

1,044,239.

W. F. PINKERTON.
STOVE.

APPLICATION FILED FEB. 27, 1911.

Patented Nov. 12, 1912.
3 SHEETS—SHEET 1.

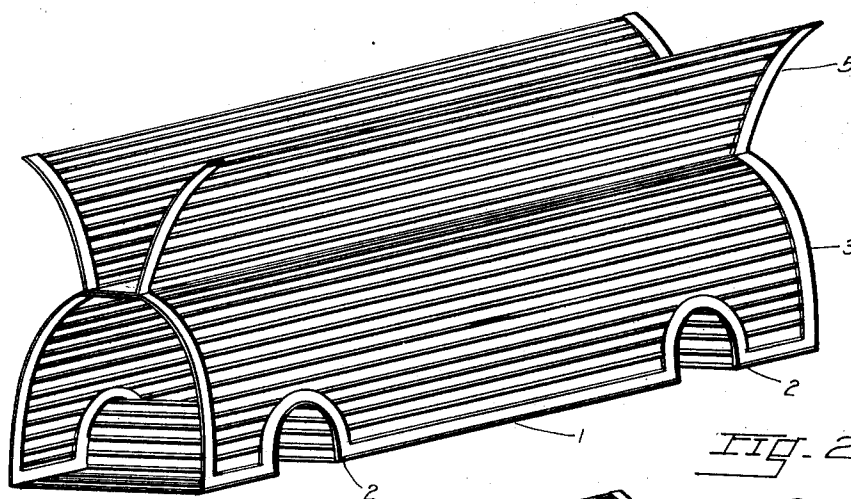


FIG. 2.

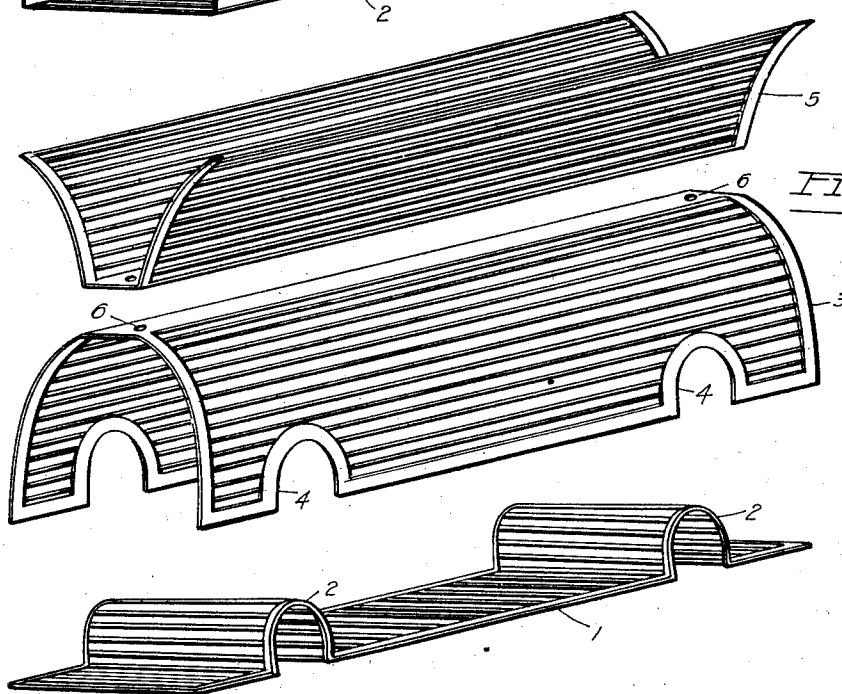


FIG. 1.

WITNESSES:

Elsie Mattoon
J A Shinnock

INVENTOR.

William Frank Pinkerton

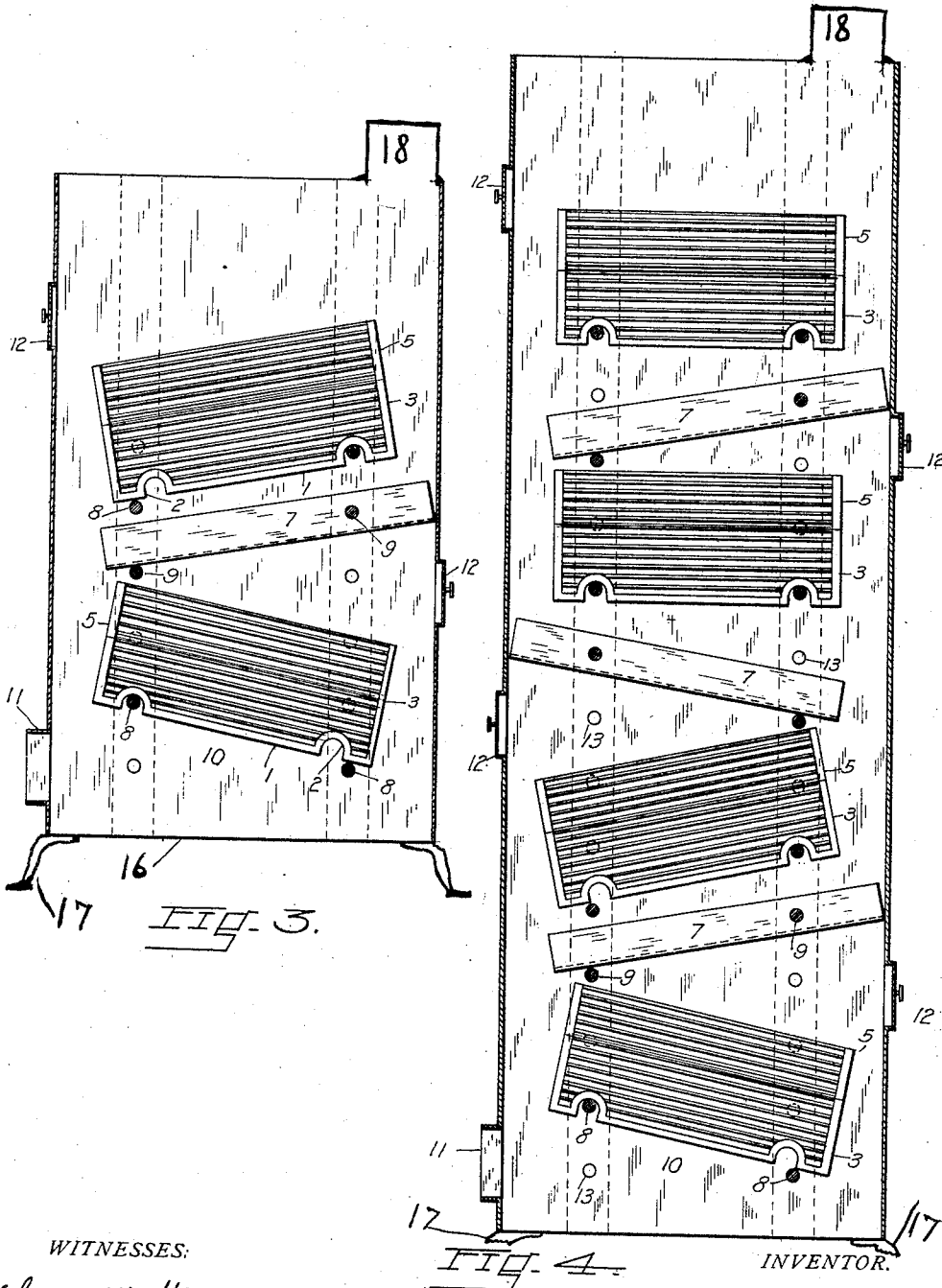
W. F. PINKERTON.
STOVE.

APPLICATION FILED FEB. 27, 1911.

Patented Nov. 12, 1912.

3 SHEETS-SHEET 2.

1,044,239.



WITNESSES:

Elsie Mattoon

J A Shimmovsky

William Frank Pinkerton

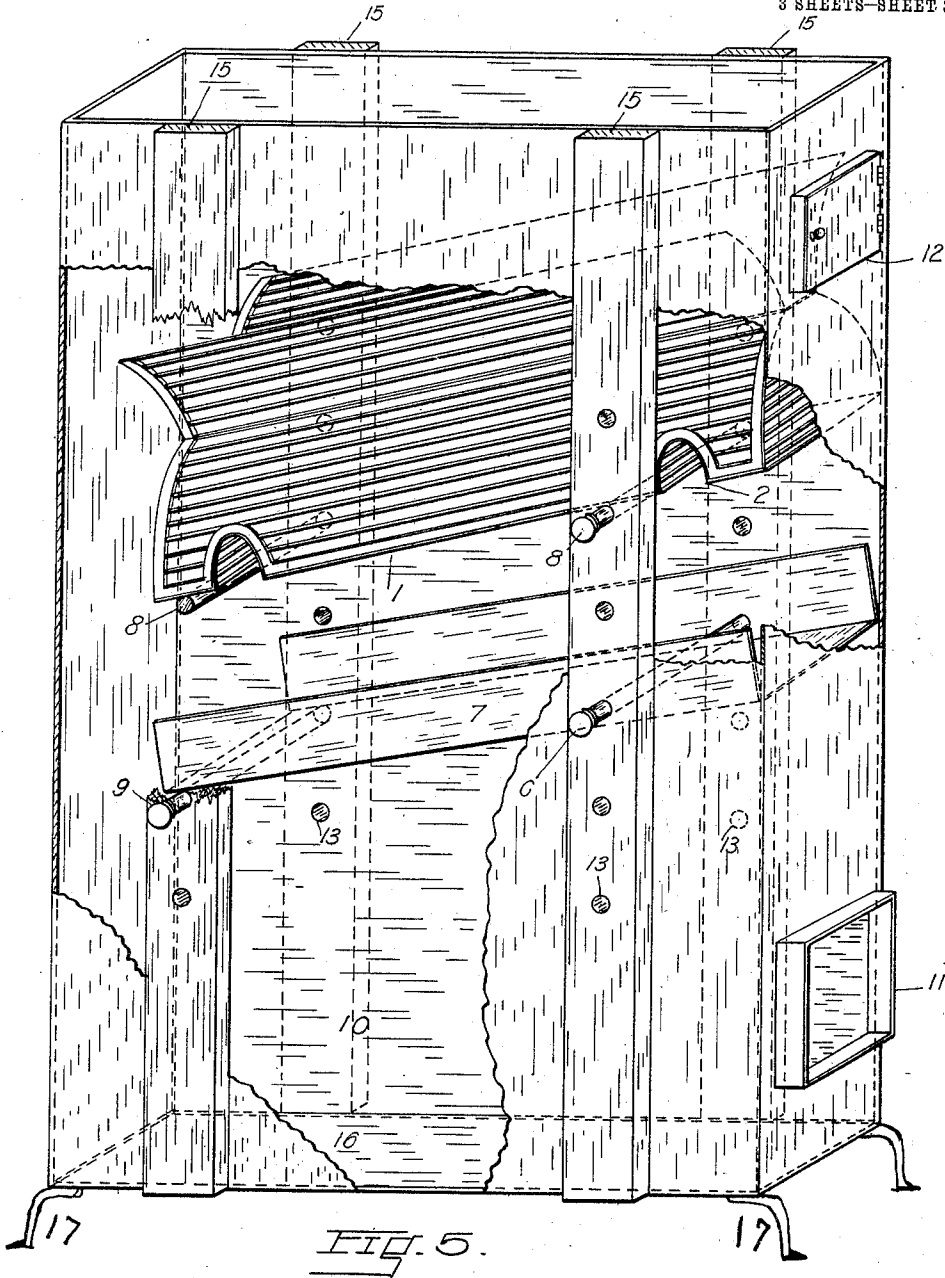
W. F. PINKERTON.
STOVE.

APPLICATION FILED FEB. 27, 1911.

1,044,239.

Patented Nov. 12, 1912.

3 SHEETS-SHEET 3.



WITNESSES:

Elsie Mattoon
J. A. Shumrosky

INVENTOR.

William Frank Pinkerton

UNITED STATES PATENT OFFICE.

WILLIAM FRANK PINKERTON, OF DENVER, COLORADO.

STOVE.

1,044,239.

Specification of Letters Patent.

Patented Nov. 12, 1912.

Application filed February 27, 1911. Serial No. 611,072.

To all whom it may concern:

Be it known that I, WILLIAM FRANK PINKERTON, a citizen of the United States, residing at Denver, in the county of Denver and State of Colorado, have invented an Improved Stove, of which the following is a specification.

My improved stove is intended especially for burning such fuels as straw, weeds, corn-stalks, chaff, grain screenings, dust, waste paper, and other trash and refuse.

The invention is an improvement upon that for which I have received Letters Patent of the United States, No. 985,058, dated February 21, 1911.

In my present invention I employ certain parts or portions of the preceding invention, to wit, the bottom grate, inner arches, the outer arch, and the upper inverted arch, but have dispensed with certain other parts as will hereinafter appear, the object being to provide a stove better adapted for burning fuels in a green or wet condition and also for burning the particular kinds of fuel before specified.

My invention comprises an exterior part or casing and an interior part which, in view of its openwork construction and its function, I have denominated a fire-cage.

In the accompanying drawings, Figure 1 is a perspective view of the several parts of the fire-cage disassociated. Fig. 2 is a perspective view of the fire-cage with its parts assembled and properly fitted together. Fig. 3 is a vertical section showing fire-cages arranged in a casing or stove body, two cages being shown placed one above the other and zigzagged or inclined in opposite directions, with a chute intervening them. Fig. 4 is a vertical section of a stove casing of larger size in which four fire-cages and three ash chutes are arranged in the required manner. Fig. 5 is a perspective view—a portion being broken away—of the lower portion of a stove body with a fire-cage in position and a chute arranged below it, the parts being in this instance shown on an enlarged scale and the fire-cage and chute being supported on cross-rods.

Referring particularly to Figs. 1 and 2, the numeral 1 indicates the bottom grate which forms the floor of the fire-cage and in practice takes the place of the ordinary fire-supporting grates of stoves or furnaces in general use. The bottom grate is shown provided with two transverse arches, indi-

cated by the numeral 2, the same being cast integral with the remaining portion of the grate and adapted to fit into recesses 4 in the base of the cage 3, whereby the latter is held in due position on the grate but may be readily removed for cleaning.

The numeral 5 indicates the inverted arch or cradle which forms the upper portion of the fire-cage, it being attached to the body or middle portion of the cage 3 by means of bolts passing through holes 6 in the flattened top thereof. This upper portion or cradle is designed chiefly to serve as a receptacle for wet or green fuel while in the process of drying preparatory to burning.

Fig. 3 illustrates a stove casing of small or medium size of the upright pattern which is particularly adapted for my improved fire-cage. The width of the casing or stove body is about one-quarter of the length which is a preferable proportion. The height of its body should be greater than its length in small stoves, and in large heaters, it may be several times greater. This figure is intended to illustrate the manner of using the fire-cages in a heater requiring two cages, the latter being placed one above the other, with an ash chute between them. The fire-cages are shown arranged at an angle but inclined in opposite directions or zigzag in regard to each other. The ash chute 7 is also inclined but parallel to the other upper fire-cage. The fire-cages are supported upon transverse rods 8 and the chute upon transverse rods 9. The numeral 10 indicates the ash pit and 11 an opening of the same which is ordinarily closed by a door 12 through which fuel is introduced.

Fig. 4 shows a heater of larger size, the several parts already described in other figures being indicated by the same numerals as before.

The numeral 18 in Figs. 3 and 4 indicates a smoke-pipe or flue.

It will be observed in both Figs. 3 and 4 that the ash chutes project at one end beyond the adjacent ends of the fire-cages, so that in practice the ashes falling from the uppermost cage drop upon the uppermost ash chute by which they are carried over or beyond the end of the fire-cage below and thus (in Fig. 4) they drop upon the next lower chute, being finally delivered into the ash pit 10. The object of thus arranging the fire-cages one above the other is that the flames rising from the lower cage may act

upon the fuel in the cage above it and thus assist in the drying or combustion of the same, and the heat and flame from the lower cages will thus act together upon the contents of the third cage and so on.

In Fig. 4 the two lower cages, which are tilted or inclined, are supposed to be charged with fuel which is comparatively dry or fit for burning, while the two upper cages, which are arranged horizontally, are supposed to be charged with wet or green fuel which becomes rapidly dried during the combustion of the fuel in the cages below.

Fig. 5 is intended to illustrate merely the arrangement in a stove casing of small size of a single cage and single ash chute. The transverse rods 8 and 9 which support the fire-cage and chute pass through the casing or body of the stove and through reinforcing strips 15 applied to the outer sides of the same. The top of the stove is shown removed in Fig. 4. Holes 13 are provided for the reception of the rods, so that the fire-cage or chute may be adjusted and supported at different angles, and such holes as are not closed by the rods are closed by means of suitable removable plugs. The fire-cages and ash chutes in the several forms of invention should fit closely to the sides of the heater body or casing and the ash chutes should fit closely at one end, as shown in Fig. 5. The casing or stove body should be made practically air-tight, that is to say, the joints should be air-tight and all openings for fuel, etc., should be fitted with doors which are substantially air-tight. The object of using the middle portion 3 of the fire-cage is to prevent the fuel from packing upon the bottom or fire-supporting grate and thus clogging the same and the arches that extend across the grate also serve to prevent clogging. Legs 17 are attached to the bottom 16 of the stove.

I thus provide a stove which will successfully burn a great variety of fuel for which ordinary stoves are not adapted and which will even burn them in a wet or green condition. The size and exact location of the feed doors and draft openings would, in practice, be varied more or less according to the particular class of fuels which the stove is intended to burn. Thus, in a stove intended for burning screenings of threshing machines, chaff, and similar fuel, such doors and openings would be shown as illustrated in the drawings; while if intended for burning coarse and bulky fuels, such as sedge brush, greasewood, etc., the feed doors would need to be much larger, and it is in some cases desirable that there should be

openings through the grating of the middle portion or cage through which fine fuel may be fed to the bottom grate.

What I claim is:—

1. A stove comprising a casing, a fire-cage constructed of a bottom fuel-supporting grate and having arches extending transversely, a middle portion or grating forming a cage resting upon the bottom grate and having recesses adapted to receive the arches of the latter, the said cage resting in an upright position upon the grate, and an upper grate portion having diverging sides and attached to and supported upon the middle portion, the whole fire-cage thus formed being arranged within the casing, and rods passing through the latter and serving for support of the cage, the rods being adapted for vertical adjustment to vary the inclination of the cage, substantially as described.

2. A stove comprising a casing, fire-cages constructed substantially as described, ash chutes arranged between the cages and inclined as specified, the ends of the cages projecting alternately beyond the ends of the cages immediately above them, rods passing through the casing and serving to support the cages and chutes, the said rods being adjustable vertically, whereby the angle or inclination of the cages and chutes may be varied at will, substantially as described.

3. A stove comprising a casing, a series of fire-cages and a series of ash chutes arranged in said casing, a chute being located immediately below a cage, and successive chutes projecting alternately beyond the ends of the chutes above them, whereby ashes from one chute may fall upon the chute below, substantially as described.

4. A stove comprising a casing, a plurality of fire-cages of the construction specified and a plurality of ash chutes all fitted within the casing and the chutes arranged between the cages and thus adapted for receiving ashes falling from an upper cage and convey the same over and upon the cage below, transverse rods passing through the casing which is provided with series of holes to permit vertical adjustment of the rods as required for holding the ash chutes at different inclinations, the fire-cages being arranged one above another so that heat and flame from a lower one will act upon fuel in those above and thus assist in combustion thereof, substantially as described.

WILLIAM FRANK PINKERTON.

Witnesses:

ELSIE MATTOON,
J. A. SHIMNOSKY.