C. P. ELLIS.

SAFETY ATTACHMENT FOR GAS STOVES.

APPLICATION FILED OCT. 8, 1912.

1,068,230.

Patented July 22, 1913.

2 SHEETS—SHEET 1.

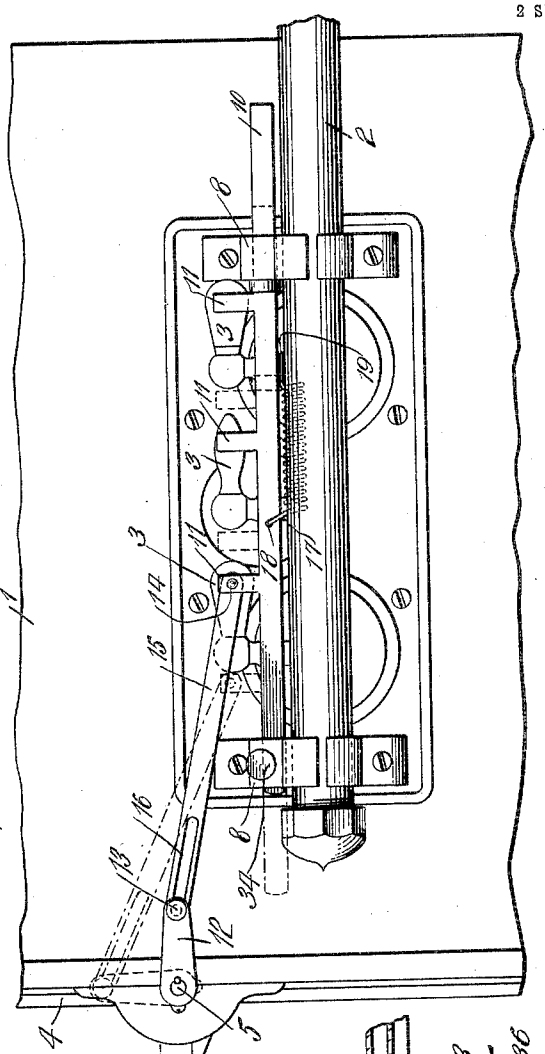


Fig. 1.

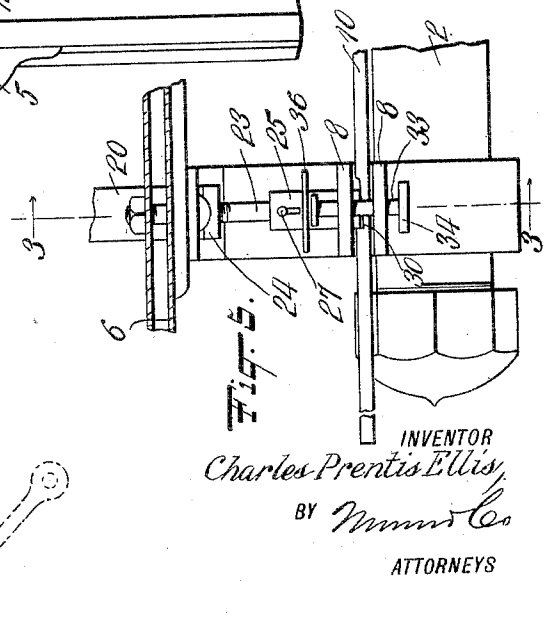


Fig. 5.

WITNESSES

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2 SHEETS—SHEET 2.

Fig. 2.

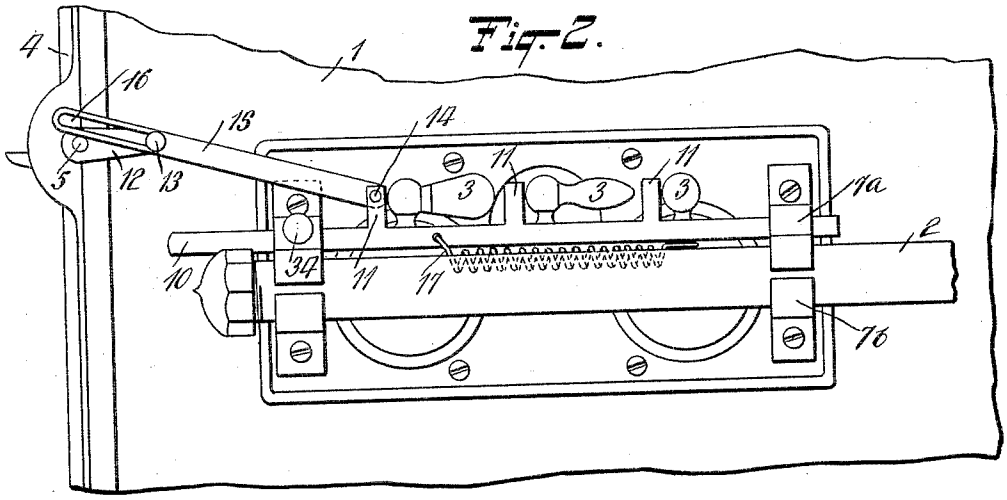


Fig. 3.

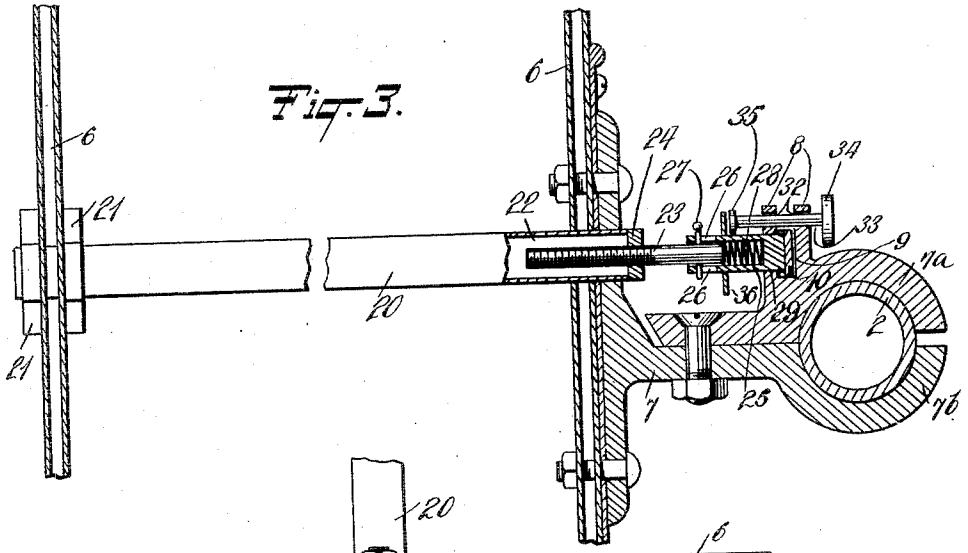
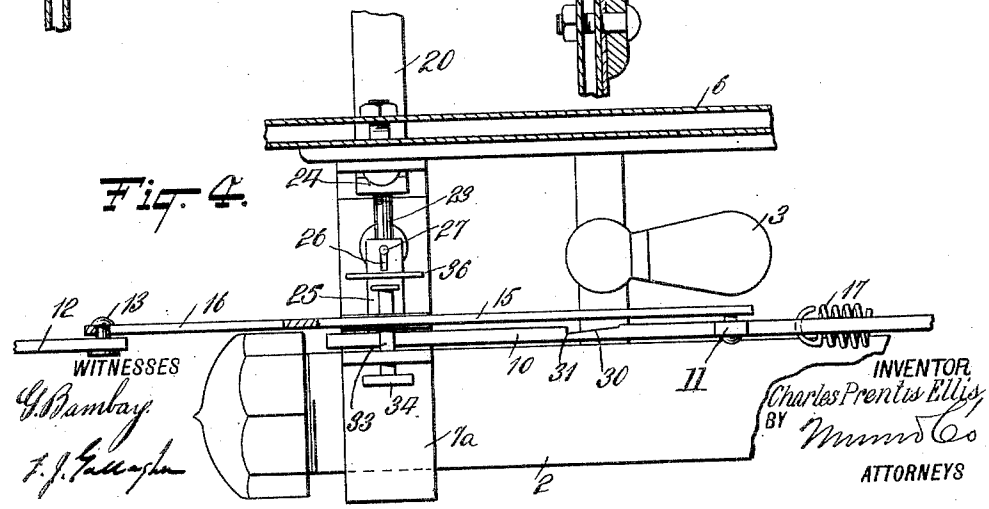


Fig. 4.



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SAFETY ATTACHMENT FOR GAS-STOVES.

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To all whom it may concern:

Be it known that I, CHARLES PRENTIS ELLIS, a citizen of the United States, and a resident of Nashville, in the county of Davidson and State of Tennessee, have invented a new and Improved Safety Attachment for Gas-Stoves, of which the following is a full, clear, and exact description.

This invention relates generally to safety attachments for gas stoves, and more particularly is directed to a construction possessing the following characteristics:—a gas stove fitted with coöperating devices whereby it is practically impossible to turn the gas cocks preparatory to igniting the gas without opening the oven door; a structure provided with a thermostatic device whereby the elements which tend to prevent turning of the gas cocks when such elements are in a certain position may be maintained in a second position after the oven door has been opened and the gas ignited and the temperature of the oven brought to a certain degree, the door being then permitted to be closed without affecting the said gas cocks.

The purpose of the invention is the provision of a safety device for use with the gas cocks and oven of a gas stove, making it practically impossible to turn on the gas without first opening the door of the oven, and, furthermore, preventing the closing of said door without either shutting off the supply of gas or waiting until the temperature of the oven has reached a certain degree, thereby tending to prevent the inadvertent escape of gas with consequent fatal results.

Many other objects of the invention and the advantages following the use of such invention will appear as the description of the preferred form proceeds, the inventive idea being included within the spirit of the appended claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which like characters of reference indicate corresponding parts in all the views, and in which—

Figure 1 is a vertical side view of a gas stove, showing the gas cocks used in heating the oven, and setting forth the mechanism in one position wherein turning of the cocks is prevented; Fig. 2 is a similar view showing the mechanism in a second position, in which the cocks may be turned and the gas ignited; Fig. 3 is a vertical sectional view on the line 3—3 of Fig. 5; Fig. 4 is a partial plan view showing one of the gas cocks and the mechanism in position for preventing turning of such cock; while Fig. 5 is a partial plan view showing the means for retaining portions of the mechanism in such position that turning of the gas cocks is permitted.

The structure chosen to illustrate the adaptation and use of the inventive idea comprehends a gas stove designated as 1 and provided with the usual manifold 2 from which the cocks 3 lead, the gas being supplied preferably to the oven of the stove. The oven door is designated as 4 and the pivotal mounting means therefor as 5, the oven wall 6 being shown as made up of spaced elements, such particular construction, however, being one of many possible forms. The manifold 2 is generally carried in suitable brackets 7 secured in various ways to the oven wall 6, the brackets in this instance being made up of two parts 7^a, 7^b, one of which, 7^a, is of peculiar construction in that it is provided on its upper side with spaced lugs 8, a pocket thereby resulting. Slidably mounted within the said pockets 9 is a bar 10 provided with a number of extensions 11, equal in number to the gas cocks 3, and adapted to lie adjacent the cocks, as shown in Fig. 1, when they are closed, in order to prevent opening thereof without first moving the said bar 10 to the left.

Secured to the pivotal mounting 5 of the oven door 4 is an arm 12 having at its outer end a transversely extending pin 13; pivotally secured to one of the extensions 11 by means of a pin 14 is a link 15 provided with a slot 16, the pin 13 at the end of the arm 12 being received within this slot so that opening the door 4 will move the bar 10 through the medium of the link 15 into the position shown in Fig. 2; the bar 10, however, is maintained in the position shown in Fig. 1 by means of a helical spring 17, one end of which is fixed in an opening 18 in the bar 10 and the other end 19 being preferably secured to one of the cocks 3. The influence of the spring will maintain the bar 10 in the position shown in Fig. 1 save when the oven door 4 is opened, means, however, being provided, which, under certain circumstances, prevent the return movement of the bar 10

when the oven door 4 is closed, the provision of the slot 16 in the link 15 permitting this door to be closed and the bar to be maintained in position with the extensions 11 remote from the gas cocks 3, as shown particularly in Fig. 2.

The particular structure bringing about such a result is shown in detail in Fig. 3, and comprises a thermostat 20 positioned within the oven, or closely adjacent thereto, in order to be sensitive to the degree of heat within the oven, one end of the thermostat being preferably fixed in position in one of the oven walls by means of lock nuts 21; the other end of the thermostat extends through the opposite oven wall 6, and the interior of the thermostat is preferably hollow for a certain extent, as at 22, a threaded bar 23 entering this hollow portion, there being a nut 24 positioned on the bar and adapted to engage the outer end of the said thermostat so that expansion of the thermostat will move the said bar 23. Movably mounted on the outer end of the bar 23 is a cylindrical element 25, the end of the bar entering into the element and the element being provided with oppositely disposed slots 26 through which a pin 27 carried by the bar extends; the position of the element 25 on the bar is determined, within certain limits, by means of a helical spring 28 within the element, the ends of the spring bearing against the end of the bar and the bottom wall of the interior of the said element. It will be remembered that the pocket 9 in the part 7^a which serves to position the manifold 2 receives the longitudinally slidable bar 10; the outer end of the element 25 is adapted to be extended into one of these pockets 9, one of the lugs 8 being provided with an opening 29 through which the said element passes. Referring now particularly to Fig. 4 it will be noted that the adjacent end of the bar 10 is provided with a notch 30, one end of the notch comprising a right-angularly extending wall 31, which wall engages with the end of the said element 25 when the bar is moved to the left into the position shown in Fig. 2, the said engagement preventing the spring 17 from returning the bar 10 into the position shown in Fig. 1. The length of the thermostat 20 and the position of the bar 23 relatively thereto is determined beforehand in order to provide that a certain rise in temperature within the oven after the gas has been lighted, and after the door has been opened, will expand the thermostat in order to bring the cylindrical element 25 on the outer end of the bar 23 into engagement with the wall 31 of the notch 30 in the sliding bar 10; further expansion of the thermostat is taken up by the spring 28 in the interior of the cylindrical element 25.

From what has been said it will be obvious that when the oven door is opened the bar 10 will move to the left of Fig. 1 into the position shown in Fig. 2, remaining in such position as long as the door is kept open; in such position the gas cocks 3 may be opened and the gas may be ignited. The rise in temperature within the oven causes the thermostat 20 to expand, thereby bringing the cylindrical element 25, which is carried by this thermostat, into engagement in the notch 30 in the bar 10, thereby preventing the return movement of the bar when the oven door is closed, or when brought into the position shown in Fig. 2. As long as the burners in the oven are kept burning the temperature will maintain the bar in the position described, extinguishment of the burners permitting the thermostat 20 to contract, thereby carrying the cylindrical element 25 out of engagement with the bar 10, the spring 17 then returning the bar to the position shown in Fig. 1, the extensions 11 on the bar engaging the handles of the cocks and effectively cutting off the supply of gas.

In order to permit movement of the bar 10 to close the gas cocks independently of opening the oven door, suitable means are provided, shown particularly in Fig. 3. The lugs 8 are provided with registering openings 32 through which a plunger 33 extends, the outer end of the plunger being provided with a button 34 whereby it may be conveniently pushed, the inner end 35 of the plunger being adapted to engage a flange or shoulder 36 carried by the cylindrical element 25, whereby the said element may be moved, bringing the outer end free of the bar 10 and permitting movement of the bar under influence of the spring 17 in order to shut off the gas.

The structure described sets forth a safety attachment for gas stoves whereby the gas cocks are prevented from being maintained in an open position unless the oven door is kept open, or unless a certain degree of temperature is maintained within the oven when the door is closed. The use of the invention described, which may be attached to any gas stove, tends to effectively prevent the inadvertent escape of gas and the consequent results; the structure is characterized by few elements of simple design, and, as a whole, is especially adapted to perform the functions indicated without undue movements on the part of the one using the stove.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:—

1. In combination with the gas cocks and door of a gas stove, a longitudinally movable member having portions adapted to lie adjacent the handles of the gas cocks and prevent turning thereof, means between the said member and the door whereby open-

ing of the door will move the member and bring the said portions remote from the handles, thereby permitting turning thereof, and means controlled by the temperature of the ignited burners for maintaining the said member in such remote position.

2. In combination with the gas cocks and door of a gas stove, a longitudinally slidable member provided with extensions adapted to lie adjacent the handles of the gas cocks and prevent turning thereof, means for maintaining the member and the extensions in such position, means engaging the member and the door, whereby opening of the door will remove the member and bring the extension remote from the handles of the said cocks, and means controlled by the temperature of the ignited burners for maintaining the said member in such removed position and permitting the door to be closed.

3. In combination with the gas cocks and door of a gas stove, a slidable member provided with extensions, said extensions lying adjacent the handles of the cocks and preventing turning thereof, a spring for maintaining the extensions in such position, an element engaging the said member and the door, whereby when the door is opened the member will be moved and the extensions brought away from the said handles, and means controlled by the temperature of the ignited burners for maintaining the said member in position away from the handles and permitting the door to be closed.

4. In combination with the gas cocks and door of a gas stove, a slidable member provided with extensions lying adjacent the handles of the said cocks and preventing turning thereof, means between the member and the door and engaging these parts, whereby opening of the door will move the member and bring the extensions away from the said handles, and a temperature controlled device for engagement with the said member at or above a certain temperature for holding it in such removed position, thereby permitting the door to be closed.

5. In combination with the gas cocks and door of a gas stove, a member adapted to lie adjacent the handles of the cocks to prevent turning thereof, means engaging the member and the said door, whereby opening and closing the door moves the said member relatively to the said handles, and a temperature controlled device for engaging the said member at or above a certain temperature when the door is open, whereby the door may be closed with the said member remaining in removed position.

6. In combination with the gas cocks and door of a gas stove, a member movable relatively to the handles of the said cocks and provided with extensions adapted to prevent turning of the handles when in one position, means between the member and the door whereby opening of the door will move the member and bring the extensions away from the handles, and a thermostat for engagement with the said member in such removed position at or above a certain temperature, thereby permitting the door to be closed with the member remaining in such removed position.

7. In combination with the cocks of a gas stove, a member movably mounted adjacent thereto and having parts lying near the handles of the cocks, thereby preventing turning of the same, means for maintaining the member and parts in such position, the said member in a second position bringing the parts away from the handles, whereby they may be turned and the burners ignited, and means controlled by the temperature of the ignited burners for engagement with the member in order to maintain it in such removed position.

8. In combination with the gas cocks of a gas stove, a slidable member having portions lying adjacent the said cocks, the said portions preventing turning of the handles when in one position, the member being movable in order to bring the said portions away from the handles, and a temperature controlled device for engagement with the said member at or above a certain temperature in order to hold it in removed position and permit the gas cocks to remain open.

9. In combination with the gas cocks of a gas stove, a slidable member provided with extensions, said extensions lying adjacent the handles of the said cocks and preventing turning thereof, the member being movable to another position with the extensions remote from the handles, whereby they may be turned, a spring for bringing the member and extensions to the said first position, and temperature controlled means for engagement with the said member, at or above a certain temperature, whereby the same may be held in said second position, thereby permitting the gas cocks to remain open.

10. In combination with the cocks of a gas stove, a member adjacent the cocks and provided with extensions lying adjacent the handles of the cocks, thereby preventing turning of the same, means for maintaining the member and extensions in such position, the member and extensions being movable to a second position, whereby the handles may be turned and the burners ignited, and means controlled by the temperature of the ignited burners for engagement with the member in order to maintain it in such second position.

11. In combination with the cocks of a gas stove, a movable member provided with extensions, the extensions lying adjacent the handles of the cocks, whereby they are prevented from turning, means for maintaining

the extensions in such position, the said member and extensions being movable to a second position, whereby the handles may be turned and the burners ignited, and a thermostat actuated by the temperature of the ignited burners for engagement with the said member in order to hold it in such removed position, extinguishment of the burners permitting the thermostat to come out of engagement with the member, whereby it returns to such first position with the extensions adjacent the handles.

12. In combination with the cocks of a gas stove, a slidable member provided with a notch, said member being also provided with extensions lying adjacent the handles of the said cocks, whereby they are prevented from being turned, means for maintaining the member and the extensions in such position, said member being movable to a second position with the extensions remote from the handles, whereby they may be turned and the burners ignited, a thermostat actuated by the temperature of the ignited burners and engaging the notch in the said member, whereby it is held in such second position, and means for disengaging the parts in order to permit the member to return to such first position.

13. In combination with the cocks of a gas stove, a movable member provided with portions lying adjacent the handles of the cocks, thereby preventing turning thereof, a spring for maintaining the member in such position, the said member being provided with a notch, the member being movable to a second position, whereby the handles may be turned and the burners ignited, a thermostat actuated by the temperature of the ignited burners and adapted to come into engagement with the notch in the member, whereby it is held in such second position, a reduction of temperature due to extinguishment of the burners bringing about disengagement of the thermostat and the said member, whereby the spring returns the said member to the first position with the portions thereon adjacent the handles, and means for disengaging the thermostat and the said member, whereby the member may be moved to such first position, thereby turning the handles and extinguishing the flame.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES PRENTIS ELLIS.

Witnesses:

JOSEPH S. FISHMAN,

T. B. YEARYIN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."