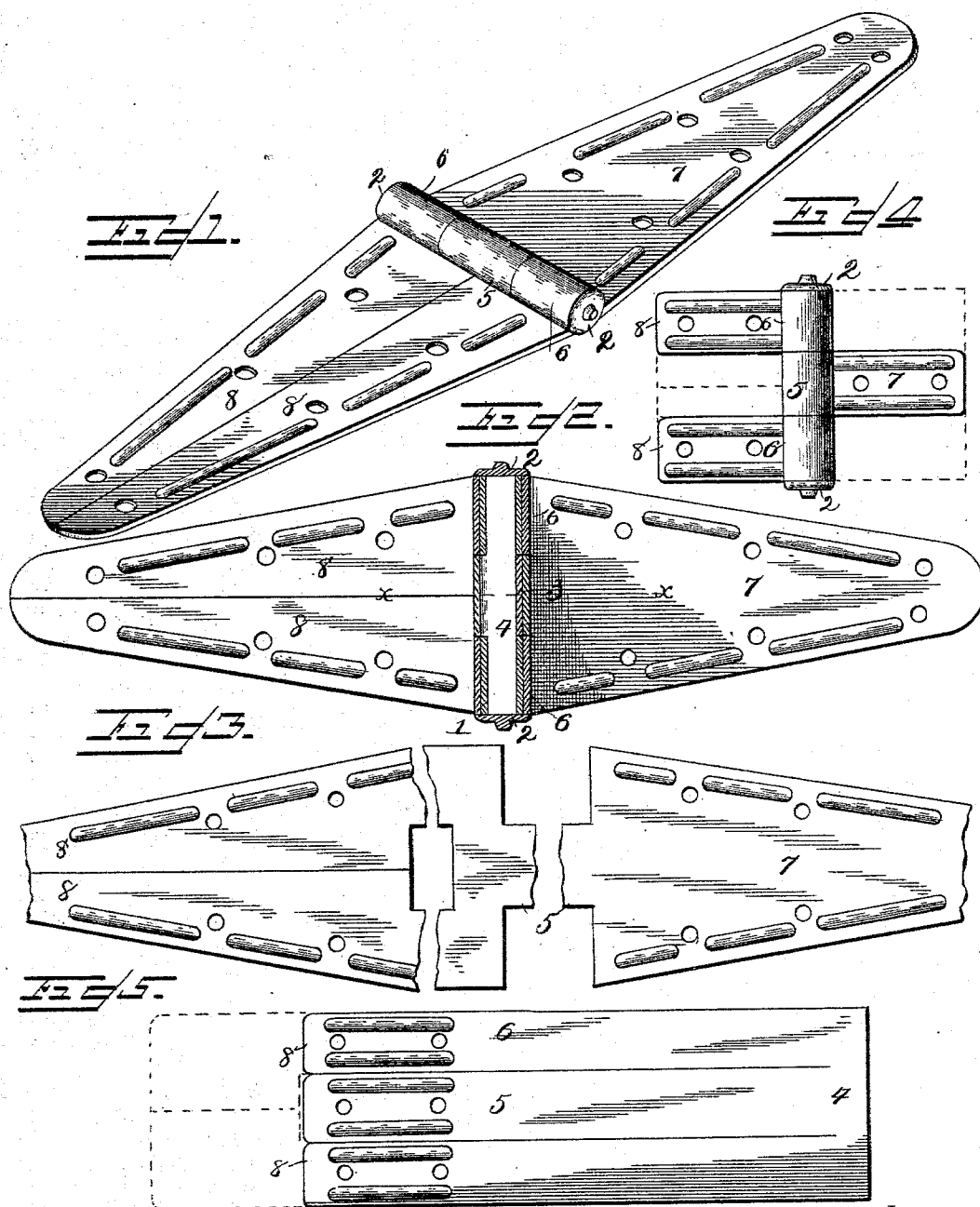


(No Model.)

P. E. GLAFCKE.
SPRING HINGE.

No. 495,031.

Patented Apr. 11, 1893.



Witnesses

W. Schneider
N. J. Riley

Fig. 5.

By his Attorneys,
C. Snow & Co.

Inventor
P. E. Glafcke

UNITED STATES PATENT OFFICE.

PAUL EMERSON GLAFCKE, OF CHEYENNE, WYOMING, ASSIGNOR OF ONE-HALF TO HENRY G. HAY, OF SAME PLACE.

SPRING-HINGE.

SPECIFICATION forming part of Letters Patent No. 495,031, dated April 11, 1893.

Application filed October 7, 1892. Serial No. 448,142. (No model.)

To all whom it may concern:

Be it known that I, PAUL EMERSON GLAFCKE, a citizen of the United States, residing at Cheyenne, in the county of Laramie and State of Wyoming, have invented a new and useful Spring-Hinge, of which the following is a specification.

The invention relates to improvements in spring hinges.

The object of the present invention is to simplify and improve the construction of spring hinges, to increase their strength and durability and efficiency, and to lessen their cost of manufacture.

A further object of the invention is to enable the spring hinges to be readily constructed of strap, butt, or other form.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings and pointed out in the claims hereto appended.

In the drawings—Figure 1 is a perspective view of a hinge embodying the invention. Fig. 2 is a plan view partly in section. Fig. 3 is a plan view of the blank from which the spring tongues or springs are constructed. Fig. 4 is a plan view of a modification of the hinge. Fig. 5 is a similar view showing another form of blank. Fig. 6 is a detail sectional view on line $x-x$ of Fig. 2.

Like numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates a pintle provided at each end with a head 2 and having a longitudinal opening 3 in which is arranged a web 4 with which are formed integral spirally coiled tongues 5 and 6 which terminate in securing plates 7 and 8.

The blank may be formed of a substantially Y-shaped piece of sheet metal; or it may be constructed of a rectangular piece of sheet metal having longitudinal slits extending from one end of the blank to within a short distance of the other end to leave a narrow portion to form the web 4. When the Y-shaped piece of metal is employed the web is formed by the metal at the inner ends of the tongues. The web 4 and the securing tongues are constructed of a single piece of sheet

metal and the intermediate tongue 5 is spirally coiled in an opposite direction from that of the outside tongues 6.

In the hinges shown in Figs. 1, 2 and 4 the Y-shaped piece of sheet-metal is employed to form the tongues 5 and 6, and in coiling the tongues to form springs the tongue 5 is passed between the tongues 6 in the interval formed by them; and in Fig. 5 of the accompanying drawings is illustrated the other form of blank by which the spiral springs are formed. Both forms of blanks may be cut economically from a sheet of metal as will readily be seen. The ends of the tongues 6 which terminate in the securing plate 8 are preferably secured to a door frame while the securing plate 7 is designed to be fastened to a door.

The securing plates 7 and 8 may be enlarged to form strap hinges as illustrated in Fig. 1 of the accompanying drawings, or they may be simple rectangular plates as illustrated in full lines in Fig. 4 or they may be rectangular and enlarged to form butt hinges as illustrated in dotted lines in Fig. 4. In order to stiffen the securing plates which are provided with screw openings they are corrugated with longitudinal flutes which may be disposed as desired. The pressure or compression employed in forming the coils is sufficient to produce the desired resiliency to form springs. The coils are sufficiently loose to enable a free circulation of air to keep them thoroughly dry, and the heads 2 at the ends of the pintle prevent to a great extent water entering the coils.

When the springs are constructed as illustrated in Figs. 4 and 5 a rectangular piece of sheet metal may be used without waste in making the springs as will readily be seen; and when strap or butt hinges are constructed an increase in the size of the securing plates is necessitated, and it is also necessary to sever and separate the plates 8, longitudinally, and it may be necessary to bend the sides of the plates 7 and 8 on themselves to lessen the width temporarily to enable the spring tongues to readily pass one another in coiling. It is preferable to employ a pintle which supports the coils and prevents them separating, but a substantial spring is provided by simply using the oppositely coiled

tongues without the pintle, and in this form it may be necessary to slightly increase the width of the web especially in the form shown in Fig. 5 to prevent any liability of the metal splitting.

From the foregoing description in connection with the accompanying drawings, it will readily be seen that a spring hinge of great simplicity, durability, and efficiency is provided, which hinge is adapted to be readily constructed in either the strap, butt or similar form.

Changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention.

What I claim is—

1. A spring hinge constructed of a single piece of sheet metal and consisting of oppositely coiled spring tongues terminating at their outer ends in securing plates, and a connecting web formed integral with the inner ends of the tongues and having the latter coiled around it, substantially as described.

2. A hinge comprising a pintle having a longitudinal opening and oppositely coiled springs constructed of a single piece of sheet metal and consisting of coiled tongues terminating at their outer ends in securing plates, and a connecting web arranged in the longitudinal opening of the pintle and formed integral with the inner ends of the tongues, substantially as described.

3. A hinge comprising a pintle having a head at each end and provided intermediate of its ends with a longitudinal opening, and oppositely coiled springs arranged on the pin-

tle and having their ends closed by said heads and consisting of a single piece of sheet metal having tongues terminating at their outer ends in securing plates and provided at their inner ends with a connecting web arranged in said opening, substantially as described.

4. A hinge comprising a pintle having a longitudinal opening, and springs constructed of a Y-shaped piece of sheet metal having its tongues oppositely coiled around the pintle and terminating in securing plates and provided at their inner ends with a connecting web arranged in said opening, substantially as described.

5. A hinge comprising a pintle having a longitudinal opening, and springs constructed of a single piece of sheet metal approximately Y-shaped and having tongues and provided at the outer ends of the tongues with enlarged securing plates 7 and 8, the plates 8 being severed or separated longitudinally, the inner ends of said tongues being connected by an integral web arranged in said opening, substantially as described.

6. A spring hinge comprising a pintle, and oppositely coiled springs arranged on the pintle and constructed of a single piece of sheet metal having tongues terminating at their outer ends in securing plates and provided at their inner ends with an integral connecting web, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

PAUL EMERSON GLAFCKE.

Witnesses:

JOHN H. SIGGERS,
GEO. C. SHOEMAKER.