No. 733,821. PATENTED JULY 14, 1903.

J. G. DIXON.

FLUE HOLE CUTTER.

APPLICATION FILED JUNE 21, 1902.

NO MODEL.

Fig. 1.

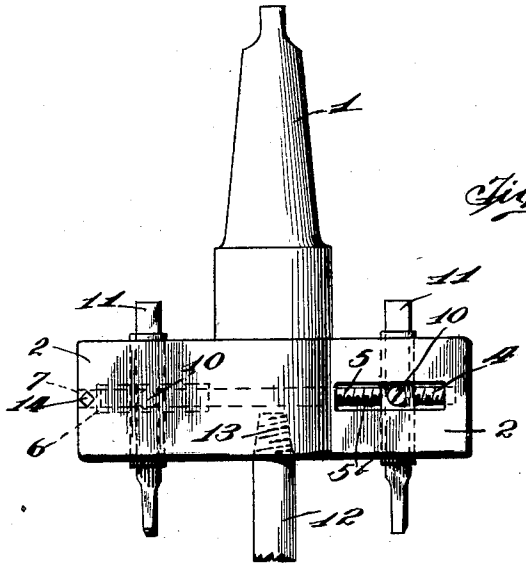


Fig. 2.

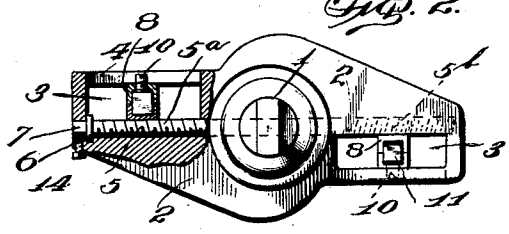
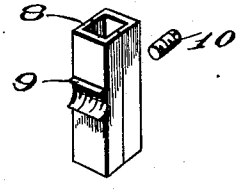


Fig. 3.



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UNITED STATES PATENT OFFICE.

JESSE G. DIXON, OF TOPEKA, KANSAS.

FLUE-HOLE CUTTER.

SPECIFICATION forming part of Letters Patent No. 733,821, dated July 14, 1903.

Application filed June 21, 1902. Serial No. 112,659. (No model.)

To all whom it may concern:

Be it known that I, JESSE G. DIXON, a citizen of the United States, residing at Topeka, in the county of Shawnee and State of Kansas, have invented certain new and useful Improvements in Flue-Hole Cutters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to flue-hole cutters; and the object in view is the production of such a device capable of ready adjustment for cutting various sizes of holes.

With this and other objects in view the invention consists in combination, with a suitable shank, of arms extending therefrom, cutting-tools carried by said arms, and means for simultaneously adjusting said tools longitudinally of the arms.

It also consists in certain other novel constructions, combination, and arrangements of parts, as will be hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 represents a view in side elevation of a flue-hole cutter embodying the features of the present invention. Fig. 2 represents a top plan view of the same, parts being broken away to reveal the interior structure. Fig. 3 represents a detail perspective view of one of the tool-casings.

In the embodiment of the invention disclosed in the accompanying drawings, 1 indicates a suitable shank constructed of the necessary shape for being received by a drill-chuck or other rotating mechanism, and formed integral therewith or suitably carried thereby are laterally-projecting arms 2 2, each formed with a longitudinal slot 3, the slots 3 lying in parallel planes and the inner edges of the slots extending in the same line. Each of the arms 2 is also provided with a longitudinal slot 4 in its edge. A bolt 5 extends throughout the length of both arms 2, having one of its sides extending within one edge of one slot 3 and the other side extending within the corresponding edge of the other slot 3. The said bolt 5 is threaded in one direction, as at 5^a, for the length of that portion extending into one of the slots 3 and is oppositely threaded, as at 5^b, for that portion extending within the other slot 3. A collar or flange 6 is carried near one end of bolt 5 for permitting rotation of the bolt and retaining the same against removal, any suitable tool-receiving head 7 being formed at one end of bolt 5, whereby the bolt may be rotated for purposes hereinafter mentioned. A set-screw 14 is threaded through a portion of one arm 2 and into contact with the head 7 for locking the same against rotation. Within each of the slots 3 moves a suitable casing 8, provided at one side with a threaded laterally-projecting lug 9, engaging the bolt 5. The opposite wall of said casing 8 is apertured for receiving a set-screw 10, said casing in operation inclosing any suitable cutting-tool 11 and the screw 10 being employed for locking the said tool in any desired adjusted position. In the assembling of the parts the screw 10 is passed through slot 4, and when it is desired to release or secure a cutting-tool within the casing 8 the screw 10 may be approached through said slot.

It will be observed from the showing in Fig. 2 that the screw 10 has its slot extending within slot 4, whereby the tool-casing 8 will be limited against lateral play and guided in its movement.

A central pin 12 is preferably secured in axial alinement with shank 1, the securing-head of said pin being preferably depressed and threaded, as at 13, for entering a similarly-formed notch in the under face of the arms 2, whereby said pin may be quickly adjusted or removed.

In operation the shank 1 is secured within a rotating mechanism of any suitable type, and a pin 12 is positioned within the guiding-aperture in the plate to be cut and the parts are rotated in the usual well-known manner for forming the flue-holes. Should it become desirous to increase or decrease the diameter of such holes, it is only necessary to rotate the bolt 5, when the casings 8 will be moved toward or away from each other for producing the desired result, such movement being effected through the engagement of the threads of the lugs 9 with the oppositely-threaded portions of said bolt.

It will be apparent that by the particular arrangement of bolt 5 the casings 8 may be moved at will and yet are locked positively

against lateral movement and cannot possibly be displaced from their normal position.

It will be observed from an examination of Fig. 3 that the casing 8 is made up of two parts, the object in view being the ready positioning of the parts within the slot, said parts being assembled by having that section carrying lug 9 placed in position within the slot and then that section provided with the threaded aperture for receiving screw 10 slid into place. The cutting-tool is next positioned within the casing and the screw 10 inserted in contact therewith by being passed through slot 4.

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

1. A flue-hole cutter, comprising a suitable shank, arms extending laterally therefrom, formed with slots, a threaded bolt extending throughout the length of said arms and having a portion lying within each of said slots, a tool-carrying casing arranged in each slot, guiding means on said casing, and threads on said guiding means engaging the threads of said bolt, substantially as described.

2. A flue-hole cutter comprising a shank with slotted lateral arms, a threaded bolt extending along one side of the slot in one arm and along the other side of the slot in the other arm, a tool in each slot and a threaded means applied to the tool and engaging the threads of the bolt.

3. A flue-hole cutter, comprising a suitable shank, arms extending laterally therefrom and formed with slots, tool-cutting casings arranged in said slots, means for moving said casings longitudinally of the slots, the walls of said slots guiding the casings in their movement, and auxiliary guiding means for said casings, substantially as described.

4. A flue-hole cutter, comprising a suitable shank, arms extending laterally therefrom and formed with slots, tool-carrying casings arranged in said slots, means for moving said casings longitudinally of said slots, and means for locking said casings against movement, substantially as described.

5. A flue-hole cutter, comprising a suitable shank, arms extending laterally therefrom and formed with slots, tool-carrying casings arranged within said slots, and means for simultaneously moving said casings longitudinally of the slots, substantially as described.

6. A flue-hole cutter, comprising a suitable shank, arms extending laterally therefrom, each having a longitudinal slot extending vertically therethrough, and a longitudinal slot extending horizontally through one edge and opening into said vertical slot, tool-carrying means adjustably arranged in each of said vertical slots, and guiding means extending from said casing into the horizontal slot, substantially as described.

7. A flue-hole cutter, comprising a suitable shank, arms extending laterally therefrom, formed with slots, a threaded bolt extending throughout the length of said arms and having a portion thereof lying within each of said slots, and a tool-carrying casing arranged within each of said slots, and provided with means engaging the thread of said bolt, substantially as described.

8. A flue-hole cutter, comprising a suitable shank, arms extending laterally therefrom provided with slots, tool-carrying casings arranged within said slots, a threaded bolt extending throughout the length of said arms and having a portion thereof lying within each of said slots, and means carried by said casings engaging the threads of said bolt, substantially as described.

9. A flue-hole cutter, comprising a suitable shank, arms extending laterally therefrom and formed with slots, a threaded bolt extending throughout the length of said arms and having a portion thereof lying within each of said slots, a casing within each of said slots provided with means engaging the threads of said bolt, means for preventing longitudinal movement of the bolt, and means for locking said bolt against rotation, substantially as described.

10. A flue-hole cutter, comprising a suitable shank, arms extending laterally therefrom provided with slots, a threaded bolt extending longitudinally of said arms and having a portion thereof lying within each of said slots, a tool-carrying casing within each of said slots provided with means engaging the thread of said bolt, and means for locking said bolt against movement, substantially as described.

11. A flue-hole cutter, comprising a suitable shank, arms extending laterally therefrom, each being formed with a longitudinal, vertical slot and a horizontal slot communicating with the vertical slot, a tool-carrying casing movable longitudinally of the vertical slot, and means extending into said horizontal slot for clamping the tool carried by said casing, the said clamping means forming a guide for said casing, substantially as described.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

JESSE G. DIXON.

Witnesses:
I. G. CORNELSON,
T. P. SHIELDS.