CHIMNEY DRAFT CONTROL VALVE

Inventor: Albenie Cormier, Bouctouche South (CA)

Correspondence Address:
MARIO D. THERIAULT
812 HWY. 101 NASONWORTH
FREDERICTON, NB E3C 2B5 (CA)

Appl. No.: 11/251,754
Filed: Oct. 18, 2005

Abstract

The chimney draft control valve has a baffle plate suspended inside a housing, between an inlet opening and a valve seat inside that housing. The baffle plate is suspended to a pivot axis for pendulum movement toward and away from the valve seat and for checking a draft in a chimney when a vacuum pressure in that chimney is high. A spring is affixed to the housing and to the baffle plate for controlling an amplitude of the pendulum movement of the baffle plate in moderate to strong wind conditions. A dampening device is affixed to the housing, to the baffle plate and to the spring for controlling a period and amplitude of the pendulum movement of the baffle plate and a free vibration in the spring.
CHIMNEY DRAFT CONTROL VALVE

FIELD OF THE INVENTION

[0001] This invention pertains to chimney draft control devices and more particularly it pertains to a damper-type flue gas control valve having in combination a mass, a spring and a damper, to control the draft in a chimney to which an oil stove is connected.

BACKGROUND OF THE INVENTION

[0002] The efficiency of a pot-type oil stove depends to a great extent on the draft in the chimney to which the stove is connected. A high wind above the chimney, for example, is known to put out the flame in the pots of these stoves, whereby the oil can fill and overflow the pot, leading to dangerous spills. It is believed that these oil stoves would be more widely used if better draft control devices were available for installation thereon.

[0003] Most draft control devices available commercially are similar to each other wherein each has a baffle plate pivoted on a horizontal axis. Generally, one or more counterweights are affixed to the plate, to move the centre of gravity of the plate toward or away from the pivot axis, and to increase or decrease the plate’s resistance to tilting from a flow of flue gases through the chimney. Although the centre of gravity of the baffle plate is normally relatively close to the pivot axis, the inertia of the plate is not negligible. Therefore, when the wind above a chimney is unsteady, the baffle plate oscillates like a pendulum, letting irregular amounts of air pass through the chimney, and causing a fluctuating draft through the stove. This fluctuating draft is also capable of extinguishing the flame in the pot of an oil stove.

[0004] In the context of control systems, the natural oscillation of the baffle plate in a pendulum-like manner is referred to as a free vibration. The flow of flue gases forcing the baffle plate to oscillate is called a forced vibration. It is believed that the combination of these two vibrations on the baffle plate is the primary cause of air fluctuating in a flue gas passage.

[0005] The field of chimney draft control devices is a limited one wherein few changes were made to a basic concept since a far past. The following documents represent a good inventory of the chimney draft control devices available in the art.

[0006] U.S. Pat. No. 1,142,894 issued to F. D. Leighton et al. on Jun. 15, 1915;
[0008] U.S. Pat. No. 2,154,644 issued to C. B. Sweatt on Apr. 18, 1939;
[0009] U.S. Pat. No. 2,259,973 issued to W. E. Firehammer on Oct. 21, 1941;
[0012] U.S. Pat. No. 2,735,385 issued to G. De Ascentis on Feb. 21, 1956;
[0015] U.S. Pat. No. 4,046,318 issued to M. Ripley on Sep. 6, 1977;
[0017] U.S. Pat. No. 4,384,672 issued to L. Kutzner et al. on May 24, 1983;
[0018] CA Pat. No. 988,799 issued to N. Y. Nicolas et al. on May 11, 1976;
[0020] DE Pat. No. 582,344 issued to H. Umbach on Jul. 27, 1933;

[0022] The draft control device described in the first-mentioned U.S. Pat. No. 1,142,894 has enjoyed a long-lasting success for having been used in residential wood furnaces and coal furnaces from its conception to at least the late 1960’s. This type of draft control device has a baffle plate suspended to a horizontal pivot axis. The baffle plate is set at a fixed angle from the rim of a flue gas passage by a chain that may extend away from the furnace, to a main floor of a building for example. The chain is adjustable in length to change the position of the baffle plate and to increase or decrease the draft through the chimney.

[0023] Perhaps the most popular draft control devices ever made belong to the same type as those described in U.S. Pat. No. 2,620,984 and in U.S. Pat. No. 2,801,056. A draft control device of this type has a baffle plate mounted on a horizontal pivot axis passing near the diameter of the blade, and one or more counterweights that are adjustable toward and away from the pivot axis, to control the vacuum pressure inside a chimney with more or less sensitivity. These draft control devices are still used on modern wood furnaces and oil furnaces.

[0024] The other documents listed herein-before describe various improvements made to the latter popular models of draft control devices, with some differences including the addition of a spring, a damper, a counterweight, one or more electric switches or a solenoid. More specifically, the German patent DE 4,039,676 discloses a draft control device wherein sudden movements of the baffle plate are controlled by a fluid brake, and U.S. Pat. No. 4,046,318 and German patent DE 582,344 disclose the use of a spring to control the movements of a baffle plate.

[0025] The purpose of a spring is to control the forced vibration caused by large flow of flue gases through the chimney. Ideally, the displacements of the baffle plate should be directly proportional to the vacuum forces applied to the baffle plate. Because of its natural frequency, however, the spring changes the characteristics of the free vibration but
does not eliminate it. On the other hand, a damper attenuates the free vibration, but does not provide a linear response to a forced vibration.

[0026] It is for these reasons, basically, that the prior flue gas dampers are difficult to predict or to calibrate. As such, it is believed that there is a need in the field of oil stove accessories, for a draft control device which is more precise than the prior art systems, in controlling the draft in the chimney to which an oil stove is connected.

**SUMMARY OF THE INVENTION**

[0027] The chimney draft control valve according to the present invention has a baffle plate mechanism comprising a mass, a spring and a dampering device. The spring is selected and mounted to influence the movement of the baffle plate in moderate to high wind conditions only. The spring is mounted in a position to influence the movement of the baffle plate along one half of the baffle plate's pendulum movement. The damper is selected and mounted in such a way as to remove all free vibration in the baffle plate. The chimney draft control valve according to the present invention is capable of maintaining an uniform and constant negative pressure inside a chimney, and inside the flue pipe leading to the chimney, in any kind of weather conditions including very high winds.

[0028] Broadly, in accordance with one aspect of the present invention, there is provided a method for controlling the draft in a chimney. This method comprises the following steps;

[0029] a) checking a draft in a chimney with a baffle plate suspended to a pivot axis for pendulum movement toward and away from a valve seat mounted in a flue gas passage on that chimney, wherein the valve seat has a planar opening extending at an angle from a vertical plane, and that angle has a vertex on the pivot axis;

[0030] b) adjusting a position and inertia of the baffle plate so that the baffle plate remains in a calibrated position in no-wind and normal-wind conditions;

[0031] c) causing the baffle plate to abut against a spring in moderate-wind conditions;

[0032] d) causing said spring to apply a force on the baffle plate in moderate-wind and strong-wind conditions;

[0033] e) dampering a free vibration on the baffle plate from a pendulum effect on the baffle plate in the no-wind, normal-wind and moderate-wind conditions, and,

[0034] f) dampering a free vibration on the baffle plate from a natural frequency of the spring in moderate-wind and strong-wind conditions.

[0035] The method described above ensures that the movement of the baffle plate is substantially directly proportional to average wind condition above the chimney.

[0036] In accordance with another aspect of the present invention, there is provided a chimney draft control valve that has a housing comprising an inlet opening, an outlet opening and a valve seat mounted therein between the inlet and outlet openings. The housing is also configured for installation in-line in a flue pipe leading to a chimney. The chimney draft control valve also has a baffle plate suspended inside the housing between the inlet opening and the valve seat, for pendulum movement toward and away from the valve seat and for checking a draft in a chimney when a vacuum pressure in that chimney is high. A spring is affixed to the housing and to the baffle plate for controlling an amplitude of the pendulum movement of the baffle plate in its movement toward the valve seat. A dampering device is affixed to the housing, to the baffle plate and to the spring for controlling a free vibration in the baffle plate. The dampering device is selected to provide a lesser influence than the spring on the forced vibration of the baffle plate.

[0037] The chimney draft control valve according to the present invention is advantageous in that a displacement of its baffle plate toward the valve seat is depending almost entirely upon, and is substantially proportional to, the torque applied to the baffle plate by a vacuum pressure inside the chimney. The other factors of influence such as the free vibration of the baffle plate due to its pendulum movement and the free vibration of the spring due to its natural frequency are substantially eliminated by the dampering device.

[0038] In accordance with another feature of the present invention, the position of the spring in the chimney draft control valve is adjustable on the housing, relative to the position of the baffle plate. The movement of the baffle plate is thereby adjustable to different chimney conditions.

[0039] In accordance with yet another aspect of the present invention, the movement of the baffle plate, the operation of the spring and of the dampering device are compatible to a mounting of the control valve in a horizontal flue pipe, in a vertical flue pipe, or as a right angle elbow changing the direction of the flue pipe from vertical to horizontal. In the first-mentioned installation the baffle plate is suspended straight down in front of a valve seat facing upstream relative to the flow of flue gases. In the second-mentioned installation, the valve seat faces downward, and the baffle plate is bent toward the valve seat. In the case of the elbow configuration, the inlet duct extends downward on the upstream side of a baffle plate that is suspended straight down in a same manner as in the horizontal installation. In all three cases, the pivot axes of the baffle plates are substantially the same, and the structure and operation of the springs and dampering devices are similar and equivalent.

[0040] This brief summary has been provided so that the nature of the invention may be understood quickly. A more complete understanding of the invention can be obtained by reference to the following detailed description of the preferred embodiment thereof in connection with the attached drawings.

**BRIEF DESCRIPTION OF THE DRAWINGS**

[0041] Three embodiments of this invention are illustrated in the accompanying drawings, in which like numerals denote like parts throughout the several views, and in which:

[0042] **FIG. 1** is perspective top, side and inlet end view of the chimney draft control valve according to the first preferred embodiment of the present invention;

[0043] **FIG. 2** is a perspective top, side and front view of the baffle plate assembly and the valve seat in the first preferred chimney draft control valve;

[0044] **FIG. 3** is side view of the first preferred chimney draft control valve;
FIG. 4 is a longitudinal cross-section view of the chimney draft control valve as seen along line 4-4 in FIG. 1;

FIG. 5 is an enlarged view of the pivot axis for the baffle plate in the first preferred chimney draft control valve as seen in FIG. 4;

FIG. 6 is a front view of the baffle plate and damper actuator in the first preferred chimney draft control valve;

FIG. 7 is a side view of the baffle plate and damper actuator in the first preferred chimney draft control valve;

FIG. 8 is an enlarged view of the coupling block between the baffle plate and the damper actuator;

FIG. 9 is a perspective view of the base for the spring on the first preferred chimney draft control valve;

FIG. 10 is a front view of the damper member on the damper actuator illustrated in FIGS. 6 and 7;

FIG. 11 is a schematic illustration of the control system in the first and second preferred chimney draft control valves;

FIG. 12 is a cutaway side view of the draft control valve according to the second preferred embodiment showing the baffle plate and valve seat therein;

FIG. 13 is a side view of the second preferred draft control valve;

FIG. 14 is an enlarged view of the pivot axis for the baffle plate in the second preferred draft control valve, as seen in FIG. 12;

FIG. 15 is a cutaway side view of the draft control valve according to the third preferred embodiment, showing the preferred location of the inlet duct.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring firstly to FIGS. 1-5, the chimney draft control valve 20 according to the first preferred embodiment is comprised of a rectangular housing 22 having an inlet duct 24 and an outlet duct 26. In use, the chimney draft control valve 20 is mounted in a horizontal section of the flue pipe of an oil stove for example. The first preferred chimney draft control valve 20 is installed in-line with the flue pipe of the stove and eliminates the need for a conventional flue damper on that flue pipe.

The housing 22 has a cover 28 mounted thereon. The cover 28 is mounted with screws such as it is easily removable for the purpose of inspecting the components inside to control valve 20.

The control valve 20 has a baffle plate 30 mounted therein across the flow of flue gases inside the housing 22. The baffle plate 30 is mounted as a pendulum, on a pivot axis 32. A valve seat 34 is mounted inside the housing 22 between the baffle plate 30 and the outlet duct 26. The valve seat 34 has an inlet portion along a slanted planar opening 36. This slanted planar opening 36 makes an angle “A” of between 20° and 30° with the baffle plate 30 when the baffle plate is in a true vertical alignment as illustrated in FIG. 4.

The pivot axis 32 coincides with the upper edge of the slanted planar opening 36 such that the baffle plate 30 can swing about the pivot axis 32 to close the slanted planar opening 36 completely.

Referring now to FIG. 2, the pivot axis 32 extends along a fulcrum that is defined by a sharp blade 40 affixed to the upper end of the baffle plate 30, and a pair of saddle members 42 extending from a support plate 44 which is affixed to the top surface of the valve seat 34 with screws 46.

The sharp blade 40 has sharp edges 48 along its lower portion on both ends thereof. In use, the sharp edges 48 of blade 40 rest into the saddle members 42. The baffle plate 30 is affixed to the sharp blade 40 with screws 46 and swings back and forth about the tip of the sharp edges 48.

The baffle plate 30 has a series of orifices 50 therein to control a minimum draft of the valve. These orifices are positioned along a slanted line and are covered with a flat bar 52 that is pivoted at its upper end on a screw 46. Should the flat bar 52 become loose on the baffle plate 30, it would swing vertically down, thereby opening most of the orifices 50 and causing no safety hazard.

A counterweight 60 is also mounted to the baffle plate 30 as illustrated in FIGS. 4, 7 and 9. This counterweight 60 prevents the baffle plate 30 from closing prematurely under the negative pressure of a small wind for example. The counterweight 60 ensures that the baffle plate 30 remains at an angle slightly larger than “A” in a no-wind condition, and at an angle “A” in a normal-wind condition. A normal-wind condition is determined according to the location of the chimney and the wind speed normally encountered at that location.

It will be appreciated that a minimum clearance between the baffle plate 30 and the side walls of the housing 22 defines an area that is substantially the same or slightly larger than a cross section of a flue gas passage defined by a gap between the baffle plate 30 and the slanted planar opening 36 when the baffle plate is in a vertical alignment, such that any movement of the baffle plate 30 toward the slanted planar opening 36 reduces the size of the flue gas passage through the draft control device.

Furthermore, it should be understood that the purpose of controlling the movement of the baffle plate 30 toward and away from the slanted planar opening 36 is to vary the size of a flue gas passage in the valve seat in a manner that is inversely proportional to a velocity of a flow of flue gases through the valve seat. Such control of the size of flue gas passage is effected to ensure a substantially constant supply of air to an oil stove on which the draft control valve is mounted, to safely maintain the flame in that stove. The present disclosure should be interpreted in that context.

The movements of the baffle plate 30 are further controlled by a damper mechanism 64 mounted outside the housing 22. The damper mechanism 64 comprises spring means and damper means to eliminate excessive movement of the baffle plate in strong or turbulent wind conditions. The damper mechanism 64 is preferably covered with a guard (not shown) that is affixed to the housing 22.

Referring now to FIGS. 1 to 9, a means to apply a spring force to the baffle plate 30 will be explained. A first
arm 70 extends from a shaft 72. The shaft 72 extends through the wall 74 of the housing 22 and connects into a coupling block 76 that is affixed to the blade 40 of the baffle plate 30.

[0069] The coupling block 76 has a hole 78 therein to receive the shaft 72. That hole 78 aligns with the tip of the sharp edges 48 on the blade 40 such that the shaft 78 is centred with the pivot axis 32 of the baffle plate 30, as shown in FIGS. 2, 7 and 8. The shaft 72 is secured into the hole 78 by a set screw 80 threaded through the block 76.

[0070] A spring seat 82 and a spring 84 are mounted below the first arm 70 and urge the first arm upward when the baffle plate 30 tends to close the opening along the slanted planar opening 36. The spring 84 is a compression spring and abuts against the first arm 70 when the baffle plate 30 is at a specific angle from the slanted planar opening 36, at an angle “A” for example. The spring 84 increases the force required to move the baffle plate 30 and to close the slanted planar opening 36 completely.

[0071] The spring seat 82 is affixed to the housing 22 by means of screws, and is adjustable in height relative to the shaft 72 by means of two mounting slots 86 therein. The spring 84 is mounted in a socket 88 which is also adjustable along a slot 90 in the spring seat 82, that extends toward and away from the shaft 72. Therefore the force and interference of the spring 84, can be adjusted to satisfy the conditions of the oil stone on which the draft control valve 20 is installed.

[0072] Referring now to FIGS. 1, 2, 3, 6, 7, and 10, the dampening device in the damper mechanism 62 will be explained. The dampening device comprises an oil bath 92 which is affixed to the housing 22. A paddle 94 is affixed to a second arm 96 extending at right angle from the shaft 72 and at an angle of about 80° to 90° from the first arm 70. The paddle 94 extends into the oil bath 92, and has a width to fitly slide between the walls of the oil bath 92. The oil in the oil bath is preferably a vegetable oil, or any other fluid having a similar viscosity.

[0073] Referring now to FIGS. 2, 6, 7 and 10, the paddle 94 is made of a pair of plates 100, 102 mounted on opposite sides of the second arm 96. Both plates 100, 102 have holes therein and the holes 104 in the front plate 100 are misaligned with the holes 104 in the rear plate in order to produce a specific fluid resistance on the paddle 94 in the oil bath. As previously mentioned, the fluid resistance of the dampening device is selected or adjusted to cause a lesser influence than the spring 84 on the vacuum forces applied to the baffle plate.

[0074] The exact specifications for the housing, the baffle plate, the valve seat, the spring and the dampening device are not mentioned herein for being obtainable without undue experimentation by those skilled in the art, in view of the prior art draft control devices, and in view of the present disclosure and the following criteria.

[0075] Accordingly, the dimensions of the housing 22 and of the baffle plate 30, the dimensions and angle “A” of the slanted planar opening 36, and the counterweight 60 should be selected to ensure a proper flow of flue gases 62 through the valve 20 under no-wind to moderate-wind conditions. The spring 84 should be selected to ensure a proper flue gases flow through the valve 20 in moderate-wind to high-wind conditions. The dampening device should be selected to eliminate the free vibration caused by the natural frequency of the spring 104 or by the flapping of the baffle plate 30 in all wind conditions.

[0076] A schematic illustration of the chimney draft control valve according to the present invention is provided in FIG. 11. When the control valve 20 is installed alone in a flue pipe, without other conventional damper, the control valve 20 with its spring 84, damper 92, 94 and mass M of the baffle plate 30, 60 constitute a mechanical system having only one movement influence, when operated along the angle “A”.

[0077] The movements of the baffle plate 30 due to inertia and free oscillation or turbulence in the flue gases, or due to the oscillation in the spring, are substantially eliminated. The angular position of the baffle plate 30 about the pivot axis 32 is only dependent on the torque T applied to the baffle plate by the negative pressure inside the chimney. This system is thereby easy to calibrate and its operation remains consistent.

[0078] Although the draft control valve according to the first preferred embodiment was illustrated and described herein above as a device mountable in a horizontal flue pipe, it will be appreciated that this is not a limitation to the present invention. An embodiment of the present invention for installation in a vertical flue pipe is illustrated in FIGS. 12-14.

[0079] The operation of the draft control valve according to this second preferred embodiment is substantially the same as the operation of the first preferred embodiment. The elements in the second preferred draft control valve have been modified to accommodate a vertical flow of flue gases 62 through the valve.

[0080] Accordingly, the inlet duct 24 and the outlet duct 26 on the control valve according to the second preferred embodiment are on bottom and top portions of the housing 122 thereof respectively. The baffle plate 130 is suspended to a fulcrum having a pivot axis 132 extending alongside a valve seat 134. The valve seat 134 is mounted immediately below the outlet duct 26, and the slanted planar opening thereof 136 makes an angle ‘B’ of about 11°-15° with a horizontal plane.

[0081] The baffle plate 130 is also suspended to a sharp blade 140. The sharp blade 140 rests into a pair of saddle members 142 extending from a support plate 144. The support plate 144 is affixed to the side surface of the valve seat 134. The support plate 144 has a right angle bent 148 in it to retain the saddle members 142 in an upward-facing orientation as illustrated in FIG. 14.

[0082] The baffle plate 130 is bent away from the sharp blade 140 such that it makes an angle ‘C’ of 2°-3° more than the angle ‘B’, from a horizontal plane in no-wind and normal-wind conditions. A counterweight 160 is affixed to the sharp blade 140 away from the baffle plate, to maintain the baffle plate 130 along the angle ‘C’ in no-wind and normal-wind conditions. The counterweight 160 may be adjustable toward or away from the pivot axis 132 is a similar manner as in the first preferred embodiment.

[0083] Referring now to FIG. 13, a damper mechanism 164 affixed to the outside surface of the housing 122. A first arm 170 extends from a shaft 172 passing through the wall
174 of the housing 122. The function of the shaft 172 is the same as the shaft 72 in the first preferred embodiment, as it engages into an identical coupling block (not shown) on the baffle plate 130.

[0084] The first arm 170 extends below a spring seat 182 affixed to the outside surface of the housing 122. A spring 184 is fastened to the spring seat between the first arm 170 and the spring seat 182. The arm 170 abuts against the spring 184 in moderate and strong-wind conditions, and the position of the spring is adjustable along the spring seat 182 to calibrate the engagement of the first arm 170 with the spring. The structure and operation of the spring and the first arm 170 are substantially the same as their equivalent elements in the draft control valve according to the first preferred embodiment.

[0085] The dampening mechanism 164 also has an oil bath 192 affixed to the housing. A second arm 196 extends from the shaft 172 at an angle from the first arm 170. The second arm 196 has a paddle on its end (not shown) and extends into the oil bath 192. The structure and operation of the oil bath 192, the second arm 196 and the paddle (not shown) on the second arm are substantially the same as their equivalent elements in the draft control valve according to the first preferred embodiment.

[0086] Referring now to FIG. 15, the draft control valve can also be configured as an elbow to change the direction of a flue pipe. In this third preferred embodiment, the housing 222 has an inlet duct 24 extending through the bottom wall thereof on the upstream side of the baffle plate 30. The baffle plate 30, the pivot axis 32, and the valve seat 34 and their functions are the same as in the control valve according to the first preferred embodiment.

[0087] Although the chimney draft control valve has been described as an apparatus for use with an oil stove, it will be appreciated that this chimney draft control valve according to the present invention can also be installed in the flue pipe of a wood stove, a propane stove or a natural gas stove.

What is claimed is:

1. A method for controlling the draft in a chimney, comprising the steps of;
   - checking said draft with a baffle plate suspended to a pivot axis, for pendulum movement toward and away from a valve seat mounted in a flue gas passage in said chimney, wherein said valve seat has a planar opening extending at an angle from a vertical plane, and said angle has a vertex on said pivot axis;
   - adjusting a position and an inertia of said baffle plate such that said baffle plate remains in a calibrated position in no-wind and normal-wind conditions;
   - causing said baffle plate to abut against a spring in moderate-wind conditions;
   - causing said spring to apply a force on said baffle plate in strong-wind conditions;
   - dampering a free vibration on said baffle plate from a pendulum effect on said baffle plate in said no-wind, said normal-wind and said moderate-wind conditions, and dampering a free vibration on said baffle plate from a natural frequency of said spring in said moderate-wind and said strong-wind conditions.

2. The method as claimed in claim 1, further including the step of adjusting a position of said spring relative to said baffle plate according to said normal-wind conditions in a region of use of said chimney.

3. The method as claimed in claim 1, wherein said step of checking said draft includes swinging said baffle plate about said pivot axis at said angle wherein said angle is about 20°-30° from a vertical plane.

4. The method as claimed in claim 1, further including the step of maintaining a minimum draft through said baffle plate in said strong-wind conditions.

5. A chimney draft control valve comprising;
   - a housing comprising an inlet opening and an outlet opening and a valve seat mounted therein between said inlet opening and said outlet opening, and means for installing thereof in-line in a flue pipe leading to a chimney;
   - means including a baffle plate suspended inside said housing between said inlet opening and said valve seat for pendulum movement toward and away from said valve seat and for checking a draft in said chimney when a vacuum pressure in said chimney is high;
   - means including a spring affixed to said housing and to said baffle plate for controlling an amplitude of said pendulum movement, and dampering means affixed to said housing, to said baffle plate and to said spring for controlling a period and amplitude of said pendulum movement and a free vibration in said spring.

6. The chimney draft control valve as claimed in claim 5, further including means affixed to said baffle plate for adjusting an inertia of said baffle plate.

7. The chimney draft control valve as claimed in claim 6, further including means for adjusting a position of said spring relative to said housing and relative to said baffle plate.

8. The chimney draft control valve as claimed in claim 5, wherein said baffle plate is mounted inside said housing, and said spring and said means for adjusting are mounted outside said housing, and said spring is connected to said baffle plate by a shaft extending through a side of said housing.

9. The chimney draft control valve as claimed in claim 8, wherein said damper means comprises an oil bath and a paddle in said oil bath, and said oil bath is mounted outside said housing and said paddle is connected to said shaft.

10. The chimney draft control valve as claimed in claim 5, wherein said inlet opening and said outlet opening are oriented vertically.

11. A chimney draft control valve comprising;
   - a housing having an inlet opening and an outlet opening, a baffle plate mounted therein and a damper mechanism affixed thereto;
   - said baffle plate being suspended to a pivot axis between said inlet opening and said outlet opening;
   - said damper mechanism comprising a spring and a dampering device;
said baffle plate having a mass and being affixed to said pivot axis for pendulum movement about said pivot axis, and
said spring and said dampening device being connected to said pivot axis and having displacements proportional to said pendulum movement of said baffle plate;
said baffle plate also comprising means to adjust an inertia of said mass;
said damper mechanism having means to adjust a force of said spring, and
said dampening device having means to dampen said pendulum movement and an oscillation in said spring.

12. The chimney draft control valve as claimed in claim 11, wherein said baffle plate has a moderate-wind position, and said spring comprises engagement means for engagement thereof with said baffle plate when said baffle plate is in said moderate-wind position.

13. The chimney draft control valve as claimed in claim 12, wherein said spring further comprises adjustment means for adjustment of said engagement means toward or away from said engagement thereof with said baffle plate when said baffle plate is in said moderate-wind position.

14. The chimney draft control valve as claimed in claim 11, wherein said means to adjust an inertia of said mass comprises a counterweight.

15. The chimney draft control valve as claimed in claim 11, wherein said baffle plate also has orifices therein, and said orifices are selectively covered by a movable flat bar.

16. The chimney draft control valve as claimed in claim 15, wherein said orifices are positioned along a slanted line.

17. The chimney draft control device as claimed in claim 12, further including a valve seat between said baffle plate and said outlet opening and said valve seat has a opening along a slanted plane making an angle of about 20°-30° with said baffle plate in normal-wind conditions.

18. The chimney draft control valve as claimed in claim 17, wherein said pivot axis extends along a fulcrum means comprising a sharp blade affixed to said baffle plate and a pair of saddle brackets affixed to said valve seat, and said pivot axis aligns with said slanted plane.

19. The chimney draft control device as claimed in claim 11, wherein said spring and said dampening device are connected to each other by an arm mounted on a shaft extending along said pivot axis.

20. The chimney draft control device as claimed in claim 19, wherein said dampening device comprises an oil bath and a paddle submerged in said oil bath, and has a lesser influence than said spring on a forced vibration of said baffle plate.

* * * * *