

No. 677,451.

Patented July 2, 1901.

E. H. HEADFORD.  
ADJUSTABLE FIREBACK.  
(Application filed Mar. 27, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

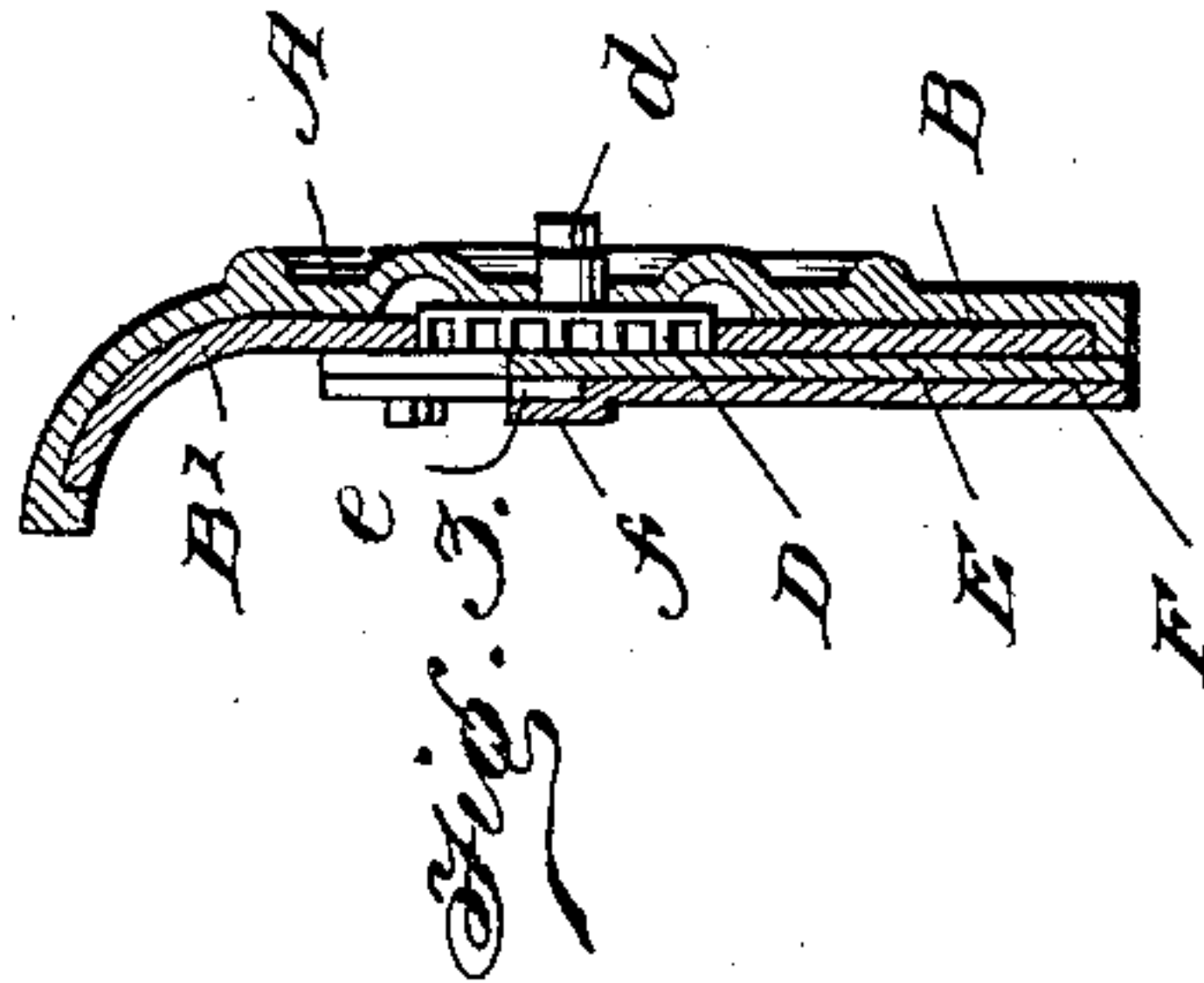
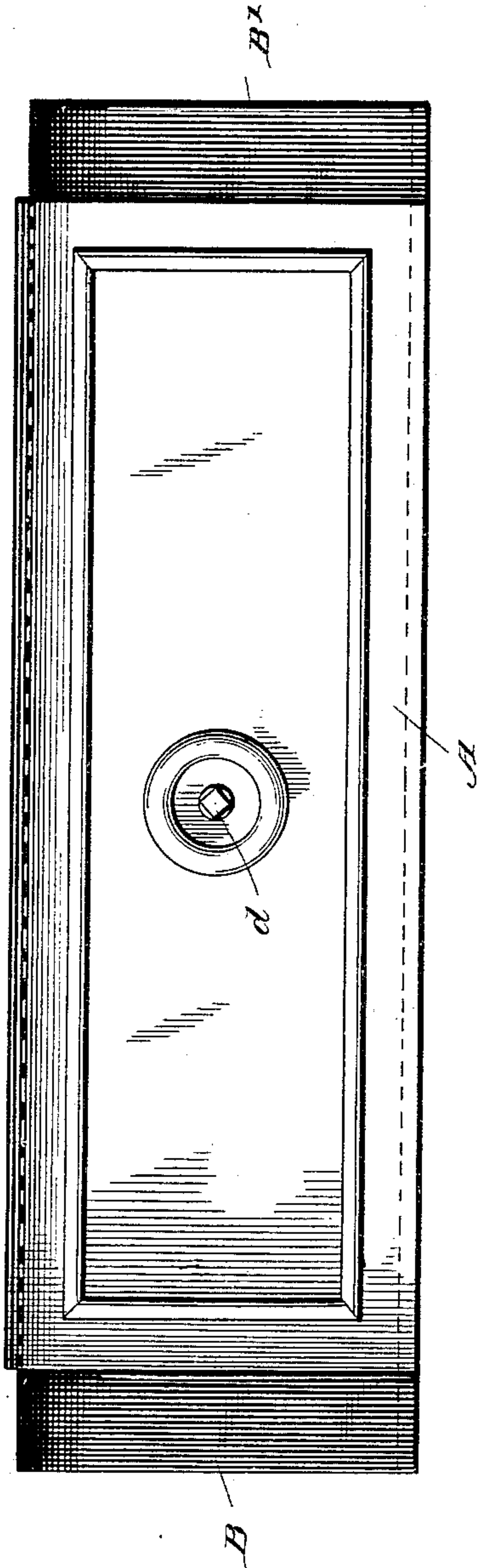
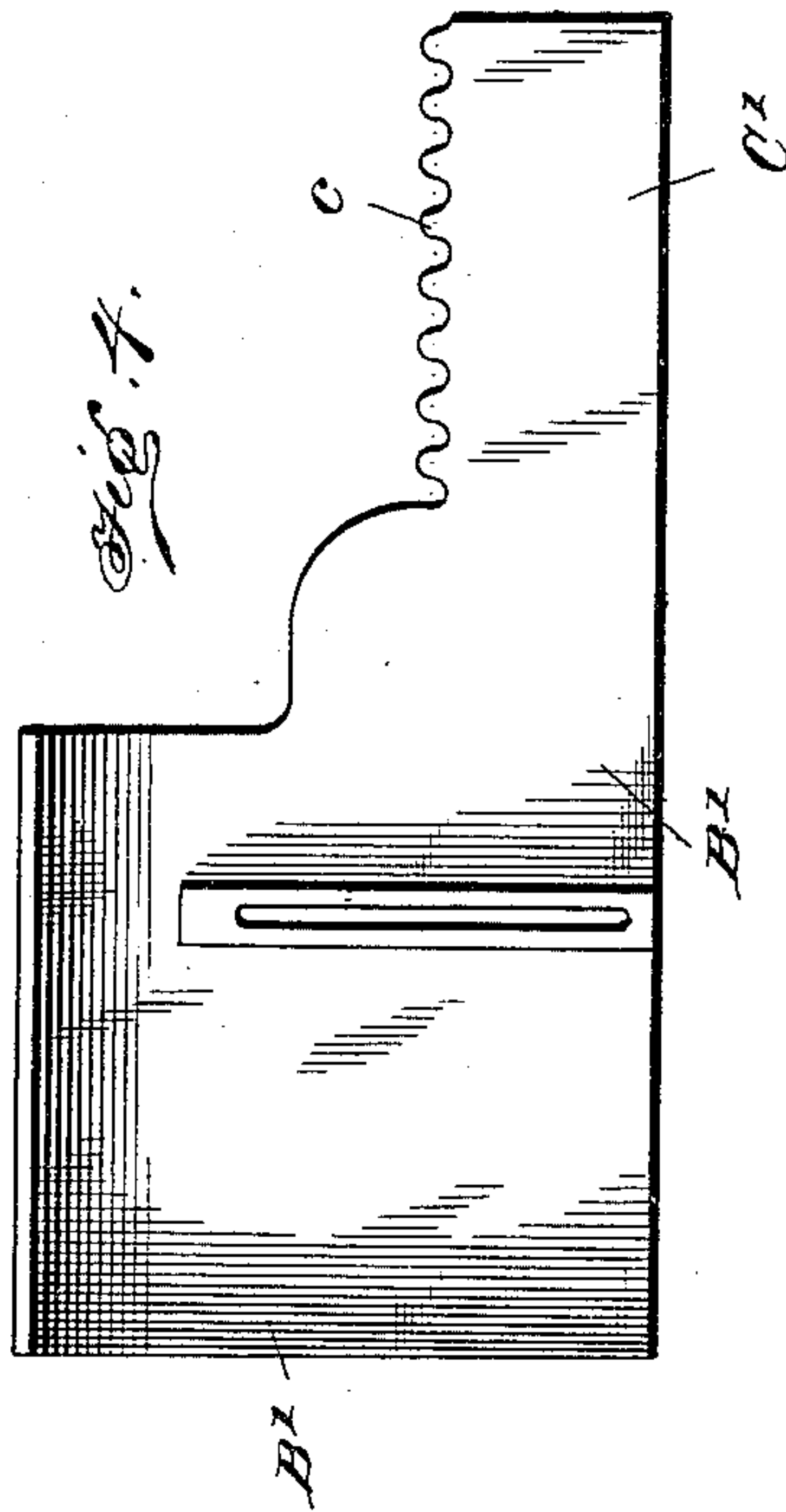


Fig. 4.



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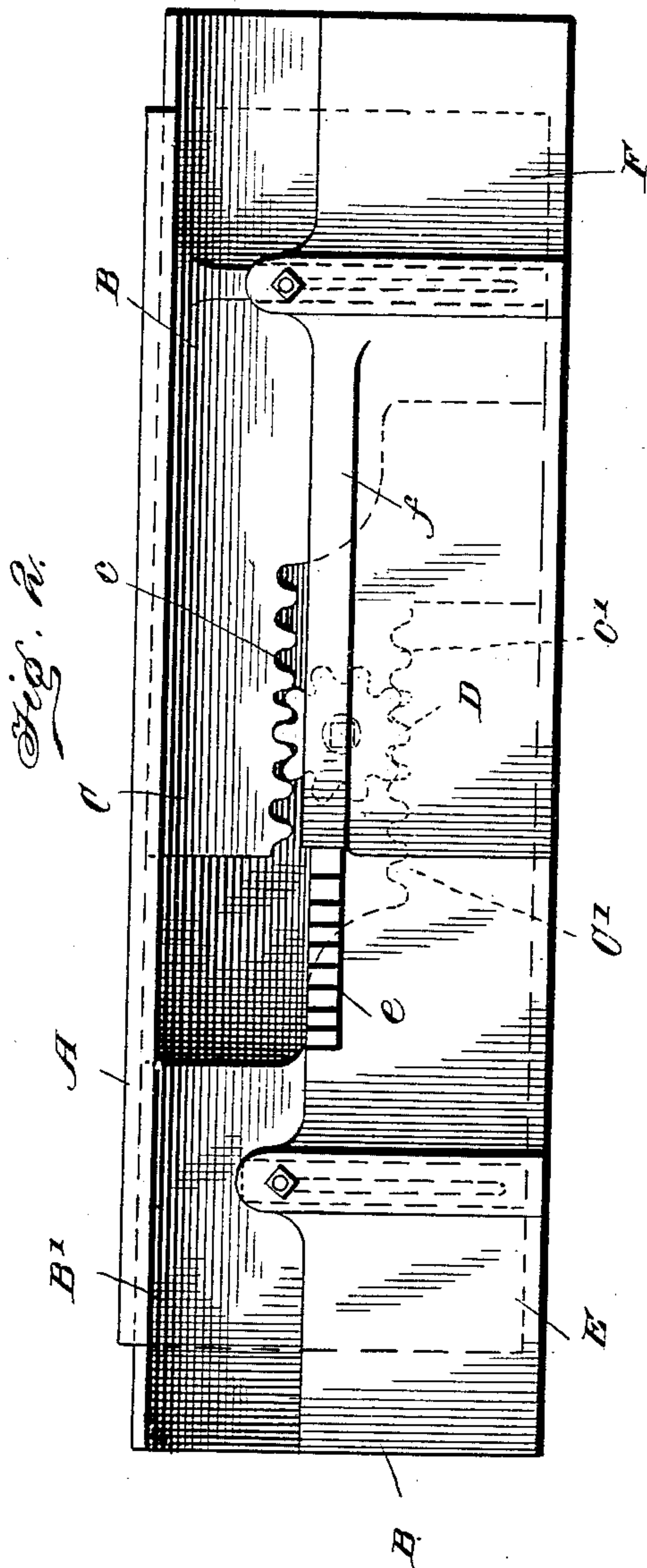
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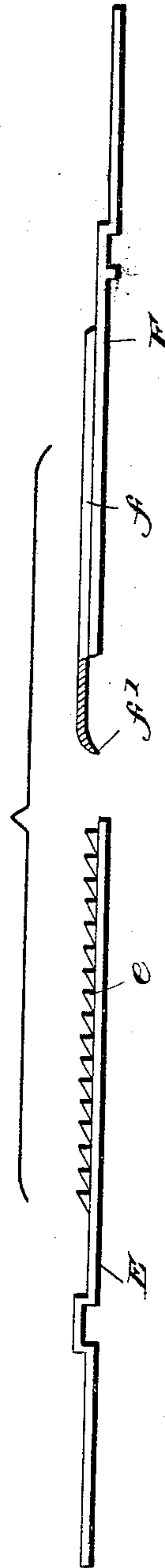
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*Fig. 6.*



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# UNITED STATES PATENT OFFICE.

EDWARD H. HEADFORD, OF DUBUQUE, IOWA.

## ADJUSTABLE FIREBACK.

SPECIFICATION forming part of Letters Patent No. 677,451, dated July 2, 1901.

Application filed March 27, 1900. Serial No. 10,342. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD H. HEADFORD, a citizen of the United States, residing at Dubuque, in the county of Dubuque and State of Iowa, have invented certain new and useful Improvements in Adjustable Firebacks; 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 an improvement in adjustable firebacks; and it is embodied in the construction and arrangement of parts hereinafter described, and defined in the claims.

Heretofore adjustable firebacks have been made with extensible wings and provisions for retaining the wings in their extended positions. Such means have been of the frictional-engagement type, requiring considerable force to effect the adjustments. My invention comprehends a construction wherein the adjustment can be easily effected through the instrumentality of a wrench or turning-tool and without the necessity of removing or loosening of bolts or nuts.

In the accompanying drawings I have illustrated a practical form of the invention, but desire it understood that the particular construction therein delineated is susceptible of changes and modifications without departing from the nature and principle of the invention.

Figure 1 is a front elevation of the improvement. Fig. 2 is a rear view. Fig. 3 is a vertical central section showing parts in elevation. Fig. 4 is a detail view of one of the wings. Fig. 5 is a detail view of the pinion, and Fig. 6 is an edge view of the bottom plates.

In the drawings, A designates the front plate, formed, as is usual, with the curved upper edge and the upper and lower retaining flanges.

B B' designate the extensible end wings, curved at their upper ends to conform to the curvature of the inner face of the front plate and working between the flanges thereof. These wing-plates are formed with the oppositely-arranged extensions C C', located, respectively, at the top and bottom of the wings. The combined width of these extensions is

less than the width of the wings, thereby leaving a space between. The opposing edges of the extensions C C' have a series of teeth c formed thereon, constituting racks, with which the teeth of a pinion D engage, the latter being located between the racks on the extensions, so that the teeth on the extension C engage the upper and those on the extension C' the lowermost teeth of the pinion. This pinion D has a stub-shaft d, which extends forward and is journaled in a suitable aperture or bearing in the front. The end of the shaft is conveniently squared, so that by the use of a suitable key or wrench the pinion can be readily turned, and thereby force the wings in or out, as the case may be. This action of the wings is simultaneous and equal, so that the back is evenly adjusted at all times.

E F designate the bottom plates of usual formation and adjustably secured to the wings in a well-known manner. These plates in one respect differ from those heretofore made in that the plate E is formed with a series of teeth e on its side near its upper edge and the plate F is formed with a laterally-movable spring-tongue f at its upper edge. The tongue has a tooth f' on its end, which engages the teeth of the opposite plate. The teeth are inclined in but one direction, so that the tooth of the tongue will ride over the teeth when the plates are moved out, but is prevented from moving back by engaging the straight faces of the teeth. When the back is to be applied, the bottom parts are first adjusted to suit the height of the fire-box. Then the pinion is turned, forcing the wings and bottom plates out and carrying the spring-tongue, with its tooth, over the teeth on the adjacent plate. After proper adjustment the spring-tongue serves to retain the members in position, and the same can only be removed by forcing the tongue outward. The thickness of the pinion is such as to fit in the space between the bottom plates and front, the former serving to prevent the displacement of the pinion. Other means can obviously be employed for that purpose.

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

1. In an adjustable fireback, the combina-



tion with the front, of the movable end wings, oppositely - arranged racks on the wings, a pinion carried by the front interposed between the racks for moving the wings in opposite directions and means for locking the wings in their adjusted position.

2. In an adjustable fireback, the combination with a front, of movable end wings and means carried by the front for moving the wings simultaneously and equally, substantially as described.

3. In an adjustable fireback, the combination with a front plate, of movable end wings, movable bottom plates, means for simultaneously and equally moving the wings, and means on the bottom plates for securing the wings in their adjusted positions, substantially as described.

4. In an adjustable fireback, the combination with a front plate, of movable end wings, movable bottom plates, a pinion carried by the front plate for simultaneously and equally moving the wings, and means on the bottom plates for securing the wings in their adjusted positions, substantially as described.

5. In an adjustable fireback, the combination with the front, of movable end wings having extensions thereon, racks on the extensions arranged opposite each other, a pinion located between the racks, and having a shaft extending through the front, and means for securing the wings in their adjusted positions, substantially as described.

6. In an adjustable fireback, the combination with the front, of adjustable end wings, bottom plates movable with the end wings, a series of teeth on one bottom plate and a spring-tongue on the other plate having a tooth engaging the teeth of the other plate, substantially as described.

7. An adjustable fireback comprising a front plate, end and bottom plates movably held by the front plate, a key-shaft extending through the front plate and a gear connection between the key-shaft and end plates for moving the same simultaneously and equally, substantially as described.

8. In an adjustable fireback, the combination with a front plate, of adjustable side plates, adjustable bottom plates, a rotatable adjusting device located between the bottom plates and front plate, and engaging the end plates, and means extending through the front for rotating the adjusting device, substantially as described.

9. In an adjustable fireback, the combination with a front, of movable end wings, mechanism for moving the wings, and means on the back for locking the wings in their adjusted positions, substantially as described.

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

EDWARD H. HEADFORD.

Witnesses:

HENRY MICHEL,  
J. L. HUSTED.