

Referring to Fig. 1, A is one of the leaves of the hinge and is constructed of a single wire B, bent, respectively, as shown, into limbs C C, the ends of which are held in juxtaposition and in direct line with each other at D within and by the transverse coil E of the steel plate F. The limbs C, just before being turned transversely inward to receive the grasp of the coil E, are respectively slightly coiled back upon themselves to form the eye or articulations G. The other extremities of the limbs C unitedly form the coil or screw-seat H. The limbs C are also given a slightly-outward bend, respectively, near their inner ends to form, in conjunction with a curved opening 1 in the plate F, the screw-seats J. The plate F, in addition to the coil E, is provided with the end coils K K, which grasp the limbs C C, respectively, and hold the latter rigidly in their original mutual relation. An intermediate plate L, provided with end coils 2 2 and with the central screw-hole 3, seated on the limbs C C, serves to still further stiffen the latter and hold the same against the structure to which the leaf A may be attached. The leaf M of Fig. 1 is composed of the limbs N N, constructed of suitably-sized wire and bent from one integral piece, the open ends 4 of which, after being slightly bent to form the screw-seat 5, are held within the sealed cap O, provided with marginal coil 6, adapted to clasp a portion of said outer end of said limbs N, which surround said screw-hole and hold the same rigidly in mutual contact. The opposite ends of the limbs N are respectively bent into eyes or articulations P, which are adapted to pass through the eyes G of leaf A and provide the necessary articulation or joint. The limbs N N, a short distance from their inner ends, are provided, respectively, with slight outer curves 7, which, in conjunction with the curved opening 8 in the plate R, form screw-seats 9 9. The plate R is provided with end coils 10 10, adapted to be clamped, respectively, upon the limbs N N and hold the latter in one fixed mutual relation. Plate R is further provided with a coil 11, which is clamped upon that portion of the limbs N which lies between the eyes P P, and the said plate R, therefore, serves to reinforce the limbs N N at their articulations with the limbs C C, respectively. An intermediate plate S, provided centrally with a screw-seat 12 and at its extremities with the coil 13, is seated intermediately on the limbs N and serves the double function of holding said limbs in proper mutual relation and that of an additional attachment of the leaf M to the side of the building.

In Fig. 2 the construction is substantially the same as that hereinbefore described in reference to Fig. 1, except that in Fig. 2 one of the leaves M′ is shortened to adapt it for attachment to a narrow surface or ledge and that the plate R′ is extended to clamp the

ends 4′ of the limbs N′. The eyes P′ are more open than the eyes P, and the eyes 9′ are located at a further distance apart than the eyes 9, while the coil 11′ and the screw-holes 5′ are substantially the same as in the other form of leaf. The leaves A and M may be readily bent into the form shown by the use of suitable machinery, and the several steel plates shown can likewise be readily formed and seated by a suitable machine.

The operation of my invention is obvious, being the same as that of the ordinary strap-hinge.

The advantages of my invention are, first, that all of the material employed, being that contained in operative parts, there is no surplus waste to the hinge, and the latter is therefore as light as it is possible to make it; second, there is no refuse or waste of material, all of the latter which is taken being utilized and the stock being not cut except as used; third, that the form of leaf adopted—to wit, that of round wire—furnishes the greatest strength with the least size and weight; fourth, the entire hinge can be made with machinery; fifth, there are no receptacles, as in the ordinary hinge, to receive moisture and thereby produce rust.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. In a strap-hinge, the combination, with two leaves, each formed from a single piece of wire, one of the leaves having its outer portion provided with a supporting-eye and the inner portion of each leaf being formed into articulating eyes, a plate upon one of said leaves adjacent to the articulating eyes, the ends of the plate being folded around the sides of the leaves and one of the sides being folded around the portion of the leaf between the articulating eyes, substantially as set forth.

2. In a strap-hinge, the combination, with two leaves, each formed from a single piece of wire, the inner portion of each of the leaves being formed into articulating eyes, of a cap upon the outer portion of one of said leaves provided with an eye, and a plate secured to the side of said leaf and to the portion of the leaf between the articulating eyes, substantially as set forth.

3. In a strap-hinge, the combination, with two leaves, each formed from a single piece of wire, one of the leaves having its outer portion provided with a supporting-eye the inner portion of each of the leaves being formed into articulating eyes, each side of one of the leaves adjacent to the articulating eye being bent outwardly, and a plate upon said leaf, each end of which is provided with a curved opening registering with the bent portion of the side of the leaf and having one side folded around the portion of the leaf between the articulating eyes, substantially as set forth.

4. In a strap-hinge, the combination, with two leaves, one of which is substantially triangular and the outer end is provided with a supporting-eye and the inner end is provided with articulating eyes, of a plate upon said leaf having its ends bent over the sides of the leaf, and one side extended and bent over the portion of the leaf between the articulating eyes, and the other leaf having its articulating portion provided with eyes and extended to form an eye substantially in a plane parallel with the articulating eyes and having the remaining portion lying at a distance from and parallel with the articulating portion, a plate, one end of which is secured to the articulating portion between the articulating eyes, and the opposite end secured to the portion parallel therewith, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN H. LAWRENCE.

Witnesses:
JOHN G. MANAHAN,
ISABELLE MANAHAN.