(Model.)

J. SPRUCE.

Spring Hinge.

No. 238,177. Patented Feb. 22, 1881.

fig. 1

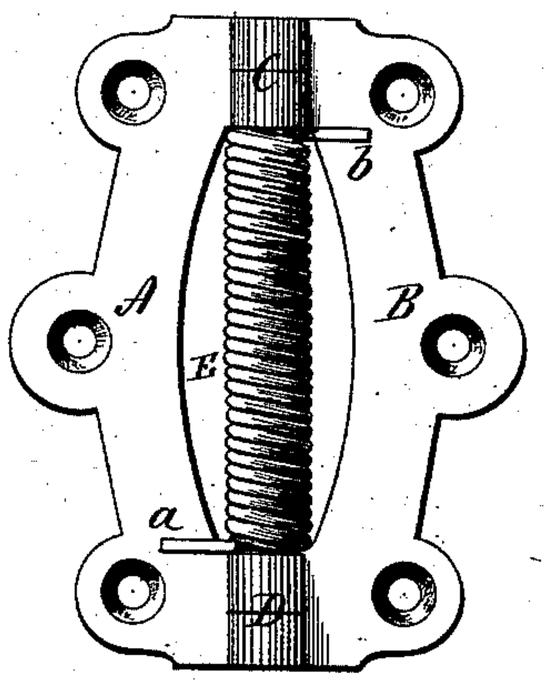

fig. 2

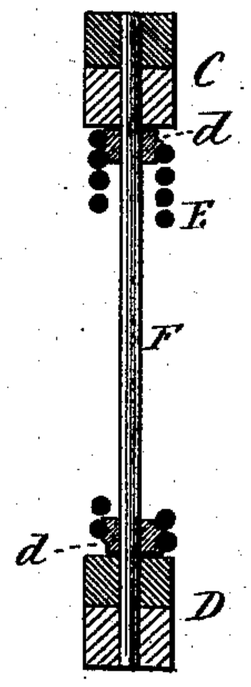

fig. 3

Witnesses.
J. H. Shumway.
L. D. Rogers.

James Spruce
Inventor
By atty.
John O'Earl

UNITED STATES PATENT OFFICE.

JAMES SPRUCE, OF WATERBURY, CONNECTICUT, ASSIGNOR TO THE SCOVILL MANUFACTURING COMPANY, OF SAME PLACE.

SPRING-HINGE.

SPECIFICATION forming part of Letters Patent No. 238,177, dated February 22, 1881.

Application filed December 27, 1880. (Model.)

To all whom it may concern:

Be it known that I, JAMES SPRUCE, of Waterbury, in the county of New Haven and State of Connecticut, have invented a new Improvement in Spring-Hinges; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a face view of the hinge complete; Fig. 2, a vertical section through the joint; Fig. 3, a collar detached.

This invention relates to an improvement in that class of spring-hinges in which the knuckles are formed one at each end with a space between, in which space a spiral spring is arranged around the pintle, so that one end bears upon one leaf and the other upon the other leaf.

It is desirable to make the spring of as small diameter as possible; hence it must come in close proximity to the pintle, and as the leaves turn the coils of the spring at one or both ends must unavoidably bear upon the pintle unless prevented from doing so. This bearing upon the pintle produces a rapid wear upon the pintle or spring, or both, which soon destroys the strength of the spring.

Various devices have been resorted to to insulate the spring from the pintle. The best or most successful devices are those which introduce a collar or tube into each end of the spring; but in putting the hinge together these are liable to be displaced, and it requires extraordinary care on the part of the workman in putting them together to keep them in place.

The object of this invention is to make the collar substantially a permanent part of the spring; and it consists in the construction of the collar, as hereinafter described, and particularly recited in the claim.

The two leaves A B are of the usual form, provided with a knuckle-joint, C, at one end and D at the other, leaving a space between for the spring E, which is arranged upon the pintle F, so that one end, *a*, bears upon one leaf, A, the other end, *b*, upon the other end, B, in substantially the usual manner.

The insulating-collars consist of a short tubular piece, *d*, (see Fig. 3,) on the periphery of which a spiral groove, *e*, is cut or formed corresponding to the interior of the coils of the spring, and so as to fit closely within the spring. After the spring is formed one of these collars is turned into one or both ends, like a screw, the perforations through the collar of a diameter so as to permit the pintle to pass freely therethrough. These collars readily retain their place within the spring and do not become accidentally displaced, so that a large number of springs may be fitted with the collars before the springs are set in place in the hinges, which cannot be done with the usual loose collar, and they preferably are arranged so as to come flush with or project slightly beyond the spring, so as to form bearings to prevent the spring from coming in wearing contact with the knuckle.

Other collars may be turned into the spring into positions intermediate between the two ends, so as to prevent contact of the spring between the ends, which, in case of a long spring, is unavoidable, because the strain upon the spring tends to twist it out of a vertical line. In this arrangement the spring may be sustained at numerous points in its length without seriously affecting its torsional power.

I claim—

In a spring-hinge, substantially such as described, a collar having a spiral groove upon its periphery corresponding to the interior of the spring, and introduced into the spring around the pintle independent of the knuckles or joints of the hinge, substantially as described.

JAMES SPRUCE.

Witnesses:

M. L. SPERRY,

C. M. DE MOTT.