Aug. 16, 1932. S. SCHAUER 1,871,744

COMBINED LATCH AND ACTUATING MECHANISM FOR SWINGING CLOSURES

Filed Aug. 19, 1929 2 Sheets-Sheet 1

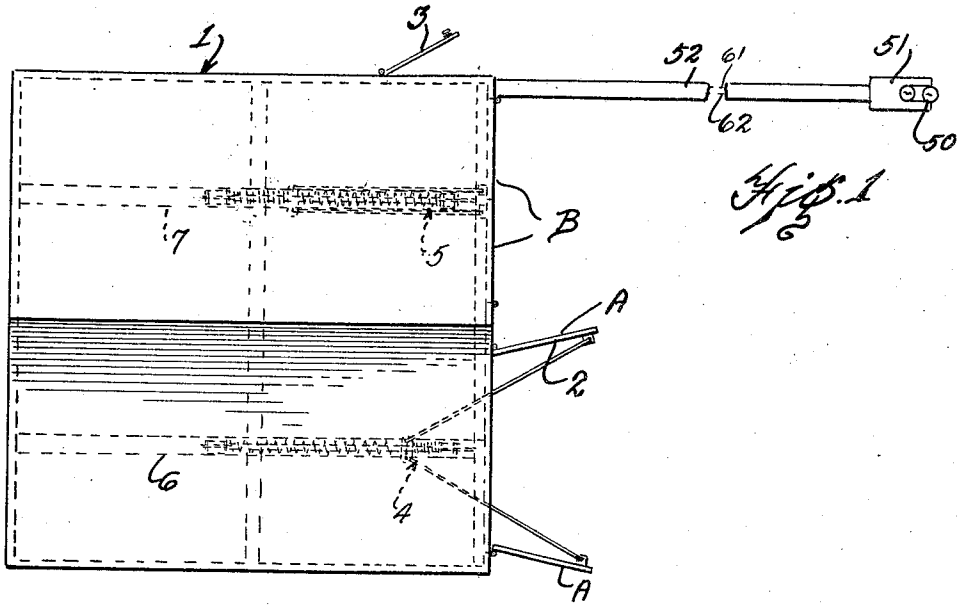


Fig. 1

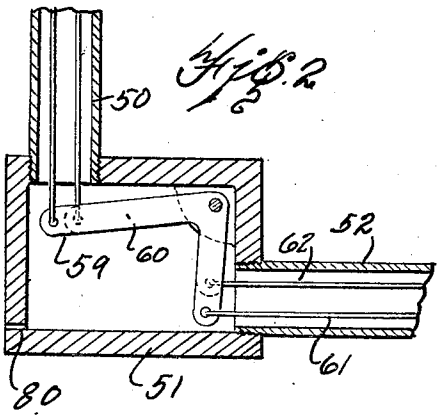


Fig. 2

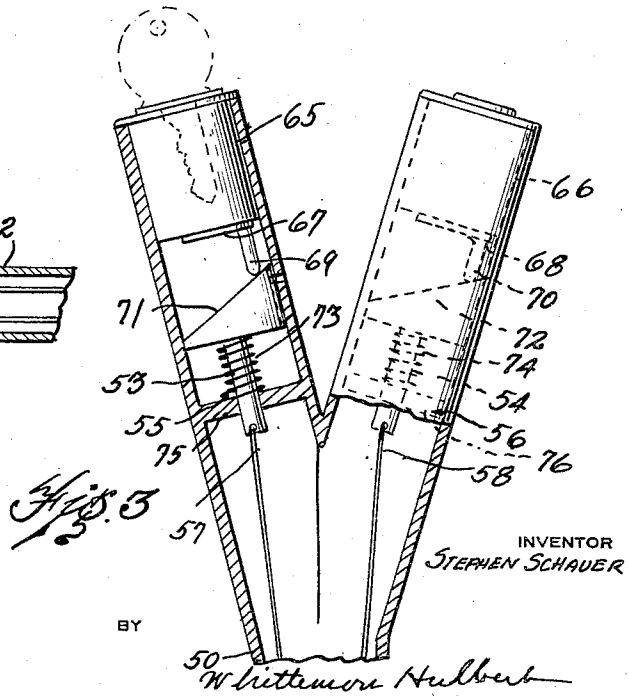


Fig. 3

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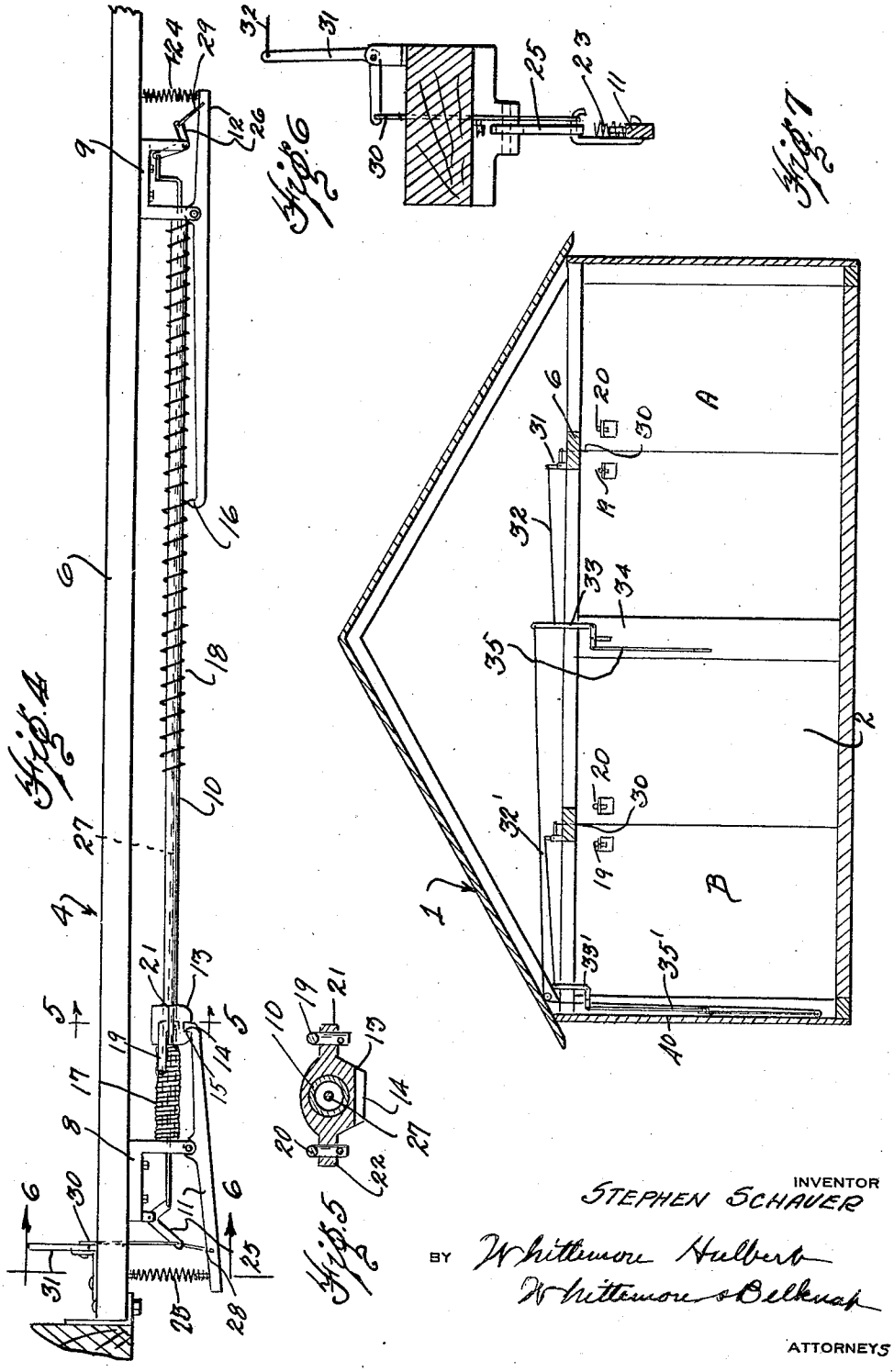
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COMBINED LATCH AND ACTUATING MECHANISM FOR SWINGING CLOSURES

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UNITED STATES PATENT OFFICE

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COMBINED LATCH AND ACTUATING MECHANISM FOR SWINGING CLOSURES

Application filed August 19, 1929. Serial No. 386,940.

This invention relates generally to door operating mechanism and consists of certain novel features of construction, combinations and arrangements of parts that will be hereinafter more fully described, and particularly pointed out in the appended claims.

Figure 1 is a top plan view of a garage and showing the latch mechanism embodying my invention applied thereto;

Figure 2 is an enlarged fragmentary vertical sectional view through the remote control casing and associated tubing;

Figure 3 is an enlarged sectional view of a portion of the post of the remote control mechanism;

Figure 4 is a side elevation of the latch mechanism embodying my invention;

Figure 5 is a sectional view taken on the line 5—5 of Figure 4;

Figure 6 is a sectional view taken on the line 6—6 of Figure 4;

Figure 7 is an enlarged cross sectional view through a garage provided with my mechanism.

Referring now to the drawings, 1 is a garage provided in the front thereof with two sets A and B respectively of outwardly swinging doors 2 and provided in one side thereof, preferably adjacent the front, with a service door 3, and 4 and 5 respectively are latch mechanisms for the respective sets of doors. As shown, the latch mechanisms are carried by laterally spaced beams 6 and 7 extending longitudinally of the garage adjacent the roof and are identical in construction. Preferably the latch mechanism 4 comprises two brackets 8 and 9 secured to and depending from the beam 6 at spaced points longitudinally thereof, a tube 10 substantially parallel to the beam extending between and terminally secured to said brackets, triggers 11 and 12 respectively pivoted intermediate their ends on said brackets, a plunger 13 slidable longitudinally of the tube and having a transverse groove or notch 14 therein for successively receiving projections 15 and 16 respectively of the triggers, coil springs 17 and 18 sleeved on the tube upon opposite sides of the plunger 13 for actuating the same, rods 19 and 20 extending from lateral ears 21 and 22 of the plunger to the doors of section A for actuating the same, coil springs 23 and 24 for holding the triggers 11 and 12 in operative position to engage and hold the plunger, bell crank levers 25 and 26 pivoted on the brackets 8 and 9 in alignment with the tube, a wire 27 extending through the tube and brackets and terminally connected to the bell crank levers 25 and 26 whereby both of said levers will move simultaneously, links 28 and 29 terminally connected to the bell crank levers and triggers whereby the triggers will move simultaneously with the levers, and a common actuating means for said triggers including a wire 30 connected to said bell crank lever 25 and extending through the beam 6, a bell crank lever 31 pivoted on the beam 6, a wire 32 extending laterally from the lever 31, a bell crank lever 33 pivoted on an upright portion 34 of the garage, and a wire 35 depending from and constituting a pull cord for the bell crank lever 33.

Thus when the doors of set A are in closed position the plunger 13 will be held by the trigger 12 and the coil spring 18 will be compressed. When it is desired to open the doors the pull cord 35 may be actuated to cause the trigger 12 to release the plunger 13. The coil spring 18 then expands and projects the plunger 13, rods 19 and 20 and doors of set A forwardly. This causes the plunger 13 to compress the spring 17 and be moved into operative latching engagement with the trigger 11 and causes the doors of set A to be moved to and held in open position. When it is desired to close the doors of set A, the pull cord 35 may be actuated to cause the trigger 11 to release the plunger 13. The coil spring 17 then expands and projects the plunger rearwardly until it abuts the forward end of the coil spring 18. The doors of set A may then be closed by hand and as they are being moved by hand to closed position the plunger 13 actuated by the rods 19 and 20 projecting rearwardly from the doors will compress the spring 18 and will be moved into operative latching position with the trigger 12. The doors of set A will then be retained in such closed position until the trigger 12 is again released as aforesaid.

As stated above, the latch mechanism 5 for the set B of doors is identical with that just described for set A of doors, however, the laterally extending wire 32′ and bell crank lever 33′ are on the side wall 40 of the garage and the pull cord 35′ is preferably adjacent to the service door 3 so that it may be operated upon entering the garage through said door.

If desired, both sets A and B of doors may be operated from a point outside and remote to the garage, for instance from a point adjacent to a side drive leading to the garage from one side of a house. Moreover, such remote control means may be under lock and key and is adapted to operate automatically when the proper key is used in the lock. As shown, a substantially Y-shape post 50 formed of tubing extends upwardly a convenient distance from a casing 51 located at a point outside and remote from the garage, preferably at one side of a side drive (not shown), while other tubing 52 extends substantially horizontally from the casing 51 to the garage. Plungers 53 and 54 are slidable in the furcations 55 and 56 of the Y and are connected to wires 57 and 58 that extend through the tubing of the post and are connected to bell crank levers 59 and 60 in the casing 51. Other wires 61 and 62 extend from these levers 59 and 60 through the tubing 52 to the latch pull cord 35′ and lever 33 within the garage. Tumbler locks 65 and 66 are secured in the upper ends of the furcations 55 and 56 and are provided with rotatable sleeves 67 and 68 which in turn have pins 69 and 70 that engage cams 71 and 72 respectively on the upper ends of the plungers 53 and 54. As shown, these plungers are urged upwardly toward the locks by coil springs 73 and 74 extending upwardly from plugs 75 and 76 in the furcations, hence when the lock sleeves 67 and 68 are turned by the proper keys, the pins 69 and 70 carried by the rotatable sleeves will ride off the respective cams of the plungers and will permit the springs 73 and 74 to move the plungers and wires 57 and 58 toward the locks so that the pull cord 35′ and lever 33 within the garage will be actuated to release the triggers of the respective latch mechanisms to permit the doors of the respective sets to open. Likewise, when the sleeves 67 and 68 are rotated in the opposite direction by the proper keys, the pins 69 and 70 carried by said sleeves will engage the cam surfaces on the upper ends of the plungers and cause the latter to be moved downwardly away from the locks to inoperative position.

Any suitable means such as the passage 80 at the bottom of the casing 51 may be used as a drain for water finding its way into the casing.

While it is believed that from the foregoing description the nature and advantages of the invention will be readily apparent, I desire to have it understood that I do not limit myself to what is herein shown and described and that such changes may be resorted to when desired as fall within the scope of what is claimed.

What I claim as my invention is:

1. The combination with a building structure having a pair of hinged doors, of a beam secured to said structure, brackets secured to said beam at spaced points longitudinally thereof, a tube extending between said brackets, triggers carried by said brackets, one by each bracket, actuating means for said triggers including an element extending through the tube, and mechanism for operating said doors when said triggers are actuated including a plunger movable longitudinally of said tube and adapted to be successively engaged by said triggers, rods terminally secured to said plunger and doors, and coil springs sleeved on said tube upon opposite sides of said plunger.

2. The combination with a building structure having a hinged door, of a beam secured to said structure, brackets secured to said beam at spaced points longitudinally thereof, a tube extending between said brackets, triggers carried by said brackets, one by each bracket, actuating means for said triggers, and mechanism for operating said door when said triggers are actuated including a plunger movable longitudinally of said tube and adapted to be successively engaged by said triggers, a rod terminally secured to said plunger and said door, and means operable when said triggers are actuated for actuating said plunger, rod and door.

3. The combination with a building structure having a pair of hinged doors, of a pair of brackets suspended from said structure, a tube extending between said brackets, triggers carried by said brackets, one by each bracket, means for actuating said triggers, and mechanism for operating said doors when said triggers are actuated including a plunger movable longitudinally of said tube and adapted to be successively engaged by said triggers, rods terminally secured to said plunger and doors, and coil springs sleeved on said tube upon opposite sides of said plunger, the tension of one of said springs being greater than the tension of the other.

4. The combination with a building structure having a pair of hinged doors, of a tube suspended from said structure, triggers at opposite ends of said tube, actuating means for said triggers, and mechanism for operating said doors when said triggers are actuated including a plunger movable longitudinally of said tube and adapted to be successively engaged by said triggers, rods terminally secured to said plunger and doors, and coil springs sleeved on said tube upon opposite sides of said plunger, the tension of one of said springs being greater than the tension of the other, whereby said plunger

when released by one of said triggers will be forced by one of said springs into engagement with the other of said triggers.

5. The combination with a building structure having a hinged door, of a tube suspended from said structure, triggers at opposite ends of said tube, actuating means for said triggers, and mechanism for operating said door including a plunger movable longitudinally of said tube and adapted to be successively engaged by said triggers, a rod terminally secured to said plunger and door, and means operable when said triggers are actuated for actuating said plunger, rod and door.

6. The combination with a building structure having a pair of hinged doors, of a tube suspended from said structure, triggers at opposite ends of said tube, actuating means for said triggers including a pull cord, a connection between said cord and one trigger, a connection between the connection aforesaid and the other trigger including an element extending through the tube, and mechanism for operating said doors when said triggers are actuated including a plunger movable longitudinally of said tube and adapted to be successively engaged by said triggers, rods terminally secured to said plunger and doors, and coil springs sleeved on said tube upon opposite sides of said plunger.

In testimony whereof I affix my signature.

STEPHEN SCHAUER.