No. 815,959. PATENTED MAR. 27, 1906.

R. M. HINMAN.

FIRE POT.

APPLICATION FILED JAN. 18, 1905.

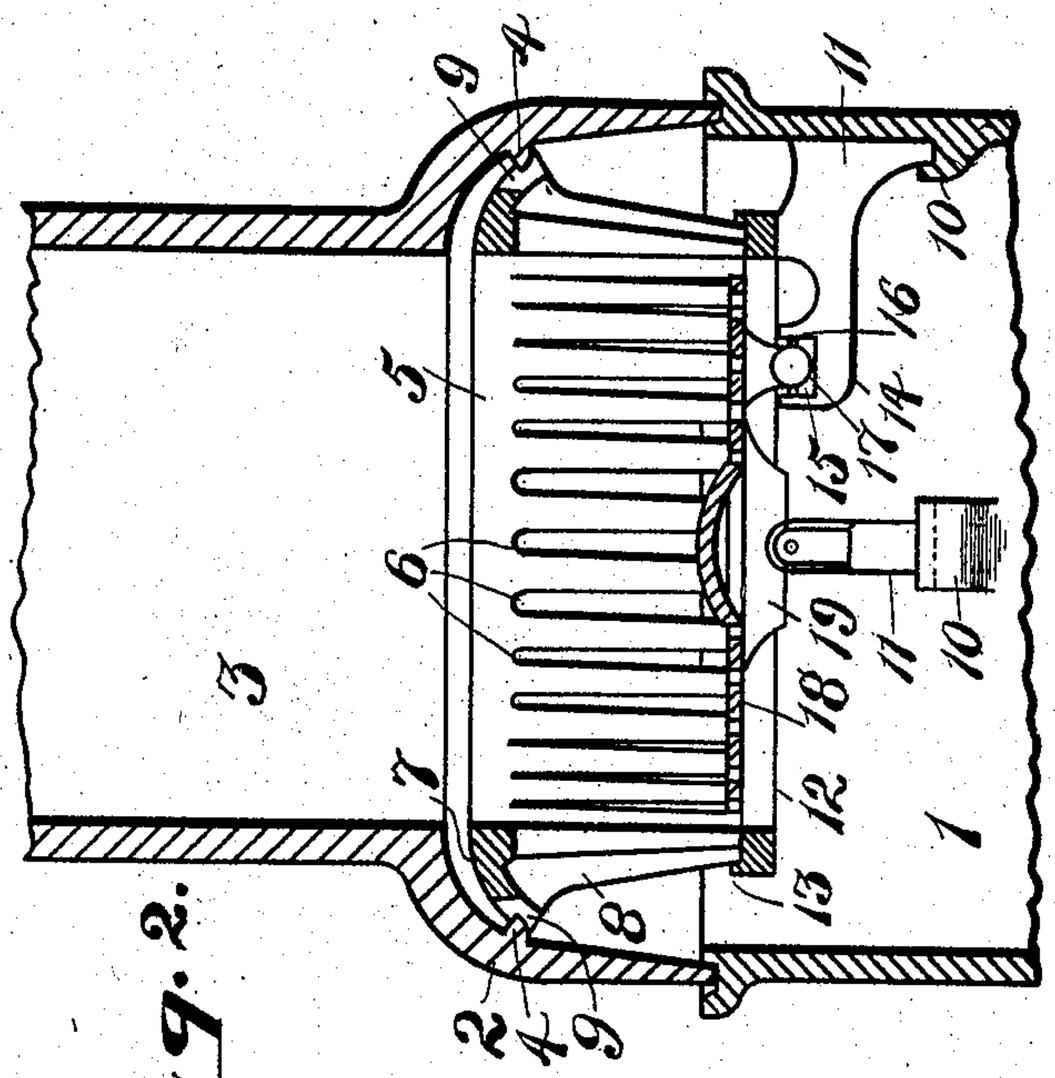

Fig. 2.

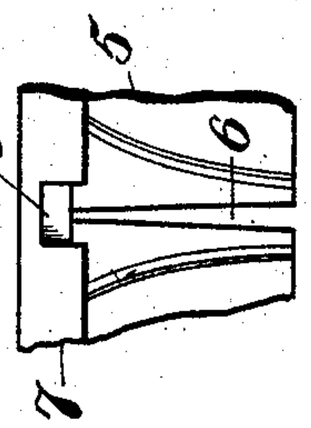

Fig. 4.

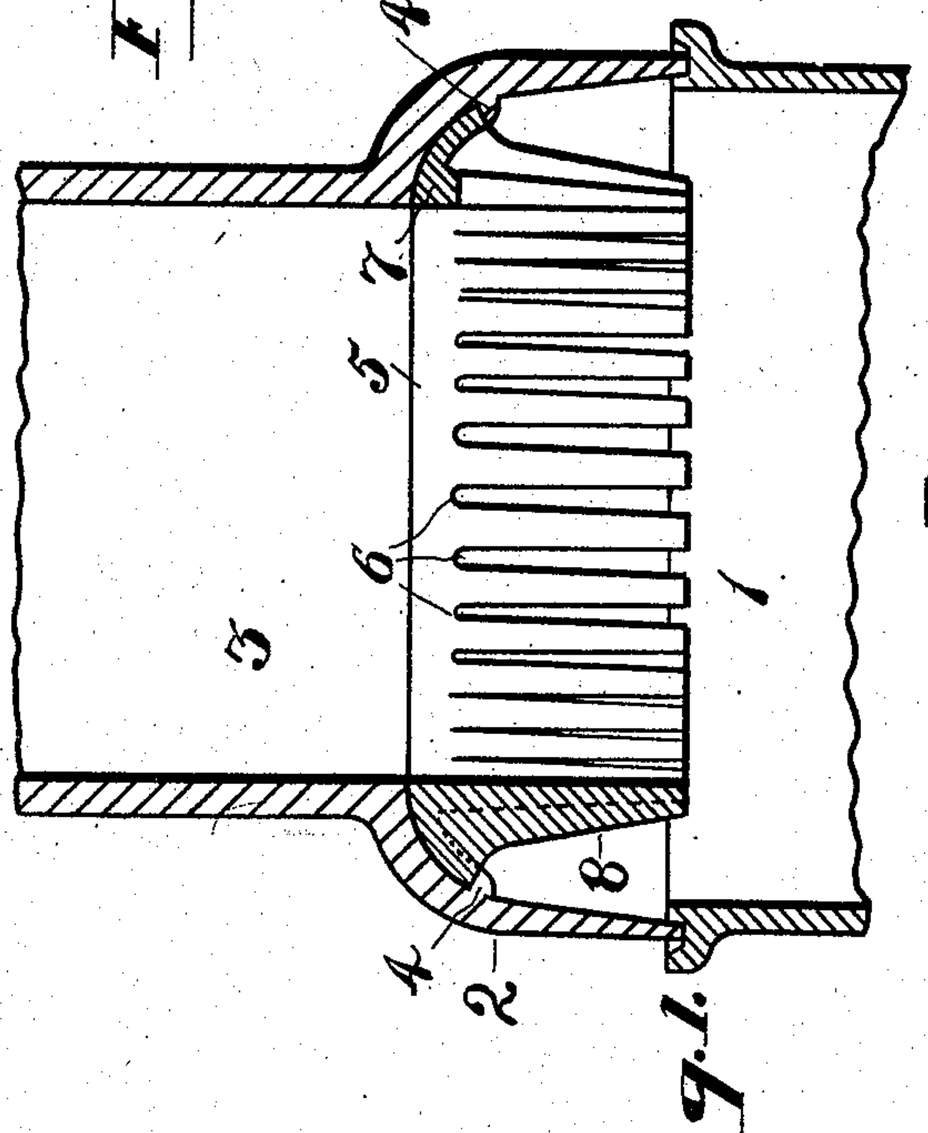

Fig. 1.

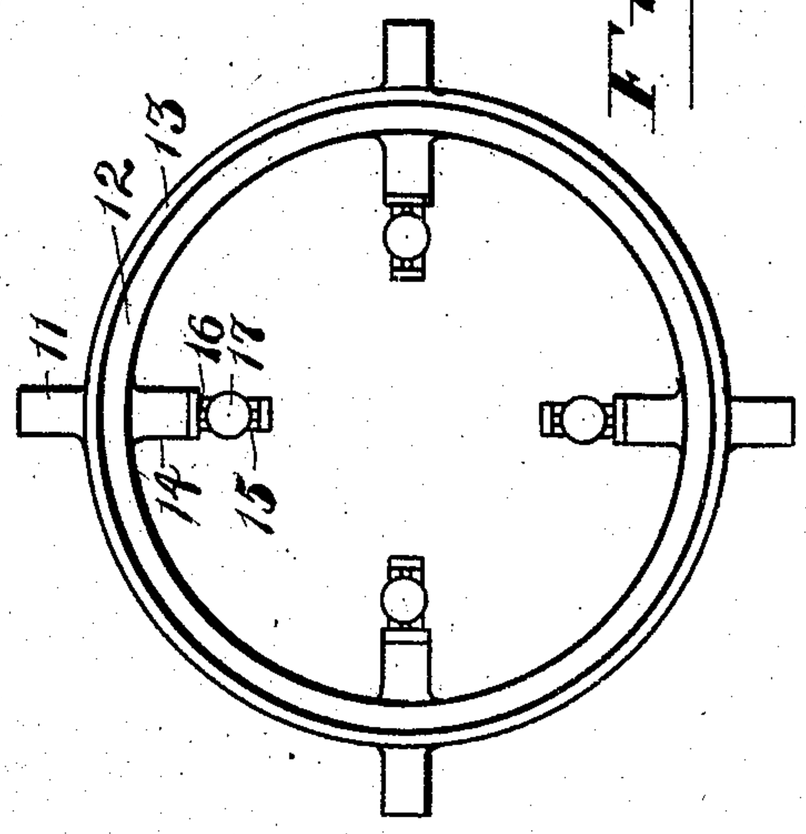

Fig. 3.

Witnesses,
A. E. Kling
Glenara Fox

Inventor,
R. M. Hinman,
by C. E. Humphrey
Atty.

UNITED STATES PATENT OFFICE.

ROBERT M. HINMAN, OF AKRON, OHIO.

FIRE-POT.

No. 815,959. Specification of Letters Patent. Patented March 27, 1906.

Application filed January 18, 1905. Serial No. 241,635.

To all whom it may concern:

Be it known that I, ROBERT M. HINMAN, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented a certain new and useful Improvement in Fire-Pots, of which the following is a complete specification.

This invention relates to fire-pots for stoves and furnaces, and has for its object the production of an improved fire-pot especially adapted for using soft coal, wherein it is desirable to introduce air to supply the requirements of combustion at the sides of the fire-pot and intermediate the bottom and top thereof in addition to the air introduced into the fuel from below the grate to produce economic and smokeless combustion of the fuel.

Another object is to make this fire-pot of simple construction, so as to be readily manufactured and repaired, and to provide it with a removable lining, which may be replaced as frequently as the needs of the case require, thereby making the stove or furnace in which it is used more durable.

A further object is to provide means for temporarily sustaining the fire-pot lining in position while erecting the furnace or repairing the same and independent means for supporting this lining when the stove or furnace is actively operated after it is completely set up in such a manner as to permit the expansion of this lining, due to excessive heat, without injury to the integrity of the main wall of the fire-pot.

In accomplishing the before-mentioned objects I employ certain novel and peculiar features, hereinafter more fully described, reference being had to the accompanying drawings, forming a part hereof.

In the accompanying drawings, in which similar reference-numerals indicate like parts in the different figures, Figure 1 is a vertical central section of my improved fire-pot resting on the ash-pit with the lining temporarily held in position to permit the insertion of the mechanism for permanently retaining the lining in position and sustaining the grate. Fig. 2 is a similar view of the fire-pot and ash-pit with the lining resting upon its permanent seat and detached from engagement with the temporary sustaining mechanism, only two supporting-arms being shown. Fig. 3 is a plan view of the permanent seat for the lining of the fire-pot, as well as the grate-sustaining mechanism; and Fig. 4, a portion of the outer side wall of the fire-pot lining.

In the drawings, 1 is an ash-pit, which may be of any preferred or desired description best suited to the work required thereof and provided on its upper edge with an annular groove, into which seats the lower end of the main body of the fire-pot 2. The wall of the fire-pot above the ash-pit converges slightly, and from this extends upwardly an approximately cylindrical portion 3. This inwardly-converging portion of the fire-pot is provided at properly-spaced intervals with inwardly-projecting lugs 4, for a purpose to be later described.

The lining proper of the fire-pot consists of an annularly-constructed member 5, having in the lower portion of the side walls thereof upwardly-extending slots 6, forming teeth at the lower edge thereof. From the upper outer edge of this lining 5 is an annular downwardly-curved rim 7, having an outer configuration similar in conformation to the inner surface of the converging portion of the fire-pot 2. Extending from the top to the bottom of the lining 5 and on the outside thereof are strengthening-ribs 8, made integral with the body of the lining 5. At properly-arranged intervals through the rim 7 are cut notches 9 of sufficient width to readily pass over the lugs 4 on the under converging sides of the fire-pot 2. In erecting or putting together a stove or furnace having this construction the lining is inserted into the ash-pit with the rim 7 at the top and raised vertically with the notches 9 so disposed as to straddle the lugs 4, and when the rim 7 is seated on the under face of the converging portion of the fire-pot 2 the lining is given a partial revolution, causing the lower edge of the rim 7 to ride over and coöperate with the lugs 4 to sustain it temporarily in position. It will be obvious from the description heretofore given that when this lining seats firmly against the under face of this converging portion of the fire-pot 2 it will receive an excessive amount of heat generated by the combustion of the fuel, and hence will expand to a greater degree than the main portion of the fire-pot, and this would result in the frequent cracking or breaking thereof. To avoid this, I make use of certain mechanism, which is the permanent support of this lining and which allows the complete expansion of the same without injury to the main body of the fire-pot.

At determinate intervals on the inner sides of the wall of the ash-pit 1 are lugs 10, and

upon these lugs are seated the lower ends of arms 11, projecting radially from a ring 12, provided with an outer beading 13. In placing this ring in position it is raised vertically from the floor of the ash-pit in such a way that the arms 11 will miss the lugs 10 and when at a sufficient height is given a partial revolution, which causes the lower ends of the arms 11 to coöperate with the upper faces of the lugs 10, thereby suitably sustaining the ring and its integral arms in position in the upper portion of the ash-pit 1. The lining 5 is then given a partial revolution sufficient to cause the notches 9 to straddle the lugs 4 and permit the lowering of the lining 5 a slight distance,which causes the lower points or edges of the teeth formed by the slots 6 to rest upon the ring 12 and be there retained from displacement by means of the beading 13. In manufacturing this ring 12 I preferably make integral therewith the internally-projecting arms 14, having in their inner ends pockets 15, in which are journaled shafts 16 of friction-reducing balls 17. Any suitable form of grate 18 may be provided for use in connection with this fire-pot, and I customarily provide on the under face of this grate a series of curved lugs 19, having their lower faces formed to ride on the upper surfaces of the friction-reducing balls 17.

It is obvious, of course, that any ordinary means for rotating this grate may be provided which the fancy of the user or requirements of the case may deem best. It is of course apparent that any suitable number of ball-bearing arms 14 may be employed which will best subserve the requirements of the user of the device, and while only two arms 14 are illustrated in Fig. 2 of the drawings it will be obvious that three or more supporting-arms 14 may be employed without in any manner departing from this invention.

It will be seen from the foregoing description that the lowering of the lining 5 from contact with the converging under face of the fire-pot 2 removes the danger of breakage of the fire-pot by the expansion of the lining 5 and also permits the ingress of air to the fuel within the lining 5 through the space existing between the rim 7 and the under surface of the converging portion of the fire-pot. In removing this lining the operation is the exact reverse of that employed for placing it in position, which can readily be followed by any one skilled in the art to which this invention appertains.

What I claim, and desire to secure by Letters Patent, is—

1. In a device of the class described, the combination of an ash-pit, a fire-pot suitably supported thereon, a removable slotted lining for said fire-pot and an annular device for supporting said lining, said fire-pot being provided on its inner face with means for supporting said lining, said ash-pit being provided with means for supporting said annular device, and said lining being formed to be temporarily supported by the fire-pot or to be permanently supported upon the annular device and out of contact with the fire-pot.

2. In a device of the class described, the combination of an ash-pit, a fire-pot suitably supported thereby, a removable lining for said fire-pot and a device for supporting said lining, said fire-pot being provided with means for supporting the lining, said ash-pit being provided with means for supporting said device, said lining being formed to be temporarily supported by the fire-pot, or to be permanently supported by said device out of contact with the fire-pot.

In testimony that I claim the above I hereunto set my hand in the presence of two subscribing witnesses.

ROBERT M. HINMAN.

Witnesses:
C. E. HUMPHREY,
GLENARA FOX.