(No Model.)

D. C. KUHN.

PIN FOR HINGES OF STOVE DOORS.

No. 411,152. Patented Sept. 17, 1889.

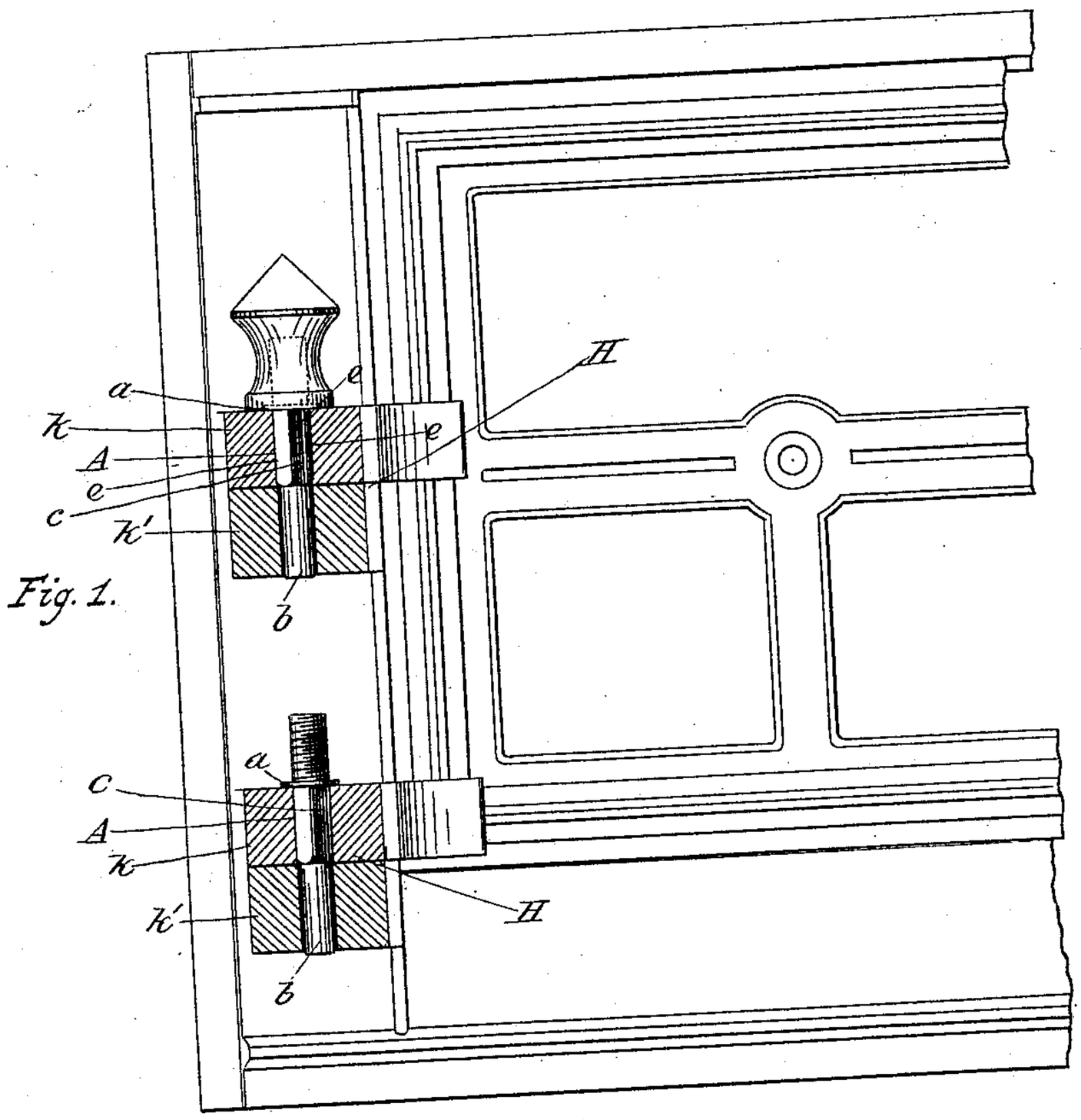

Fig. 1.

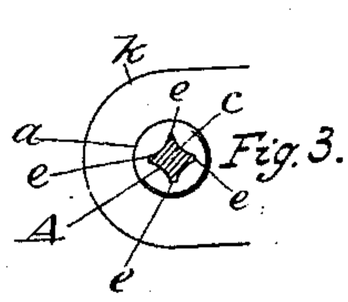

Fig. 3.

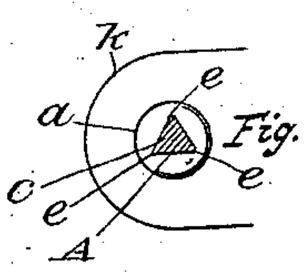

Fig. 5.

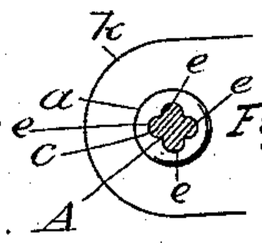

Fig. 7.

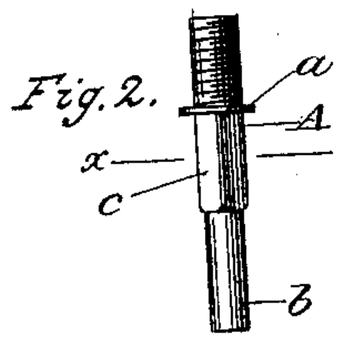

Fig. 2.

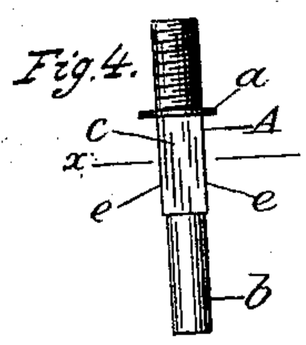

Fig. 4.

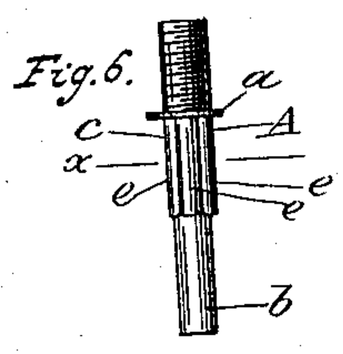

Fig. 6.

Fig. 8.

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UNITED STATES PATENT OFFICE.

DAVID C. KUHN, OF ALBANY, NEW YORK.

PIN FOR HINGES OF STOVE-DOORS.

SPECIFICATION forming part of Letters Patent No. 411,152, dated September 17, 1889.

Application filed May 7, 1888. Serial No. 273,161. (No model.)

To all whom it may concern:

Be it known that I, DAVID C. KUHN, a citizen of the United States, residing at Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Pins for Hinges of Stove-Doors, of which the following is a specification.

My invention relates to pins for hinges of cast plates of doors and their frames by which the doors can have their free ends slightly raised so as to free its latching-piece from the catch made on the door-frame; and it consists of a pin having its upper end portion or half provided with three or more longitudinal projections which are extended outwardly past the diameter of the cylindrical portion of the pin, which forms the lower half portion of the same.

The object of my invention is to produce a hinge-pin for stove-doors which will admit its being driven tightly in the hole made in one of the knuckles of the hinge, and have its lower end portion of a smaller diameter than the bore of the holes in the coacting knuckles of the hinge, so as to allow said lower end portion to have a sidewise movement in the hole of the lower half of the hinge, by which the door hinged to the frame can have its free end raised or lowered without straining the pin or loosening the same in the knuckle above. I attain this object by the employment, in a hinge-pin, of the particular elements illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is an elevation of a door and door-frame having their hinges shown in section, and my improved hinge-pin shown in place therein. Fig. 2 is a perspective view of a hinge-pin containing my improvements. Fig. 3 is a sectional view of the same taken at line *x* in Fig. 2. Fig. 4 is a view of a hinge-pin having its holding portion made with a modified form. Fig. 5 is a sectional view of the same taken at line *x* in Fig. 4. Fig. 6 is a view of a modified form of hinge-pin. Fig. 7 is a sectional view of the same taken at line *x* in Fig. 6. Fig. 8 is a sectional view of the lower half portion of the hinge-pin, as at line *y* in Figs. 2, 4, and 6, and illustrates the diameter of the same in relation to the diameter of the bore of the hinge-pin hole in the knuckle of the frame.

The same letters of reference refer to like parts throughout the several views.

In the drawings, A is my improved hinge-pin, which is shown to have a length below its head-end shoulder *a* equal to about the thickness of the two knuckles *k k'* of the hinges H of the door. This pin in its length is made with its upper half portion preferably about the same in length as the lower half portion, yet it can be made shorter, if preferred. The lower half portion *b* of the pin is made with a cylindrical form, as shown, and with a diameter less than the bore of the lower half or knuckle of the hinge, as shown in Figs. 1 and 8. The upper half portion *c* of this pin is made with such a form of construction as to produce with it a series of three or more projecting ridges *e e e*, which are substantially parallel with the axis of the pin, and are extended outwardly past the circumferential line of the cylindrical portion *b*, as shown, so that these edges *e* are on a line of a circle which is of greater diameter than that of the cylindrical portion *b* of the pin. These several projecting ridges *e e* can be produced with the upper half portion of the pin by forming the said portion with substantially a square form, thereby producing four corners or edges *e*, or by swaging the sides of the upper portion *c* with convex form, as illustrated in Fig. 3, or by making the said upper portion *c* of this pin with a triangular form, as shown in Fig. 5, or by making said portion *c* to be in the form shown in Fig. 7, by means of a series of convex form of surfaces, as shown in said figure. These parallel ridges *e* can be made with any polyform-shaped upper portion and be in number of from three to eight, (more or less,) as may be preferred. The upper knuckle *k* is provided with a hole which will be so little smaller than the diameter of the circle on which the ridges *e e* of the portion *c* of the pin fall that when the pin is driven into the hole in the said knuckle *k* its ridges *e e e* will bind with the metal of said hole and tightly hold the pin with said knuckle, and while being driven this pin will not burst the knuckle it is driven into, as will

a larger cylindrical portion, as heretofore employed in hinge-pins, because the several ridges *e e e* will readily become compressed sufficiently to prevent such bursting of the knuckle.

The lower knuckle *k'* of the hinge will be drilled to produce a hole of the same size as that in the upper knuckle *k*, and being thus produced it will be of larger diameter than the diameter of cylindrical portion *b* of the pin, which will allow this portion *b* of the pin to be readily moved sidewise in the pin-hole in knuckle *k* to a small distance, so as to allow the free end of the door to be lifted and lowered to a small distance, as may be required, for it to engage with the catch on the door-frame, as usually employed but not shown, or be raised out from the same, as may be required in operating the door.

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

The combination, with the upper knuckle *k* and lower knuckle *k'*, having each a pin-hole of the same diameter as the other, of the hinge-pin A, provided with a head-end shoulder *a*, and having its half portion *c* provided with three or more ridges *e e*, running parallel with the axis of the pin and projected uniformly past the line of the circumference of its cylindrical portion *b* for engagement or tight holding with the metal surrounding the hole of one of the knuckles, the cylindrical portion *b* being of smaller diameter than the pin-hole in the other knuckle, substantially as and for the purposes set forth.

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