

C. G. PFEIFFER & G. W. PARKER, JR.

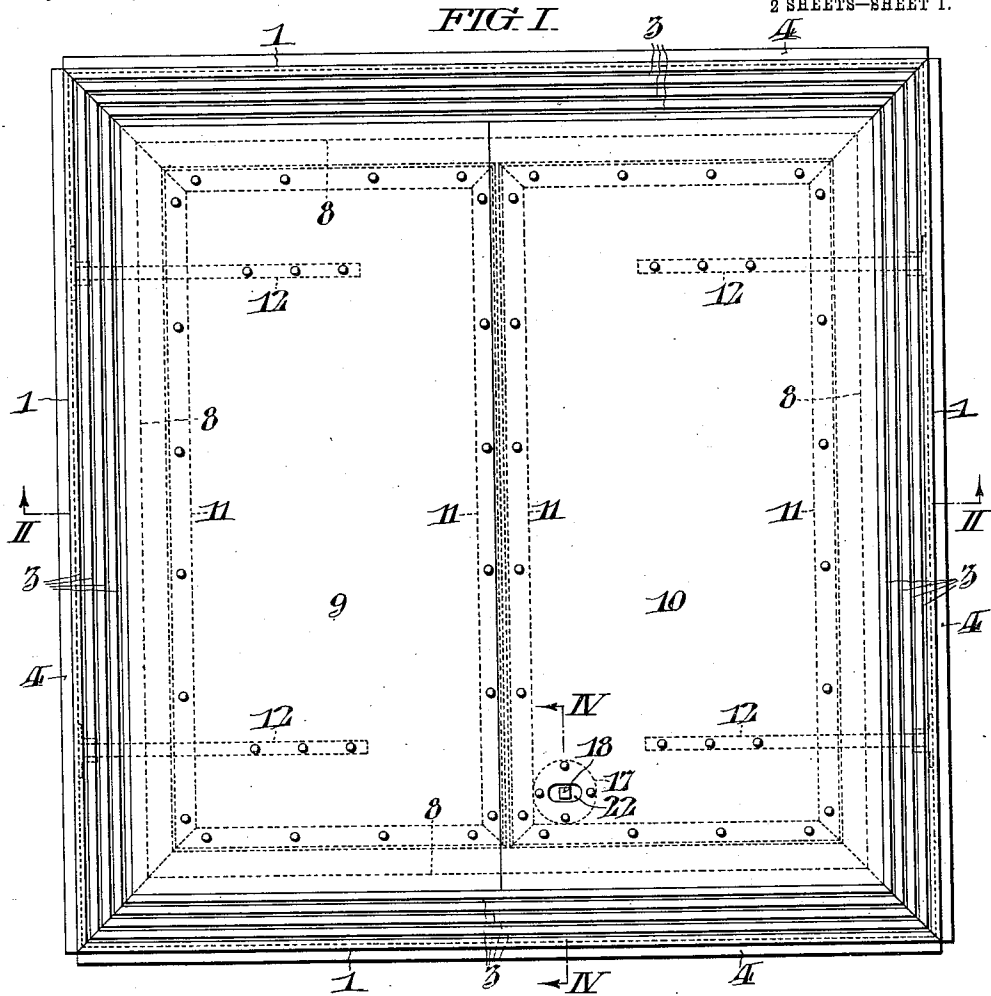
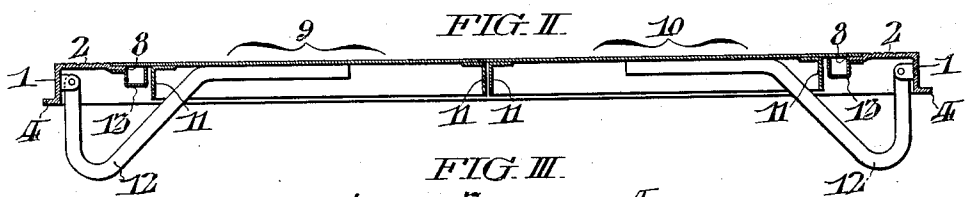
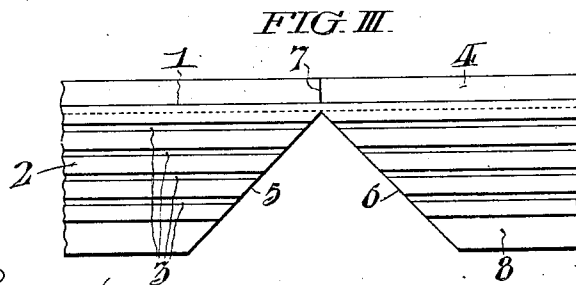
VAULT CLOSURE.

APPLICATION FILED APR. 27, 1912.

1,087,606.

Patented Feb. 17, 1914.

2 SHEETS—SHEET 1.



Witnesses
John C. Burges
James E. Bell

Inventors
Charles G. Pfeiffer &
George W. Parker Jr.,
by Mary E. Lane
Attorneys

C. G. PFEIFFER & G. W. PARKER, JR.

VAULT CLOSURE.

APPLICATION FILED APR. 27, 1912.

1,087,606.

Patented Feb. 17, 1914.

2 SHEETS—SHEET 2.

FIG. IV.

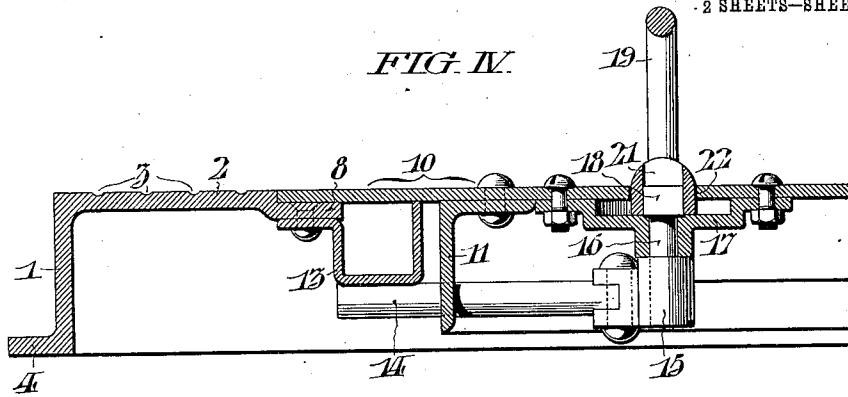


FIG. V.

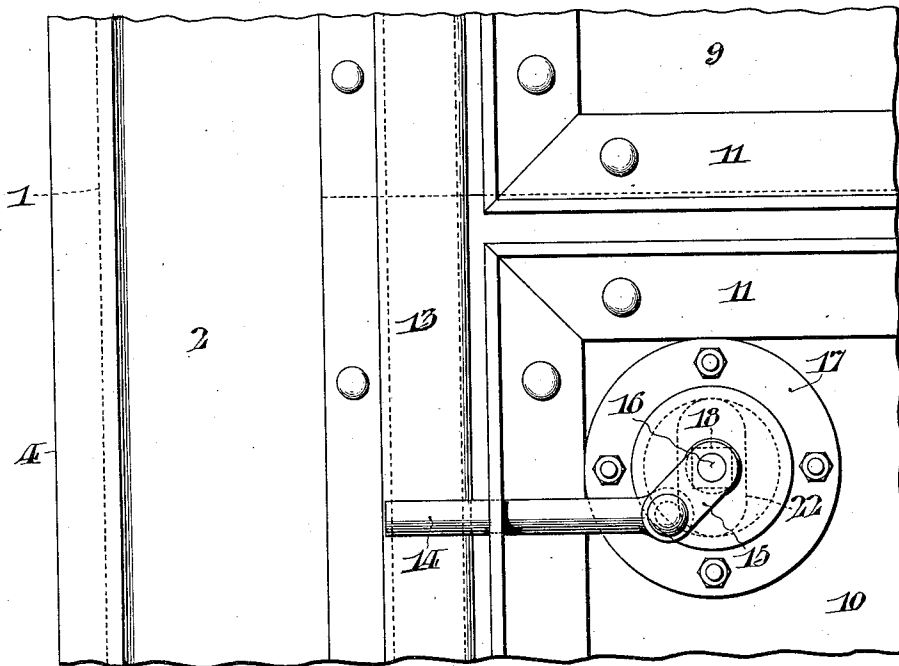
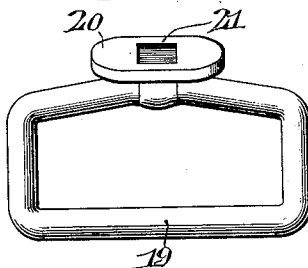


FIG. VI.



Witnesses
John C. Bergman
James E. Bell

Inventors
*Charles G. Pfeiffer &
George W. Parker Jr.,*
by [Signature]
Attorneys

UNITED STATES PATENT OFFICE.

CHARLES G. PFEIFFER AND GEORGE W. PARKER, JR., OF PHILADELPHIA,
PENNSYLVANIA.

VAULT-CLOSURE.

1,087,606.

Specification of Letters Patent.

Patented Feb. 17, 1914.

Application filed April 27, 1912. Serial No. 693,707.

To all whom it may concern:

Be it known that we, CHARLES G. PFEIFFER and GEORGE W. PARKER, Jr., of the city and county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Vault-Closures, of which the following is a specification, reference being had to the accompanying drawings.

The invention relates more particularly to the supporting frame and the doors for closing a vault in a sidewalk.

An object of the invention is to provide a door frame construction which shall be rigid, and which shall be free from objectionable projections.

A further object of the invention is to provide a frame of the above character with door closures therefor which are so disposed relative to the frame as to be substantially flush therewith, which frame is also provided with a trough for collecting the leakage water passing through the frame at points adjacent the connection with the door.

These objects will in part be obvious, and will in part be hereinafter more fully described.

In the drawings, which show by way of illustration one embodiment of the invention, Figure I, is a plan view of a vault closure having the improvements applied thereto. Fig. II, is a sectional view on the line II—II of Fig. I. Fig. III, is a detail view showing the manner of forming the frame. Fig. IV, is an enlarged detail section on the line IV—IV of Fig. I. Fig. V, is an enlarged bottom view, showing the manner of locking the door, and Fig. VI, is a detail perspective view, showing the key for releasing the lock and lifting the door.

In carrying out the invention, the supporting frame for the door is formed from a bar of metal, which may be rolled so as to form a side flange 1, and a top flange 2, which is grooved as at 3. This frame is also formed with a lower horizontal flange 4. The bar in the forming of the frame is cut away at the corners, as shown in Fig. III. The top horizontal flange 2, is cut through to the vertical flange 1, by a V-shaped cut with side edges 5, and 6, so spaced that when the bar is bent to bring said edges into contact, the sections of the bar will lie at right angles to each other. The outer flange 4,

is also cut by a straight cut 7, opposite the point of the V-shaped cut to allow this folding or bending of the sections of the bar. The bar is thus bent to form a rectangular frame, and the ends are suitably joined. This frame is adapted to be embedded in the concrete of the sidewalk, so that the top horizontal flange 2, will be substantially flush with the upper surface of the sidewalk. The flange 2, of the frame is formed with a depression 8, at its inner edge, which forms a seat for the doors.

As herein shown, the central opening in the frame is closed by two doors 9, and 10. These doors are similar in construction, and are preferably formed of sheet steel. The doors are strengthened by an angle iron frame 11, which is also cut at the corners to allow the angle bar to be bent into a rectangular frame, and this rectangular frame is riveted or otherwise secured to the lower face of each door. The doors are provided with hinges 12. The outer edges of the door overlap the depressed portion 8, of the frame and seat thereon, so that the doors when closed are supported entirely by the seat formed in the frame. The hinges 12, are pivoted to the vertical flange 1, of the frame and said hinges are bent so as to permit the doors to be raised and held in raised position by the hinges.

Extending about the frame at a point adjacent the connection of the door with the frame, is a metal trough 13, which is riveted to the frame, and is so positioned that any leakage of water between the door and the side frame will pass through into the trough, and may be drawn off in any suitable way from the trough.

The doors are held closed by a locking bolt 14, which passes through an opening in one of the strengthening flanges 11, secured to the door. This bolt is adapted to pass underneath the trough 13, and firmly secures the doors in closed position. The doors are so constructed that one door slightly overlaps parts of the other, as clearly shown in Fig. I, and the bolt 14, extends in a direction substantially parallel with the meeting edges of the door, so that the bolt will pass underneath the side frame, and will lock the upper door and the upper door will in turn hold the lower door closed. This bolt is connected at its inner end to a crank arm 15, which is carried by a short shaft 16, mount-

ed in a housing 17, secured to the under face of the door. This housing 17, is spaced from the door, as clearly shown in Fig. IV. The upper end of the shaft 16, is formed with a square head 18. When it is desired to withdraw the bolt to open the door, a tool such as shown in Fig. VI, may be used. This tool is formed with a handle 19, and with a bar 20, which is provided with an angular hole or opening at 21, located centrally thereof. The door is formed with an oblong opening 22, which corresponds in shape to the bar 20. The bar 20, is inserted through the opening 22, and the square hole in the bar placed over the square head on the shaft 16. By turning the handle 19, through an arc of 90°, the bolt is withdrawn from underneath the side trough 13, and the ends of the bar 20, are turned underneath the side walls of the slot 22, so that the tool is held secured to the door, and the door may, therefore, be raised by lifting the handle of the tool. When the door is closed, the tool is turned so as to force the bolt underneath the side trough, and this brings the bar 20, into position so that it may be removed from the opening in the door.

From the above construction, it will be apparent that we have provided a vault closure which consists of a metallic frame that may be made at small cost, and at the same time, said frame is durable in construction and free from any objectionable projecting parts. The doors also are strong, and are so related to the frame that said doors are supported by the frame independently of the hinges of the door, and said door sections when closed are substantially flush.

As shown in Figs. I and II, it will be

noted that the overlapping of one door on the other is brought about by the extending of the strengthening angle iron, which is attached to one section of the door underneath the other section, so that the metal parts of the doors proper do not overlap, and, therefore, these two doors have in effect an overlapping connection without any objectionable projecting parts.

It is obvious that minor changes in the details of construction and the arrangement of parts may be made, without departing from the spirit of the invention as set forth in the appended claim.

Having thus described our invention, we claim:

A vault closure including in combination, a metallic supporting frame; metallic door sections for closing the opening in the frame; a locking bolt for holding the door sections closed; a shaft for operating said locking bolt, said shaft having an angular head formed thereon; a housing secured to the under face of the door section, and in which said shaft is mounted, said housing being spaced from the door sections; and an operating tool for turning the bolt including a bar adapted to extend between the housing and the door section, whereby said operating tool may be used to lift the door section.

In testimony whereof, we have hereunto signed our names at Philadelphia, Pennsylvania, this twenty-third day of April 1912.

CHARLES G. PFEIFFER.
GEORGE W. PARKER, JR.

Witnesses:

JAMES H. BELL,
E. L. FULLERTON.