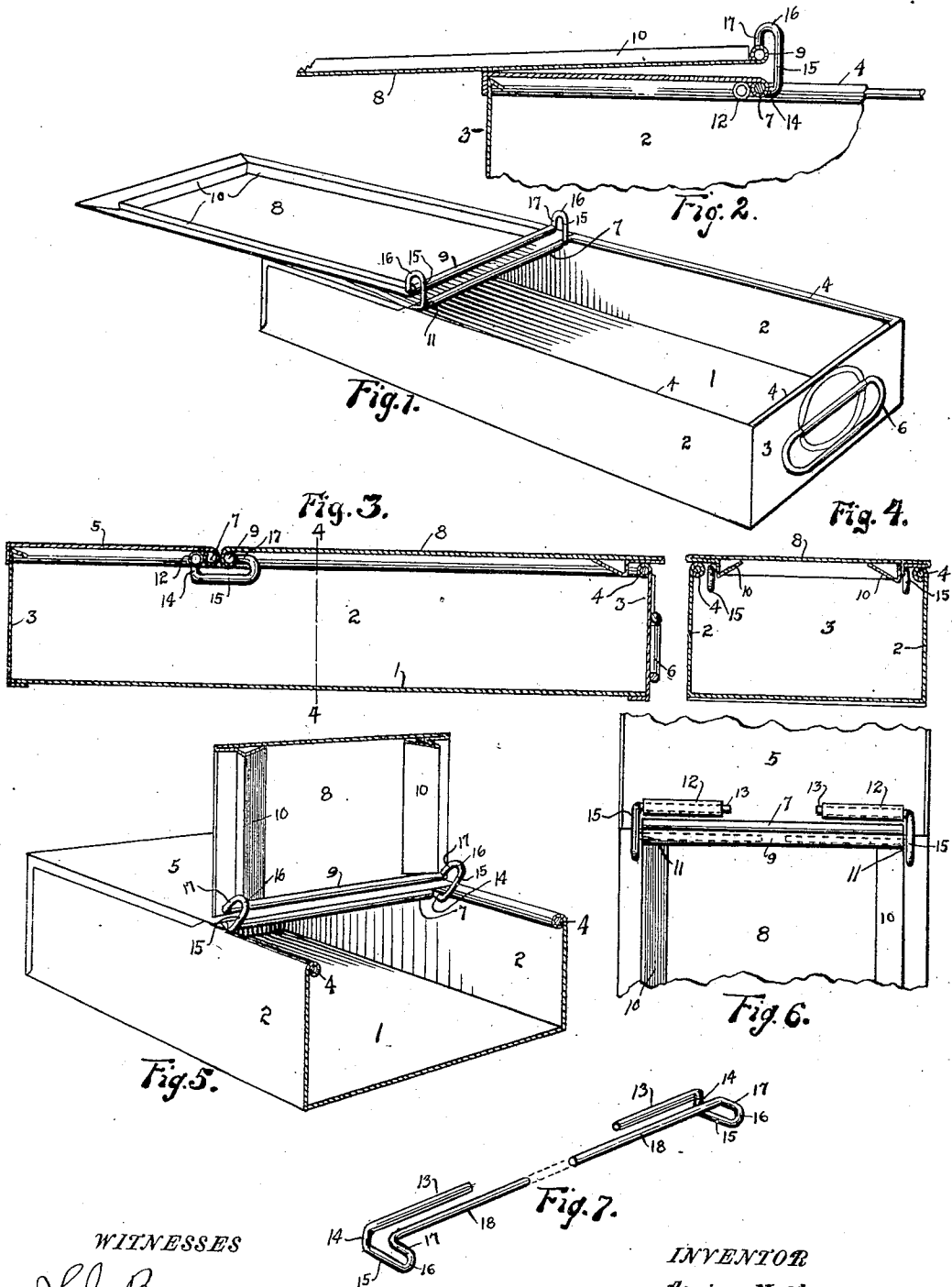


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HINGE.
APPLICATION FILED MAY 3, 1909.

946,587.

Patented Jan. 18, 1910.



WITNESSES

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HINGE.

946,587.

Specification of Letters Patent. Patented Jan. 18, 1910.

Application filed May 3, 1909. Serial No. 493,622.

To all whom it may concern:

Be it known that I, ARVINE N. THOMAS, a citizen of the United States, residing at Canton, in the county of Stark and State of Ohio, have invented a new and useful Hinge, of which the following is a specification.

In safe deposit vaults, fire proof filing cabinets and the like it is customary to provide individually removable boxes adapted to contain the papers or other articles of value deposited or filed. The construction of the individual boxes, as well as their arrangement within such vaults or cabinets, is of much importance in order that a number of such boxes may require a relatively small amount of space, while affording opportunity for convenient and ready access to any one of the individual boxes. Pigeonholes or compartments into which the individual boxes are adapted to neatly enter are usually provided and it is desirable that the bottoms, tops and sides of the boxes be so constructed as to present even surfaces adapted to lie closely adjacent the walls of such pigeonholes or compartments and to permit the boxes to be readily withdrawn therefrom when occasion demands. The boxes mentioned are preferably constructed of sheet-metal, and finished with enamel or japan. The tops of such boxes are usually formed of two parts, a stationary part and a hinged or lid part adapted to be opened and turned back over the stationary part of the top to permit access to the interior of the box the construction being such that when the said lid is brought forward and downward into the closed position no part of the hinge will extend above the general surface of the top.

My invention relates to improvements in boxes of the character mentioned and has special reference to the hinge for connecting the lid to the stationary portion of the top; and the objects of my improvement are to provide a neat, strong, cheaply constructed hinge no part of which will extend above the upper surface of the top when the lid is closed, which will permit the lid to be turned backwardly over the stationary portion of the top without possibility of injuring the enamel or finish on the parts of the top adjacent the said hinge and which will assist in aligning the stationary and lid portions when the lid is closed. I attain these objects together with other objects apparent

to those skilled in the art by the construction illustrated in the accompanying drawing in which—

Figure 1 is a perspective view of the box 60 showing the lid opened and overlying the stationary portion of the top. Fig. 2 is a fragmentary longitudinal vertical section through the stationary and lid portions of the top in the same relative position as in Fig. 1. Fig. 3 is a longitudinal vertical section through the box, the lid being closed. Fig. 4 is a transverse section taken on the line 4—4 of Fig. 3. Fig. 5 is a fragmentary perspective view partly in section illustrating the position of the parts when the lid is partially opened. Fig. 6 is a view of the under side of the top, the parts being in the position assumed when the lid is closed. Fig. 7 is a detached perspective view of the 75 pintles of the hinge.

Throughout the several views similar numerals of reference indicates similar parts. The numeral 1 indicates the bottom of the box, 2 the sides and 3 the ends. The upper 80 free edges of the sides 2, and the upper free edge of one of the ends are preferably provided with the roll or bead 4, the same constituting a desirable finish for said edges. The stationary portion 5 of the top is arranged upon and attached to the sides and end of the box at the rear thereof, the end of said box where said stationary portion is attached being intended to be inserted first into the pigeonhole or compartment, and a 90 handle or pull 6 being arranged upon the front end of the box to provide convenient means for withdrawing the box from said pigeonhole or compartment. The said stationary portion 5 extends forwardly to the 95 point 7 where a transverse roll or bead may be arranged, lying wholly below the top surface of the portion 5, which constitutes the forward free edge of the stationary portion.

The lid 8 is of appropriate length to extend from the forward edge of the portion 5 to the front end of the box and is adapted when in the closed position, to rest upon the bead or roll 4 on the sides and front end, as illustrated in Figs. 3 and 4. At the rear 105 edge of the lid 8 is arranged a transverse knuckle 9 preferably formed integrally with the lid 8 by forming a hollow roll or barrel therefrom on the under side of the rear edge mentioned. When the lid is in the closed 110 position the said knuckle is adapted to lie contiguous to the bead on the front edge of

the stationary portion 5, as illustrated in Fig. 3. Some method of reinforcing the lid 8 and finishing the edges thereof may be provided, such as the ribs 10 formed integrally with the lid and extending along the under side of the sides and front end thereof.

It should be noted that the bead on the front edge of the stationary portion 5 does not extend entirely to the sides of the box but terminates a short distance from said sides, leaving a space for the accommodation of a portion of the pintles of the hinge as hereinafter will appear. The knuckle 9 likewise does not extend entirely to the sides of the box but terminates at the points 11 in line with the ends of the bead on the stationary portion 5.

Arranged on the under side of the portion 5 and to the rear of the bead on the front edge of said portion are the stationary knuckles 12, which consist preferably of hollow cylinders or tubes soldered or otherwise attached to the portion 5 and having a common axis arranged parallel with the axis of the bead at the forward edge of said portion 5. From an inspection of Fig. 6 it will be noted that the outer ends of the knuckles 12 are alined with the ends of the knuckle 9, the knuckle 9 and the knuckles 12 being intended to be connected by appropriately arranged pintles to constitute the hinge. While the pintles might well be formed of a single piece of wire or other suitable material, yet it is preferable to form them in two sections, as illustrated in Fig. 7, as to so form them facilitates the construction and simplifies the operation of assembling the various parts. Each pintle section comprises a plurality of integral parts variously disposed and adapted for different purposes. The part 13 is transversely disposed and adapted to be journaled in one of the knuckles 12. The part 14 extends downwardly and substantially at right angles to the part 13. The part 15 extends forwardly from the part 14 and substantially at right angles to the parts 13 and 14. At a point a short distance in front of the vertical plane passing through the knuckle 9 the part 15 merges in the curved portion 16, lying in a plane passing through the portions 14 and 15 and extending upwardly to a height equal to the height of the portion 14, from which point the part 17 extends rearwardly to a point opposite the end of the knuckle 9, whence the part 18, lying parallel with the part 13 extends transversely and is adapted to be journaled in the said knuckle 9. The arrangement of the two pintle sections with reference to the other parts is well illustrated in Fig. 6, the parts journaled in the knuckles being shown in dotted lines.

It will be noted that the part 13 is spaced from the part 18 a sufficient distance to permit the bead at 7 to lie between the knuckles

12 and 9 to fill the space between said knuckles when the lid is in the closed position illustrated in Fig. 3. It should also be noted that the part 14 is sufficiently long to permit the part 15 to be turned upwardly into the vertical position illustrated in Figs. 1 and 2, the part 14 being accommodated, when the pintles are in such position by the hereinbefore mentioned spaces between the outer ends of the roll at 7 and the sides of the box. It should also be noted that the part 17, when the lid is closed, lies adjacent the under surface of said lid.

A box provided with a hinge of the character herein described having been provided the operation of the said hinge is as follows. Assuming that the various parts are in the position illustrated in Fig. 3, let it be supposed that the box is opened by lifting the front edge of the lid 8 upwardly and swinging it backward upon its hinge connection. Upon the initial movement of the lid 8 as just described the parts 13 of the pintles will be rotated within the knuckles 12, carrying the knuckle 9 upwardly and backwardly and out of engagement with the roll at 7. The parts 13 will continue to revolve within the knuckles 12 until the pintles have assumed the position illustrated in Figs. 1 and 2. Before such position has been assumed, however, in the normal operation of the device, the knuckle 9 will begin to rotate about the parts 18, so that when the lid 8 is in the vertical position illustrated in Fig. 5 the relative position of the parts will be as there shown. By the continuation of the backward movement of the lid, however, the position illustrated in Figs. 1 and 2 will be attained as hereinbefore stated, the knuckle 9 being held in elevated spaced relation with reference to the roll at 7 and the lid resting upon the rear edge of the stationary portion 5. Assuming the parts to be in the position illustrated in Figs. 1 and 2, let it be supposed that it is desired to close the box. The lid 8 should be lifted and swung forward upon its hinged connection. During the closing movement of the lid 8, as the said lid nears the vertical position the parts 18 will be rotated within the knuckle 9, until the position illustrated in Fig. 5 is again assumed, when a still further forward movement of the said lid will bring the under surface of the same into engagement with the parts 17, thereby carrying the pintles with the lid 8 in its further movement and insuring proper rotation of the parts 13 within the knuckles 12 and returning the various parts to the original closed position illustrated in Fig. 3. It will be understood that in the practical operation of the hinge the parts 13 and parts 18 may rotate with reference to their respective knuckles in slightly varying degrees at different times, but it is of importance to note that the pintles are so constructed as to

throw the hinge edge of the lid out of engagement with the forward free edge of the stationary portion 5 as the lid is opened, and also that in the closing of the lid the parts 5 17 will insure the proper return of the various parts into the closed position shown in Fig. 3 by reason of their engagement with the under side of the lid.

Attention should be directed to the fact 10 that when the stationary and lid portions of the top are in the closed position illustrated in Fig. 3 the bead at 7 and the knuckle 9 are in engagement, thus thoroughly excluding the dust, and providing a most satisfactory 15 and perfect fitting joint.

I claim:

1. A hinge for the stationary portion and lid of the box top, comprising knuckles arranged upon the under side of said stationary portion and said lid respectively, 20 spaced pintles journaled in said knuckles, connecting means between said pintles, the knuckle on said stationary portion and said lid being held in spaced relation with reference to each other, and said stationary 25 portion extended beyond the knuckle thereon, the extended portion adapted to lie between said spaced knuckles when the lid is closed.

2. A hinge for the top of a box comprising, in combination with the stationary and lid portions of the top, knuckles arranged on the stationary portion and on the lid respectively, spaced pintles journaled in said 30 knuckles, connecting means between said pintles, said pintles so spaced from each other that the said knuckles will be held apart from each other when the lid is closed, and an extension of said stationary portion 35 adapted to lie between said knuckles when the lid is in the closed position.

3. A hinge for the stationary and lid portions of a box top, comprising knuckles arranged upon the mutually adjacent edges 40 of the two portions, spaced pintles journaled in said knuckles, means for connecting said pintles to each other, said pintles so spaced as to space said knuckles from each other when the lid portion is closed, and one of 45 the portions of said top provided with an extension adapted to lie intermediate the said knuckles when the lid portion is in the closed position.

4. A hinge comprising, in combination 50 with the stationary and lid portions of a box top, knuckles arranged upon said portions, the knuckle on one portion located at the extreme edge thereof, the knuckle on the other portion located back from the 55 extreme edge thereof on the under side of said portion a distance from the said extreme edge greater than the distance from

said knuckle to the top surface of said portion, and connected spaced pintles journaled in said knuckles and adapted, when the lid 65 is in the closed position, to abut the knuckle on the extreme edge of the one portion against the extreme edge of the other portion.

5. A hinge for a box top comprising a 70 stationary portion of said top provided at the hinge edge with a roll, a knuckle connected to said stationary portion on the under side thereof and back of said roll, a lid provided with a knuckle at the extreme 75 hinge edge thereof, and spaced connected pintles arranged in said knuckles adapted to hold the said knuckles in spaced relation when said lid is in the closed position, the roll on the hinge edge of said stationary 80 portion being adapted to lie intermediate the knuckles on the lid and stationary portions respectively when the lid is in the said closed position.

6. A hinge for a box top comprising a 85 stationary top portion having a free hinge edge and an upper surface, a knuckle arranged upon and connected to the under side of said stationary portion, the axis of said knuckle being located back from the 90 free edge of said portion a distance greater than the distance from said axis to the top surface of said stationary portion, a lid provided at one of its edges with a knuckle, and spaced connected pintles journaled in said 95 knuckles and adapted, when said lid and stationary portion are lying substantially in the same plane, to hold the knuckle on said lid contiguous to the said free edge of the stationary portion. 100

7. A hinge for a box top comprising two portions of said top adapted to be hinged to each other and having mutually abutting edges, a knuckle arranged upon and connected to the under side of one of said portions, the axis of said knuckle being located 105 back from the abutting edge of said portion a distance greater than the distance from said axis to the top surface of said portion, the other portion provided at its abutting 110 edge with a knuckle, and spaced connected pintles journaled in said knuckles and adapted, when the two portions of said top lie substantially in the same plane, to hold the mutually abutting edges of said portions in contiguous relation. 115

In testimony that I claim the above, I have hereunto subscribed my name in the presence of two witnesses.

ARVINE N. THOMAS.

Witnesses:

SYLVIA BORON,
WILLIAM H. MILLER.