portant elements. And if this be so, the novelty of the frame does not consist in its having two uprights standing apart from each other without regard to the figure of the intervening space. As we have seen, if the semicircular shape of what in the specification is called the inner margin of the yoke, that is, of the space between the uprights, is not a necessary constituent, the yoke cannot accomplish the results claimed for it, and no manner of support for a wringer is exhibited. Surely a frame shaped like an inverted M (W), though it would have two uprights separated by a space and connected at the bottom, would be essentially different from that claimed in this patent, because incapable of the same use. It could not support a clothes-wringer in the manner described in the drawings annexed to the patent. A space bounded by right lines is not substantially the same as one bounded by a curve, and unless we throw out of the specification and the claims all that is said respecting the configuration of the interval between the uprights, we must hold that the defendants, in the use of their device, have not been guilty of any infringement of the complainants' rights. They have used a portable support for a wringing mechanism which has some of the features of that of the complainants, but it has not the U-formed yoke, which is essential to the patented combination.

DECREE AFFIRMED.

This case was argued before the CHIEF JUSTICE took his seat, and he did not participate in the judgment.

HAILES *v.* VAN WORMER.

1. A new combination, if it produces new and useful results, is patentable, though all the constituents of the combination were well known and in common use before the combination was made. But the results must be a product of the *combination*, and not a mere *aggregate* of several results, each the complete product of one of the combined elements.

2 Merely bringing old devices into juxtaposition, and there allowing each to work out its own effect without the production of something novel, is not invention.

3. No one, by bringing together several old devices without producing a new and useful result, the joint product of the elements of the combination and something more than an aggregate of old results, can acquire a right to prevent others from using the same devices, either singly or in other combinations, or, even if a new and useful result is obtained, can prevent others from using some of the devices, omitting others, in combination.

APPEAL from the Circuit Court for the Northern District of New York.

Hailes & Treadwell, manufacturers of stoves, filed a bill in the court below against Van Wormer et al., engaged in the same business, to enjoin these last from making a certain sort of coal-stoves called "base-burning," "self-feeding," or "reservoir" stoves. These stoves are so called because they have a magazine or reservoir suspended above the fire-pot, which may be filled with coal at its upper extremity. This, when filled, is closed by a cover. The lower end of the reservoir or feeder is left open, and, as the coal in the fire-pot is consumed, that in the reservoir falls and supplies the place of that consumed, the combustion being only in the fire-pot, and not in the reservoir. Every reader, on looking at the diagrams on pages 355, 356 and 357, will recognize the sort of stove referred to.

The value of this sort of stove, which had been in large use in this country for some time, was not a matter of question. But persons were not all agreed as to what was the most economical and otherwise the most advantageous mode of embodying the principle which made the distinguishing characteristic of the stoves.

The bill was founded on two letters-patent; one reissued patent, granted to the complainants, February 3d, 1863, for an "improvement in stoves," the original patent having been granted to Hailes & Treadwell, as inventors, May 7th, 1861; the other a patent granted to one Mead and Hailes, assignees of Hailes & Treadwell, as inventors, August 11th, 1863, for an "improvement in coal stoves;" the interest of Mead in

Base-burning Stove.

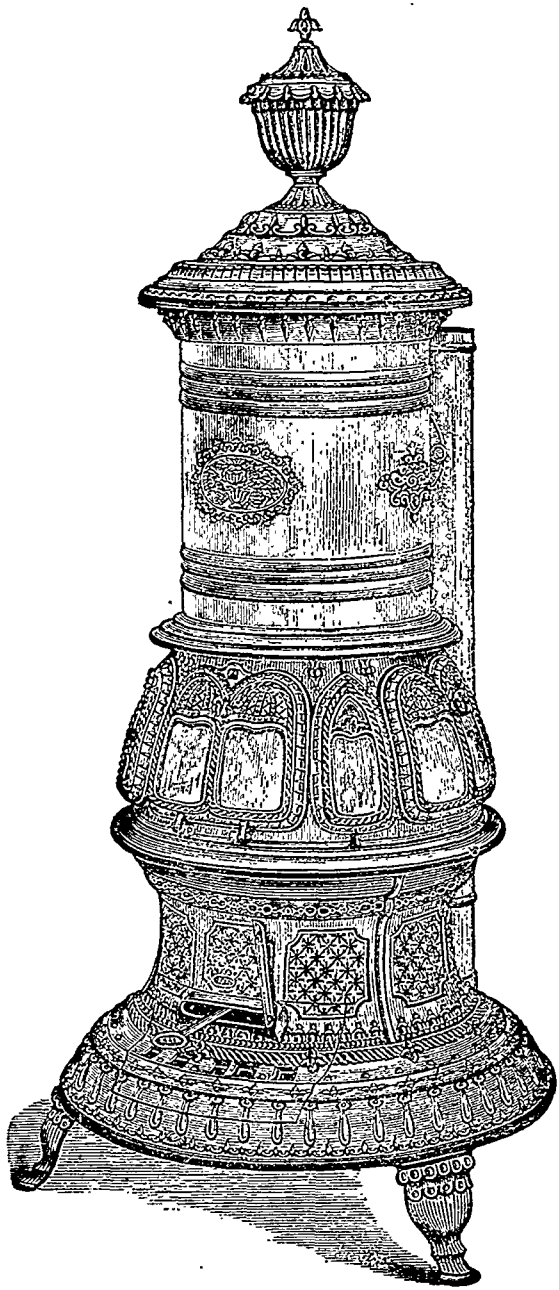


FIG. 1.—Base-burning Stove.

Base-burning Stove without the casing.

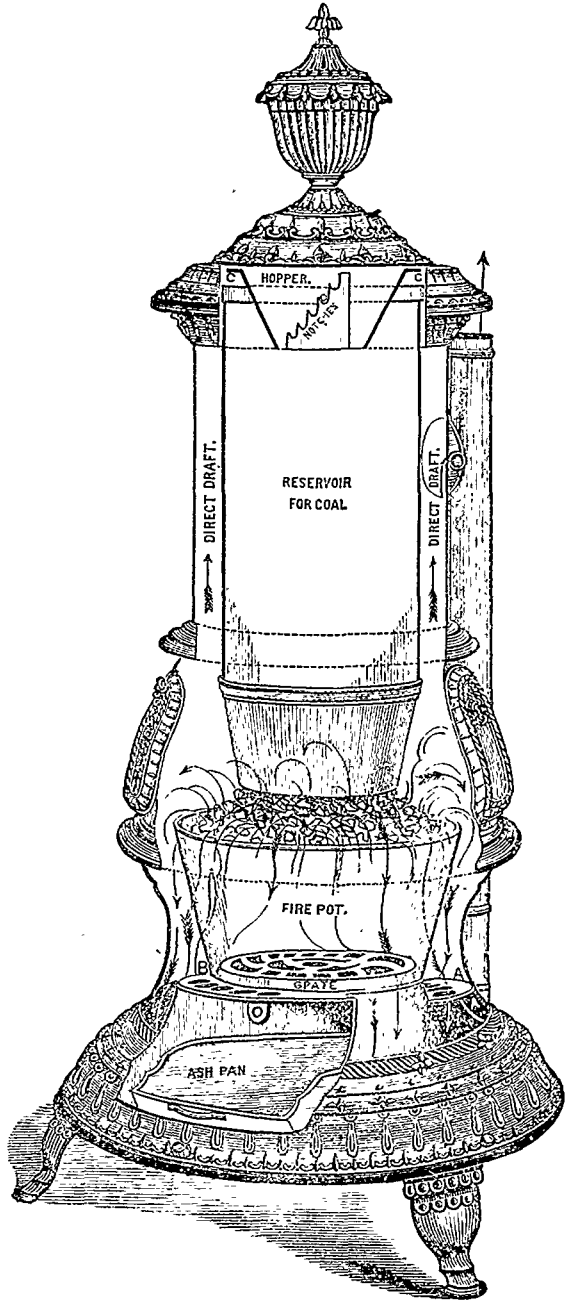


FIG. 2.—Base-burning Stove without the casing.

Vertical section of Base-burning Stove.

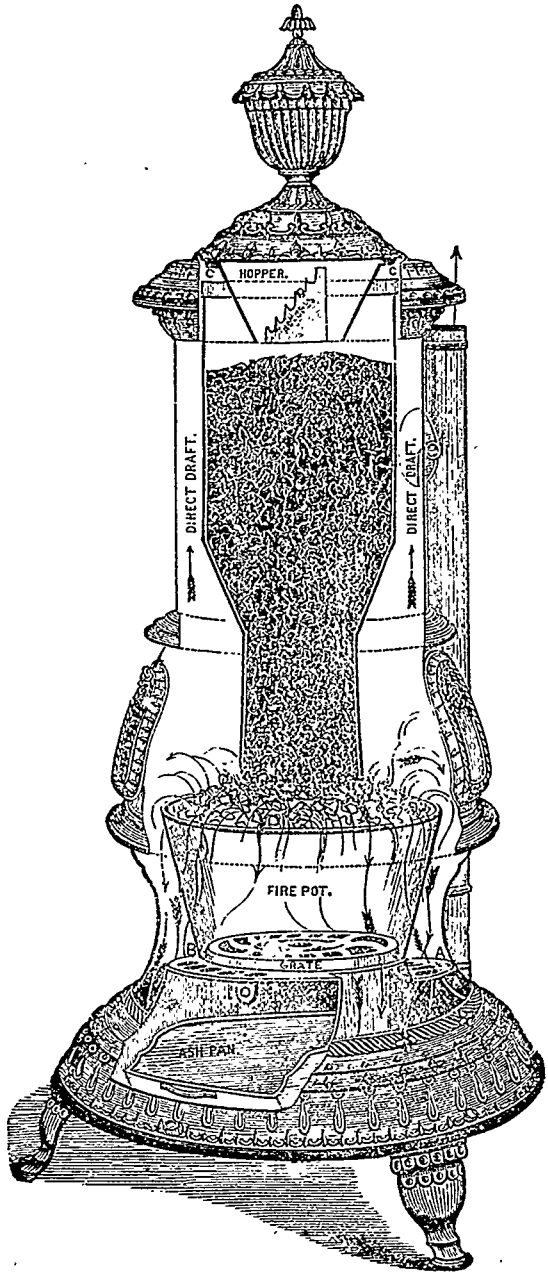


FIG. 3.—Vertical section of Base-burning Stove.

which patent had become vested in the complainant Treadwell.

The specification of the reissue of February 3d, 1863, said:

"Our experience in this class of stoves" (base-burning or reservoir stoves) "is, that the most beneficial effects are to be secured from an organization which does not pass the products of combustion up, around, and over the top of the coal-supply reservoir, so as to heat a surrounding jacket thereof, but heats a circulating or ascending body of air by means of radiated heat from the fire-pot, and at the same time heats the base of the stove by means of direct heat, circulating through descending flues which lead into the ash-pit, or around it, and to the smoke and draft flue; also, that the greatest economy, considering the increased benefit secured from supplying coal continuously out of a reservoir, is attained with an arrangement which holds the superincumbent body of coal in suspension, such arrangement being a reservoir with a contracted discharge extending slightly down into a flaring or enlarged fire-pot, around or above the whole upper edge of which, outside of the contracted discharge of the coal-supply reservoir, the flame is allowed to circulate, and, therefore, caused to descend and circulate around or under the base portion of the stove, in its passage to the smoke and draft flue.

"The effect of the first-named plan is to husband the radiated heat and use it for the purpose of warming the upper part of the stove and the room in which it is situated, as well as for heating air for warming rooms above, if desirable, and at the same time to so confine the direct fire-heat and keep it in contact with the base portion of the stove a sufficient length of time as to insure the warming of the same to a comfortable degree.

"The effect of the second plan is to relieve the incandescent coal from the weight of the body of superincumbent coal, and thus obviate a compression of the incandescent coal in the fire-pot, and secure for the flame a free expansion in a lively and brilliant manner, and thus enable it to act with great heating effect upon the lower portion of the stove in its passage to the smoke and draft flue.

"With the view of organizing a stove or heater which operates on the base-burning or coal-supply reservoir principle, and at the same time embraces the two plans of operation above referred to, we have devised the following plan of construction:

Statement of the case.

"A is a base of our stove, constructed with a chamber B, which extends around and beneath the top plate of the said base. In this chamber air may be admitted through the front passage A. Upon the top-plate of the base A is erected a support C, for horizontal grate D, and a fire-pot E, as shown. The support forms a chamber below the grate, and out of the front of the support

FIG. 4.

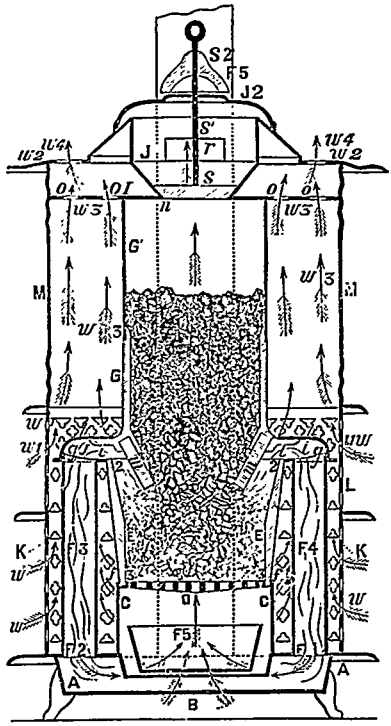
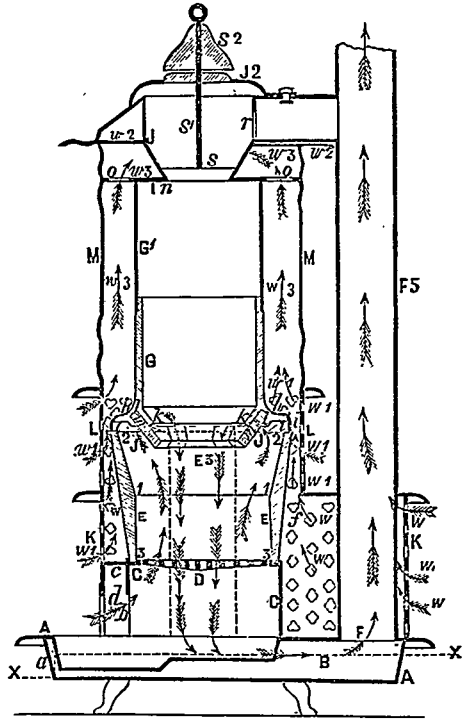


FIG. 5.



a portion of metal is removed as at *b*, so that air to the fire on the grate may have free access when the ordinary regulator or damper is open. In order to insure the passage of the air to the fire only from below the grate, a cut-off, *c*, extends out from the upper front part of the support C, and rests upon the two lateral stops *d*, which extend out from the front of the support, as shown. The top plate of the base, at points outside of the support C, is perforated with three apertures, F, F^1, F^2, which com-

municate with the chamber B. The apertures F^1, F^2, have vertical pipes F^3, F^4, placed in or around them, while the aperture F has the draft and smoke pipe or flue F^5 placed in or around it, as shown. The pipes F^3, F^4, extend up to the upper rim of the fire-pot E, and connect to perforated flanges or ears of said pot, so that a space, *f*, exists between the pipes and fire-pot, as shown. The outer portion of the top edge of the pipes F^3, F^4, protrudes above the flanges to a slight degree, as indicated at g, g.

"The fire-pot flares at top and contracts at its bottom; the flare and contraction are gradual. The section of the metal, of which the pot is made, shows a gradual decrease in thickness from the centre of the depth of the pot in an up and downward direction, as indicated at 1, 2, 3. This construction or form of the metal insures an equable heating of the pot at all parts, and a uniform expansion and contraction by the principle of conduction, the thickest and most intensely heated portion imparting to the thinnest or less intensely heated portions a large amount of its heat, on the principle just mentioned.

"Above the fire-pot and vertical pipes the coal-supply reservoir G is arranged. The reservoir is constructed with a flange, *h*, at its base, said flange turning down at its outer edge so as to form a right angle, or thereabouts, as shown at *i*. The rim, *i*, of the flange fits down upon the rim of the fire-pot and incloses the top opening of the fire-pot of the vertical pipes within a continuous chamber J, as represented; the said chamber constituting an enlargement to the upper portion of the fire-pot, as it were, and thus giving increased room for the expansion of the flame.

"The diameter of the coal reservoir is decreased below the point where the body of supply coal is suspended by means of an extension or ring-flange, *k*, which is in form of an inverted frustum of a cone. This flange also serves, in connection with a detachable ring *v*, which, also, is in form of an inverted frustum of a cone, to form a frame or sash for the reception of fire-brick or other fire-proof material, as shown at *m*. The ring v has a horizontal flange, and bolts by the same, to the under side of the flange n of the coal-supply reservoir. The fire-brick are shaped so as to form, when put together, an inverted frustum of a cone, and they, therefore, when clamped between the devices k, v, cannot descend, separately, out of their places, nor can they do so unitedly, as the largest circumference of the conic frustum *m* cannot pass through the space between the lower

ends of the devices k, v. It will be observed that the fire-brick continue the contraction of the coal-supply reservoir, and thus insure a gradual descent of the supply coal upon the central part of the bed of incandescent coal, and at the same time leave a large and open space outside of the conic frustum *m*, for the free burning and expanding of the gases or flame. This result is also furthered by the dishing form of the flange h, the same forming a large circulating flame-channel J, all round the upper edge of the fire-pot, as illustrated.

"The reservoir G is continued up to a horizontal division plate I of the stove, by means of an extension G^1, as shown. The division-plate I has a large coal-induction hole *n* in its centre and several hot-air passages *o o* near its circumference or outside of the circle of the coal-supply reservoir, as shown. Around the central hole n there is constructed a small, combined cylindric and conic hopper J, which is furnished with an adjustable valve *s*, and a removable cover-plate J^2, as hereinafter described. Through and from the rear of this hopper there extends a branch draft-flue *r*, the same leading into the main draft-flue F^5, as shown. In order to open and close this flue (*r*) and also to open and close the induction-hole to the coal-supply reservoir, the taper-valve *s* is fitted to the lower part of the hopper J, and up from the centre of the back of this valve a vertical rod s^1 extends and passes through the removable cover-plate J^2 of the hopper, and also through a weight s^2, as shown. The weight s^2 is not level on its bottom with the top surface of the cover-plate J^2, nor is the quantity of metal on one side of the rod as great as that on the other side. The cover-plate, the valve, the rod, and the weight, are all connected together, so that by taking hold of the rod the whole can be lifted together, that is, when the valve is raised, first, to its full stroke; but the connection is also such that, when the valve is required to be raised a less distance than its full stroke, the movement of the valve is independent of the cover-plate J^2; therefore the branch-flue *r* can be opened and closed or the damper-valve adjusted without disturbing the cover-plate, and whenever such an adjustment of the valve is made, the weight, by reason of its being unbalanced, will automatically bind upon the rod and hold it and the valve in suspension.

"It is desirable to open the branch of the direct draft-flue when the fire is first started, and also before the cover-plate J^2

is removed, first, in order to obtain a powerful draft, and second, to pass off the pent-up gases in the coal reservoir through the branch-flue, instead of allowing them to puff out into the room at the time when fresh coal is being introduced.

"The organization thus far described has but one shell, and in order to make it a double shell or wall-stove a casing, K, L, M, is placed around it from base to top. The part K of this casing incloses a portion of the fire-pot, and of the vertical pipes and draft-flue. This part is finely perforated all around so as to admit air to the first wall, to be heated as indicated at *w*. The part L of the casing incloses the remainder of the vertical pipes and fire-pot, and also a small portion of the coal-supply reservoir, but not the main draft or smoke flue. It is also finely perforated so as to admit cold air, as indicated at w^1. The part M of the casing incloses the remainder of the coal-supply reservoir, and extends up to and unites with a stationary top or finishing plate W^2. This part of the casing is not perforated, but the plate W^2 has perforations through it for the escape of the confined heated air W^3 into the room or into pipes leading to rooms above, as indicated by arrows W^4.

"It will be seen that the air circulates all about the radiating surface, and thus protects the same from rapid destruction by the fire, and while this is the case the air is very thoroughly heated, and discharged in that state into the room where the stove is situated, or into other conductors."

There were in this reissue twelve claims, the first five of which, the complainants alleged, had been infringed by the defendants, namely:

"(1.) A base-burning, coal-supply reservoir stove or furnace, so constructed that the products of combustion do not pass up, around, and above the supply-reservoir, nor up through the grate, but down outside of the fire-pot toward the base of the stove, and out through a main draught flue, which leads directly from a space or chamber about the lower part of the stove, all for the purpose set forth and substantially as described.

"(2.) The contracting of the discharge end of the coal-supply reservoir, the expanding of the fire-pot, and the extending of the flame-passage downward, for united operation, in a base-burning, coal-supply reservoir stove or furnace, essentially as set forth.

"(3.) A fire-pot resting on a base, and imperforated on its inner or outer circumference, or from its inner to its outer circumference, and so constructed and applied, with respect to a coal-supply reservoir, that an inclosed horizontal chamber for the free expansion and circulation of the flame and gases, is formed all around and outside of the contracted discharge, and above the upper edge of the fire-pot, substantially as and for the purpose set forth.

"(4.) The descending passage or passages, in combination with the continuous flame-expansion and circulation passage, and a main draft-flue, leading out of the base or lower part of the stove or furnace, substantially as set forth and for the purpose described.

"(5.) Constructing the fire-pot of a base-burning, coal-supply reservoir stove or furnace, with an imperforated circumference and in the form of a trumpet-mouth at its upper portion, in combination with descending flame-passages, substantially as described and for the purpose set forth."

The specification of the patent of August 11th, 1863, stated that the invention covered by it was an improvement on the stove patented by the reissue of February 3d, 1863, and consisted,

"1st. In the construction of an illumination-window or windows, at one or more points in the continuous flame-expansion chamber or channel, which is about the base of the coal-supply reservoir and the top of the coal-burning fire-pot, in combination with a descending flue which leads to a chamber about the base of the stove, and from such chamber into a chimney-flue.

"2d. In the construction of a damper draft-flue in the continuous flame-expansion chamber or channel, located as just stated, in combination with a descending flue, which first leads down into a chamber about the base of the stove, and then into the chimney-flue, with which the damper draft-flue connects directly at the top of the fire-pot."

The patent (see figures on page 364) proceeded:

"Fig. 1 is a vertical longitudinal section of a stove patented by us at previous dates, with our improvements of the present date applied to it.

"Fig. 2 is a vertical transverse section of the whole stove.

Statement of the case.

"Our first improvement is carried into practice by casting the fire-pot A with a rectangular, elliptical, or circular extension *a* (Fig. 1) (6) at one or more points of its upper edge. This enlargement we extend through an opening in the outer casing or jacket B of the stove, and close it with mica or other transparent material C, as shown. We may find it more practical to form a short ledge on the upper edge of the fire-pot, as at b, and cast the

FIG. 6.

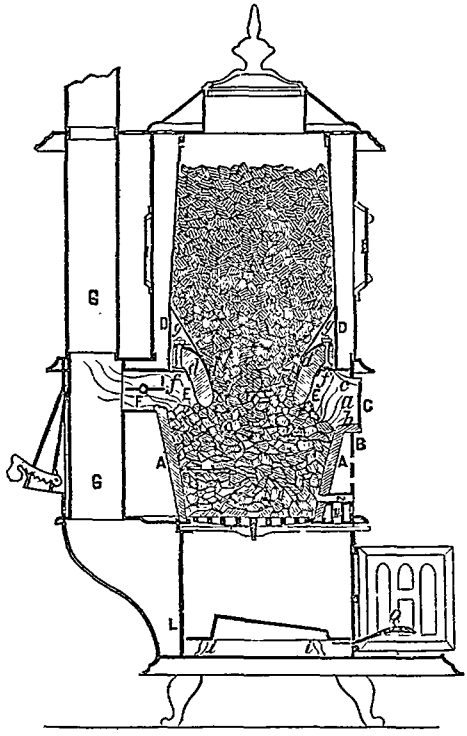
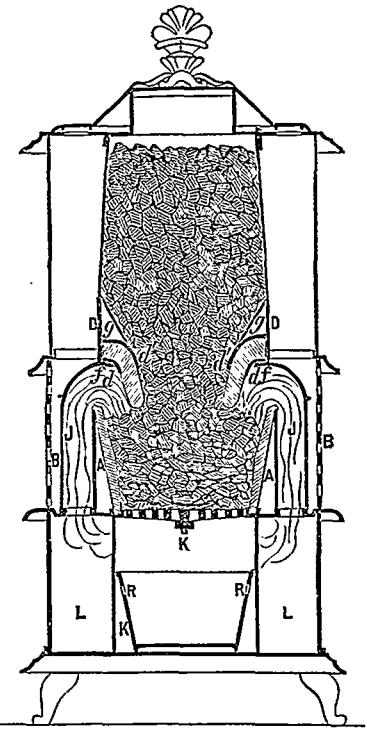


FIG. 7.



enlargement c on the part D, which forms the expansion-flame passage E, as shown. In any case, the illumination-window must be constructed so as to confine the flame and gases at this point within the flame-chamber E.

"Our second improvement is carried into practice by casting in like manner an enlargement of proper form to make a branch-flue F on the upper edge of the fire-pot, or on the lower edge of

the part D, as represented. This branch-flue we run into the smoke-pipe or draft-flue G, and in order to open and close it at will, we have arranged within it a damper or valve I, which has its rod, by which it is turned, extended to the outside of the casing of the stove. By opening the damper a direct draft is obtained, and the fire can be kindled very speedily, and the draft does not have to pass up through the body of coal in the reservoir, as in our other patented stove. When the damper is closed, the highly ignited gases pass down the descending flues J J, as in our former patent. We will here state that we have slightly modified the base of our stove by increasing the depth of the ash-pit K, and dispensing with a chamber or space underneath the ash-pit. This space or chamber L, in which the heated products of combustion circulate to heat the base of the stove, and pass to the draft- or smoke-flue, being only around the ash-pit."

There were in this patent six claims, the first two of which, the complainants alleged, had been infringed by the defendants, namely:

"(1.) The combination of the illuminating openings, flame-expansion chamber, coal-supply reservoir, fire-pot, descending flue and draft-flue, substantially in the manner and for the purpose described.

"(2.) The combination with the flame-expansion chamber, formed at the base of the coal-supply reservoir, and around the upper edge of the fire-pot of a base-burning stove, of the branch draft-flue with damper, when the same are located with respect to the flame-expansion chamber, fire-pot, coal-supply reservoir, and descending combustion-flues, substantially as and for the purpose described."

Certain parts of the things above described were shown by the evidence, or were admitted, not to be new in A.D. 1861, when the complainants professed to have invented their base-burning stove. Among them these:

The introduction of a magazine or reservoir into a stove for the purpose of supplying coal to the fire-pot below.

The contraction of the lower end of the said reservoir, so that it should be smaller than the upper portion thereof,

which, the complainants asserted, aided in sustaining the mass of coal therein, and prevented too great pressure upon the burning coal in the fire-pot.

The construction of a fire-pot of larger diameter at the top than at the bottom.

So also stoves so constructed that the smoke, gas, and other products of combustion passed from the fire-chamber through downward flues to or near the level of the bottom of the stove were common; the revertible flues so-called had long been in use.

In one of the exhibits these products of combustion were passed down and through a chamber in the base of the stove and thence out into the smoke-pipe.

The addition of a direct draft to such stoves as were constructed with revertible flues, by means of a flue above the fire-pot provided with a damper to be closed after the fuel had been ignited was no novelty.

The use of openings in the exterior or shell of the stove and the insertion of mica therein in order to permit the light emitted in the process of combustion to be seen, had been employed for very many years.

The stove of the defendant, which the complainants alleged infringed their patents, contained in combination several of the devices claimed by the complainants, as—

1. The flaring fire-pot supported by a base, the diameter of the pot narrower at the bottom than at the top.

2. A vessel over the fire-pot to receive the coal, and let it down by way of supply on the fire below; the lower end of the vessel being narrower than the upper.

3. Revertible flues outside of the pot to conduct the products of combustion downwards to the base of the stove and thence to a main draft-flue leading thereout.

4. A direct draft for such stoves as are constructed with revertible flues, the direct draft being obtained by a flue passing out above the fire-pot, and provided with a damper to be closed after the fuel has been ignited.

5. Holes or openings in the iron case of the stove in which to put plates of mica so as to let the fire in the stove be seen

through it, and to give light to the room in which the stove is.

In the defendant's stove, however, there was no such peculiar structure of the lower extremity of the supply reservoir, nor such a closed expansion-chamber as in the complainant's stove; the reservoir did not rest on the fire-pot; nor had it a connection either with it or with the sides of the stove; nor was there anything interposed to the passage of the products of combustion up and around the reservoir when the flue for direct draft was open; and when that flue was closed the flame was not detained over the burning coal, but the products of combustion passed directly across the edge of the fire-pot and descended along its sides to the interior draft-passage.

So, in the defendant's stove, the entire space around the magazine and the fire-pot was completely inclosed. There was but a single chamber around the reservoir over the surface of the burning coal and around the fire-pot. Through this chamber the products of combustion passed, either through the direct draft-flue, when that was in use, or to the base of the stove and thence outward.

The court below dismissed the bill and the complainant brought the case here.

Mr. E. H. Bennett, for the appellant; Mr. C. M. Keller, for the appellee.

Mr. Justice STRONG delivered the opinion of the court.

The sort of stoves known as "base-burners," or self-feeding stoves, had been made and they were well known years before either of the complainants' patents were granted, and it is not asserted that merely as base-burning stoves they are within the monopoly of the patents. The inventions claimed are alleged improvements in the structure and arrangement of such stoves. They consist in what is described as a new combination of old and known devices producing a new manufacture, namely, a stove uniting in itself all the advantages of a reservoir stove, and those of a revertible-draft

stove which prevents the products of the combustion in the fire-pot from passing up, around, and over the reservoir, thereby heating the fuel therein so as to expel its gases, and cause their explosion as well as their escape into the apartments where the stove may be placed. All the devices of which the alleged combination is made are confessedly old. No claim is made for any one of them singly, as an independent invention.

It must be conceded that a new combination, if it produces new and useful results, is patentable, though all the constituents of the combination were well known and in common use before the combination was made. But the results must be a product of the combination, and not a mere aggregate of several results each the complete product of one of the combined elements. Combined results are not necessarily a novel result, nor are they an old result obtained in a new and improved manner. Merely bringing old devices into juxtaposition, and there allowing each to work out its own effect without the production of something novel, is not invention. No one by bringing together several old devices without producing a new and useful result the joint product of the elements of the combination and something more than an aggregate of old results, can acquire a right to prevent others from using the same devices, either singly or in other combinations, or, even if a new and useful result is obtained, can prevent others from using some of the devices, omitting others, in combination.

If now we examine the patents held by the complainants, looking first at the objects sought to be obtained by the combinations for which the patents were granted, they are, as described in the specification, first, to prevent the passage of the products of combustion up, around, and over the top of the coal-supply reservoir, so as to heat a surrounding jacket thereof; and, secondly, to heat a circulating or ascending body of air by means of radiated heat from the fire-pot, and at the same time to heat the base of the stove by means of direct heat circulating through descending flues which lead into the ash-pit, or around it, and to the smoke

and draft flue. A third avowed object is to secure economy by retarding the fall of the coal into the fire-pot from the supply reservoir, and by causing the flame to circulate outside of the contracted discharge of the reservoir, and around the upper edge of the fire-pot, and thence to descend around or under the base of the stove in its passage to the smoke and draft flue. Such are the avowed objects of the combinations claimed to have been devised by the patentees, and their effects they assert to be husbanding the radiated heat, and using it for the purpose of warming the upper part of the stove and the room in which it is situated, as well as for heating air for warming rooms above, if desirable, and at the same time so confining the direct fire heat, and keeping it in contact with the base portion of the stove as to insure warming it to a comfortable degree. A second effect claimed is relief of the incandescent coal from the weight of the body of superincumbent coal, thus preventing the compression of the burning coal in the fire-pot, and securing for the flame free expansion, thus enabling it to act with greater heating effect upon the lower portion of the stove in its passage to the smoke and draft flue.

The combination employed to produce these effects consists of the following devices, among others:

1st. A flaring fire-pot supported by a base, the diameter of the pot being larger at the top than at the bottom.

2d. A magazine or reservoir for supplying coal, located over the fire-pot, and having its lower end contracted.

3d. Revertible passages or flues outside of the pot for the conduct of the products of combustion downwards to the base of the stove and thence to a main draft flue leading thereout.

4th. A direct draft for such stoves as are constructed with revertible flues, the direct draft being obtained by a flue passing out above the fire-pot and provided with a damper to be closed after the fuel has been ignited.

5th. Openings in the case or exterior of the stove and the insertion of mica therein for the purpose of illuminating the

room in which the stove may be with the light of the burning fuel.

These devices *with others* are brought together and claimed as a new combination, and several combinations of some of them are also claimed as inventions, producing novel and useful results. What those other devices are we need not specify, for it is not shown that they are employed by the defendants.

The stove of the defendants does, however, contain all those mentioned and contain them in combination. That each of them was an old device, well known, and in public use before the patents of the complainants were granted is abundantly proved by the evidence submitted. A flaring fire-pot, a supply reservoir with its lower extremity of smaller diameter than its upper, revertible flues, a place for flame expansion above the fire-pot, the addition of a direct draft for use in igniting the fuel, provided with a damper, and the insertion of mica for illumination openings, were all found in stoves before Hailes and Treadwell claimed to have made their invention. It is true there is a peculiarity in the construction of the lower extremity of the complainants' supply reservoir. It is provided with a circular flange, extending outward and bending downward, so as to fit upon the upper rim of the fire-pot, and thus form a closed combustion-chamber. This, of course, cuts off communication with the space around the upper part of the reservoir, and confines the flame and other products of combustion within a circular combustion-chamber thus formed, leaving no outlet for them except through ear passages into revertible flues. For this device, the peculiar structure of the reservoir, and the formation of the closed expansion chamber, there is no equivalent in the defendants' stove. There is no such closed chamber. The reservoir does not rest on the fire-pot. It has no connection with it, or with the sides of the stove. Nor is there any obstacle interposed to the passage of the products of combustion up and around the reservoir when the flue for direct draft is open. And when that flue is closed, the flame is not detained over the burning coal, but the products of

combustion pass directly across the edge of the fire-pot and descend along the sides thereof to the inferior draft-passage. Such an arrangement is not fitted to produce the effects sought and claimed for the complainants' stoves. On the contrary, it plainly excludes them.

There are other differences in the devices used both in the complainants' and the defendants' stoves, which we think are substantial, and not merely formal. The combination claimed by the complainants passes the products of combustion out of the chamber through perforations in the flange or through ears into flues leading downwards but wholly exterior to the fire-pot, and not in contact with it. This arrangement makes it possible to introduce external air through perforations in the outer casing of the stove, and allow it when heated by contact with the fire-pot and the descending flues to escape from the top. Accordingly the outer casing is perforated, and there is no closed magazine around the fire-pot. But in the defendants' stove there is no such device and no such effects are produced. There are no external downward flues separated from the fire-pot. The whole space around the magazine and the fire-pot is completely inclosed. There is but a single chamber around the reservoir, over the surface of the burning coal, and around the fire-pot. Through this chamber the products of combustion pass, either through the direct draft-flue, when that is in use, or to the base of the stove and thence outwards. This arrangement also excludes the possibility of an effect claimed for the Hailes and Treadwell invention. It admits of no space around the fire-pot to which the external air can have access.

It is not, then, the combination of old devices which the defendants use that Hailes and Treadwell invented. It is not those old devices that produce the new results claimed. The complainants' combination is a different thing. It has a greater number of constituent elements. It consists in the employment of the devices used by the defendants, together with others they do not use, and the result of the entire combination is the production of a stove differing very ma-

terially from that of the defendants. And the defendants' combination cannot produce the results claimed for that of the complainants. We have said that the new results claimed, whatever they may be, are not the production of the combined devices common to both stoves. The devices used by the defendants produce no new effects, because used in combination. The space around the fire-pot leading to the base doubtless secures the beneficial results long known to follow the use of revertible flues. It may be conceded to be an equivalent for such flues. But the results of its construction are not changed by the fact that a flaring fire-pot, and a supply reservoir with a contracted discharge end, and openings for illumination are used in the same stove. It still operates to conduct the products of combustion to the base, and into the exit flue. No new operation is given to it by the combination. The same may be said of every other device employed by the defendants which is also in the complainants' combination. Each produces its appropriate effect unchanged by the others. That effect has no relation to the combination; in no sense can it be called its product. Thus far nothing novel is produced. This, then, is mere aggregation of devices, not invention, and consequently the use of those devices, either singly or together, cannot be held to be any infringement of rights belonging to the complainants.

We pass now to consider more in detail the claims in the complainants' patents which it is alleged the defendants have infringed. The first in the reissued patent, dated February 3d, 1863, is unquestionably too broad to be sustained, unless limited to the means described in the specification. So it was doubtless intended by the patentees to be limited, for the claim speaks of the combination claimed "as substantially described," that is, described in the specification. Thus limited, one of its essential elements is a closed combustion-chamber over the fire-pot, formed by a flange of the reservoir resting on the upper edge of the pot, and provided with perforations or ears connecting with two flues passing downwards. This element is indispensable for the purposes

asserted in the claim, as well as in the specification. And the peculiar structure of the chamber is more than formal. It is functional. It prevents the passage of the flame and other products of combustion up, around, and over the supply reservoir, which is a leading avowed object of the invention, precisely the improvement patented. But this constituent of the combination the defendants have never used, nor have they used any corresponding device, or device producing the same results.

The second claim is for contracting the discharge end of the coal-supply reservoir, expanding the fire-pot, and extending the flame passage downward for united operation in a base-burning coal-supply reservoir stove or furnace, essentially as set forth. The means set forth for extending the flame passage downwards are perforations through the flange forming the lateral boundary of the closed combustion-chamber, or ears leading thereout and close flues extending from the ears or perforations downward at some distance from the fire-pot through a space bounded on one side by the fire-pot and on the other by an outer casing of the stove perforated for the admission of external air. It might, perhaps, be questioned whether there is any device in the defendants' stove corresponding to this, but waiving the consideration of that question, it is very evident that the combination of the three devices named is not the work of invention. They have no relation to each other. Neither the form of the feeder, nor the shape of the fire-pot bears at all upon the direction of the draft passages. There is no novel result flowing from the joint operation of the three devices. The revertible flues have no more to do with a stove supplied by a feeder than they would have with a stove supplied by hand. There is, therefore, nothing in this claim that interferes with what the defendants have done.

An essential element of the combinations mentioned in both the third and fourth claims is the closed combustion-chamber formed, in part by a circular flange extending outward and closing on the top of the fire-pot, with perforations in it, or ears for connection with the downward flues, or it is

those perforations or ears leading out of such a chamber to the descending passages. These devices the defendants do not employ, and they cannot be used in the defendants' stove. There has been, therefore, no infringement of these claims.

The fifth claim is the only remaining one contained in the reissue which the defendants are alleged to have invaded. It is constructing the fire-pot of a base-burning stove with an imperforated circumference and in the form of a trumpet mouth at its upper extremity, in combination with descending flame passages, substantially as described, and for the purposes set forth. How in combination? As described in the specification, united by means of perforated flanges or ears of the pot, involving, of course, the presence of a closed combustion-chamber constructed substantially as already described. Construing the claim thus, as we think it must be construed, the defendants have been guilty of no infringement.

Passing now to the second patent, issued August 11th, 1863, we observe that its first claim was for a combination of the illumination openings, flame-expansion chamber, coal-supply reservoir, fire-pot, descending-flue and draft-flue, substantially in the manner and for the purpose described. In the main this is the same combination as that claimed in the reissued patent we have had under consideration. The only change is the addition of illumination openings. These were a well-known device applied to stoves long before either of the patents were granted. They perform no peculiar office in the new combination. They have no possible relation to it. They do not affect, in the slightest degree, the results of that combination, whatever they may be. It is impossible to regard the mere addition of such openings to a stove containing the improvements described in the reissued patent, as the formation of a new patentable combination. It is not invention. If, however, it were, the defendants have not trespassed upon it, for of the combination the peculiarly formed close expansion chamber is an essential constituent, and that is not found in the defendants' stove.

Similar remarks might be made respecting the second claim of the patent of August, the only remaining one alleged to have been infringed. All the elements of the combination have not been used by the defendants.

DECREE AFFIRMED.

This case was argued before the CHIEF JUSTICE took his seat, and he did not participate in the judgment.

FERRIS v. HIGLEY.

1. The act of Congress under which Utah was organized as a Territory provided for a Supreme Court, District Courts, Probate Courts, and justices of the peace, and distributed the judicial power among them.
2. It gave to the Supreme and District Courts a general jurisdiction at common law and in chancery, and limited and defined the powers of the justices of the peace.
3. It declared that the legislative power should extend to all rightful subjects of legislation not inconsistent with the Constitution of the United States or with the organic act.
4. The act of the Territorial legislature conferring on the Probate Courts a general jurisdiction in civil and criminal cases, and both in chancery and at common law, is inconsistent with the organic act, and is, therefore, void.

ERROR to the Supreme Court of the Territory of Utah. The case, which involved a question as to the jurisdiction of the Probate Courts of Utah, was thus:

In 1850 Congress passed an act "to establish a Territorial government for Utah;" the organic act governing the Territory.* The act is a long act, of seventeen sections. It defines the boundaries of Utah; establishes an executive power and defines its duties; provides for a secretary of the Territory and defines his duties. It establishes also a legislative power; declares of whom it shall be composed, and

* Act of September 9th, 1850; 9 Stat. at Large, 453.