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ELECTRICALLY ACTUATED BURGLAR ALARM AND CIRCUIT CLOSER THEREFOR

Filed July 10, 1953

3 Sheets-Sheet 1

Fig. 1.

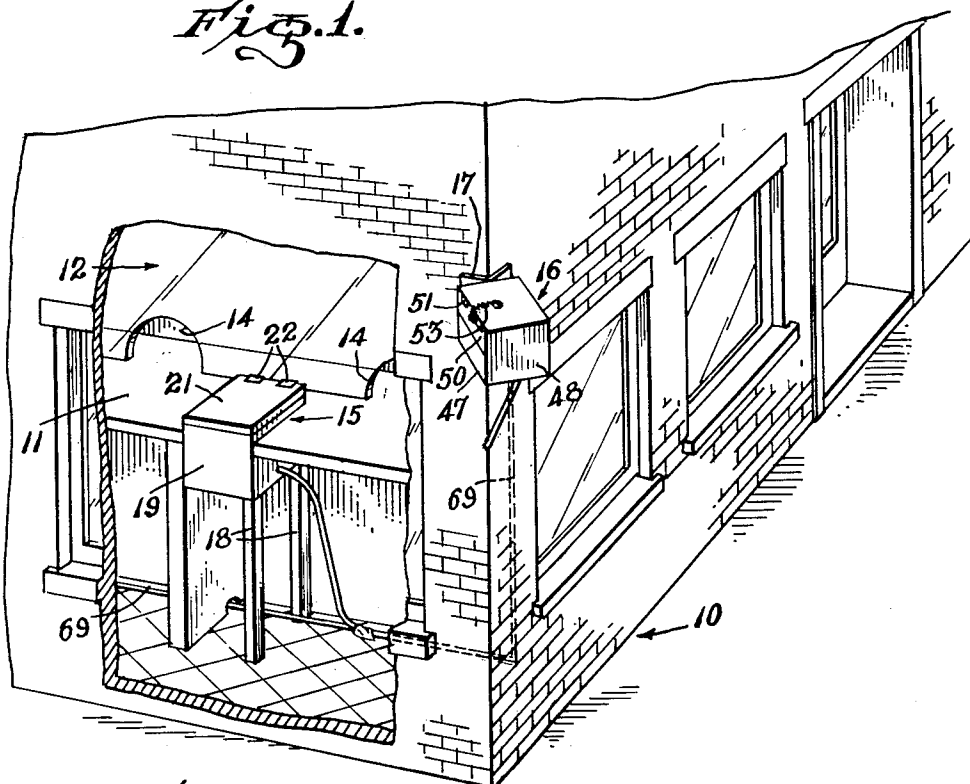
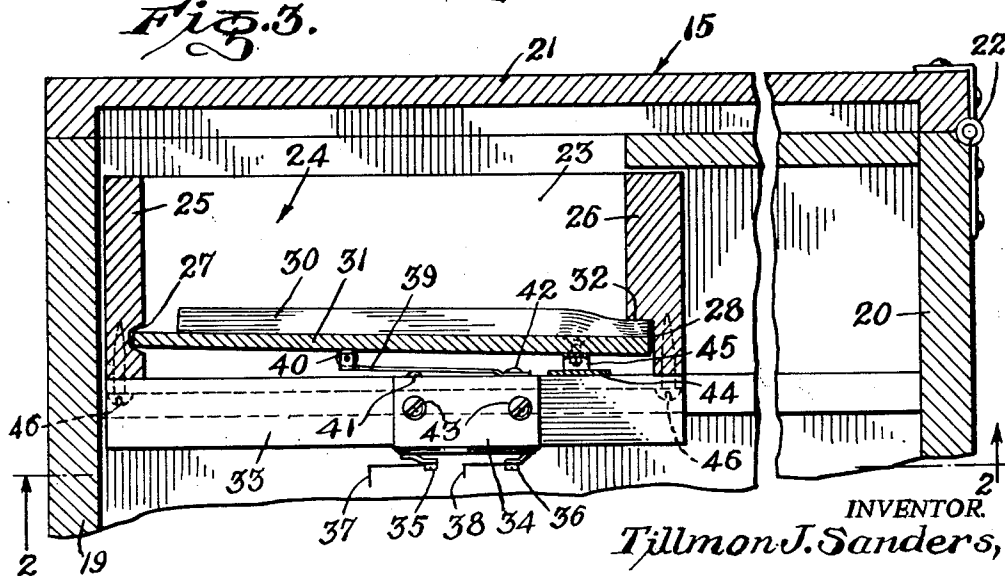


Fig. 3.



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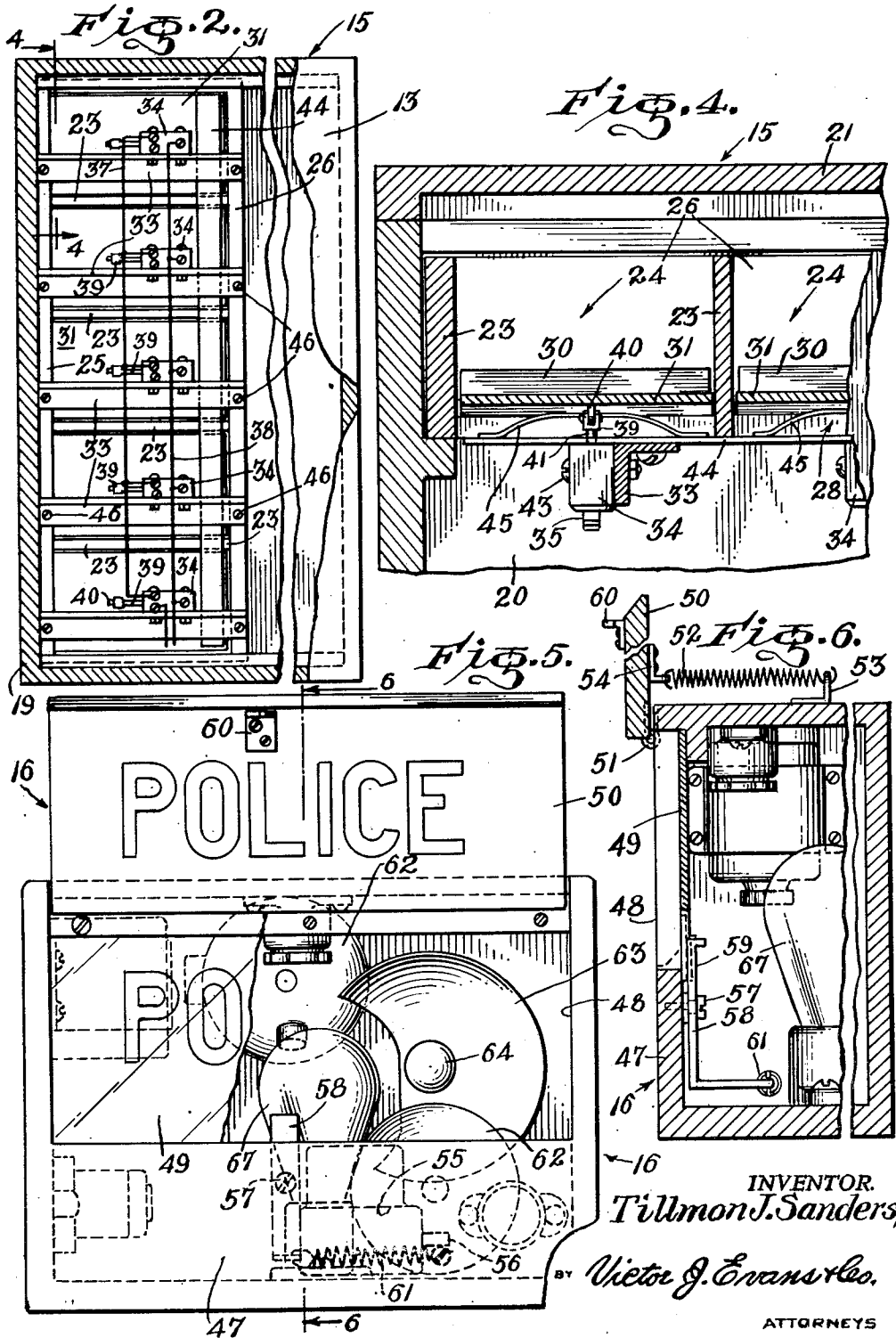
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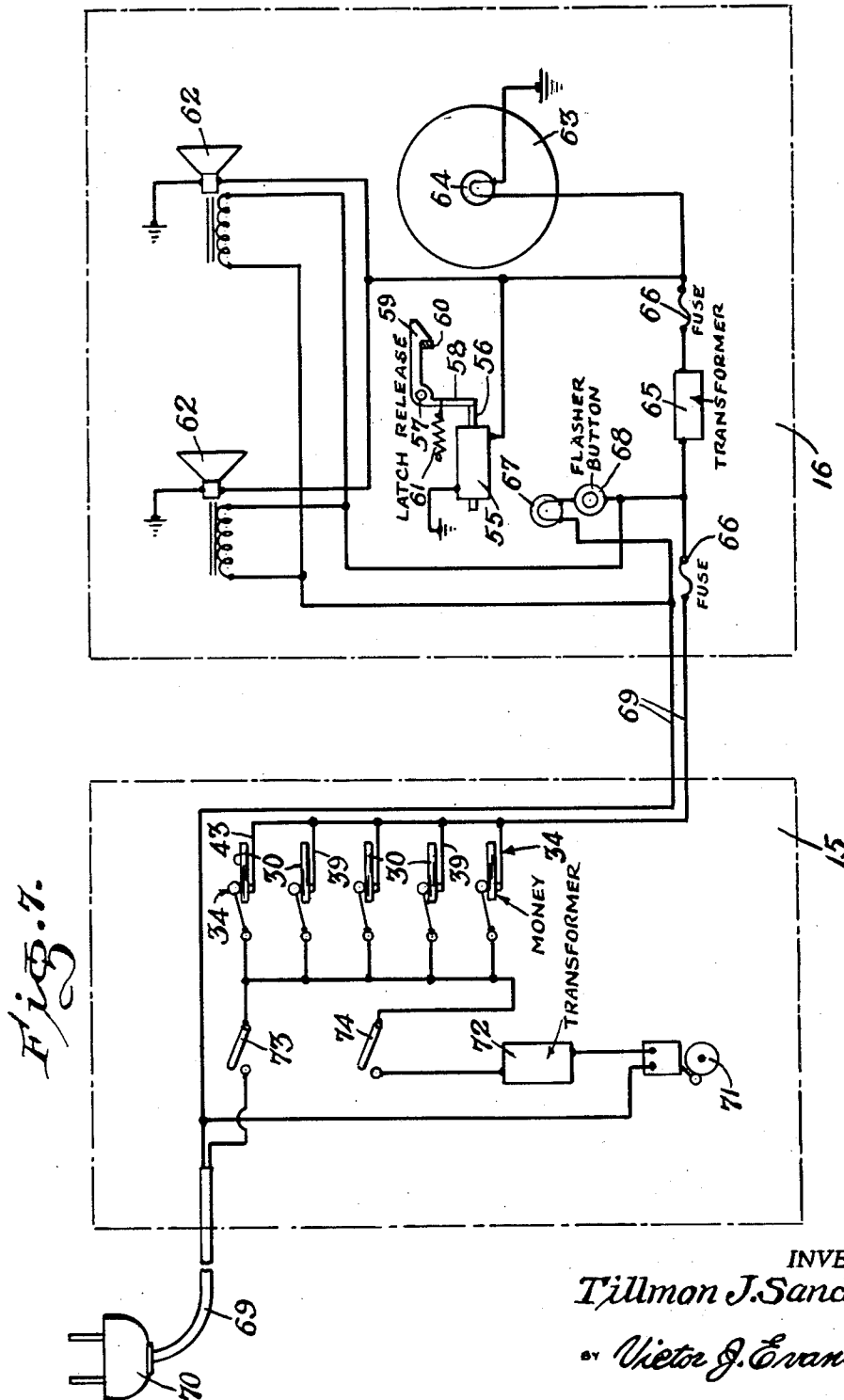
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3 Sheets-Sheet 3



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ELECTRICALLY ACTUATED BURGLAR ALARM AND CIRCUIT CLOSER THEREFOR

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2 Claims. (Cl. 200—61.61)

This invention relates to a burglar alarm, and more particularly to an electrically actuated burglar alarm.

The object of the invention is to provide a burglar alarm which will be automatically actuated when a person wrongfully or without authority attempts to take money or other valuables from a suitable apartment or housing.

Another object of the invention is to provide a burglar alarm which includes means for testing the circuit to insure that all of the parts are in working order, the burglar alarm including a control mechanism and an alarm mechanism, the control mechanism adapted to be located within a suitable building while the alarm mechanism may be arranged exteriorly of the building to notify police or other persons that a robbery is being perpetrated.

Another object of the invention is to provide a burglar alarm which is extremely simple and inexpensive to manufacture.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawings, forming a part of this application, and in which like numerals are used to designate like parts throughout the same:

Figure 1 is a perspective view of the burglar alarm, constructed according to the present invention, and with parts broken away and in section.

Figure 2 is a sectional view taken on the line 2—2 of Figure 3.

Figure 3 is a longitudinal sectional view taken through the control mechanism.

Figure 4 is a sectional view taken on the line 4—4 of Figure 2.

Figure 5 is a front elevational view of the alarm mechanism showing the door open as when the device has been actuated by a burglar, and with parts broken away and in section.

Figure 6 is a sectional view taken on the line 6—6 of Figure 5.

Figure 7 is a schematic view showing the wiring diagram for the burglar alarm of the present invention.

Referring in detail to the drawings, the numeral 10 designates a building which may be a bank, store, or other structure, and a counter or platform 11 may be arranged within the building 10, Figure 1. A partition 12 may extend upward from the counter 11, and the partition 12 may be provided with cut-outs 14 whereby currency and the like can be readily passed therethrough when a bank cashier is dealing with customers or depositors or the like.

The present invention is directed to a burglar alarm whereby in the event that a person attempts to rob the money or other valuables contained in a housing 15, an alarm mechanism 16 will be actuated to thereby notify police or other persons so that an arrest can be made. The alarm mechanism 16 may be secured outside of the building 10 by a suitable bracket 17, and the housing 15 may be arranged within the building and can be supported on posts 18.

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The control mechanism 15 is shown in detail in Figures 2, 3 and 4 and this control mechanism includes a housing that may be made of any suitable material, the housing including a front wall 19 and a rear wall 20. A horizontally disposed bottom wall 13 can be provided for the housing. Hingedly connected to the housing is a cover or lid 21, and the cover 21 can be pivoted by means of the hinge 22 so that the cover 21 can be opened and left open during normal working hours when valuables such as currency 30 are being removed and replaced from the compartment 24. It will be seen that the control housing 15 includes a plurality of compartments 24 which are defined by the plurality of spaced parallel partitions 23 and after normal use of the compartments, the currency 30 can be positioned in the compartments 24 on a pivotally mounted shelf 31.

Arranged in the housing is a front plate 25 and a rear plate 26, and the front plate 25 is provided with a cut-out 27 for pivotally receiving an end of the shelf 31. This cut-out 27 permits the shelf 31 to swing or pivot about the recess 27. The rear plate 26 is provided with a recess or cut-out 28 which defines a shoulder 32 in its lower portion, and the currency 30 is adapted to be wedged between the free end or rear end of the shelf 31 and the shoulder 32.

Extending longitudinally below each compartment 24 is an angle iron or bar 33 which has a conventional micro-switch 34 secured thereto as by screws 43. A pair of contacts 35 and 36 may depend from the bottom of each of the micro-switches 34, and electric wires 37 and 38 are electrically connected to the contacts 35 and 36 for a purpose to be later described. A spring arm 39 has one end pivotally connected to the top of the micro-switch 34 by a pin 42, and the spring arm 39 is adapted to abut or engage a push button 41 which controls actuation of the micro-switch 34. A contact 40 is carried by the free end of the spring arm 39, and the contact 40 engages the lower surface of each of the shelves 31. The angle irons 33 may be secured to the bottom of the plates 25 and 26 by screws 46. Extending across the top of the angle irons 33 is a bar 44 which provides a support for a plurality of spring members 45 which engage the lower surface of the shelves 31. The spring members 45 tend to normally urge the shelves 31 in a counterclockwise direction, Figure 3, so that in the event the currency 30 is stolen or removed without authority from the compartment 24, a space will be provided between the shelves 31 and the shoulder 32 to permit the spring members 45 to urge the shelves 31 upwardly whereby the spring arm 39 will move in a clockwise direction, so that the micro-switch 34 will be actuated whereby the alarm mechanism 16 will be energized to notify police or other persons that a robbery is being made.

The alarm mechanism 16 arranged outside the building 10 includes a casing that comprises a front wall 47 which is provided with a cut-out or window 48. A piece of colored glass 49 which may be red in order to enhance or make more noticeable the light in the casing provided, and the glass 49 is arranged contiguous to the opening 48. A door 50 is hingedly connected to the casing by means of a hinge 51, and the door 50 is mounted for movement into and out of closing relation with respect to the opening 48. As later described in this application, when the robbery takes place, that is when the currency 30 is removed from the compartment without authority and with the circuit in operating condition, the door 50 will be automatically opened and at the same time flashing lights and sirens or other sounding devices within the casing will be actuated to thereby notify police or other persons of the robbery. For normally urging the door 50 to its open position, a coil spring 52 is provided, and the coil spring 52 has one end connected to a bracket 53

mounted on top of the alarm device, the other end of the coil spring 52 being connected to a bracket 54 which is secured to the door 50. A latch means is provided for normally maintaining the door 50 in its locked or closed position, and this latch means includes a solenoid 55 which has a movable core 56 mounted therein. Arms 58 are pivotally mounted on a pin 57, and the arms 58 are connected to the movable core 56, the arms 58 adapted to actuate a catch or keeper 59. The keeper 59 is mounted for movement into and out of engagement with a locking member 60 which is mounted on the door 50. Thus, normally the latch 59 will engage the locking member 60 to maintain the door 50 closed, but when the micro-switch 34 is actuated as when a person attempts to take money from the compartments, then the solenoid 55 will be automatically actuated to pivot the keeper 59 so that the spring 52 can pull the door open as shown in Figure 6 and in Figure 5. A spring member 61 is connected to the arm 58.

Arranged within the alarm mechanism 16 is a plurality of sounding devices which may be sirens 62 and the sirens 62 may be electrically actuated. A reflector 63 may be arranged contiguous to a bulb 64 which may remain lit at all times so as to help illuminate the red glass 49 which may have the word police written thereon or printed thereon as shown in Figure 5. Also, the word police may be printed on the inside of the door 50 so that when the door 50 swings open, as shown in Figure 5, an additional warning will be issued. A transformer 65 may be electrically connected in the system, and fuses 66 may also be provided. A bulb 67 is provided in the alarm mechanism 16, and the bulb 67 may be continuously and quickly flashed on and off by means of a flasher button 68 to give an effective alarm.

A means is provided for testing the electrical circuit to ascertain whether the system is in proper working order. This means comprises a bell or sounding device 71 which is electrically connected to a transformer 72. A plug 70 is connected to a lead wire 69, and the plug 70 may be connected to any suitable source of electrical energy. A manually operable switch 73 is provided for controlling the supply of current to the micro-switches 34 and to the alarm mechanism 16, and a suitable switch 74 is provided for use when the testing circuit is to be utilized.

From the foregoing it is apparent that a burglar alarm has been provided which will immediately produce a sound and give an illuminated warning in the event that a burglar attempts to steal money or other valuables from the device 15. The control device 15 may be located in a bank or other place and currency 30 may be positioned therein as shown in Figure 3. When the circuit is to be tested, the switch 74 is closed and if the circuit is in good working order the bell 71 will be actuated so that the person testing the apparatus will hear the bell 71. After it has been determined that the system is in operative condition, the switch 74 is opened and the switch 73 is closed. Then, in the event that the currency 30 is removed without authority from the compartments 24, the shelf or shelves 31 will be pivoted in a counter-clockwise direction by means of the spring members 45 since there will be a space left between the free end of the shelf 31 and the shoulder 32. Then, when the currency 30 is removed, that is after the cover 21 has been raised, the electric circuit leading to the alarm device 16 will be completed since the arms 39 will pivot to energize the micro-switches 34. When the circuit is completed by the robber to the alarm device 16, the bulb 67 will continuously flash on and off, and the sirens 62 will be actuated so that the police or passerbys will be warned of the

robbery. At the same time the solenoid 55 will be actuated so that the core 56 will move to release the keeper 59 from the locking member 60 so that the spring 52 will pull open the door 50 to permit police or other persons to see the warning sign indicating the presence of the robber.

A plurality of the compartments 24 are provided and the burglar alarm of the present invention can be used in any suitable location such as a bank, office, storage building or store. If desired, a suitable chemical spray can be released within the building so as to neutralize or temporarily knock out the burglar.

I claim:

1. In a burglar alarm, a control mechanism adapted to be mounted within a building and comprising a housing, a cover hingedly connected to said housing, a plurality of partitions arranged in said housing and defining compartments therein for holding valuables, a front and rear plate mounted in said housing, a plurality of shelves pivotally connected to said front plate, said shelves providing the bottom of said compartments, the lower inner portion of said rear plate being cut away to provide a shoulder, said shoulder and shelves adapted to receive therebetween currency, angle irons positioned below each of said shelves, a micro-switch secured to each of said angle irons and including a contact arm engaging the bottom of said shelves, and spring members for urging said shelves upwardly when the currency or other valuables are removed therefrom.

2. A burglar alarm comprising a control mechanism adapted to be mounted within a building and comprising a housing, said housing including a front wall and a rear wall and a horizontally disposed bottom wall, a cover hingedly connected to said housing, a plurality of spaced parallel partitions arranged in said housing and defining compartments therein for holding valuables, a front and rear plate mounted in said housing, a plurality of shelves pivotally connected to said front plate, said front plate being provided with a cutout for receiving an end of a shelf, said shelves providing the bottom of said compartments, the lower inner portion of said rear plate being cut away to provide a shoulder, said shoulder and shelves adapted to receive therebetween currency, angle irons positioned below each of said shelves and extending longitudinally therebelow, a micro-switch secured to each of the angle irons, a spring arm having one end pivotally connected to the top of said micro-switch, a push button engaged by said spring arm, a contact carried by the free end of said spring arm for engaging the lower surface of a shelf, a pair of contacts depending from the bottom of each of said micro-switches, and spring members mounted on said angle irons for urging said shelves upwardly when the currency or other valuables are removed without authority from said compartment.

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