N. KNUTH.

SAFETY HINGE.

APPLICATION FILED JUNE 27, 1921.

1,412,875. Patented Apr. 18, 1922.

FIG. 1

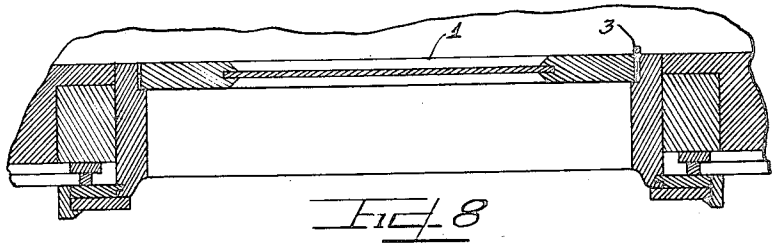



FIG. 8

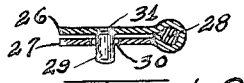



FIG. 2

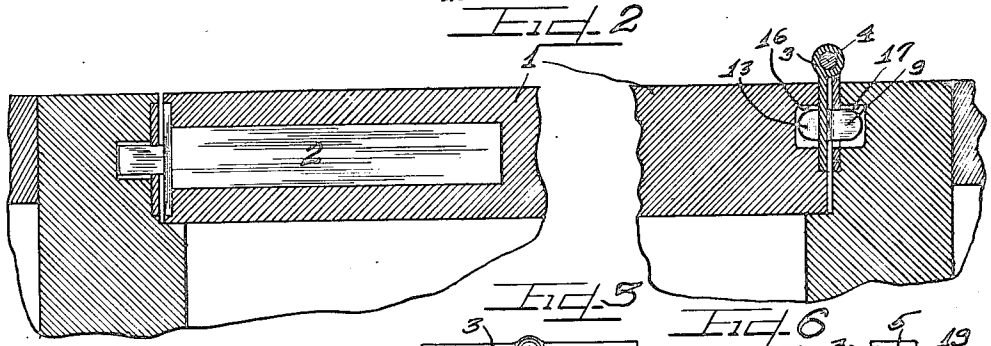



FIG. 3




FIG. 6

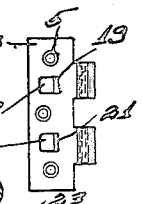



FIG. 4

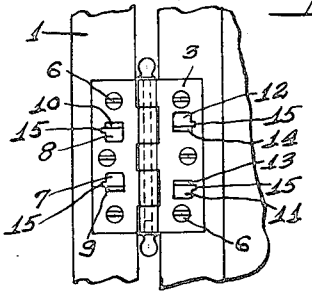



FIG. 5

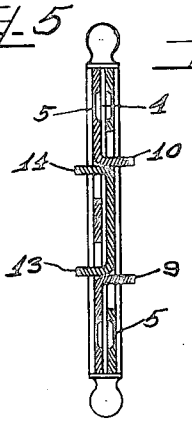
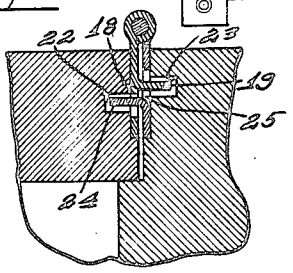



FIG. 7




Witnesses

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# UNITED STATES PATENT OFFICE.

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## SAFETY HINGE.

1,412,875. Specification of Letters Patent. Patented Apr. 18, 1922.

Application filed June 27, 1921. Serial No. 480,632.

*To all whom it may concern:*

Be it known that I, NICK KNUTH, a citizen of the United States, and a resident of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in a Safety Hinge; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the numerals of reference marked thereon, which form a part of this specification.

When a door hung with ordinary hinges is closed and locked, it is possible to open it without unlocking it. This is accomplished by removing the pintles from the hinges and then forcing the hinged edge of the door outward, pivoting the door about its locked edge. It is an object of this invention to prevent this.

It is a further object of this invention to provide a hinge which is struck up on each leaf to co-operate with recesses in the door and casing.

Other and further important objects of this invention will be apparent from the disclosures in the specification and drawings.

The invention (in a preferred form) is illustrated in the drawings and hereinafter more fully described.

On the drawings:

Figure 1 is a section of a door and casing showing the application of my invention.

Figure 2 is a section on an enlarged scale showing the details of the hinge, a portion of the door and casing being broken away.

Figure 3 is an end view of the hinge.

Figure 4 is a side view of the hinge applied to a door.

Figure 5 is a longitudinal section of the hinge.

Figure 6 is a side view of one leaf of a modified form of hinge.

Figure 7 is a section through a hinge of the form shown in Figure 6 applied to a door.

Figure 8 is a section showing the application of my invention to an ordinary hinge.

As shown on the drawings:

The door 1 is provided at one side with a lock 2 and at the other side with hinges 3. Each hinge consists of two leaves fastened together by a pintle 4 as is usual. The hinges are provided with the usual countersunk holes 5 for receiving screws 6. Each leaf of the hinge is also provided with struck up portions made by cutting away a portion of the leaf and bending the cut portion out of the plane of the leaf.

As shown in Figure 4, upon the left hand leaf, the openings 7 and 8 provide upturned tongues 9 and 10 at right angles to the leaf and with their plane at right angles to the pintle. These tongues are integral with the leaf at the edges of the holes 7 and 8 nearest the ends of the leaf. On the opposite leaf, holes 11 and 12 are provided to make upstanding tongues 13 and 14, but these tongues are placed upon the sides of the openings farthest from the ends of the leaf.

Each hole is also provided with a notch 15 upon the side of the hole farthest from the pintle and in line with the upstanding tongue upon the other leaf, so that when the hinge is folded into the position shown in Figure 5 the corners of the tongues may pass through these notches and the hinge will fold without binding.

The positioning of the holes is such that when the hinge is folded the tongues will project through the holes in the opposite leaf, as shown in Figure 5, the tongue 10 projecting past the tongue 14 and the tongue 9 projecting past the tongue 13.

These projecting tongues are accommodated in recesses 16 and 17 in the door and casing respectively. There may be four recesses for each hinge, one for each tongue, or the two recesses in the door may be merged into one if desired for ease in cutting them and the same may be done with the recesses in the casing.

In the modification shown in Figures 6 and 7, the tongues are struck up from the longitudinal edges of the holes so that their plane is parallel to the pintle. Thus from the hole 18 goes a tongue 19 which is integral with the leaf at that edge of the hole nearest the pintle, and similarly from a hole 20 goes a tongue 21. The tongues on the co-operating leaf will be integral with that edge of the hole farthest from the pintle, as shown in connection with the tongue 24 and hole 25 in Figure 7. When the hinge is folded together these tongues project through corresponding holes in the opposite leaf. Corresponding tongues project through these holes, as indicated in Figure 7. Recesses 22 and 23 are provided in the door and casing respectively to receive the projecting tongues.

In the form shown in Figure 8, I take an ordinary hinge with leaves 26 and 27 and a pintle 28 and drill a hole 30 in one leaf. I drill a smaller hole in the other leaf in order to rivet therein a stud 29, as shown at 31. When the hinge is folded the stud 29 will project through the hole 30 and can engage a recess in either the door or the casing.

The operation is as follows:

In the operation of the device, the door is mounted upon its hinges in the usual way except that the recesses in the door and casing are provided. When the door is closed and locked, if a burglar should undertake to open the door by removing the pintle 4 and moving the hinged edge of the door outward, the projecting tongues would prevent such an outward movement and the door therefore could not be opened. On the other hand, when the door is unlocked and opened by turning on its hinges in the usual way, the tongues withdraw from the recesses and the door is opened.

Should occasion arrive to remove the door from its hinges, it may be done by unlocking the door and opening it and taking out the pintle in the usual way. No difficulty is experienced in separating the door from the casing when the door is unlocked and opened since the tongues are then withdrawn from the recesses.

In the modification shown in Figure 4, the edges of the tongues contact with the sides of the recess when an attempt is made to force the door. For this reason it would not be easy to force the door by breaking or bending the tongues. The modification shown in Figure 7 is not so strong because in it the side of the tongue contacts with the side of the recess and the resistance to bending is less. On the other hand, the form shown in Figure 7 is more easily manufactured because the notches 15 need not be provided.

I am aware that numerous details of construction may be varied through a wide range without departing from the principles of this invention, and I therefore do not purpose limiting the patent granted otherwise than necessitated by the prior art.

I claim as my invention:

In a hinge, two leaves and a pintle, each leaf having holes therein, tongues projecting up from the leaves at the edges of the holes, the holes in one leaf extending from the tongues toward one another and the holes in the other leaf extending from the tongues away from one another, each hole having a notch in the edge opposite the pintle and in line with the tongue upon the other leaf.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

NICK KNUTH.

Witnesses:

OSCAR HARTMANN,

CARLTON HILL.