R. A. NORTON.

VAULT COVER.

APPLICATION FILED SEPT. 18, 1913.

1,105,826.

Patented Aug. 4, 1914.

2 SHEETS—SHEET 1.

FIG. 1.

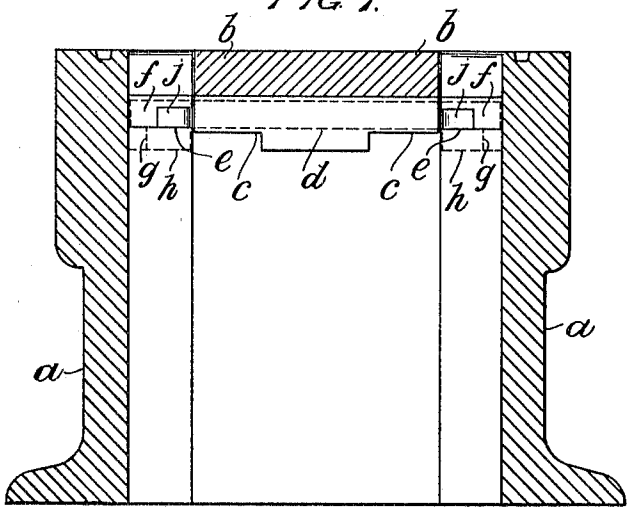
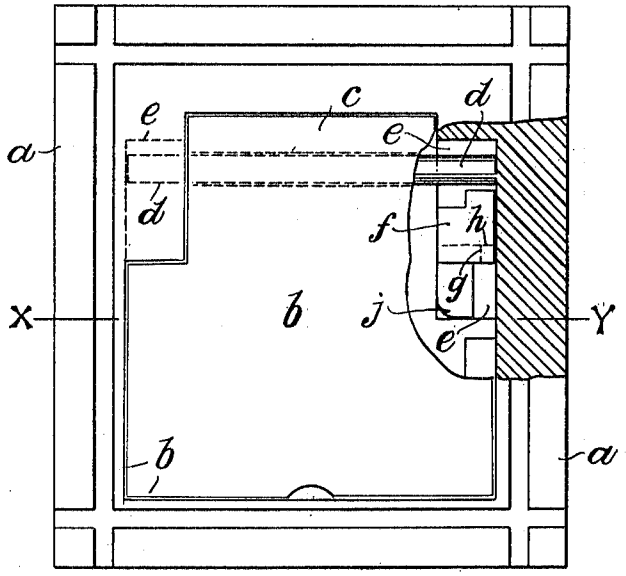


FIG. 2.



WITNESSES:

John C. Sanders

Albert F. Heinman

INVENTOR:

By Ralph Arthur Norton

Thos. Wallace White

ATT'Y.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

R. A. NORTON.

VAULT COVER.

APPLICATION FILED SEPT. 18, 1913.

1,105,826.

Patented Aug. 4, 1914.

2 SHEETS—SHEET 2.

FIG. 3.

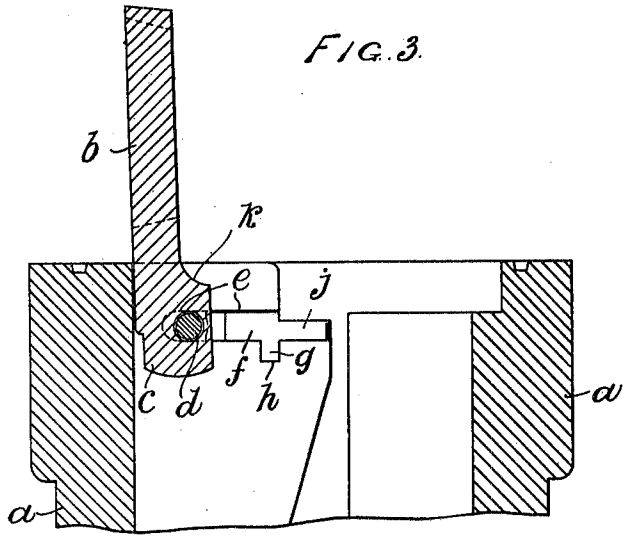


FIG. 4.

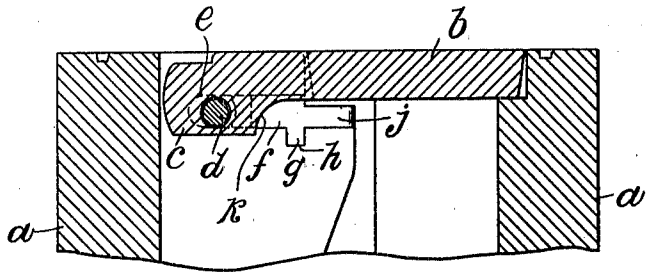


FIG. 5.

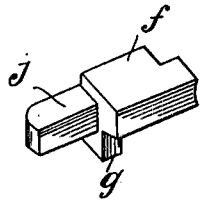
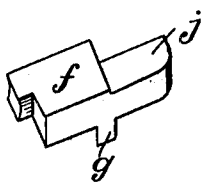


FIG. 6.



WITNESSES:

John C. Sanders

Albert F. Haumann

INVENTOR:

Ralph Arthur Norton

By Thos. Wallace White.

ATT'Y.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

RALPH ARTHUR NORTON, OF NEWCASTLE-UPON-TYNE, ENGLAND.

VAULT-COVER.

1,105,826. Specification of Letters Patent. Patented Aug. 4, 1914.

Application filed September 18, 1913. Serial No. 790,401.

To all whom it may concern:

Be it known that I, RALPH ARTHUR NORTON, a subject of the King of Great Britain and Ireland, residing at 15 Queen's Terrace, Jesmond, in the city and county of Newcastle-upon-Tyne, England, have invented new and useful Improvements in or Relating to Vault-Covers, of which the following is a specification.

This invention relates to the hinged covers or lids and the like of man-holes, street-boxes and the like which are let into the ground, built into or set in masonry or paving, and the invention has special reference to covers, lids and the like which have their hinge pins so arranged that in the event of a cover, lid or the like being broken, the broken parts thereof can be removed and a new cover, lid or the like fitted without disturbing the ground, masonry or paving into which the man-hole, street-box or the like is built or set.

The object of the present invention is to provide improved means whereby the cover, lid or the like can be removed at any time without disturbing the ground, masonry or paving.

According to this invention, the ends of the hinge pin of the cover, lid or the like, engage slots, grooves or recesses in the frame of the box or the like and are retained therein by locking-blocks or the like which close said slots, grooves or recesses, and are provided with projections or tongues which take into grooves at right angles to said slots, grooves or recesses, the arrangement being such that said locking-pieces can be fitted and removed only when the cover, lid or the like is fully opened.

I will fully describe the invention with reference to the accompanying drawings wherein—

Figure 1 is a vertical section on the line X—Y in Fig. 2 which view is a plan of Fig. 1 (partly in section) of a street box for inclosing the stop cock of a water main or service pipe, embodying one form of my improvements. Fig. 3 is a section at right angles to Fig. 1 with the lid or cover raised. Fig. 4 is a similar view to Fig. 3 with the lid or cover closed, and Figs. 5 and 6 are perspective views of one of the locking-blocks hereinafter more particularly referred to.

Referring to the drawings, *a* is the frame of the box and *b* is the cover or lid thereof provided with a lug or eye *c*, of less width than the cover or lid, in which is loosely mounted a hinge pin *d*. The inside of the sides of the frame are fashioned with horizontal slots *e* which are open at their front ends, so that the hinge pin *d* can be engaged with the slots when the frame is set or built into position. The hinge pin *d* is retained in the slots *e* by locking-blocks *f* which are fitted into said slots *e* and can be fitted and removed from the inside of the box when the cover or lid is fully opened. The locking-blocks are provided with tongues or projections *g* which engage grooves *h* at right angles to the slots *e* aforesaid, the blocks *f* being so shaped that they can be removed by a lever or the like applied between the tails *j* of the block and the sides of the box *a*. The lug or eye *c* of the cover *b* is so shaped at *k* that when the lid or cover is closed it, as shown in Fig. 4, prevents the locking blocks *f* from being displaced by vibration. The locking-blocks are preferably made of brass, gun-metal, white metal or other suitable material in order to prevent any possibility of their "binding" owing to corrosion.

It will be seen that owing to the method of securing the locking-blocks they cannot be forced out of position by a pinch-bar or the like inserted between the cover or lid and the frame of the box, and that they can only be removed after the cover or lid has been fully opened.

If desired any suitable lock may be fitted to the box for the purpose of locking the cover or lid.

Though the invention is especially applicable to the covers or lids of man-holes and street-boxes, it is also applicable to the covers or lids or hinged members of other boxes, casings or the like which are let into the ground or built into or set in masonry or paving, such as for instance gate-stops.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In a man-hole, street-box or the like the combination of, a frame; a cover; pivots on said cover; slots in said frame for the reception of said pivots; and removable means for closing said slots to confine said pivots therein and thereby lock said cover against inadvertent removal from the frame.

2. In a man-hole, street-box or the like the

combination of, a frame; a cover; a hinge pin loosely mounted in said cover; slots provided on the inside of said frame for the reception of the ends of said hinge pin; and removable locking blocks for closing said slots to confine the ends of said pivots therein and thereby lock said cover against inadvertent removal from the frame.

3. In a man-hole, street-box or the like the combination of, a frame; a cover; a hinge pin loosely mounted in said cover; slots provided on the inside of said frame for the reception of the ends of said hinge pin; and removable locking blocks for closing said slots to confine the ends of said pivots therein and thereby lock said cover against inadvertent removal from the frame, said locking blocks being capable of fitment and removal only when said cover is raised.

4. In a man-hole, street-box or the like the combination of, a frame; a cover; pivots on said cover; slots in said frame for the reception of said pivots; removable locking blocks for closing said slots to confine said pivots therein; grooves in the walls of said slots at right angles thereto; and tongues on said blocks adapted to enter said grooves.

5. In a man-hole, street-box or the like the combination of, a frame; a cover; a hinge pin loosely mounted in said cover; open-ended slots in the inside of said frame for the reception of the ends of said pin; grooves in the walls of said slots at right angles thereto, removable locking blocks for closing said slots to confine the ends of said hinge pin therein; and projections on said blocks adapted to enter said grooves.

6. In a man-hole, street-box or the like the combination of, a frame; a cover; a hinge pin loosely mounted in said cover; open-ended slots in the inside of said frame for the reception of the ends of said pin; grooves in the walls of said slots at right angles thereto; removable locking blocks for closing said slots to confine the ends of said hinge pin therein; projections on said blocks adapted to enter said grooves; and tail pieces on said blocks for facilitating the removal of said blocks.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

RALPH ARTHUR NORTON.

Witnesses:
WM. C. GOVELL,
WILLIAM J. GEACH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."