

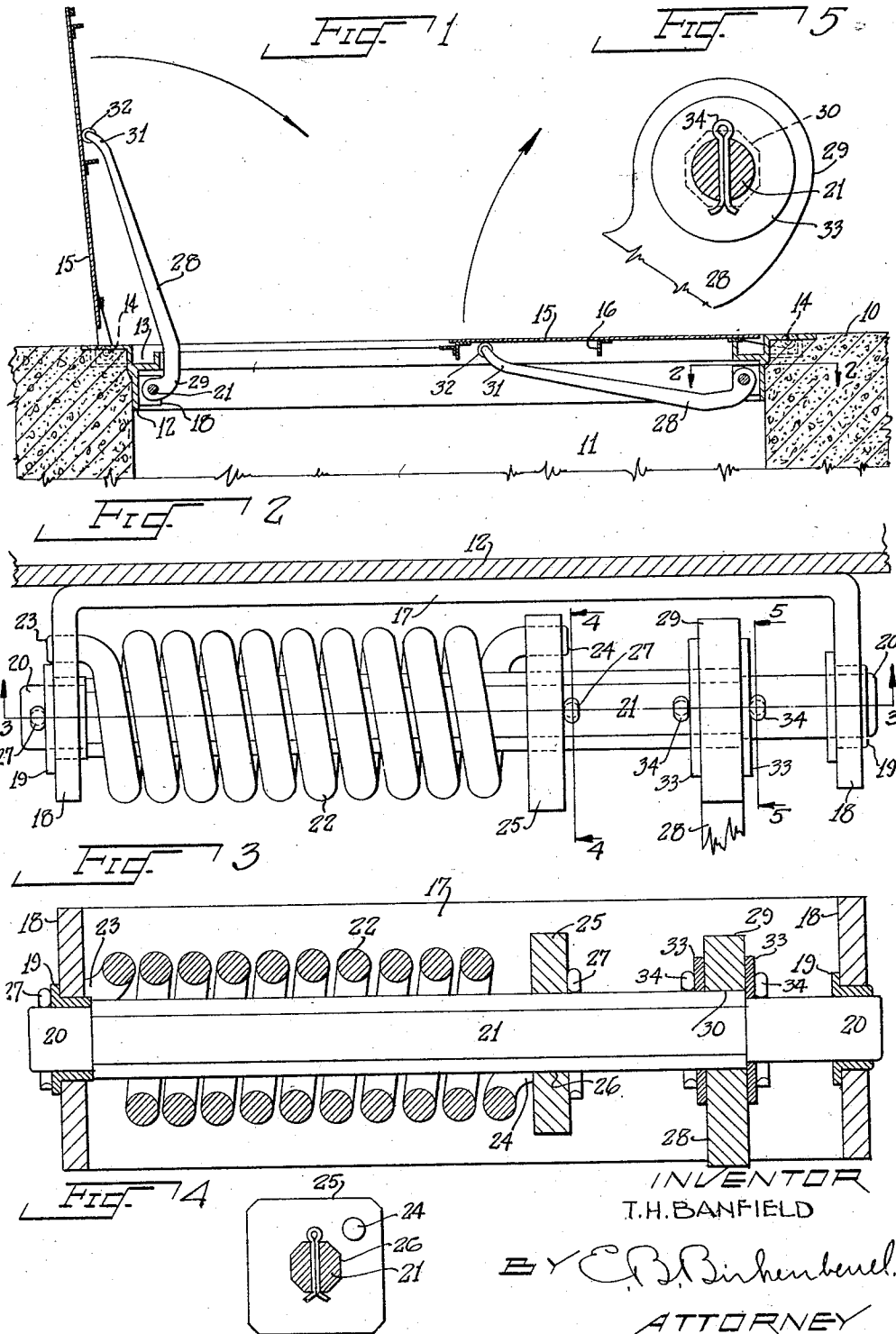
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DOORCHECK

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DOORCHECK

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This invention relates generally to door checks, and particularly to devices for controlling trap doors.

The main object of this invention is to provide a trap door check which will assist in the opening of a door and also assist in holding same in a wide open position, as well as preventing the destruction of the door by the rapid closing of same as is ordinarily the case.

The second object is to so construct the device that it will be easy to manufacture and install and can be easily adjusted to vary the checking action.

These, and other objects, will become more apparent from the specification following as illustrated in the accompanying drawing, in which:

Figure 1 is a section through a pair of doors showing one open and one closed.

Figure 2 is a horizontal section taken along the line 2—2 in Figure 1.

Figure 3 is a section taken along the line 3—3 in Figure 2.

Figure 4 is a section taken along the line 4—4 in Figure 2.

Figure 5 is a section taken along the line 5—5 in Figure 2.

Similar numbers of reference refer to similar parts throughout the several views.

Referring in detail to the drawing, there is shown a floor 10 in which is formed an opening 11 around the upper portion of which is mounted a frame 12 whose top side forms a channel 13 for drainage purposes. On opposite sides of the opening 11 are the hinged mountings 14 for the trap doors 15 such as are in common use. The doors 15 are usually of sheet metal and as thick as is required to stand the loads which they would be expected to carry, which require same to be quite heavy for even ordinary size openings. Transverse braces 16 are also provided on the under side of the doors 15 for stiffening purposes.

Turning now to my invention it will be seen to consist of a U-shaped frame 17 in whose ends 18 are placed the bushings 19, preferably of bronze. In the bushings 19

shaft 21 on which is placed a torsion spring 22, one end 23 of which passes through the end 18 of the frame 17 and is held thereby, and the other end 24 passes through a square collar 25 having an octagonal opening 26 adapted to receive the shaft 21. Pins 27 are passed through the shaft 21 to hold the ends of the spring 22 in contact with its associated members 18 and 25.

On the octagonal shaft 21 is also placed an arm 28, whose end 29 is provided with an octagonal opening 30 adapted to receive the shaft 21. The end 31 of the arm 28 carries a roller 32 which bears against the under side of the door 15. Washers 33 are placed on the shaft 21 on opposite sides of the arm 28 and are held in position by means of the pins 34.

One end 20 of the shaft 21 is turned round for a short distance from the end to permit the device to be assembled and adjusted. When adjusting the spring tension on the arm 28 it is only necessary to withdraw a pin 34 and slip the arm 28 onto the round portion 20 of the shaft 21 and then by means of a wrench on the collar 25 provide the desired tension on the spring 22, after which the arm 28 is again replaced on the octagonal portion of the shaft 21 and held there by means of the pin, which has previously been removed and which, of course, is reinserted into its hole in the shaft 21.

It can be seen from this construction that although a door, on account of its size, may be so heavy as to be difficult to open, and therefore heavy enough to encourage slamming the door to a closed position, that the introduction of my check accomplishes three objects. First, it facilitates the opening of the door, second, it overcomes the tendency to slam the door, and third, it tends to hold the door to a wide open position when once it passes its vertical center (as shown in Figure 1).

It will also be noted by this construction that the tension on the spring increases as the door is closed, that is, moved toward a horizontal position, which offsets the increase in weight at the moving end of the door as it approaches a closed position.

It can be seen that various changes may

be made in the details of construction without departing from the spirit of this invention; I therefore do not wish to be limited to the precise construction shown, but intend
5 to be bound only by the limitations set forth in the following claims.

I claim:

1. A check for trap doors consisting of an elongated frame having a standard formed at
10 each end thereof, an octagonal shaft having cylindrical ends formed thereon journaling in said standards, a door-engaging arm mounted on the octagonal portion of said shaft, a collar on said shaft having an octagonal opening adapted to slidably receive
15 said octagonal shaft portion, a torsion spring surrounding said octagonal portion between said collar and an adjacent standard, and means for fastening the ends of said spring
20 to said collar and standard.

2. A check for trap doors having in combination an elongated frame, a pair of spaced standards formed thereon, each of said standards having a bushing mounted therein, a
25 flat-sided shaft having turned ends adapted to occupy said bushings, the flattened portions of said shaft lying between said bushings, a torsion spring on said flattened shaft portion secured at one end to one standard,
30 a washer on said flat shaft portion having a flat-sided opening therein permitting a sliding but non-rotating movement between said washer and shaft, said washer having means for securing the remaining end of said spring,
35 and an arm mounted on said flattened shaft portion and non-rotatably secured thereto.

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