

K. L. KARO.
HINGE.

No. 470,334.

Patented Mar. 8, 1892.

Fig. 1

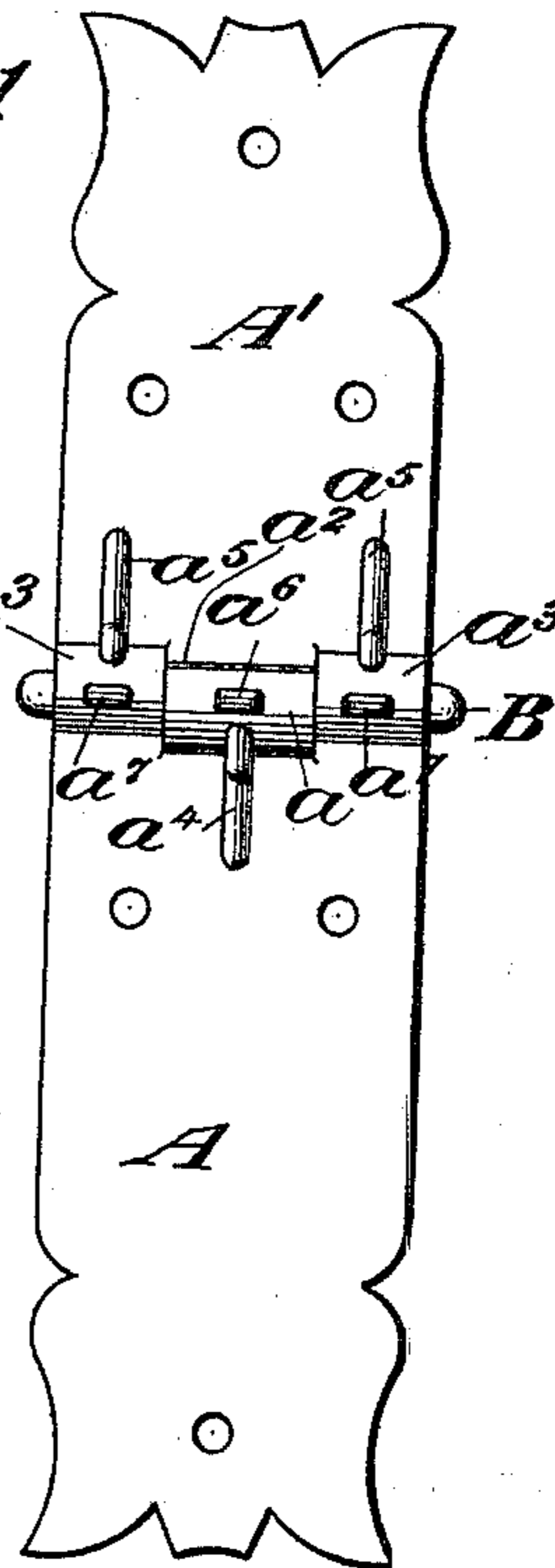


Fig. 2.

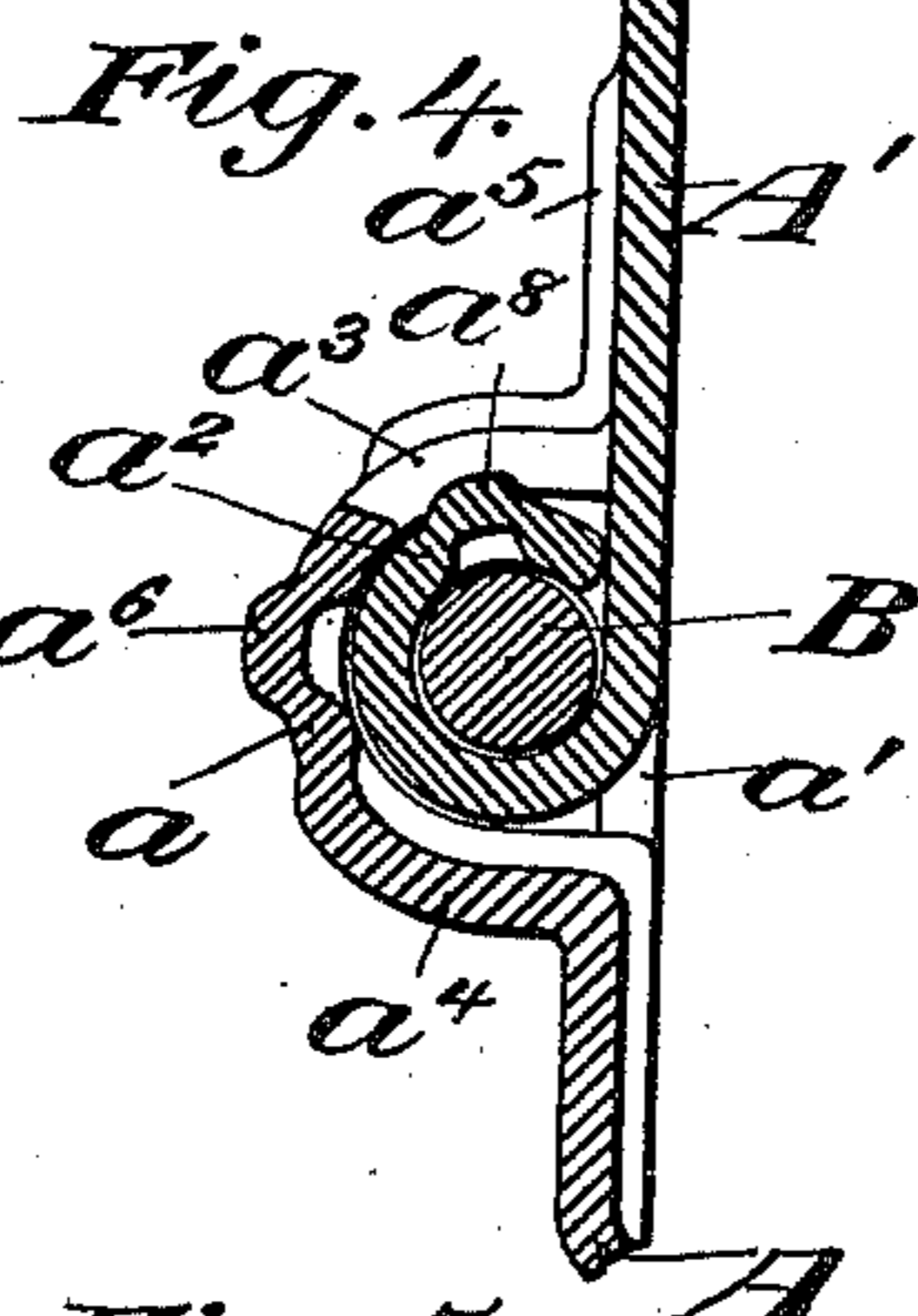
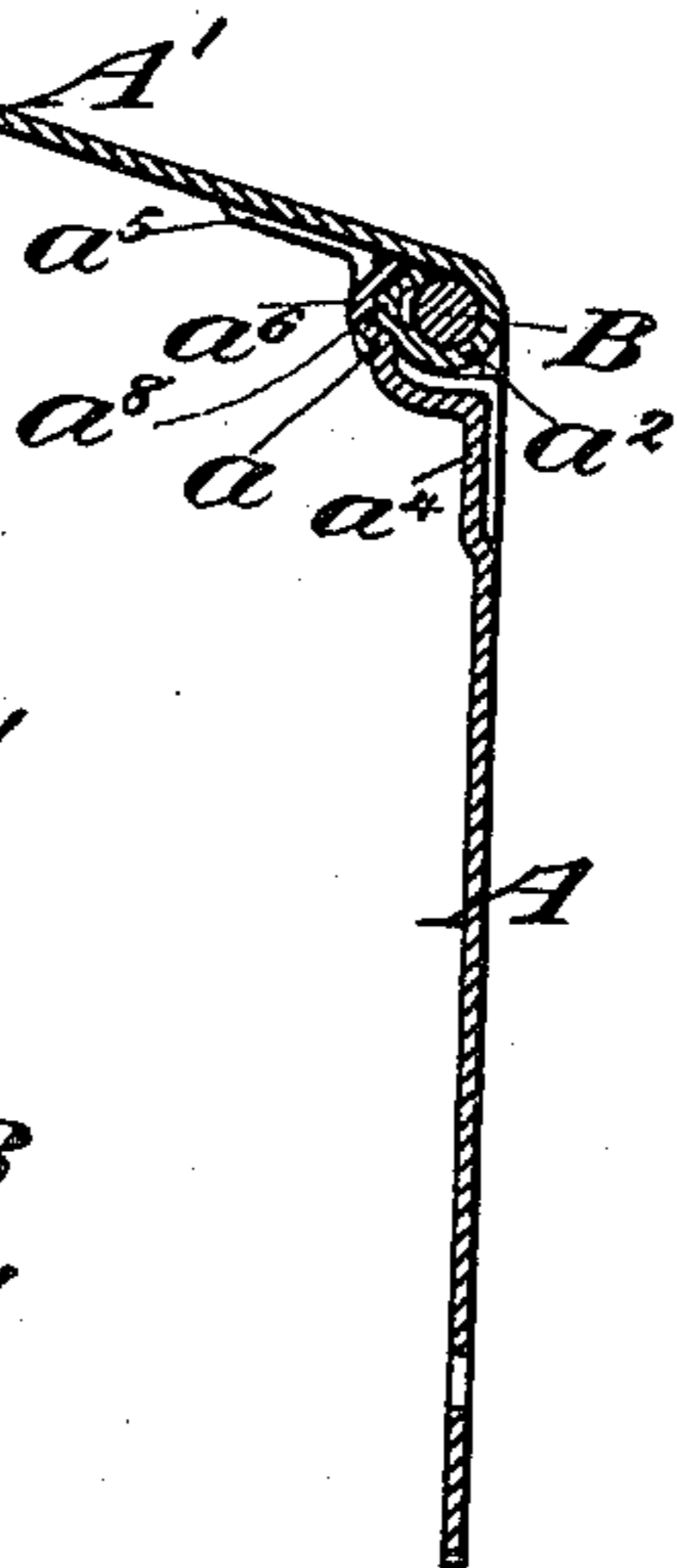


Fig. 5.

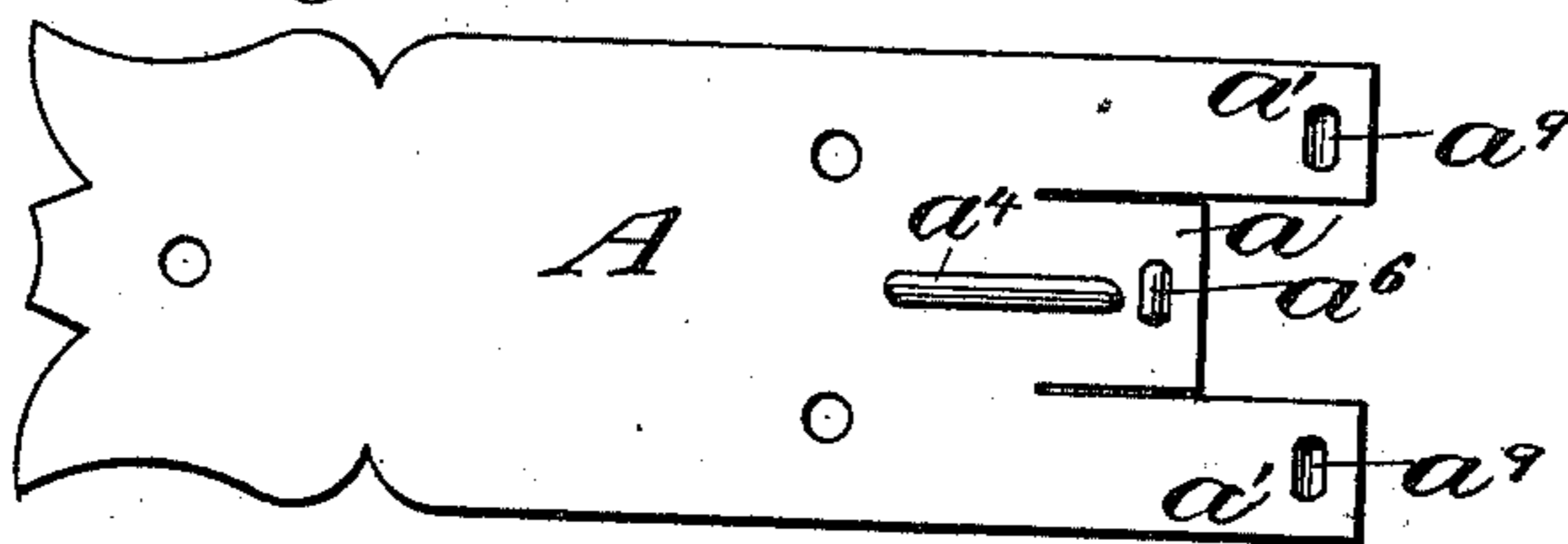


Fig. 7.

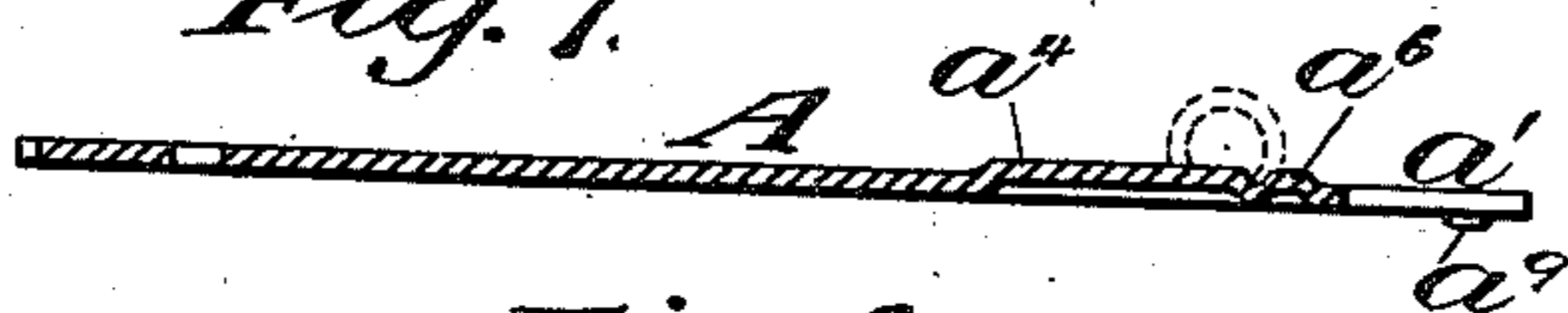
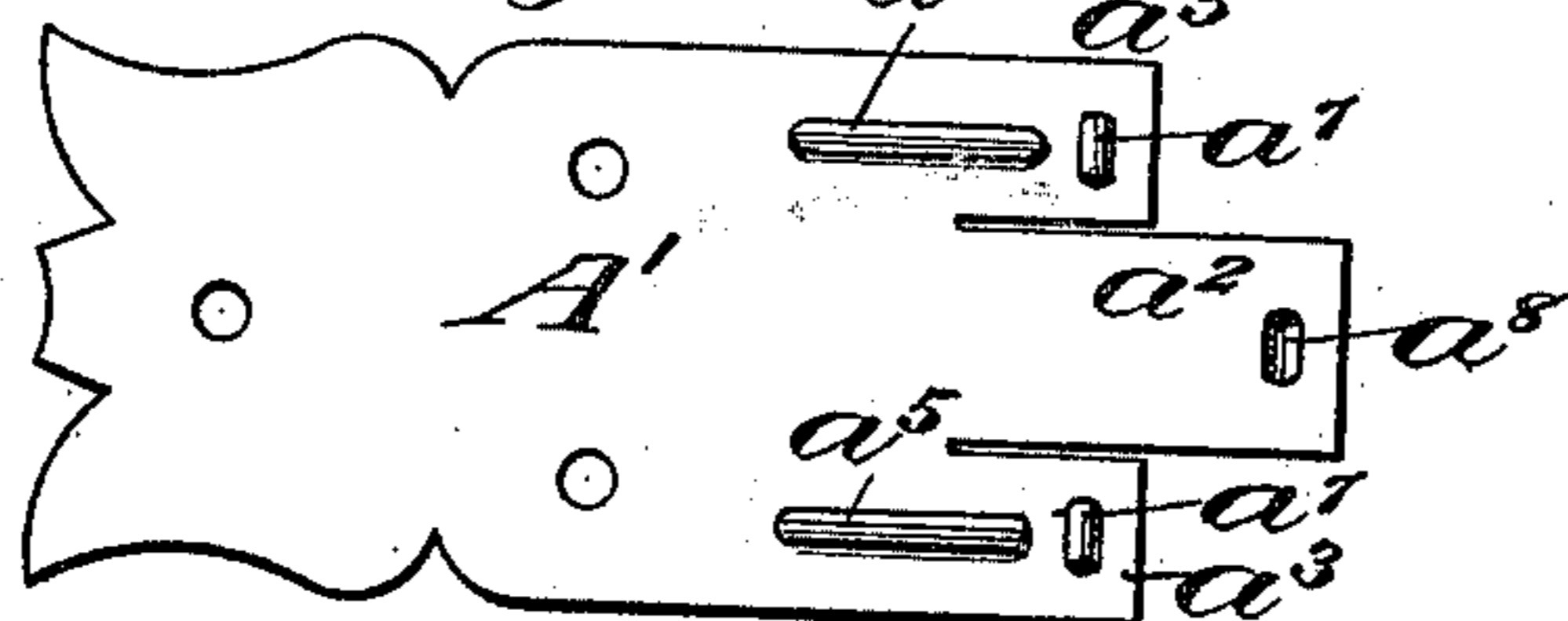


Fig. 6.



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UNITED STATES PATENT OFFICE.

KING LOUIS KARO, OF NEW YORK, N. Y.

HINGE.

SPECIFICATION forming part of Letters Patent No. 470,334, dated March 8, 1892.

Application filed November 27, 1891. Serial No. 413,169. (No model.)

To all whom it may concern:

Be it known that I, KING LOUIS KARO, of New York, in the county and State of New York, have invented a new and useful Improvement in Hinges, of which the following is a specification.

My invention relates to an improvement in hinges in which provision is made for limiting the opening of the hinge, and hence determining the amount of opening of the part secured to the hinge.

The object is to provide a strong and durable hinge which may be manufactured at a low initial cost and which will present a neat attractive appearance.

A practical embodiment of my invention is represented in the accompanying drawings, in which—

Figure 1 represents a face view of the hinge with the two leaves open into the same plane. Fig. 2 is a longitudinal central section showing the leaves open. Fig. 3 is a similar view showing the leaves closed. Fig. 4 is an enlarged view in detail, showing a central section taken transversely through the pintle and middle portion of the leaves, the leaves being represented in the position which they occupy in Fig. 1. Figs. 5 and 6 represent the two leaves as they are cut or stamped from the sheet of metal before their interlocking ends are bent into curved form, and Fig. 7 is a central section taken longitudinally through the blank represented in Fig. 5.

One of the leaves of the hinge—that, for example, which is to be secured to the body of the box or trunk or to the stationary part—is denoted by A, and the other leaf—that which is to be secured to the cover or swinging part—is denoted by A'. When cut or stamped from the sheet of metal, the ends of the leaves which are to receive the pintle of the hinge are provided—the one A, for example—with a center lip or tongue a and with lips or tongues a' on opposite sides of the central lip or tongue a , the tongues a' being projected beyond the ends of the center tongue a , and the other—A', for example—is provided with a center lip or tongue a^2 and with lips or tongues a^3 on opposite sides of the center, the central lip or tongue a^2 projecting beyond the lips or tongues a^3 . The extension of the central lip or tongue a^2 of the leaf A'

is substantially the same as the extension of the side lips or tongues a' , so that in stamping the two leaves from a sheet or strip of metal there is no considerable portion of the metal wasted at the adjacent ends of the leaves.

In shaping the lips or tongues on the leaves to form the socket for the pintle B of the hinge the lips or tongues a' on the leaf A are bent over in ring form, as shown in dotted lines in Fig. 7, and the lip a^2 of the leaf A' is likewise bent over into ring form, as shown in Figs. 2, 3, and 4, so that when brought together end to end the sockets formed by the lips a' and a^2 will fall into alignment and form a continuous socket for the reception of the pintle B. In addition to the bending of the lips to form the socket the central tongue or lip a of the leaf A is bent in the opposite direction from that in which the lips or tongues a' are bent, and is adapted to rest on and conform to the exterior rounded surface of the bent lip or tongue a^2 . In like manner the lips or tongues a^3 of the leaf A' are bent in an opposite direction from that in which the central lip a^2 is bent and are adapted to rest on and conform to the curved outer face of the bent lips a' . The positions of the lips a and a^3 are clearly shown in Fig. 1.

From the above structure it follows that when the leaf A' is swung from its closed position (shown in Fig. 3) or from any position intermediate of its closed and open position to its extreme open position (shown in Fig. 2) it will be stopped in that position by the engagement of the end of the curved tongue a with the outer face of the leaf A' and the simultaneous engagement of the ends of the curved lips a^3 with the outer face of the leaf A.

In order to dispose the metal so as to strengthen the hinge at the point where the greatest strain occurs and at the same time utilize as little metal as is consistent with the required strength, I find it desirable to strike up elongated ribs a^4 and a^5 , extending, respectively, from the body portion of the leaves along the portions of the lips a and a^3 , contiguous to the body portion of the hinge, so as to prevent the said tongues or lips from springing over toward the body portions of the leaves under the impulse due to the abrupt stopping of the swinging part by the en-

gagement of said lips with the leaves. To further provide for the holding of the hinge in its open adjustment and the same time permit it to be folded under the impulse of an intentional pull, I find it desirable to provide recesses on the under sides of the lips or tongues a and a^3 , preferably by striking up short ribs a^6 and a^7 , and to form short ribs by striking down the metal, as at a^8 and a^9 in the tongues a^2 and a' , so that when the leaf A' swings into its open position the end of the tongues a and a^3 will ride over the raised portions a^8 and a^9 on the socket until said raised portions are received into the recesses under the ribs a^6 and a^7 . The elasticity of the metal is intended to be sufficient to permit the tongues to spring over such raised portions.

Some of the obvious advantages of the construction as above set forth are the following: The socket portion of the hinge is for the most part double-walled, and hence protected against the liability of becoming jammed, twisted, or broken. The metal itself is disposed in such position as to withstand the strain in the direction in which it is most liable to occur without the addition of any superfluous metal. The parts may be readily stamped from a sheet of metal without loss of material and may be shaped and assembled with great facility. The leaves of the hinge are interlocked with each other, exclusive of the pintle, as soon as they begin to swing open, and the frictional catches for holding the hinge in open position do away with the necessity of special means for holding the part attached to the swinging leaf of the hinge open, as is commonly the case in constructing trunks, where the herein-described hinge may be used to great advantage.

It is evident that slight changes might be

resorted to in the form and arrangement of the several parts without departing from the spirit and scope of my invention. Hence I do not wish to limit myself strictly to the structure herein set forth; but

What I claim is—

1. A hinge the leaves of which have their ends developed into eyes or sockets and guards for the sockets, the socket portion of each leaf having a guard portion extending from the other leaf over it, and strengthening-ribs extending from the body portion of the leaves onto the guard lips or tongues, substantially as set forth.

2. A hinge the leaves of which have their adjacent ends developed into eyes or sockets and guards, the eye or socket on one leaf having a corresponding guard on the other leaf, the eye or socket and the guard being provided the one with a projection and the other with a recess adapted to receive the projection, and thereby tend to hold the hinge open, substantially as set forth.

3. A hinge, one leaf having longer lips or tongues at its end formed into eyes or sockets and a shorter lip or tongue formed into a guard and the other leaf having a longer lip or tongue formed into an eye or socket, and shorter lips or tongues formed into guards, the guards on the one corresponding to the eyes or sockets on the other leaf and serving as stops to limit the opening of the hinge, and a pintle extending through the eyes or sockets formed on the leaves, substantially as set forth.

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