

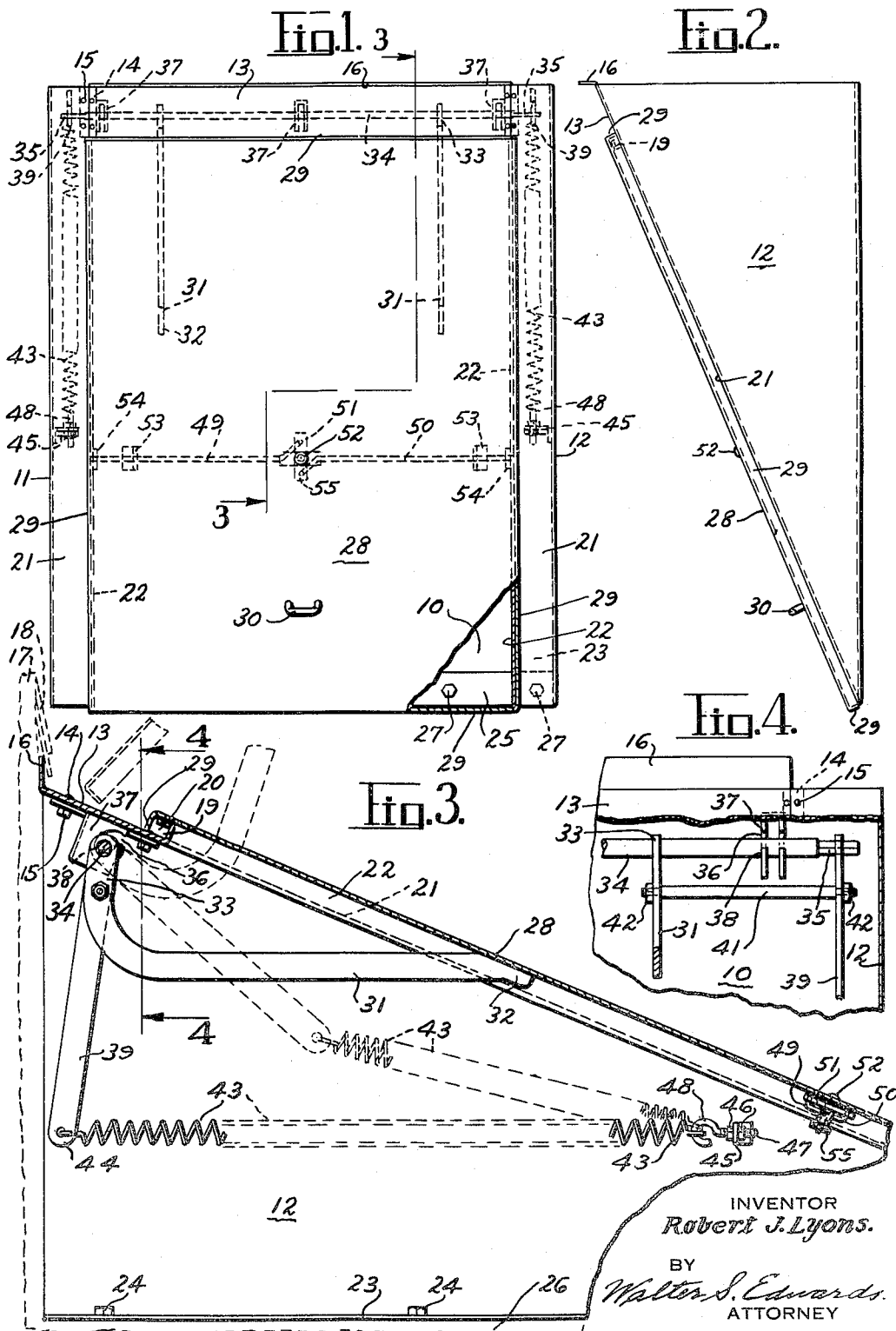
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SHEET METAL CLOSURES FOR HATCHWAYS

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SHEET METAL CLOSURES FOR HATCHWAYS

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1 Claim. (Cl. 94—36)

This invention relates to sheet metal hatchway closures and more particularly to a hatchway closure structure to cover the exterior cellar exit from a building.

The hatchway from the cellar of a building usually includes a series of steps rising, through an opening in the ground, at an angle from the cellar floor to the ground level. Such a hatchway should be completely covered to prevent the entrance of unauthorized persons, while being readily opened to permit entrance and exit, through the hatchway, into and from the cellar.

One object of this invention is to provide a sheet metal closure for a hatchway which, when in closed position, will be watertight, fire resistant, and of such structure that the entrance of unauthorized persons therethrough will be prevented.

Another object is to provide a hatchway closure of the above nature which may be readily opened from the inside and as readily closed, and locked in closed position.

Still another object is to provide a hatchway closure of the above nature which will be constructed of detachable parts whereby they may be compactly packed for storage, or shipment, and be readily assembled in operable relation over a hatchway to close the same.

A further object of this invention is to provide a closure for a hatchway which will be relatively inexpensive to manufacture, simple in construction, compact, of pleasing appearance, and very efficient and durable in use.

With these and other objects in view, which will appear as the description proceeds, there has been illustrated in the accompanying drawings a structure in which the features and principles of this invention are conveniently and practically embodied.

In the drawings:

Figure 1 is a top plan view of a hatchway closure embodying the features and principles of this invention;

Figure 2 is a side view of the same;

Figure 3 is an enlarged and broken sectional view taken on the line 3—3 of Figure 1; and

Figure 4 is a sectional view taken on the line 4—4 of Figure 3.

Referring now to the drawings, wherein like reference numerals designate like parts throughout the several views, the reference numerals 11 and 12 denote left and right hand sheet metal side members, triangular in shape, and the reference numeral 13 denotes a sheet metal head-piece extending between and secured by plates 14 and bolts 15, to the adjacent side member 11 or 12.

The upper edge 16 of the head-piece 13 is suitably bent to properly fit the outer wall 17 of the building to which the closure is to be applied and is secured thereto in any desirable waterproof manner. In the form shown, the upper edge 16 is in the form of an upturned lip adapted to be slipped under a row of shingles, or under a clapboard 18. The lower edge of the head-piece 13 is bent upwardly and then rearwardly to form a channel-shaped flange 19 having its channel 20 directed upwardly over the head-piece 13.

The upper edge of each of the side members 11 and 12

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is bent inwardly, at substantially right angles, to form a top flange 21 and then upwardly to form an upstanding lip 22. The flange 21 extends the entire length of each of the side members 11 and 12, while the lip 22 only extends from the channel-shaped flange 19 of the head-piece 13 to the outer, or lower, end of each of the side members 11 and 12. The lower edge of each of the side members 11 and 12 is bent inwardly to form a flange 23 to rest upon the side edges of the side walls of the hatchway 10 and be secured thereto in any suitable manner, as by bolts 24. The head-piece 13 and the side members 11 and 12 formed and assembled as above described, form a readily taken apart frame for the hatchway closure, having upstanding side members 11 and 12, and slanting upper surfaces 21, and head-piece 13, adapted, with the wall 17 to surround three sides of the hatchway 10. The outer ends of the side members 11 and 12 may be tied together by a sill strip 25, secured at each end thereof to the flange 23 and the hatchway foundation 26, upon which it rests, by bolts 27.

A cover, or door, 28 is provided to close the opening between the side members 11 and 12, the head-piece 13 and the sill strip 25. The door 28 is of sheet metal and overlaps the channel flange 19, the side member lips 22, and the sill strip 25. A downwardly extending flange 29 is provided along the top edge, side edges, and bottom edge of the door 28, which flange closely fits against the outside of side member lips 22 and may rest upon the head-piece 13. The door 28 is hingedly connected to the head-piece 13 to be swung upwardly away from the sill strip 25 to provide passageway out of, and into, the hatchway 10, between the side members 11 and 12. A handle 30 is provided to raise the door 28 from the outside.

The means by which the door 28 is hinged to the head-piece includes hinge bars 31, two laterally spaced apart bars being shown, which are preferably welded at their forward ends 32 to the underside of the door 28. The other end 33 of the bars 31 is bent upwardly and secured, as by welding, to a hinge shaft 34. The hinge shaft 34 is of sufficient length to extend beyond each side of the door 28, to be disposed under the flanges 21, and the ends 35 of the shaft are preferably square in cross-section. The hinge shaft 34 is spaced outwardly from the flange 29 along the upper edge of the door 28 and is spaced downwardly therefrom sufficiently to provide a space therebetween of greater dimension than the height of the channel 19 to allow the shaft 34 to enter the opening between the side members 11 and 12, and to allow the upper edge of the door 28 to pass over the channel-shaped flange 19 into the position shown in Figure 3. In so assembling the door 28 upon the assembled frame it may be swung sideways to first dispose an extended squared end 35 of the shaft 34 under a side flange 21 and then swing in the opposite direction to dispose the other squared end 35 of the shaft 34 under the other side flange 21. While so assembling the door 28 with the hinge bar 31 and hinge shaft 34 to the assembled frame, the hinge shaft 34 is slipped through a slot 36 in bearing brackets 37 to be seated in a hook-shaped bearing pocket 38 provided in said brackets 37. The bracket 37 is preferably made of sheet metal being U-shaped in cross-section and having an edge of each arm of said shape welded to the underside of the head-piece 13. The slot 36 is formed and leads into the outer edge of each arm of the U-shape of said bracket 37 and connects with the bearing pocket 38 therein. After assembly of the door 28 to the assembled frame, the door may be swung from the full line position to the dotted line position, shown in Figure 3.

To counterbalance the weight of the door 28 and thus assist in swinging it upwardly, a spring bar 39 is provided mounted on each squared end 35 of the shaft 34 and, when the door 28 is in closed position, depends downwardly

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therefrom, as shown in full lines in Figure 3. To maintain the spring bar 39 from slipping off the squared ends 35 a tie rod 41 is provided which extends from each bar 39 to the adjacent arm 33 of each hinge bar 31 and is secured in place by nuts 42 screwed thereon, the rod being shouldered at each bar 39 and arm 33. A coiled tension spring 43 is disposed to react between the lower end 44 of the bar 39 and a lug 45, welded to the adjacent side member 11 or 12, to constantly urge the bar 39 into the position shown in dotted lines in Figure 3 and thus tend to swing the door 28 upwardly. The tension of the spring 43 may be adjusted by means of the nuts 46, one on each side of the lug 45, being screwed upon the threaded end 47 of a hook 48 in a well-known manner. The spring 43 constitutes means resiliently acting between the assembled frame and the door 28 to rotate the shaft 34 and thus urge the door 28 to swing upwardly into an open position.

Means is also provided to lock the door 28 in closed position and comprises latch rods 49 and 50 attached at their opposing ends to opposite ends of a cross-link 51, which is pivoted to the door 28 by a pin 52. The outer ends of the rods 49 and 50 are supported and guided by clips 53 and are adapted to enter holes provided in the side members 11 and 12, or into holes in a plate 54 welded upon the inner surface of said side members, as shown in dotted lines in Figure 1. A handle 55 is pivoted on the pin 52 and secured to the link 51 to turn it and actuate the rods 49 and 50. The handle 55 may also be used to pull the door 28 downwardly into closed position, after which the handle is twisted to project the rods into locking position.

By the provision of the above described structure, a substantially watertight, readily opened and closed, and securely locked hatchway closure, is provided which is of pleasing appearance and very efficient and durable in use. By providing that the side members 11 and 12, the head-piece 13, the sill 25, the door 28, with the hinge shaft 34 and hinge bars 31 attached thereto, spring arms 39, and the springs 43 are separable, a device is formed which is very convenient to pack for storage, or shipment, and which is readily assembled at the location where it is to be installed.

While there has been shown and described herein a preferred form of closure for a hatchway embodying the features and principles of this invention, it is to be understood that the same may be embodied in other specific forms without departing from the spirit and essential attributes thereof, and it is therefore desired that the present embodiment be considered in all respects as illustrative and not restrictive, reference being had to the claim rather than to the foregoing description to indicate the scope of the invention.

Having thus disclosed the invention, what is claimed as new, and for which it is desired to obtain Letters Patent, is:

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In a structure such as described, having triangular spaced-apart side members provided with upper margins arranged in sloping position, a head piece extending between the upper end portions of the side members and arranged in sloping position, and a door extending between the side members and having the upper edge thereof extending over the lower edge of the head piece, a plurality of L-shaped hinge members for connection to the door intermediate the upper and lower edges of the latter, the L-shaped members being laterally spaced apart and the long arms thereof having their distal ends fixed to the underside of the door at substantially the central portion of the latter, the short arms of the L-shaped members being directed upwardly and having their distal ends disposed a distance beyond the upper edge of the door and under the plane of the door, a hinge shaft extending through the distal ends of the short arms, a plurality of laterally spaced bracket members suspended from the head piece, each bracket member being provided with a recess opening toward the door and receiving the hinge shaft, the bracket members providing a hinge support for the door from which support the door may be detached by lifting and lateral movement of the latter when the door is in open position, a pair of bars, one bar being disposed at each end of the hinge shaft and having an end supported from the hinge shaft, the bars extending downwardly from the hinge shaft beyond said hinge members when the door is in closed position, and said bars being in fixed relation with said hinge members and extending at substantially right angles to the long arms thereof, and a pair of coil springs, each spring having one end secured to one of said bars at the other end thereof, each spring having the other end thereof detachably secured to one of the side members, and the springs serving as counterbalancing means for the door and extending in substantially parallel relationship to the long arms of the hinge members when the door is in closed position.

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