

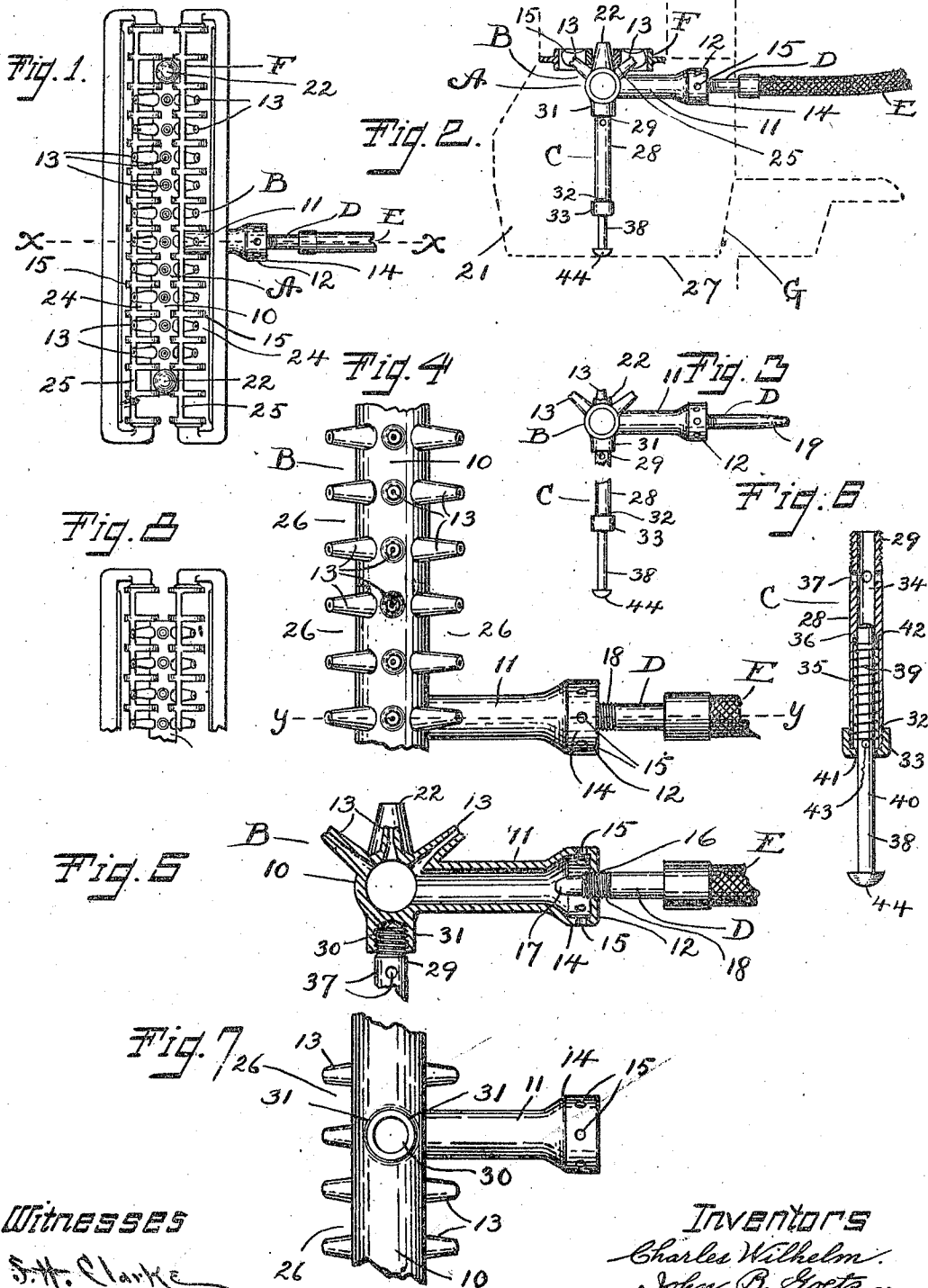
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KINDLING DEVICE.

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Witnesses

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To all whom it may concern:

Be it known that we, CHARLES WILHELM, a citizen of the United States, residing at West Hartford, in the county of Hartford and State of Connecticut, and JOHN B. GOETZ, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Kindling Devices, of which the following is a specification.

Our invention relates to improvements in kindling devices and the objects of our improvement are simplicity and economy in construction and convenience and efficiency in use.

In the accompanying drawing: Figure 1 is a plan view of our improved kindling device and a grate F above in relative position for use. Fig. 2 is a sectional view on the line *x x* of Fig. 1, and the hearth of a stove, the latter being shown in broken lines and the kindling device being shown in side elevation. Fig. 3 is a similar view of the kindling device alone. Fig. 4 is a plan view of a part of the same on an enlarged scale. Figs. 5 and 6 are sectional views on the line *y y* of Fig. 4, of the body member and the spring member respectively. Fig. 7 is a bottom view of a part of the burner. Fig. 8 is a view similar to Fig. 1 of a part of a modification of our kindling device and a grate.

A is our kindling device and comprises a burner B and supporting means comprising a spring device C. The burner B comprises a T-shaped body having at one end the cross-arm 10 which constitutes the burner proper and the inlet arm 11 that extends laterally or rearwardly therefrom at about right angles to the same. The said burner proper 10 and inlet arm 11 are preferably made as one casting and are hollow suitably to serve as a mixing chamber for the gas and air that constitute the fuel mixture and to conduct the same from the inlet 12 at the inner end of the inlet arm 11 to the jets 13 that are provided on the burner proper 10. The said inlet 12 of the inlet arm 11 comprises a head 14 having radial air inlet holes 15 and a front wall that is pierced by a hole 16 suitable for receiving and supporting the inlet jet tube D. As shown the hole 16 provides a screw threaded engagement with the jet tube D. The said jet tube D comprises a piece of wrought iron

tubing having the rear end 17 reduced and brought to a taper, has the body portion 18 threaded to fit the threaded hole 16 and has the front end 19 tapered or provided with any means desired for connecting with a supply of gas or fuel, as a rubber tubing E. The length of the rear end or jet portion 17 of the jet tube D or the amount the same projects into the head 14, and the relation of the same to the air inlet holes 15 are such as are determined by the proper conditions for the combustion of the fuel.

The burner proper 10 comprises as described a hollow arm and is of suitable length for extending along the lower side of the grate F in the hearth 21 of a stove G, is provided on the upper side with guiding means, such as pins 22 or the equivalent, suitable for guiding and positioning the burner 10 relatively to the grate F, and also has on the upper side a plurality of burner jet tubes or jets 13 projecting upwardly therefrom suitably for entering the spaces 24 between the bars 15 of the grate F, which jets have suitable outlet holes for feeding the fuel to the flame.

We prefer to have three rows of jets 13, comprising a central row, and a row each in front and in back of the said central row, the individual jets 13 of the three rows being arranged in line in cross-rows, and having the spaces 26 between the cross-rows such that the jets 13 will register with the spaces 24 between the grate bars 15 as mentioned, with the body of the burner 10 being held in abutment with the lower side of the grate bars 25. As means for holding the burner 10 against the lower side of the grate bars as mentioned we provide a spring device C, engaged with the lower side of the burner 10 and itself resting on the bottom 27 of the hearth 21.

We prefer to have the spring device C secured to the bottom of the burner 10 and in such a manner as to be positioned substantially at right angles thereto so that it will always be ready and tend to operate to push the burner 10 upward against the grate bars 25 of the grate F when inserted in position in the hearth 21, and the device A can readily be manipulated, particularly to be placed in operation, by means of one hand.

We prefer to provide the spring device C with a tubular body 28, the upper end 29 of which is exteriorly threaded to fit and engage with a threaded hole 30 in a down-

wardly projecting boss 31 on the middle of the body portion of the burner B, at the junction of the cross-arm or burner proper 10 and the inlet arm or mixing chamber 11.

5 The lower end 32 of the body 28 is threaded exteriorly similarly to the upper end suitably to receive an annular cap 33. The body 28 has a longitudinal bore the upper portion 34 of which is smaller in diameter
10 than the lower portion 35, the two meeting about the middle of the length of the body 28 where a shoulder 36 is formed at the upper end of the lower bore 35. The upper portion of the body 28 may be provided with
15 radial vent holes 37 through the lateral wall. The body 28 when screwed to the burner B constitutes essentially a fixed portion thereof.

A reciprocating member 38 is operatively connected to the body 28, and has a limited
20 reciprocal motion relatively thereto, is normally held in the open or extended position by means of a spring 39, and comprises a cylindrical body portion 40 that passes through the hole 41 in the annular cap 33
25 through the lower bore 35, and extends into the upper bore 34, and is a sliding fit for the said upper bore 34 and hole 41, and guided thereby in its motion relatively to the body portion 28. A washer 42 and the
30 spring 39 surround the said body portion 40 and are housed in the said lower bore 35, the upper end of the spring 39 bearing against the said washer 42 and holding the same in engagement with the shoulder 36
35 and the lower end bearing against a diametral pin 43 that penetrates the body portion 40 is normally held in engagement with the annular cap 33 by the spring.

The lower end of the reciprocating member 38 being in the form of a rod is suitable
40 for being entered into the hearth in the midst of accumulations of ashes so as to have the extreme lower end engage with the bottom of the hearth, notwithstanding such
45 accumulation, and the said extreme lower end may be provided with a head 44 for a finish and which may be suitably rounded so as to permit of being forced to the bottom of the hearth in the manner described.

50 The distance from the base of the hearth to the bottom of the grate is less than the combined overall dimension of the normal overall length of the spring device C and the depth of the burner body wherefore when
55 the device A is in position for use the spring 39 is compressed and the burner B is held resiliently engaged with the bottom of the grate. The length of the jets 13 is such that with the body of the burner 10 in abutment
60 with the grate F the upper ends of the jets will be approximately on the level with the top sides of the grate bars 25 or preferably as shown, slightly below the same. Accordingly, with a supply of coal on the grate F
65 and with the fuel burning at the jets 13 the

said jets will be positioned so that the heat of the flame will impinge directly on the coal, and with the usual drafts in operation, will serve to kindle the coal quickly and economically, avoiding losses through waste-
70 ful heating of the grate bars. Furthermore, although the burner is in close relation to the coal to be kindled; owing to the effects of the draft in drawing a supply of cold air over the burner the same will be maintained
75 relatively cool and the burner will have long life and be practically indestructible.

Our kindling device A is readily placed in position for use by bringing the lower end of the spring device C in contact with the
80 base of the hearth and forcing the burner B downward sufficiently to permit the guide pins 22 and jets 13 to clear the bars 25 and enter the spaces 24 when upon releasing the same the spring device C will force the
85 burner 10 and the jets 13 upward into operative positions. The pins 22 may be dispensed with in some cases as shown in Fig. 8 and the jets 13 relied upon for positioning. The fact that the jets 13 are tapered as
90 shown, facilitates entering the same in the spaces 24 in a proper manner for use.

It is apparent that some changes from the specific construction herein disclosed may be made and therefore we do not wish to be
95 understood as limiting ourselves to the precise form of construction shown and described, but desire the liberty to make such changes, in working our invention, as may fairly come within the spirit and scope of
100 the same.

We claim as our invention:—

1. In a kindling device suitable for use under a grate and having a body portion, means for holding the said body portion in
105 abutment with the bottom portion of the grate comprising a spring device having a relatively fixed portion secured to the said body portion and a member having a reciprocal motion relatively to the said body
110 portion.

2. In a kindling device suitable for being positioned in the hearth of a stove below the grate and having a body portion suitable for bearing against the lower side of
115 the said grate, a spring device operative to hold the said body portion in such bearing position, the said spring device comprising a body portion having a smaller bore at the upper end, and larger bore in the lower end,
120 a moving member extending through the said lower bore and into the upper bore, and a spring housed in the said lower bore and operative to tend to hold the said body member and moving member in relatively
125 extended position.

3. In combination in a kindling device, a body portion and spring means operative to hold the said body portion in abutment with
130 a grate, the said spring means comprising a

telescoping device having two parts and a spring tending to hold the same in extended position, and having the lower end in the form of a rod suitable for being embedded in the midst of accumulations of ashes on the bottom of the hearth.

4. In a kindling device suitable for being positioned in the hearth of a stove below the grate and having a body portion suitable for bearing against the lower side of the said grate and means for holding the said body portion in such position, the said body

portion provided with a plurality of jets suitable for entering the spaces between the bars of the grate, and the length of the said jets such that with the body of the burner in abutment with the grate the upper ends of the jets will be below the level of the top sides of the grate bars.

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