A. B. GONSER.

SHEET METAL BOX.

APPLICATION FILED AUG. 5, 1908.

915,850.

Patented Mar. 23, 1909.

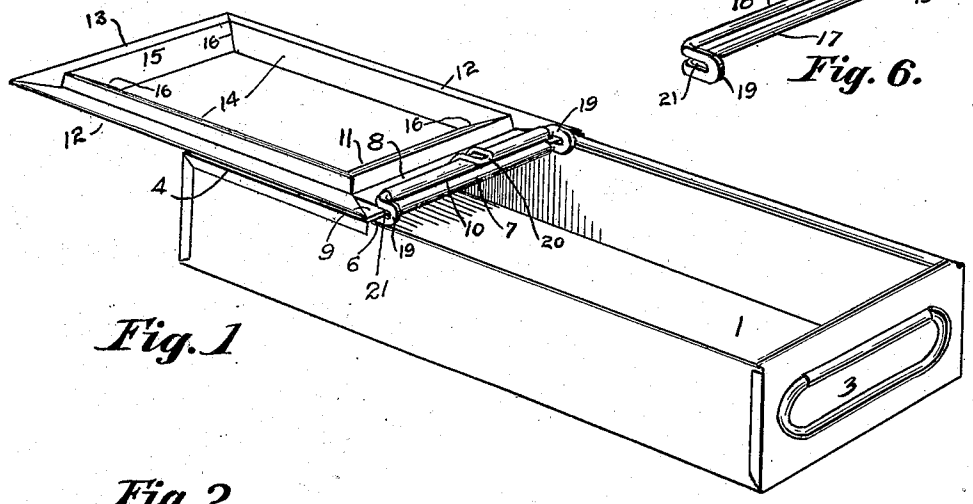
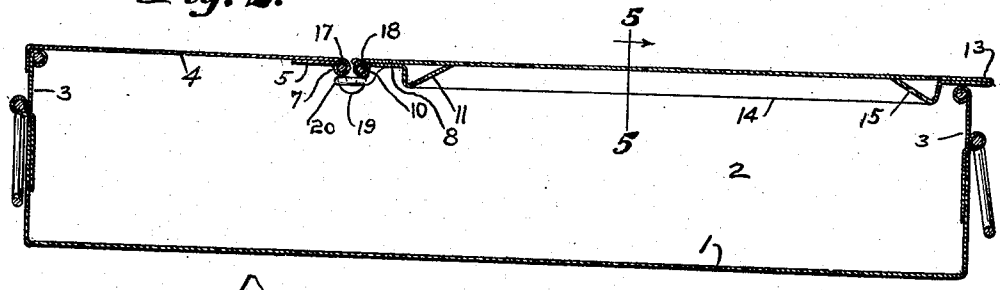


Fig. 1

Fig. 6.

Fig. 2.



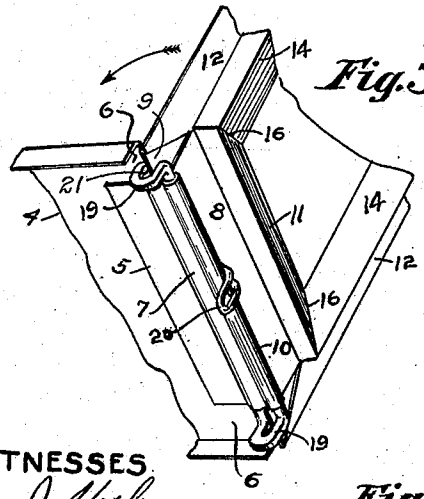


Fig. 3

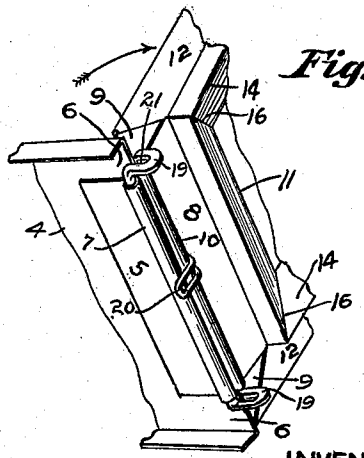


Fig. 4.

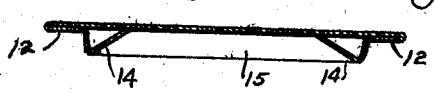


Fig. 5.

WITNESSES.

Jos. J. Hosler.

Ruth A. Miller

INVENTOR

Augustus B. Gonser

BY

Harry Grease.

ATTORNEY

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

AUGUSTUS B. GONSER, OF CANTON, OHIO, ASSIGNOR OF ONE-HALF TO EDWARD WILLIG, OF CANTON, OHIO.

SHEET-METAL BOX.

No. 915,850. Specification of Letters Patent. Patented March 23, 1909.

Application filed August 5, 1908. Serial No. 447,051.

To all whom it may concern:

Be it known that I, AUGUSTUS B. GONSER, a citizen of the United States, residing at Canton, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Sheet-Metal Boxes, of which the following is a specification.

The invention relates to a sheet metal box for use in safe deposit vaults, and especially to the construction of the lid and of the hinge for connecting the lid to the fixed part of the cover of the box. Boxes of this character are usually formed somewhat narrow with reference to their length, and somewhat shallow with reference to their width; and the cover of the box is usually divided into a fixed part, usually the rear part, which is secured to or formed integral with the sides and rear end of the box, and a lid part, usually the forward portion, which is hinged at its rear end edge to the forward free edge of the fixed part of the cover. Such boxes are usually intended and adapted to be entered into pigeonholes or other suitable receptacles shaped to neatly receive the individual boxes and therefore it is desirable that when the lid is closed it should lie flat and flush with the fixed part of the cover. It is also desirable that the lid should be so hinged as to fold over and lie flat on the fixed portion of the cover, and for this operation it is desirable that the adjacent edges of the fixed and the lid parts of the cover shall be shaped smooth and straight and without any angles or recesses therein, and that they shall not rub against each other to abrade or deface the enamel with which the boxes are usually finished. These important objects of the invention are accomplished by forming bearing barrels on the adjacent edges of the fixed cover and the lid, in which bearings are journaled two parallel pintles, the ends of which are connected together by U-shaped yokes, which yokes are bent or deflected to one side so that the edges of the respective fixed cover and the lid on each side of the bearing barrels are adapted to enter between the arms of the yokes when the lid is open and rotated backward; and a tongue is provided on the lid which is adapted to operate under the barrel of the fixed cover to draw the hinged end of the lid downward to the plane of the fixed cover when the lid is rotated forward and closed.

A further object of the invention is to make a one-piece lid with suitable stiffening angles or ribs on its inner side by folding over and suitably shaping the edges of the sheet which forms the body of the lid, and an accompanying feature of the improvement consists in forming the bearing barrel of the lid out of the same portion thereof which is bent over to stiffen the hinged end of the lid.

The various features of the invention, which are thus set forth in general terms, are illustrated in the accompanying drawings, forming part hereof, in which—

Figure 1 is a perspective view of the box showing the lid open and rotated backward; Fig. 2, a longitudinal-vertical section of the box showing the lid closed; Fig. 3, a fragmentary perspective view showing the normal operation of the hinge when the lid is being opened; Fig. 4, a fragmentary perspective view showing the normal operation of the hinge when the lid is being closed; Fig. 5, a transverse section of the lid on line 5—5, Fig. 2; and Fig. 6, a detached perspective view of the parallel pintles.

Similar numerals refer to similar parts throughout the drawings.

The bottom 1, the sides 2 and the ends 3 of the box are formed of sheet metal, and the fixed rear part 4 of the cover is formed or secured on the sides and rear end thereof, in any well-known manner. The middle portion 5 of the forward free end of the fixed cover is originally extended beyond the extreme side portions 6 thereof, and this extended portion is bent downward, rearward and upward to form the bearing barrel 7 and thence directed backward along the under face of the cover, to which it is preferably secured as by soldering. The middle portion 8 of the normally rear end of the lid is originally likewise extended beyond the extreme side portions 9 thereof, and this extended portion is bent downward, forward and thence upward to form the bearing barrel 10, and thence directly forward along the body of the lid, and thence again downward and forward and upward to form the transverse stiffening rib 11 adjacent to the hinged end of the lid.

The side portions 12 and the free-end portion 13 of the sheets out of which the lid is to be formed are also extended beyond the proposed edges of the lid, and these extended

portions are first bent inward along the under side of the body of the lid and thence downward and forward and upward to form the longitudinal side stiffening ribs 14 and the free-end transverse stiffening rib 15 of the lid. By this method of construction, it is only necessary to solder the miter joints 16 formed by the junction of the folded-over portions of the lid sheet in order to make a substantial and thoroughly stiffened lid out of a single sheet; and at the same time the number of operations required to shape, form, assemble and connect together the parts of the lid when separately made is greatly reduced, and the remaining operations are materially simplified.

The parallel pintles 17 and 18 are journaled respectively in the bearing barrels 7 of the fixed part and 10 of the lid of the cover, and these pintles are connected together at each end by the U-shaped yokes 19 which yokes are formed or bent inward at right angles to the plane of the pintles; and the tongue 20 which, as shown, is in the form of a U-shaped wire loop, is formed or attached to the hinged end of the lid and extends normally backward from the lower side of the bearing barrel of the lid substantially parallel with the plane of the lid and far enough to extend well under the lower side of the bearing barrel of the fixed portion of the cover when the lid is closed, as shown in Fig. 2.

In the normal operation of the hinge thus described, when the lid is opened by rotating it upward and backward, the bearing barrel of the lid first rotates on the forward pintle until the lid has reached an upright position, and in so doing the side portions 9 of the hinged end of the lid enter the recesses 21 between the arms of the yokes which connect the ends of the pintles, and the contact of these edges with the forward arms of the yokes constitutes a stop which prevents a further rotation of the lid on the forward pintle, which relation of the parts is shown in Fig. 3. A further backward movement of the lid causes the pintle 17 to rotate in the bearing barrel of the fixed part of the cover, which rotation continues until the lid has been laid over flat on the fixed cover, and in so doing the arms of the yoke embrace the side portions 6 of the free end of the fixed cover, which relation of the parts is shown in Fig. 1.

In the normal operation of the hinge, when the lid is closed by rotating it upward and forward, the bearing barrel of the lid first rotates on the pintle which is journaled therein until the lid is brought to an upright position whereupon the tongue on its hinged end strikes the bearing barrel of the fixed cover, which stops the lid against further rotation on its pintle, which relation of the parts is shown in Fig. 4; whereupon a further forward movement of the lid causes the other pintle to rotate in the bearing barrel of the fixed cover, and in so doing the hinged end of the lid is guided by the abutment of the tongue against and around the barrel of the fixed cover, so that when the lid is closed, the hinged end is brought down flat and flush with the adjoining edge of the fixed cover, which relation of the parts is shown in Fig. 2. The cover parts and the hinge are so proportioned and arranged that the bearing barrels formed on the presented edges of the cover parts are near together but do not touch each other, and it is evident, from the normal operation of the hinge thus described, that the barrel bearings will be positively held apart by the abutment of the side portions of the hinge-edge of the lid yokes when the same is being opened, and by the abutment of the lid tongue against the fixed bearing when the lid is being closed. It is furthermore evident that it is not essential that the side portions of the adjacent edges of the cover portions should be so shaped as to enter between the arms of the yoke when the lip is opened, and consequently it is not essential that the yokes connecting the ends of the pintles shall be bent to be on the inner sides thereof, although this particular form of the construction is preferred for the reason that the side portions of the adjacent edges of the cover portions can thereby be shaped to come closer together when the lid is closed.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A hinge for the fixed and lid parts of a flat box cover comprising bearings on the middle portions of the hinge-edges of the cover parts, parallel pintles journaled in the bearings, U-shaped yokes connecting the ends of the pintles and located on the inner side thereof, and a tongue on the lid adapted to abut the inner side of the fixed bearing when the lid is closed to aline the cover parts, the side portions of the hinge-edges of the cover parts being adapted to enter between the yoke arms when the lid is opened.

2. A hinge for the fixed and lid parts of a flat box cover including bearings on the middle portions of the hinge-edges of the cover parts, parallel pintles journaled in the bearings, U-shaped yokes connecting the ends of the pintles and located on the inner side thereof, and means for alining the cover parts when the lid is closed, the side portions of the hinge-edges of the cover parts being adapted to enter between the yoke arms when the lid is opened.

3. A hinge for the fixed and lid parts of a flat box cover including bearings on the middle portions of the hinge-edges of the cover parts, parallel pintles journaled in the bearings, and U-shaped yokes connecting the ends of the pintles and located on the inner side thereof, the side portions of the hinge-edges

of the cover parts being adapted to enter between the yoke arms when the lid is opened.

4. A hinge for the fixed and lid parts of a flat box cover including bearings on the middle portons of the hinge-edges of the cover parts, parallel pintles journaled in the bearings, and yokes connecting the ends of the pintles and deflected to the inner side thereof, the side portions of the hinge-edges of the cover parts being adapted to enter between the yoke-arms when the lid is opened.

5. A hinge for the fixed and lid parts of a flat box cover including bearings on the hinge-end portions of the cover parts, parallel pintles journaled in the bearings, and yokes connecting the ends of the pintles and deflected to the inner side thereof.

AUGUSTUS B. GONSER.

Witnesses:
HARRY FREASE,
JOSEPH FREASE.