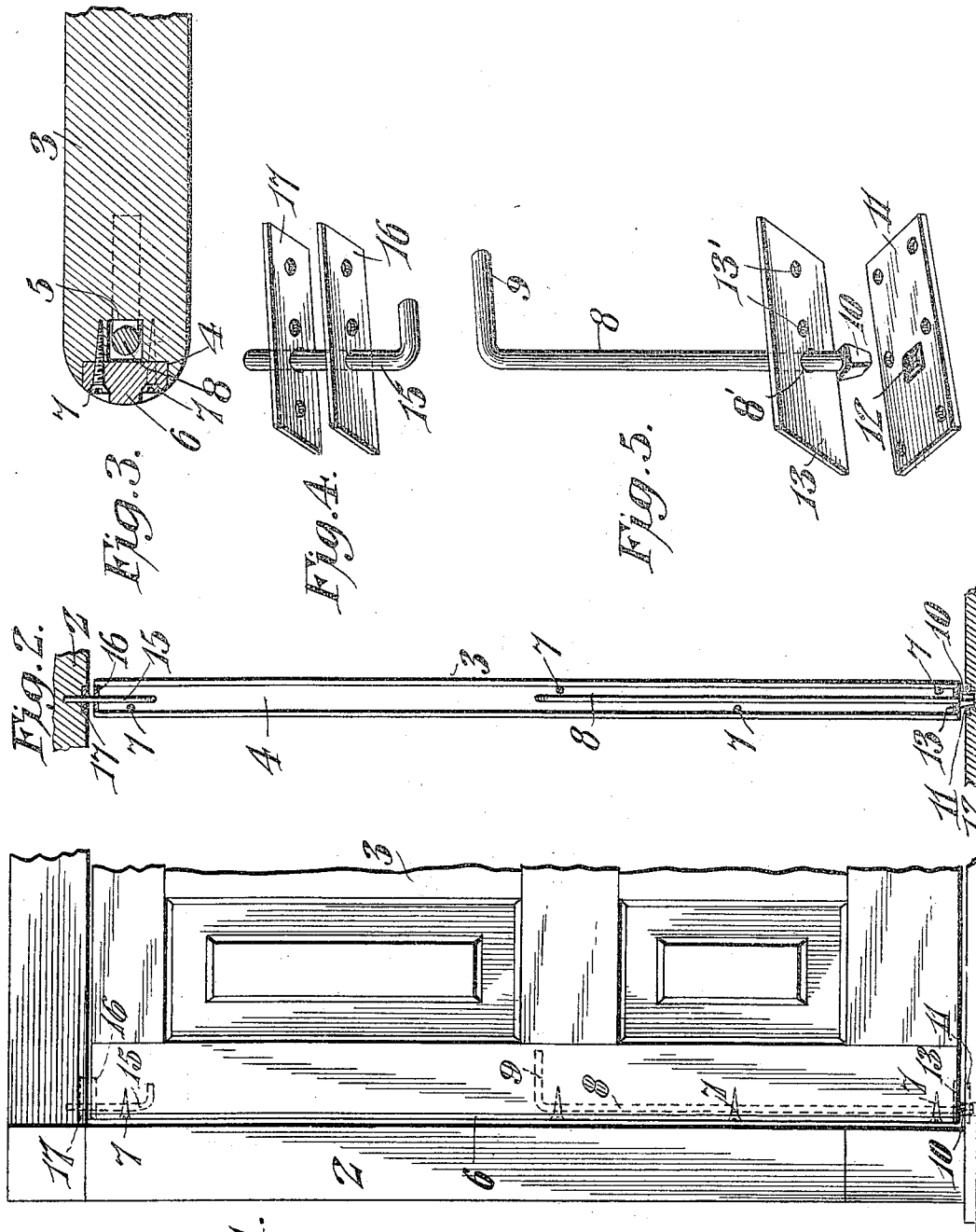


H. K. HANSEN.
 SPRING DOOR HINGE.
 APPLICATION FILED NOV. 5, 1908.

962,426.

Patented June 28, 1910.



Witnesses
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UNITED STATES PATENT OFFICE.

HEBER K. HANSEN, OF LOGAN, UTAH, ASSIGNOR OF ONE-HALF TO ROBERT LAFOUNT,
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SPRING DOOR-HINGE.

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To all whom it may concern:

Be it known that I, HEBER K. HANSEN, a citizen of the United States, residing at Logan, in the county of Cache and State of Utah, have invented a new and useful Spring Door-Hinge, of which the following is a specification.

My invention relates to spring door hinges, and its object is to provide a door hinge which shall permit the door to be swung freely in opposite directions, which will be entirely concealed, which shall depend upon the torsional elasticity of a metal rod for its resiliency, and which shall be exceedingly cheap in construction and simple in operation. These objects I attain by the use of a spring rod contained within a longitudinal recess in the rear of the door, one end of the rod being attached to the door and the other to the door casing either above or below the door so that when the latter swings in either direction, the rod shall be twisted or put under torsional stress and so act to return the door to its mid or closed position.

In the drawings:—Figure 1 is a face view of the rear portion of a door and the adjacent frame. Fig. 2 is a rear edge view of the door with the casing strip removed. Fig. 3 is an enlarged horizontal section of the rear portion of a door. Figs. 4 and 5 are perspective views of my improved spring and the pintle for holding the upper portion of the door.

Similar reference numerals designate corresponding parts in all the figures of the drawings.

In the drawings, 2 designates a door casing of any ordinary construction and 3 a door which is formed in any manner except that its rear edge is formed with a longitudinal recess 4 which may extend from top to bottom of the door. This is most easily manufactured with the recess extending from end to end. The bottom or inner side of the recess is formed with a groove 5 which may also extend along the entire length of the door or only a portion adjacent to the pintles or rods 8 and 15. The recess 4 is adapted to be closed by a strip 6 held in place by screws 7. The closing of this recess by the strip 6 provides a longitudinal passage extending through the door in which the spring rod 8 is contained. This rod is preferably a straight rod of metal, the upper end 9 of which is bent inward and

forced into the rear edge of the door in a direction parallel with the face of the door. The lower end of the rod projects below the lower edge of the door and is there formed with a square head 10 adapted to be received within a square socket 12 formed within a plate 11, the said socket being arranged on the upper side of the plate and extending partially therethrough. This plate is screwed or otherwise attached to the upper face of the door sill or other portion of the frame. As will be seen the rod 8 forms by this construction not only a spring which will return the door to a middle position when the door is opened in either direction, but also forms the pintle on which the door will turn. In order to hold the lower end of the rod in proper relation to the rear edge of the door, I also provide the plate 13 having the screw holes 13' and a passage 8' through which the rod 8 passes. Thus, it will be seen that the weight of the door is carried by the head of the rod and the socket, this arrangement causing the said head, and consequently the rod, to be held against rotation.

While the upper end of the door might be hinged in any convenient or desired manner to the door frame, I prefer to use a rod 15 bent at its lower end and inserted into the wood of the door, this rod extending upward through a plate 16 and into the frame or lintel of the door, the lintel being protected by a plate 17 screwed thereto. While I have shown this rod as a plain pintle, it is to be understood that it might be formed in the same manner as the rod 8, and act together with rod 8 to return the door or that the rod 8 might be placed in the upper portion of the door and the pintle rod in the lower portion without in any way departing from the spirit of my invention.

My invention is extremely simple, is easily applied and is entirely concealed from view. No hinges need be used as the door will swing upon its pintles and no springs are in evidence.

My improved spring hinge is easy to apply to doors, cannot get out of order and there are no parts which are likely to rust or cause friction.

From the foregoing, it is thought that the construction, operation and many advantages of the herein described invention will be apparent to those skilled in the art without further description, and it will be under-

stood that various changes in the size, shape, proportion and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

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

1. The combination with a swinging door having a longitudinal groove in one of its edges and provided with sockets extending transversely of the groove, L-shaped pintle-forming elements having their long members disposed in alinement with the groove and projecting from the ends thereof, and their short members engaging in the said sockets, and a retaining means for holding the elements in the said groove.

2. In combination with a plate having a socket, a rod vertically disposed and secured rigidly to a door and having its lower end projecting beyond the lower end of the door and provided with a head to fit in the socket, a short rod connected to the top of the door and arranged in alinement with the lower rod, said short rod projecting beyond the top of the door, and a perforated plate in which the said projecting end bears.

3. The combination with a door frame, of a swinging door having a longitudinal groove in one side edge and provided with a socket extending transversely of the groove, a vertically-arranged spring rod disposed in the groove and projecting from one end thereof, a strip extending longitudinally of the groove for retaining the rod in place and preventing lateral displacement thereof, the said rod having its inner end bent inward and entered in the said socket, and a non-circular head formed on the projecting lower end, the bent inner end of the rod serving to prevent longitudinal displacement of the rod, and a socket plate secured to the door frame and having a non-circular socket formed in the upper side thereof for receiving the said head, the weight of the door being thereby placed upon the non-circular head of the rod and socket.

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

HEBER K. HANSEN.

Witnesses:

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GEO. D. McCULLOCH.