

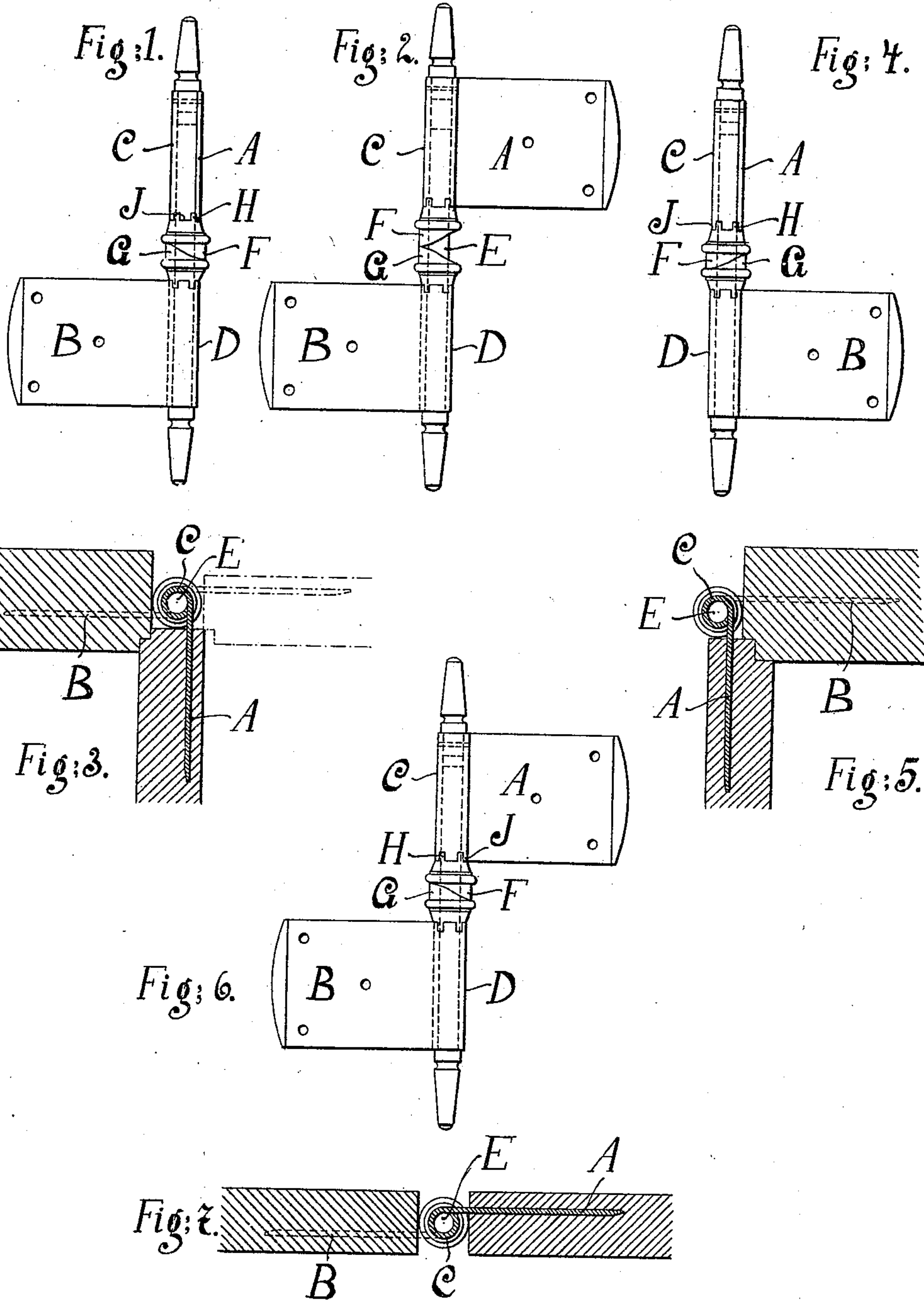
No. 641,397.

Patented Jan. 16, 1900.

F. LIEGENS.
HINGE.

(Application filed Aug. 21, 1899.)

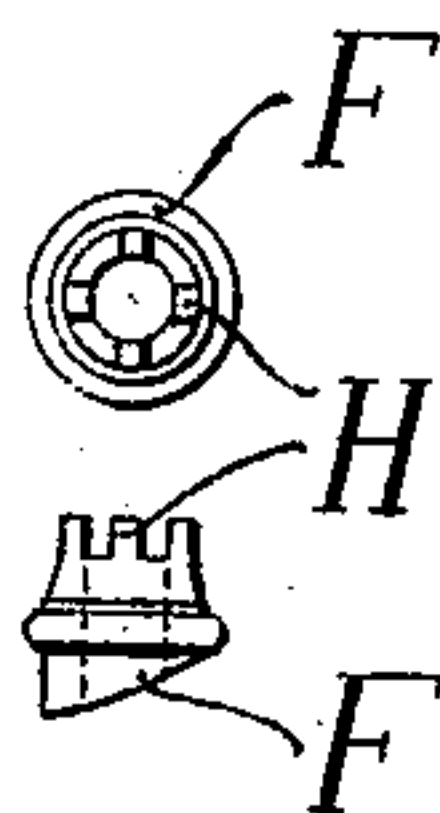
(No Model.)



Witnesses;

[Signature]
Otho König

Fig. 8.



Inventor;

Friedrich Liegens

UNITED STATES PATENT OFFICE.

FRIEDRICH LIEDGENS, OF VOHWINKEL, GERMANY.

HINGE.

SPECIFICATION forming part of Letters Patent No. 641,397, dated January 16, 1900.

Application filed August 21, 1899. Serial No. 727,960. (No model.)

To all whom it may concern:

Be it known that I, FRIEDRICH LIEDGENS, a citizen of the German Empire, residing at Vohwinkel, near Elberfeld, in the province of Rhenish Prussia, Kingdom of Prussia, Germany, have invented certain new and useful Improvements in Hinges, (for which I have applied for Letters Patent in Germany, dated January 30, 1899, L. 12,897, provisional number; in Austria, dated February 28, 1899, without provisional number; in England, dated July 29, 1899, No. 15,600; in Russia, dated March 11, 1899, No. 7,234, provisional number; in Italy, dated March 16, 1899, No. 51,092, and in France, dated March 16, 1899, No. 286,878;) and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to use the same.

This invention relates to self-closing hinges adapted to operate with doors which open to the right or left or both ways; and it consists in the construction and combination of parts hereinafter set forth and claimed.

I adapt my improved hinge to be shifted from a door which opens in one direction to a door which opens in the other direction or to a door opening both ways by means of the hinge shown in various views on the accompanying drawings and described hereinafter, in which—

Figure 1 shows the hinge arranged for a door opening leftwise, the door being closed. Fig. 2 shows the same in position when the door is open. Fig. 3 shows the hinge in a sectional plan. Figs. 4 and 5 show the hinge in plan and elevation arranged for a door opening rightwise. Figs. 6 and 7 show the same in two similar views arranged for a pendulum-door. Fig. 8 shows one of the collars in detail elevation and plan.

The new hinge consists of the two leaves A and B, each with the knuckle C or D, respectively, and the pintle E, fixed in one of them, as usual. The two knuckles, however, do not stand directly one upon the other. Between them I place two collars F and G. These engage with their respective knuckles, the one at its upper side, the other at its lower sides, by four projections H into corresponding recesses J of the knuckles placed at right

angle to each other or separated from each other by ninety degrees. At the sides facing each other they are beveled or cam-faced, as best seen by Fig. 2. The weight of the door, to which one half is fixed, the other half being fixed at the door-posts, presses the teeth of each collar always into the respective recesses in the corresponding knuckle, and so prevents their separation. From this it will be understood that when the hinge fixed to the door is turned with the same it will raise the door by the action of the cam-faces of the collars on each other, as illustrated in Figs. 1 and 2, and also that when the bevels or cam-faces are steep enough the door will close itself by the pressure of its weight transmitted through the upper bevel or cam-face to the lower.

The projections H on the nuts and the respective recesses J in the knuckles being set at ninety degrees from each other, it will be easily understood that it requires only turning of the collars by a right angle and resetting them to make the hinges fit for either a door opening to the right or one opening to the left, as shown, respectively, in Figs. 1 to 3 and 4 and 5, and if the collars are turned by one hundred and eighty degrees the hinges are fit for use with so-called "flap-doors" or "pendulum-doors" opening both ways, Figs. 6 and 7. No springs or other complicated devices are required to close the doors in such cases. They always return to the normal or closed point by their own gravity.

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

1. In combination with the leaves, knuckles and pintle of a hinge, a pair of collars arranged on the said pintle and between the said knuckles, the said collars being provided with opposed cam-faces and the said knuckles and collars being provided with interlocking parts arranged and adapted to allow the said cam-faces to be shifted into and secured in position for operation with a door opening to the right or the left or both ways, substantially as set forth.

2. In combination with the pintle E and hinge-leaves A and B having knuckle C which are provided with notches or recesses in their opposing faces, a pair of interposed collars F

G, having opposed cam-faces and on their outer sides projections H adapted to fit into the said recesses, the number and arrangement of the projections and recesses being
5 such that the hinge may be set at will for automatic closing action in either one of two directions, substantially as set forth.

In testimony whereof I have affixed my signature in presence of two witnesses.

FRIEDRICH LIEDGENS.

Witnesses:

R. E. JAHN,
OTTO KÖNIG.