United States Patent

Bolster

[15] **3,669,092**

[45] **June 13, 1972**

[54] FIREPLACE GRATE FOR BURNING PAPERS

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[22] Filed: **July 10, 1970**

[21] Appl. No.: **53,782**

[52] **U.S. Cl.** **126/165**

[51] **Int. Cl.** **F23h 13/02**

[58] **Field of Search** 126/164, 165, 298, 153

[56] **References Cited**

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[57] **ABSTRACT**

A fireplace grate with a framework of expanded metal which is provided with supports enabling the grate to be alternatively positioned in a horizontal orientation for burning logs in the conventional manner or to be positioned upright for burning newspapers, magazines and the like.

5 Claims, 4 Drawing Figures

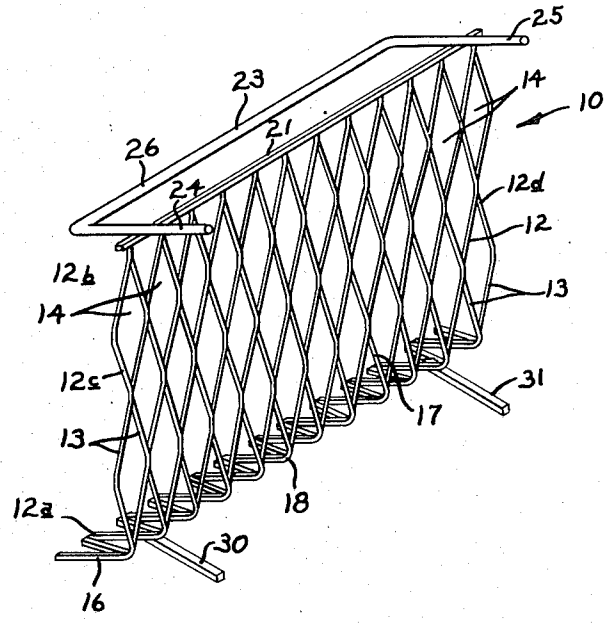


Fig. 1

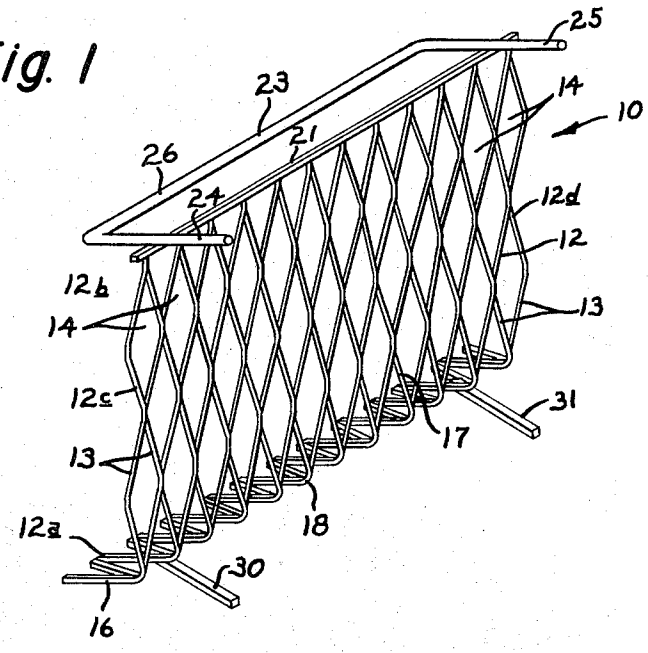


Fig. 2

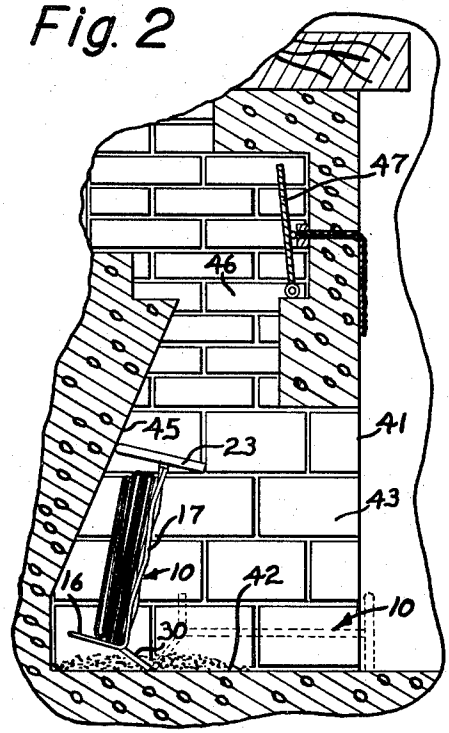
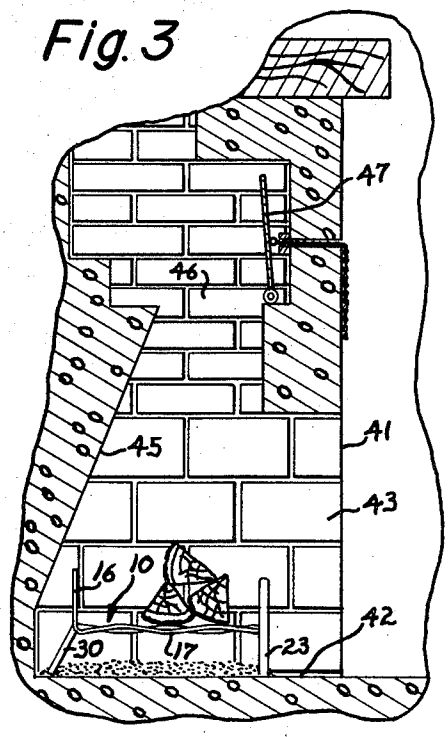


Fig. 3



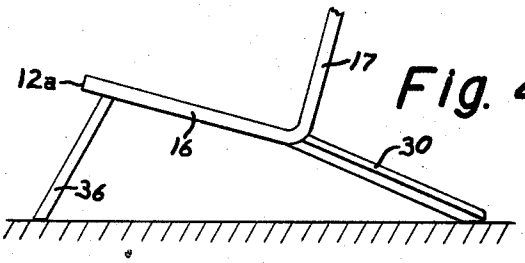


Fig. 4

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FIREPLACE GRATE FOR BURNING PAPERS

BACKGROUND OF THE INVENTION

It is well known that conventional fireplace grates are ineffective for burning newspapers that are left folded and stacked in a pile forming a plurality of parallel layers. As combustion takes place on conventional grates, only the outer layers of paper burn. Air is unable to permeate through the layers to support combustion of the inner layers of paper. Consequently, a large percentage of the newspaper is left partially or incompletely burned which means that the partly burned newspaper must be removed from the fireplace.

Consequently, people have thrown their newspapers in garbage cans to be disposed of through normal channels, instead of burning them in their fireplaces.

PURPOSE OF THE INVENTION

One of the principal objects of this invention is to provide a fireplace grate apparatus that enables the user to effectively burn newspapers and the like in his fireplace.

An additional object of this invention is to provide a grate apparatus for burning newspapers for a hotter, longer lasting fire with less waste then could be expected when using a conventional fireplace grate.

A further object of this invention is to provide a combination fireplace grate apparatus that may be used in the conventional manner for burning logs or wood and it may be used alternatively for burning newspapers and the like by merely changing the orientation of the apparatus.

It is also an object of this invention to provide a dual purpose fireplace grate apparatus comprised of a framework of expanded metal for the containment of burning material either in a horizontal or an upright position to facilitate ventilation along the burning surfaces.

A still further object of this invention is to provide means for disposing of newspapers in a manner which is relatively pollution free.

Another object of this invention is to provide means for disposing of newspapers without having to clutter up garbage cans, etc.

These and other objects and advantages of this invention will become apparent upon reading the following detailed description of the preferred embodiment.

GENERAL DESCRIPTION

A preferred and alternate form of this invention is shown in the accompanying drawings, wherein:

FIG. 1 is a perspective view of a fireplace grate apparatus embodying the principal elements of this invention;

FIG. 2 is a sectional view of a fireplace with the grate shown positioned in an upright manner for burning newspapers;

FIG. 3 is a sectional view of a fireplace similar to FIG. 2 except showing the grate in a horizontal orientation for burning logs, etc. in the conventional manner; and

FIG. 4 is a fragmentary side view of an alternate fireplace grate apparatus.

Referring now in detail to the drawings, particularly FIG. 1; there is shown a fireplace grate apparatus **10** that may be considered a combination fireplace grate. It may be utilized in the traditional or conventional manner for burning logs, etc., or it may be used in an alternative manner for burning newspapers, magazines and the like to reduce the paper to ash.

The fireplace grate apparatus has an L-shaped grate framework **12** of expanded metal forming a plurality of interconnected bars **13**. The bars **13** are spaced in such a manner as to form diamond-shaped holes **14** throughout the grate to provide excellent ventilation, while at the same time supporting the materials being burned. The framework **12** has end edges **12***a* and **12***b* and side edges **12***c* and **12***d*.

The framework **12** is curved at **18** to form the L-shape with a shelf **16** extending outward at a substantially right angle to a main platform, **17**. The L-shaped framework **12** is of sufficient size to handle a number of newspapers at one time. A sheet of

newspaper is generally approximately 17 inches by 23 inches and when folded in half has dimensions roughly 17 inches by 12 inches. The width of the framework **12** between the side edges **12***c* and **12***d* is somewhat greater than 17 inches and the distance from the shelf **16** to the end edge **12***b* is equal to or greater than 10 inches. The shelf **16** projects outward from the main platform **17** sufficiently to support a number of newspapers along their edges as shown in FIG. **2**. The main platform **17** has a cross bar **21** welded across the end edge **12***b*.

The fireplace grate apparatus has a support means for supporting the grate framework in either of the alternate positions—(1) with the main platform **17** extending upwardly at an incline angle as shown in FIG. **2** or, (2) with the platform **17** substantially horizontal as shown in FIG. **3**. The support means supports the grate off the floor to provide good ventilation to support combustion and also enabling the ash to filter through the grate and fall onto the floor away from the burning material.

The support means includes a U-shaped member **23** welded in an inverted orientation to cross-bar **21**. The U-shaped member **23** has leg members **24** and **25** that extend downwardly from the platform **15** and an upper section extending upwardly to form a front retainer **26** to prevent logs, etc. from rolling off the grate framework when the grate is positioned in the horizontal orientation.

The support means also includes back legs **30** and **31** that are welded to the grate framework adjacent the bend **18**. The legs **30**, **31** extend outwardly from the grate at an inclined angle to the platform **17** so that the legs **30** and **31** will support the grate off the fireplace floor independently or whether the grate is positioned in the upright position or in the horizontal position. The support means supports the grate in the upright position with the platform **17** extending upward at an angle greater than 45° with respect to the floor.

The fireplace grate apparatus is designed for use in a fireplace **40** having a front opening **41** and a floor **42**, side walls **43** and a back wall **45**. The fireplace also has a chimney opening **46** for exhausting the combustion gas products to the atmosphere. A damper **47** is normally mounted in the opening **46** for opening and closing the opening as desired.

When it is desired to utilize the fireplace grate apparatus **10** for burning newspapers, the newspapers are piled on top of each other on the platform **17** with the paper layers substantially parallel with the platform **17**. The edge of the newspapers engage the shelf **16**. The grate apparatus is then pivoted upward until the U-shaped member **23** engages the back wall **43** as shown in FIG. **2**. Alternatively the papers may be loaded when the grate apparatus is already in the up position. In this position the platform **17** extends upwardly at an inclined angle that supports the papers in an upright manner to enable sustained combustion to occur. The shelf **16** extends toward the back wall to support the edges of the newspapers as shown in FIG. **2**. The rear legs **30** and **31** support the shelf **16** spaced from the floor **42**. The user than puts a match to the newspapers. It has been found that the newspapers will burn very efficiently reducing them to an ash with little or no carbonaceous product remaining. This in stark contrast to the normal result in which the newspapers are partly or half burned leaving a mess in the fireplace.

When it is desired to use the fireplace grate apparatus **10** in the conventional manner for burning logs, the fireplace grate is pivoted to the horizontal position with the platform **17** supported by the legs **24**, **25** and **30**, **31** substantially parallel with the floor to receive the logs. The upper part of the U-shaped member **23** becomes a front retainer **26** to prevent the logs from rolling from the grate toward the front of the fireplace and the shelf **16** prevents the logs from rolling from the grate towards the back of the fireplace. The legs **24**, **25**, **30** and **31** support the framework **12** spaced from the floor to provide good ventilation and to permit the ashes to fall through the diamond-shaped holes to the floor.

In an alternate embodiment shown in FIG. 4, the fireplace grate apparatus can be modified for use in burning newspapers only, in which the U-shaped member **23** is removed and new leg elements **36** are welded to the shelf **16** adjacent edge **12***a* for supporting the grate in the upright manner with the side **17** extending upwardly at an inclined angle greater than 45° and the shelf **16** extending rearward in a slight upward angle to support the edges of the newspapers. In such a configuration, it is not necessary to have holes in the side **17**.

It should be understood that the above described embodiments are simply illustrative of the principles of this invention and numerous other embodiments can be readily devised by those skilled in the art which contain this invention. Therefore, only the following claims are intended to define or limit this invention.

What I claim is:

1. A double purpose fireplace grate apparatus for alternate use in supporting flat folded newspapers or logs for burning in a fireplace having a floor and a back wall, said grate apparatus comprising:

an L-shaped grate framework including a platform of sufficient area to receive and support folded newspapers stacked on one another and placed against the platform while the platform is in an upright orientation or to alternately support logs thereon when the platform is in a horizontal orientation and a shelf projecting to one side of the platform along one edge thereof to alternately support the edges of the newspapers or to prevent rolling of logs from the platform;

support means affixed to the grate framework for locating the shelf and platform above the fireplace floor alternately in an upright orientation with the shelf extending toward the fireplace back wall and the platform extending upward at an inclined angle greater than 45°with respect to the floor or in a horizontal orientation with the shelf extending upwardly and the platform horizontal;

said support means including leg elements fixed to the platform along said one edge thereof and extending outward in a direction opposite to the shelf at inclined angles to both the platform and shelf and terminating beyond the shelf to thereby support said one edge of the platform above the floor in both the upright and horizontal orientations of the platform.

2. The fireplace grate apparatus as defined in claim **1** wherein the grate is constructed from expanded metal having a plurality of interconnected bar elements and wherein further the L-shaped grate framework is bent along one end to form the shelf.

3. The fireplace grate apparatus as defined in claim **1** wherein the folded newspapers have a face area of approximately 17 inches by 12 inches and wherein the width of the framework is greater than 17 inches and the distance from the shelf to an end of the platform is greater than 10 inches.

4. The fireplace grate apparatus as defined in claim **1** wherein a front retainer element is affixed to the grate adjacent the remaining edge of the framework for preventing logs from rolling off the framework when the framework is horizontally oriented.

5. The fireplace grate apparatus as defined in claim **4** wherein the front retainer element is U-shaped with leg elements that extend downwardly below the platform part of the supporting means to assist in supporting the platform in the horizontal orientation.

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