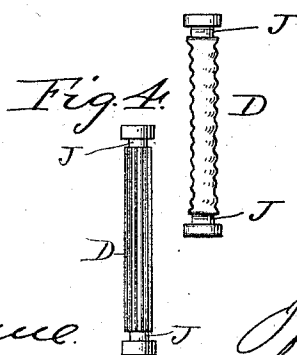
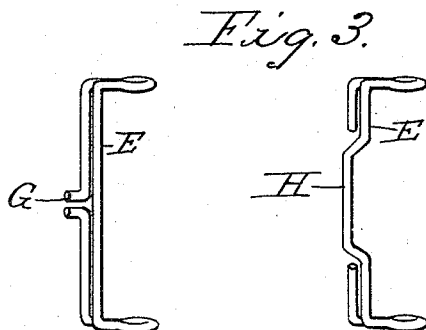
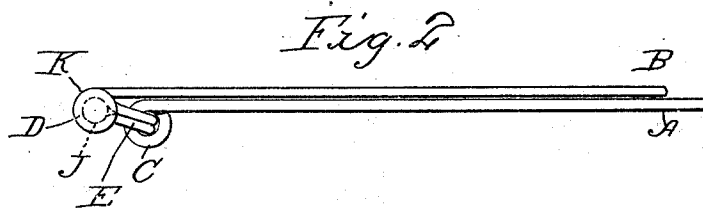
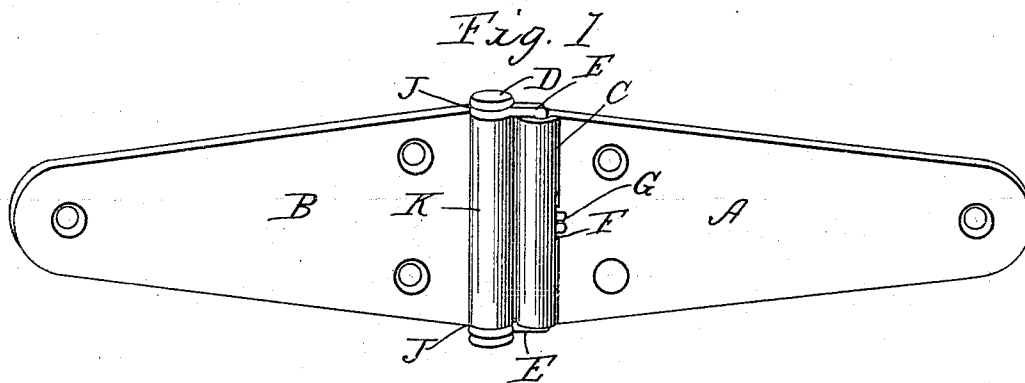


(No Model.)

J. H. LAWRENCE.
HINGE.

No. 518,741.

Patented Apr. 24, 1894.



Witnesses
Charles B. Burdick
Horace A. Dodge

Inventor
John H. Lawrence
by *John G. Manahan*
his Attorney

UNITED STATES PATENT OFFICE.

JOHN H. LAWRENCE, OF STERLING, ILLINOIS.

HINGE.

SPECIFICATION forming part of Letters Patent No. 518,741, dated April 24, 1894.

Application filed November 23, 1893. Serial No. 491,747. (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 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 of reference marked thereon, which form a part of this specification.

My invention has reference to an improvement in hinges, which dispenses with the interlocking of the inner ends of the leaves of the hinge, and therefore, by avoiding the usual cutting away of the inner ends of the hinge, to accomplish such interlocking, I utilize the entire width of the inner end of each leaf, and attain the advantage of equal or greater strength at the inner ends of said leaves with the use of less material.

My present invention is an improvement upon the type of hinge for which, on December 16, 1884, I was granted United States Letters Patent No. 309,393. The structure of my present invention, when in place, operates substantially as that shown in said Letters Patent, but by the mode of construction herein shown and described, I attain greater economy in the manufacture of the hinge, and equal facility and satisfaction in its operation, and greater strength in proportion to the amount of material employed.

It is the intention to manufacture my present invention entirely of steel, and to attain the necessary strength and utility with the fewest number of parts, and the minimum of material sufficient for the purpose intended.

In my present invention, the inner ends of the respective leaves of the hinge are pivotally connected by means of a steel wire, which is tightly looped around the projected ends of the pintle or pivot of the leaf attached to the door, and firmly held in the looped end of the companion leaf attached to the building. Said pintle is riveted at its respective ends upon said wire, which not only secures said pintle from casual displacement, but also holds it against axial rotation. A sufficient portion of the vertical part of said wire is

clasped in a recess formed in the edge of the coil of the leaf which is attached to the building and said wire and pintle thereby held from any oscillatory movement.

In hinges which are exposed to the weather, and in which the pintle has smooth, straight sides, the rust is apt to form upon said pintle within its socket in the leaf of the hinge, particularly if said hinge is not constantly used, and said rust there accumulates to the extent of fastening the leaf upon said pintle, resulting often in breaking the hinge at the first or second screw hole, in attempts to force the door open. This objection I avoid by the use of a fluted, corrugated, or irregular-sided pintle, which, in the constant oscillation of the door, has the effect of cutting out and preventing the accumulation of rust in the pintle seat, and thereby secures a continuous flexibility of the door pivot.

I attain the advantages aforesaid by the construction shown in the accompanying drawings, in which—

Figure 1 is an elevation of a strap hinge, provided with my invention. Fig. 2 is a view of the edge of the same when folded. Fig. 3 is a detail of the aforesaid steel wire, shown with two different formations at its central portion. Fig. 4 represents details of the fluted and corrugated pintle aforesaid.

Similar letters refer to similar parts throughout the several views.

A is a leaf which is attached to the building, and B the leaf which is attached to the door. On the inner end of each of said leaves are formed the usual loops C and K, by turning the extreme inner end of each leaf outwardly back upon itself.

D is the pintle which forms the pivotal seat of the leaf B, and projects slightly beyond each side thereof. A double wire E is tightly looped around each end of the pintle D outside of the edges of the leaf B, and its main portion and ends firmly held in the loop C of the leaf A. The ends G of the wire E extend laterally under the edge of loop C for the purpose of holding said wire against oscillatory movement. A slight recess F is formed centrally in the edge of said loop C to receive the laterally projected ends G of wire E, to be formed smoothly. Instead of the ends G, loop H may be formed centrally in the wire

E, as shown in Fig. 3, or said wire may be held in any other suitable mode under or within said loop C.

When the door is opened and the hinge 5 folded upon itself, it will be in the position shown in Fig. 3, where the pintle D and loop K of the hinge B are rigidly held beyond the end of the leaf A, and the leaf B, being its own thickness outside of the looped end of 10 leaf A, is thereby enabled to fold back against the outside of leaf A.

J—J are longitudinal grooves formed in the periphery of the pintle D (see Fig. 4), or said 15 inequalities in the exterior of said pintle made in the form of grooves or corrugations, as shown in the same figure; or, the exterior of said pintle may be formed in any form which will give the periphery of said pintle a rasping effect on the interior of its incasing 20 loop to prevent the collection of rust thereon, as aforesaid.

All the parts of my present hinge are made of steel, and being constructed by suitable machines, can be afforded very cheaply. The 25 inter-connection of the leaves A and B being

at their respective sides, the door is given less leverage thereon than where such attachment is within the lateral margin of said leaves. Also the strain of said connection, being lengthwise of said wire, the maximum 30 of the strength of the latter is utilized, and no opportunity afforded for wrenching or twisting said connection.

What I claim as my invention, and desire to secure by Letters Patent of the United 35 States, is—

In a hinge, the combination of leaves A and B, provided respectively, with loops C and K, pintle D loosely seated in loop K, and projected beyond the ends of said loop, and a 40 wire E looped around said projected ends of said pintle, and inserted and rigidly held in said loop C; substantially as shown, and for the purpose described.

In testimony whereof I affix my signature in 45 presence of two witnesses.

JOHN H. LAWRENCE.

Witnesses:

JOHN G. MANAHAN,
MOSES DILLON.