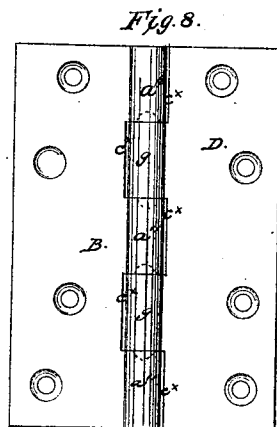
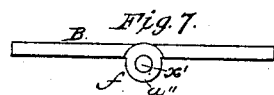
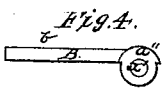
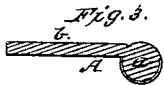
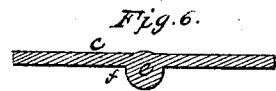
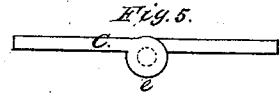
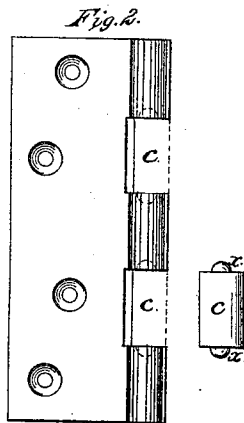
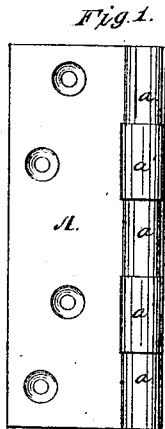


*C. M. LAUE,
Casting Hinges.*

N^o 20,948.

Patented July 20, 1858.



UNITED STATES PATENT OFFICE.

CONRAD M. LANE, OF CINCINNATI, OHIO.

IMPROVEMENT IN CASTING HINGES.

Specification forming part of Letters Patent No. 20,918, dated July 20, 1858.

To all whom it may concern:

Be it known that I, CONRAD M. LANE, of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and useful Improvement in Casting Hinges; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a face view of the first pattern required, said pattern being for one part of the hinge. Fig. 2 is a casting from said pattern, showing the cores between the knuckles. Fig. 3 is a transverse section of the pattern in the mold. Fig. 4 is an end view of the casting and mold. Fig. 5 is an end view of the second pattern required. Fig. 6 is an end view of the mold formed by said pattern. Fig. 7 is an end view of the mold and first casting, the casting being so disposed within the mold as to render it suitable to form the second casting and complete the hinge. Fig. 8 is a face view of the improvement complete.

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

This invention relates to an improvement in casting that kind of hinge in which a central pin or pintle is dispensed with and a jointed connection formed between the two parts or leaves of the hinge by means of teats or projections at the ends of the knuckles of one leaf or part, which fit in corresponding recesses in the ends of the knuckles of the other leaf, the joint being formed by casting one part in a mold partly formed by the other part, or, in other words, casting one part with the other.

This invention is designed to obviate the difficulty hitherto attending the free movement of the joint, and to dispense with the labor or finishing now requisite in order to perfect the hinge when cast in the usual way.

The invention consists in casting the knuckles of such form that their inner halves will be portions of cylinders of less diameter than their outer halves, and thereby allow a space between the face side of each knuckle and the edge of its adjoining leaf, so that a perfectly-free moving joint is obtained when the hinge is cast, no extra labor or finishing being required.

To enable others skilled in the art to fully

understand and construct my invention, I will proceed to describe it.

A, Fig. 1, represents a pattern by which, in connection with cores, the mold is formed for the first leaf or part of the hinge. This pattern has the knuckle portions *a* of different thicknesses—that is to say, the inner sides or halves are portions of cylinders of less diameter than the outer sides or halves. This will be clearly seen by referring to Fig. 3, in which the pattern is shown in the sand or mold, which is designated by *b*. The pattern A thus formed is embedded in the sand and a corresponding mold, *b*, obtained, and cores *c* (shown in red, Fig. 2) are placed in the mold between the spaces corresponding to the knuckle portion *a* of the pattern, the cores being of rather greater diameter than the knuckles, and having teats *x* formed on their ends. The cores *c* are equal in diameter to the portions *a'* of the pattern between the knuckles, and the cores occupy corresponding places in the mold. When the cores *c* are properly adjusted, the first casting is made, and one of the leaves or parts B of the hinge obtained, (see Figs. 4, 7, and 8,) the knuckles *a''* of said leaf corresponding in form to the parts *a* of the pattern A, and having recesses *x'* in their ends, corresponding inwardly to the teats *x* of the cores *c*.

C, Figs. 5 and 6, represents a second pattern, which is of the form of an open hinge, the central semi-cylindrical protuberance, *e*, corresponding in size to the smaller portions of the knuckles *a''* of the leaf B. A second mold, *f*, is formed by the pattern C, in connection with the first casting, B, which is placed in one side of said mold. (See Fig. 7.) The second casting, D, is formed in this mold, and the spaces between the knuckles *a''* of the casting or leaf B are the portions of the mold in which the knuckles *g* of the second leaf, D, are formed, and the recesses *x'* in the ends of the knuckles *a'* are filled, of course, when the casting D is made, and form the connection of the joint.

From the above description it will be seen that spaces *c** (see Fig. 8) will be allowed between the inner parts or surfaces of the knuckles of both leaves B D and the edges of the leaves, so that the joint will be allowed to turn easily without any after-work in the way

of filing, finishing, &c., which has hitherto been necessary in order to make the joint work freely. By this improvement, therefore, much labor is saved, and the hinges are also stronger, for they are not annealed, as formerly.

I do not claim forming the joint of the hinge by casting teats at the ends of the knuckles of one leaf into corresponding recesses in the ends of the knuckles of the other leaf, for this has been previously done; but,

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

Casting, substantially as shown, the knuckles *a' g* of the respective leaves B D so that the inner parts or sides of the knuckles will form parts of cylinders of smaller diameter than the outer parts, to admit of the easy moving of the joint without additional labor or finishing, as herein described.

CONRAD M. LANE.

Witnesses:

F. H. RÖWEKAMP,
J. HENRY PLUMP.