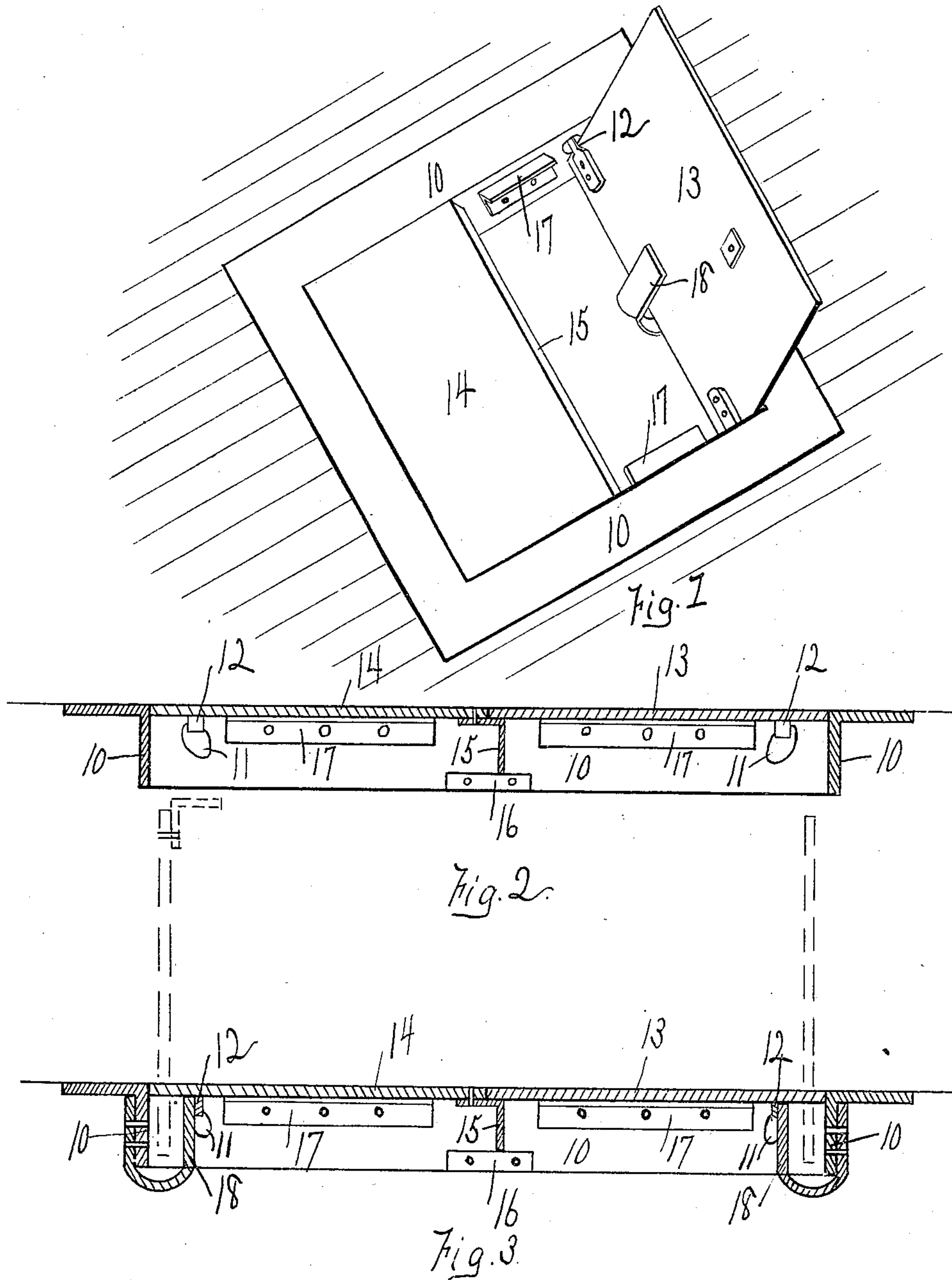


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TRAP DOOR FOR SIDEWALKS.  
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951,280.

Patented Mar. 8, 1910.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

WILLIS H. JONES, OF UTICA, NEW YORK.

## TRAP-DOOR FOR SIDEWALKS.

951,280.

Specification of Letters Patent.

Patented Mar. 8, 1910.

Application filed February 23, 1909. Serial No. 479,350.

*To all whom it may concern:*

Be it known that I, WILLIS H. JONES, of Utica, in the county of Oneida and State of New York, have invented certain new and useful Improvements in Trap-Doors for Sidewalks; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the numerals of reference marked thereon, which form part of this specification.

The object of my invention is to provide a trap door particularly adapted to be made in metal and for use in sidewalks in which the doors are flush with the frame and present no projections, and which are well supported so as to be strong and not liable to sag under heavy strain or general usage.

Figure 1 shows a perspective view of a pair of the doors, together with the frame, showing one of the doors in open position and one in closed position. Fig. 2 is a cross-sectional view of the frame and doors. Fig. 3 is another cross-sectional view, at a different cross-section line, showing the doors also in closed position.

Referring to the reference numerals in a more particular description, 10 indicates the frame which is of angle metal having a dependent flange and a horizontal flange, the latter adapted particularly to be embedded in the surface of a walk so as to lie in the same plane with the upper surface of the walk. The frame 10 in the form shown is rectangular and at opposite ends has enlarged slotted openings 11 in which the pintles 12 of the doors 13, 14, are adapted to loosely engage. On the swinging edge the door 14 has secured an angle metal beam 15, the horizontal flange of which projects somewhat beyond the swinging edge of the door to make a shoulder on which the edge of the opposite door 13 is adapted to engage and rest when the doors are closed and the ends of the vertical flange when the door 14 is closed rest on blocks or shoulder pins 16 secured on the inner face of the ends of the frame 10. The ends of the doors 13 and 14 are well supported by angular brackets 17 secured on the inner sides of the ends of the frame 10 in position so that the horizontal member will be engaged by and the ends of the doors 13 and 14 will rest upon them when in closed position. The hinged sides

of the doors 13 and 14 are to some extent controlled by the pintles 12 engaging in the enlarged openings 11 but more particularly the swinging sides are controlled by turning in the space between the projecting arms of the U-shaped supporter 18 and the inner face of the sides of the frame 10. This U-shaped supporter 18 is rigidly secured on the outer side of the vertical flange of the frame 10 by means of one arm, while the other arm is extended upwardly to such a point as to engage with the under face of the door when in closed position and make a support for the door at its point.

On short doors one U-shaped retaining and supporting member 18 may be sufficient, while on longer doors two or more will preferably be used distributed at suitable intervals along the side of the frame. The pintles 12 engaging in the openings 11, while they do not serve particularly as hinges, do serve the purpose of preventing the doors being removed or detached from the frame. In opening the doors the hinged edge turns over the top of the retaining support as a fulcrum and may more or less drop down in the space between the support and the side of the frame, the amount of this movement being limited by the length of the opening 11. In closing, the hinged side of the door will fulcrum on the end of the support and will turn and slide thereon, while the extreme edge of the door slides up the inner face of the side of the frame.

The form of construction shown above as to door frame and parts may be made out of wrought metal, and when the doors are in closed position they are level with the upper surface of the frame, which upper surface may be in the plane of the surface of a walk or floor in which the same is in-laid. Through one of the doors extends a bolt 19 having the usual loose ring at its head end for operating the door from above and secured by a nut 19<sup>a</sup> which bears against the lower surface of the door.

What I claim as new and desire to secure by Letters Patent is:

1. The combination in a trap door of a frame, a door having pintle projections adjacent to its hinging edge engaging loosely in openings in the ends of the frame and U-shaped retaining supports secured on the frame intermediate of the ends of the frame and adapted to cooperate with the hinging edge of the door, substantially as set forth.



2. The combination in a trap door of a frame, a door having pintle projections adjacent to its hinging edge engaging loosely in openings in the ends of the frame and U-shaped supports secured on the frame intermediate of its ends, the free end of the U supporting the hinging edge of the door when closed and the loop of the U receiving the hinging edge of the door when opened, substantially as set forth.

3. The combination in a trap door of a frame, a door having pintle projections adjacent to its hinging edge engaging loosely in openings in the ends of the frame and U-shaped supports secured on the frame intermediate of its ends, the free end of the U supporting the hinging edge of the door when closed and serving as a fulcrum upon which to operate the door and the loop of the U receiving the hinging edge of the door when opened, substantially as set forth.

4. The combination in a trap door of a frame, a door having pintle projections adjacent to its hinging edge engaging loosely in openings in the ends of the frame and U-shaped supports secured on the frame inter-

mediate of its ends, the free end of the U supporting the hinging edge of the door when closed, the loop of the U receiving the hinging edge of the door when opened and the outer leg of the U acting as a stop when the door is opened, substantially as set forth.

5. The combination in a trap door of a frame, a door having pintle projections adjacent to its hinging edge engaging loosely in openings in the ends of the frame and U-shaped supports secured on the frame intermediate of its ends, the free end of the U supporting the hinging edge of the door when closed and serving as a fulcrum upon which to operate the door, the loop of the U receiving the hinging edge of the door when opened and the outer leg of the U acting as a stop when the door is opened, substantially as set forth.

In witness whereof, I have affixed my signature, in presence of two witnesses, this 16th day of February, 1909.

WILLIS H. JONES.

Witnesses:

EMMA S. HESSE,  
SARAH E. CLARK.