

(No Model.)

P. PESCHONG.
FIRE LIGHTER.

No. 502,136.

Patented July 25, 1893.

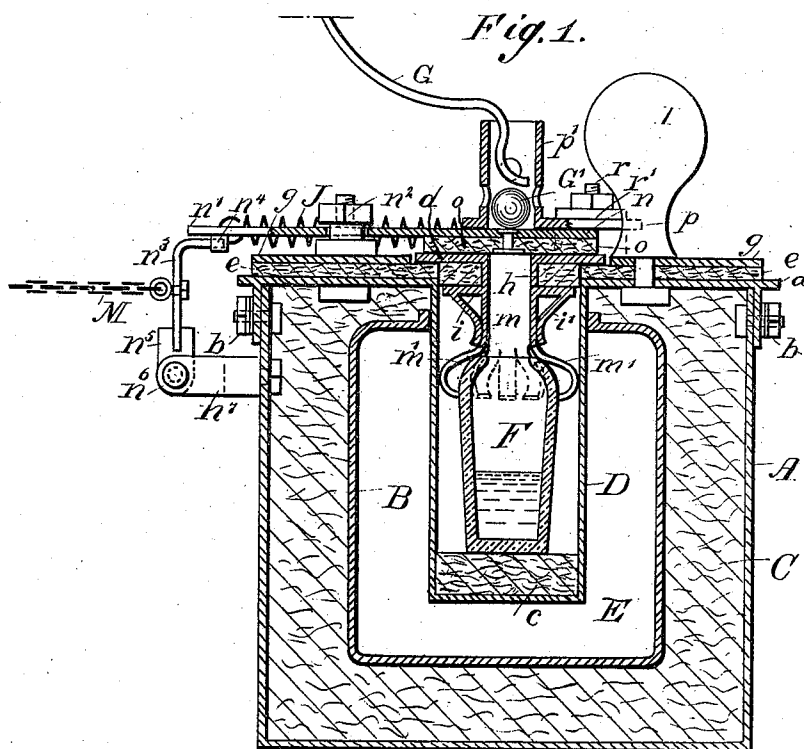


Fig. 4

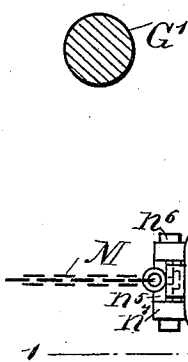


Fig. 2.

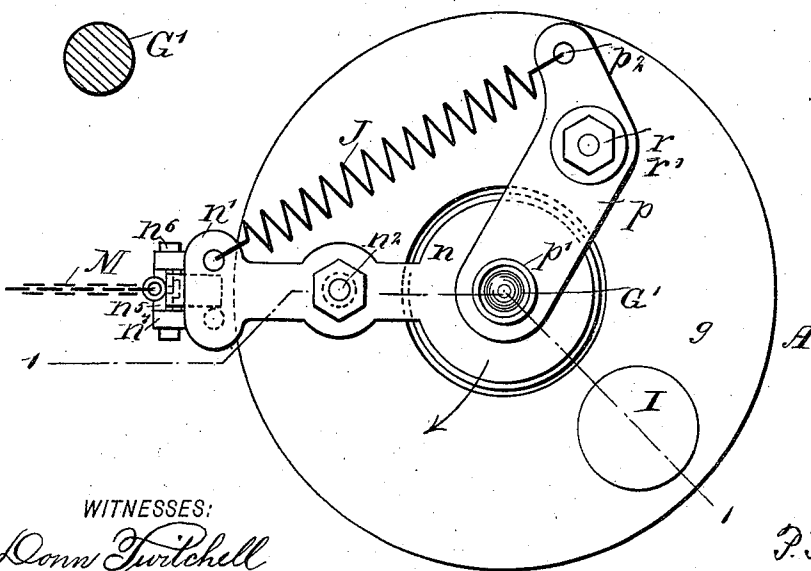


Fig. 3



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PETER PESCHONG, OF ALTON, IOWA.

FIRE-LIGHTER.

SPECIFICATION forming part of Letters Patent No. 502,136, dated July 25, 1893.

Application filed January 24, 1893. Serial No. 459,513. (No model.)

To all whom it may concern:

Be it known that I, PETER PESCHONG, of Alton, in the county of Sioux and State of Iowa, have invented a new and useful Improvement in Fire-Lighters, of which the following is a full, clear, and exact description.

My invention relates to improvements in fire kindling devices adapted to automatically produce the ignition of fuel in a stove or other heating device, by the use of chemical reagents, and consists in the construction and combination of parts in a mechanical device and also in a novel fuse and chemicals to ignite said fuse, as is hereinafter described and claimed.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a vertical sectional view of the device, on the line 1—1 in Fig. 2. Fig. 2 is a plan view of the device represented in Fig. 1. Fig. 3 is an enlarged view of a part of the fuse; and Fig. 4 is an enlarged sectional view of a novel fuse ignitor forming part of the improvement.

The mechanical structure shown, comprises an outer metallic chamber A, which is by preference of cylindrical form closed at its bottom, and provided with a removable top piece *a*, which is secured in place by bolts *b*, or like means, said chamber being of such dimensions as will adapt it for portability, and insure effective service as a receiver and supporter for other parts.

Within the chamber A, another cylindrical sheet metal receiver B is introduced, which is of reduced diameter and height, thereby permitting a space to exist between the exterior of the receiver, and the interior surface of the chamber A, which space is by preference compactly filled with asbestos fiber, or any other good non conductor of cold, said material represented at C, in Fig. 1, completely enveloping the vessel B, except where an aperture is formed in its top wall. A third cylindrical vessel D, is inserted within the receiver B, closely fitting against the circular edge of the aperture in the top of said receiver, and is of such a size as will produce an air space E around its side and bottom

walls when the vessel D is joined at its top edge with the annular top piece *a*, to which it is secured, liquid and air tight.

An asbestos or other slightly yielding cushion *c*, is placed within the vessel D, on its bottom, for the support of an earthen or stone ware jar F, that is of less diameter and height than the vessel it is placed in; said jar having a preferably cylindric side wall which is converged above near its top to reduce the inlet orifice a proper degree.

A flat lid *d*, is provided for sealing the otherwise open top of the vessel D, which lid is of circular form and such a diameter as will permit its edge portion to lap sufficiently past the top edge of the vessel D, to seat fairly on a joint washer *e*, that is imposed on the top piece *a*. The joint ring or washer *e*, is of a width that will project it beyond the lid *d*, so that a flat metal clamping ring *g*, may be secured upon the joint ring named and bind its outer edge tightly upon the top piece *a*.

On the under side of the lid *d*, a thick asbestos packing ring *h*, is held, by a bracket shelf *i*, that is a radial projection from a depending tube *m*, the upper end of which penetrates the center of the lid *d*, and affords a vertical passage through said lid into the jar F, the lower outwardly curved edge of the tube *m*, being nearly in contact with the incurved top portion of the jar, as represented in Fig. 1. The jar F is by preference surrounded by asbestos paper, (not shown) to isolate it from contact with the metallic clamps of the tube *m*. The shelf *i*, is supported at its outer edge by a suitable number of spaced braces *i'*, which project downwardly and inwardly to be secured at their lower ends upon the depending tube *m*; and from the latter a series of curved clasping fingers *m'*, are projected, which have an elastic bearing with their lower ends upon the jar F, serving to maintain it in an upright position without injurious pressure. There is a circular gate *n*, furnished to close the upper end of the tube *m*, and from the gate an arm *n'*, projects of a suitable length, which arm is pivoted at *n*² upon the clamping ring *g*, and adapted for vibration, the lower side of the gate being shod with an asbestos or other suitable joint disk *o*.

Nearly opposite the pivot bolt n^2 , a flat bracket arm p , is firmly secured by one end on the clamping ring g , with a bolt and nut r , or other equivalent means; a spacing washer n' , placed on the bolt body between the clamping ring and arm p serving to elevate the latter a proper degree, so as to allow the gate n to be vibrated between the projected free portion of said arm, and the lid d .

On an outwardly projecting portion of the bracket arm p , a spiral spring J is secured by one end, its other terminal being connected with the outer end of the arm n' , and in a normal condition holds the circular gate n away from the tube m , so as to leave its upper end open.

There is a depending perforated block n^4 formed on the outer end of the arm n' , for the reception of a trigger rod n^3 , which is bent so as to have its upper portion adapted to loosely engage a horizontal perforation in the block n^4 , the depending limb of the trigger rod being enlarged and flattened as at n^5 , in Fig. 1, so as to enter the outer slotted end of the bracket arm n' , and be pivoted thereto as at n^6 . The bracket arm p is furnished with an upwardly projected cylindrical bottomless cup p' , which is located above the tube m , and in alignment with it, the gate n , forming a removable bottom for the cup when it is located between the lid d and said cup, as represented in Figs. 1 and 2.

A fuse G is provided, which is a part of the invention, consisting of a fibrous wick made of any preferred material which will burn freely. A sufficient length is given to the fuse G , to allow it to extend from the cup p' , to enter a stove or lie below an open grate (not shown), when the chamber A , is placed on the stove hearth plate, or other support near the stove or other device, wherein a fire is to be lighted by an ignition of kindling fuel therein.

To render the fuse G more effective in service, by increasing its inflammability, the fibrous material forming the fuse is preferably saturated with a chemical composition consisting of chlorate of potash, sugar, sulphite of antimony, paraffine, and gum water, mixed in correct proportions to afford the best results.

In the cup p' , when the device is to be used, a small ball or capsule G' of chemical ingredients is placed, said fuse ball being by preference composed of a proper proportion of chlorate of potash and sugar, or equivalent material, which will ignite from contact with sulphuric acid or its equivalent in action. There is a chain or cord M extended from the trigger rod n^3 , to have its other end connected with the alarm or other appropriate mechanism of a common clock (not shown), so that the rotatable movement of a proper portion of said mechanism will draw the chain sufficiently to detach the trigger rod from the block n^4 , and thus permit the retractile force

of the spring J to draw the gate n away from below the cup p' , and open a passage from said cup into the jar F .

When the device is to be used to light a fire in a stove or open grate, the combustible materials are arranged in the fire chamber of said stove or below the grate, so that ignition from the burning of the fuse G , will be easy to effect. The chamber A , is now located conveniently to the stove, so that the fuse may be extended therefrom to reach the fire pot of the stove; in case the device is used to start a fire in an open grate it is placed on the hearth near said grate.

The gate n , is adjusted to form a bottom wall for the cup p' and the fuse ball G' , is placed in said cup, as represented in Fig. 1. Any suitable amount of sulphuric acid or its equivalent, is placed in the jar F , so as to afford an igniting liquid for the chemicals in ball form in the cup p' , which will be ready for instant use as soon as the ball is immersed in the acid.

If the parts of the mechanical device have been arranged and connected as described, it will be evident that the discharge of the mechanism of a clock to which the chain M is attached, will pull the gate n away from below the fuse ball G' and allow it to drop into the sulphuric acid in the jar F .

The composition of matter in the fuse ball G' , is such as will cause its instant combustion when it is brought into contact with the acid in the jar F , so that the fuse G , which is very inflammable, will ignite from the flame thus produced, and burn until it sets fire to the combustibles in the stove.

It will be seen that the asbestos packing provided within and upon the vessel A , as well as upon the lid d , will prevent the acid in the jar F from freezing in cold weather, and also protect the acid from heat that would cause its excessive evaporation.

All the sheet metal vessels provided for the device may be protected by coating them with non-oxidizing metal, the interior of the vessel D , being by preference protected by gilding it, to avoid injury that might result from the fumes of the acid in the jar F .

It is claimed for this device, that it will be reliable in action, and inexpensive to produce; affording a great convenience to residents of sections where the winters are rigorous, as by its use a fire may be started automatically to warm a room before it is entered in the morning.

If desired, there may be more than one jar F , provided and other parts may be duplicated to start a fire at more than one point in a stove or grate, to insure its rapid evolution.

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

1. In a fire lighting device, the combination with a sealed chamber, a receiver therein, a non-conductor between the chamber and re-

ceiver, a third vessel within the receiver, an
open receptacle, and a conduit leading from
the lid of the outer vessel into the inlet of
said receptacle, of a bracket arm on the lid, a
5 bottomless cup on said arm, above the con-
duit and separated therefrom, and a swinging
gate on the lid, having a projecting arm and
adapted to form a bottom for the cup, and
means for swinging the gate, substantially as
10 described.

2. In a fire lighting device, the combination
with a sealed chamber, a receiver therein, a
non-conductor between these parts, a third
vessel within the receiver, an open receptacle
15 which is a resistant of corrosive acid, and an

open conduit leading from the lid of the outer
vessel into said receptacle, of a bracket arm
on the lid, a bottomless cup on one end of
said arm, above the conduit and separated
therefrom, a swinging gate on the lid, an arm 20
on said gate, a retractile spring for said arm,
a bracket arm on the outer vessel below the
gate arm, a trigger rod loosely engaging said
arms, and a draft chain or like connection for
the trigger rod, substantially as described.

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Witnesses:

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