

(No Model.)

C. BASSINI.
STOVE FOR RAILWAY CARS.

No. 377,057.

Patented Jan. 31, 1888.

Fig. 1.

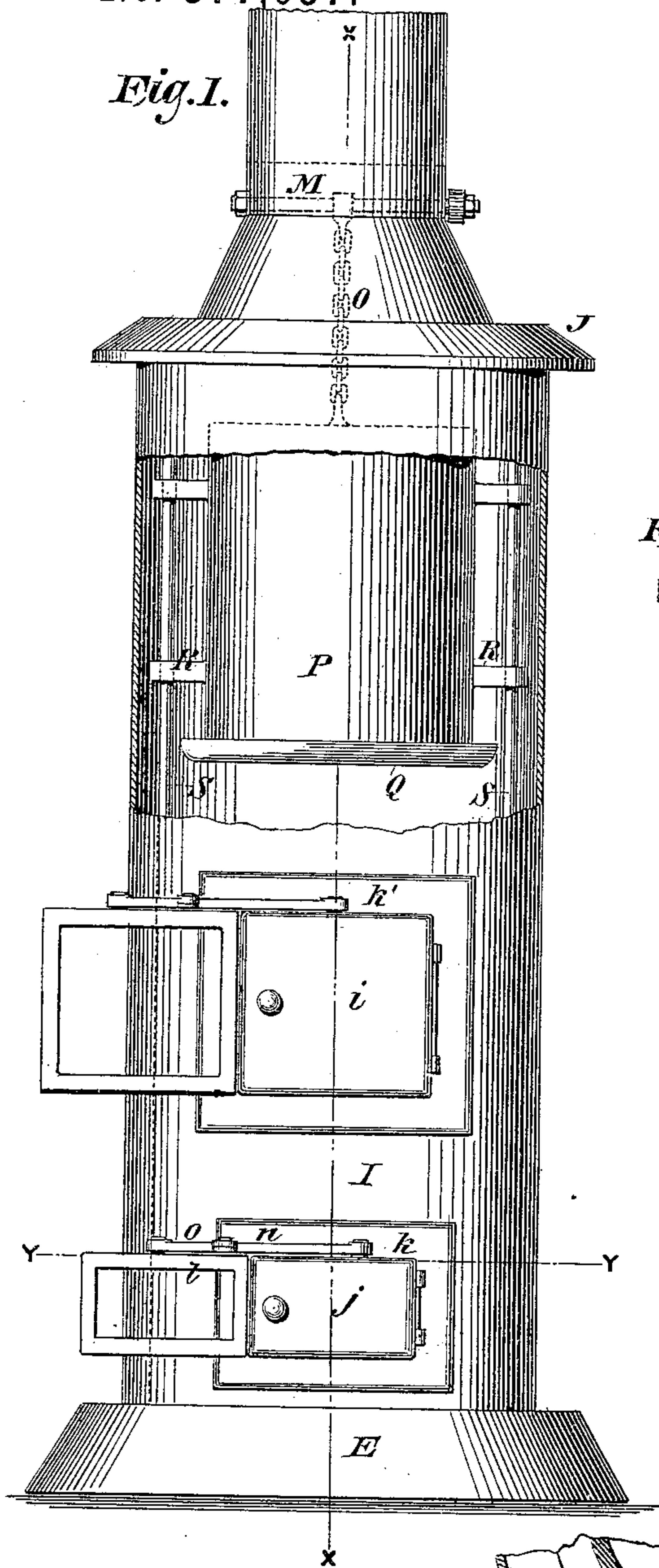


Fig. 2.

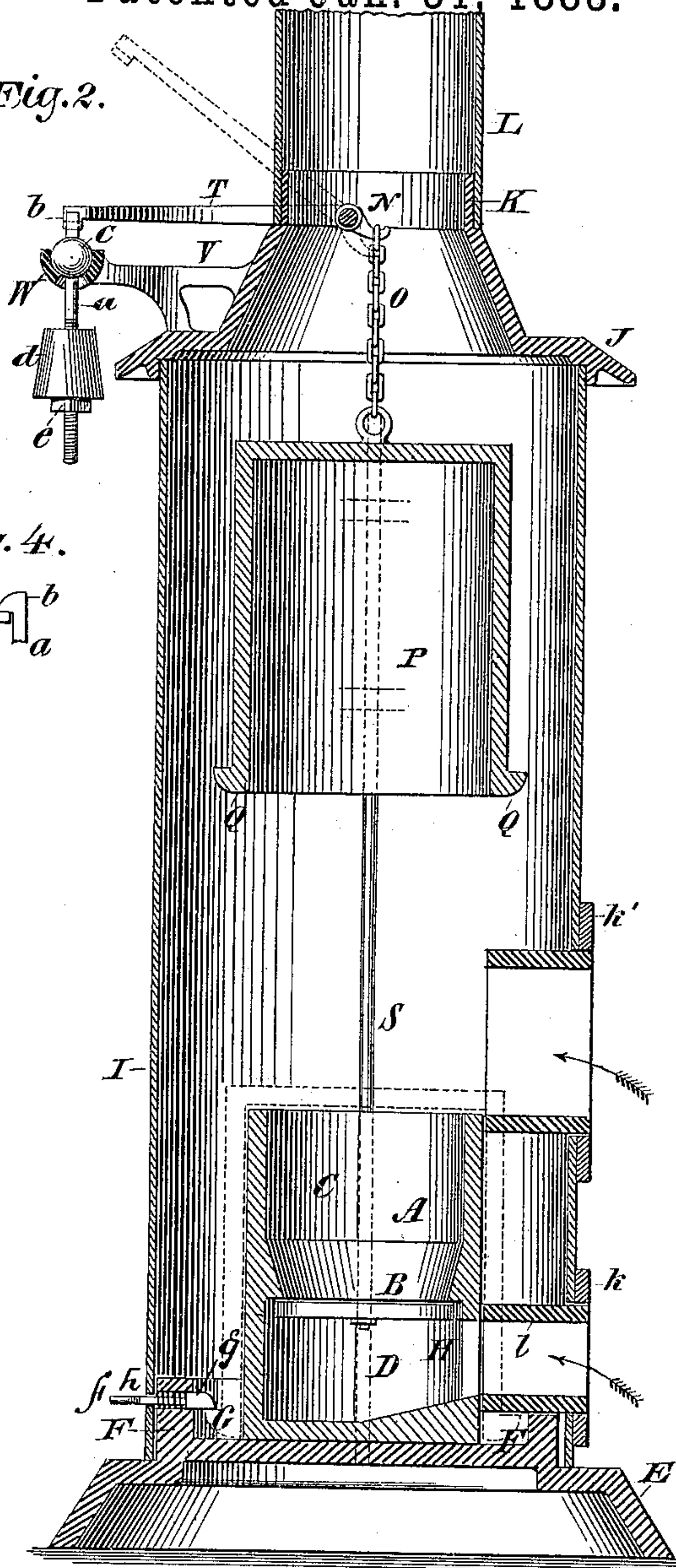
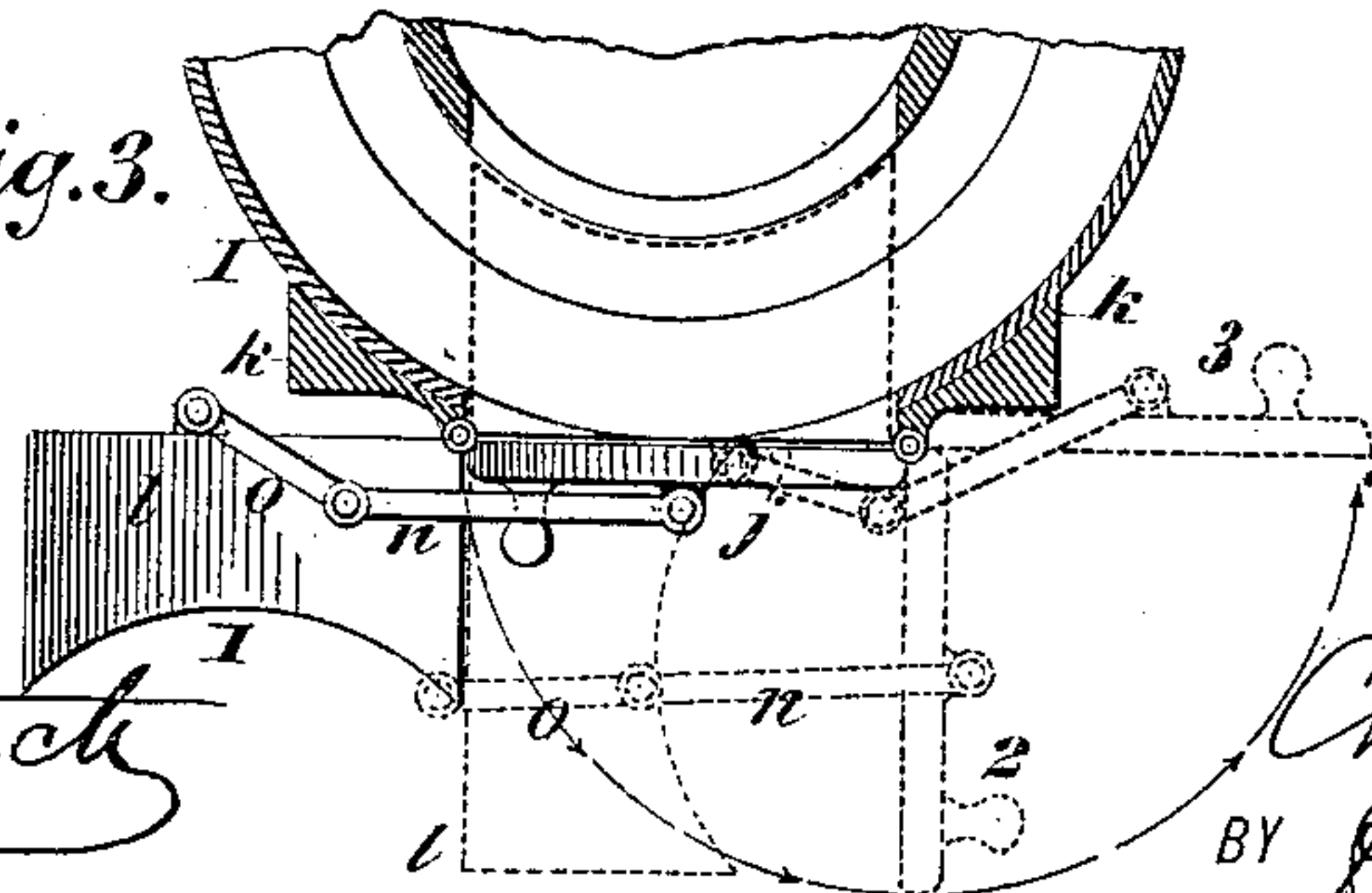


Fig. 4.



Fig. 3.



WITNESSES:
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UNITED STATES PATENT OFFICE.

CHARLES BASSINI, OF NEWARK, NEW JERSEY.

STOVE FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 377,057, dated January 31, 1888.

Application filed April 2, 1887. Serial No. 233,345. (No model.)

To all whom it may concern:

Be it known that I, CHARLES BASSINI, of Newark, Essex county, New Jersey, have invented a new and useful Improvement in Car-Heating Stoves, of which the following is a specification.

My invention relates to a stove for warming railway-cars. Its principle is the automatic inclosure of the fire-pot and contained fire in a tight casing or envelope whenever the car is subjected to violent jar or concussion, or when thrown over sidewise, or when the stove is displaced or shattered, as in the event of collision, derailment, or other similar accident.

My object is to prevent the wood-work or other inflammable material in the vicinity of the stove from becoming ignited in case of casualty, as aforesaid. The casing is of metal or other suitable fire-proof material strong enough not to be injured or broken even if the car is wholly destroyed. Although the fire becomes hermetically sealed in this envelope the latter does not become hot enough to set fire to adjacent wood-work, &c., and, moreover, the fire becomes soon extinguished by reason of the exclusion of air and the confinement of the carbonic-acid gas generated.

In the accompanying drawings my invention is shown applied to a stove of simple construction.

Figure 1 is an elevation, with a portion of the shell of the stove broken away to show the hood or fire-pot cover suspended therein. In this view the doors *j* and *i* are shown as closed and the chute *l* outside the casing. Fig. 2 is a vertical section on the line *x x* of Fig. 1. In this view the doors *j* and *i* are shown as open, the chute *l* being inside the casing. Fig. 3 is a partial horizontal section on the line *y y* of Fig. 1, showing the arrangement of the door and attached chute. Fig. 4 is a detail of the releasing device for the hood.

Similar letters of reference indicate like parts.

A is the fire-pot, which may be an iron casting lined, if desired, with fire-brick in the usual way.

B is the grate. The fire-pot is here shown as cylindrical in form, open above the fire-chamber C and closed below the ash-pit D. It is attached in any suitable way to the heavy base-piece E of the stove. This base-piece

has an upwardly-projecting annular flange, F, between which and the fire-pot A there is an annular channel, G. In the fire-pot A, and affording communication with the ash-pit D, is an opening, H.

The shell or casing I of the stove is supported upon the base-piece E, and may be secured to the outer periphery of the flange F. Said shell is surmounted by a cover, J, which may be of cast metal. The central portion of said cover is of conical form, surmounted by an open ring or short cylinder, K. To said ring the usual draft-pipe, L, is secured in any suitable way. Extending across the ring K is a shaft, M, which is free to turn in the sides of said ring. To the middle of said shaft is secured a hook, N. Suspended from said hook N by the chain O is the hood P. This hood is in the form of a hollow cylinder open beneath and provided at its lower extremity with a flange, Q, having a rounded edge, as shown. This cylinder may be an iron casting. On its outer periphery are lugs R, which receive the guide-rods S, which are secured inside the stove-shell in any suitable way.

It will be noticed that the hood P is suspended directly over the fire-pot A, but at such a distance therefrom as not to impede the draft. The products of combustion circulate around the outside of the hood in passing to the escape-pipe.

To one end of the shaft M, outside the ring K, is secured a lever-arm, T. On the end of this arm is a projection, U, which extends downwardly and then laterally, as shown in Fig. 4. Upon the cover J is cast or otherwise secured an arm, V, which supports the socket-bearing W.

a is a rod, having at its upper end a projection, *b*, as shown in Fig. 4. This projection *b* engages with the projection U. Upon said rod is a ball, *c*, which rests in the socket W. Said rod then passes through said bearing and its lower portion is threaded. Upon said rod is an adjustable weight, *d*, which is supported by a nut, *e*, received upon the threaded portion of rod *a*. The opening in the socket W is flared at its lower edge, so as to allow of considerable swing to the weight *d* as a pendulum.

The length of the lever-arm V and the weight *d* should be such that the weight will overbalance the hood P, so that the latter will nor-

mally remain suspended from the hook N on shaft M. The ball *c* then rests in the socket W and the projection *b* on rod *a* engages with projection U. Suppose, now, that, this stove
 5 being in the usual position of the heater in a railway-car, a collision or other accident occurs. If the shock is violent enough to throw the car over sidewise, or even to give it a heavy jar, the tendency of the pendulum-weight to re-
 10 main vertical will infallibly cause a disengagement of the projection U and the rod *a*. The instant this happens the shaft M is free to turn, the lever-arm T rises, (see dotted lines, Fig. 2,) and the hood P drops. As the hood is directly
 15 over the fire-pot, A, and, moreover, is guided in its descent by the lugs R and the guide-rods S, it lands directly upon said fire-pot, with its lower flange, Q, in the annular channel G. The fire-pot A is now completely enveloped in
 20 metal, and of course no fire can escape.

In order to hold the hood P in place after the descent, I arrange in the flange F of the base-piece E spring-latches, one of which is shown at *f*, Fig. 2. The dogs of these latches
 25 have upper rounded edges, *g*. The rounded edges of the flange Q of the hood P meet the rounded edges *g* of the latch-dogs. The dogs are thus pushed back while the flange Q is passing them, and finally the dogs spring back
 30 over the rim of the flange, as shown in Fig. 2. The latches may be disengaged by withdrawing the dogs by means of the rods attached thereto, said rods terminating in rings, as *h*, which may be outside the stove-shell. It will
 35 now be apparent that, even if all the lighter portions of the stove are destroyed, no matter how suddenly, the fall of the hood P is even the more certain to take place. Then the hood, fire-pot, and base-piece become substan-
 40 tially a single mass of metal. The fire is shut up therein with all access of air or possibility of egress of carbonic acid cut off, so that it speedily becomes smothered.

There are of course other devices which may
 45 be adopted for releasing the hood P and allowing it to drop in event of sudden jar, &c., and I therefore do not limit myself to the particular arrangement for that purpose here shown. My present device, however, I consider prefer-
 50 able. The arc of swing of the pendulum-weight *d* may be adjusted by raising or lowering said weight upon rod *a* by suitably moving the nut *e*, and the sensitiveness of the contrivance may thus be controlled. It will of course
 55 be understood that the ball and socket shown constitute a universal joint, and that the shoulder *b* on rod *a* is caused to move off of the projection U through the inertia of the weight when the stove is inclined beyond a certain
 60 point, or when a violent jar occurs.

i is the feed-door, and *j* the door affording access to the ash-pit. These doors are of the usual form and construction, and are hinged to frames *k k'*, attached to the stove-shell. Hinged
 65 to the opposite side of the frame *k* is a chute, *l*, which is simply a square frame of plate metal having a depth equal to the distance be-

tween the door-opening. The inner edge of said frame, which meets the periphery of the fire-pot, is rounded, so as to fit closely thereon. The
 70 chute *l* is connected to door *j* by jointed link-rods *n o*, so that when the door is closed the chute is thrown back in the position shown in Fig. 1 and marked 1 in Fig. 3. When the
 75 door stands at right angles to the opening, as indicated in the position marked 2, (dotted lines,) Fig. 3, the chute stands parallel to the door. When the door is thrown back, as shown in the position marked 3, (dotted lines,) Fig. 3, the chute enters the door-opening and
 80 meets the fire-pot. The object of this construction is to prevent coal when the fire is being fed, or ashes when the latter are removed from the ash-pit, from falling into the annular channel G, and thus preventing the hood P from
 85 resting on the bottom of said channel, or from being engaged in the manner described by spring-latches. The chutes are operated automatically by the opening or shutting of the
 90 doors.

I do not limit myself to either a hood or a fire-pot of the precise construction here shown, or to the specific latch mechanism here set forth for securing the hood in place after descent, as all these parts may be varied in form
 95 and in general arrangement.

I claim—

1. In a stove, the combination of an open vessel for containing the fire, a hood detachably suspended and adapted to fit over said
 100 vessel, a suspension-hook for said hood, a pivoted lever connected to said hook, and a detachable weight suspended from said lever and counterbalancing said hood, substantially as described.
 105

2. In a stove, the combination of an open vessel for containing the fire, a hood detachably suspended and adapted to fit over said
 110 vessel, a suspension-hook for said hood, a pivoted lever connected to said hook, and a pendulum-rod and weight thereon, the said rod being pivoted or similarly supported, and having a shoulder or projection engaging the said lever above its point of support, and carrying a weight sufficient to counterbalance said
 115 hood below said point of support, substantially as described.

3. The combination of the fire-pot A, shell or casing I, hood P, rock-shaft M, and hook N thereon, the said hood being suspended
 120 from said hook N, lever T, having projection U and secured upon said shaft M, and weight *d*, suspended from said projection U, substantially as described.

4. The combination of the fire-pot A, shell or casing I, hood P, rock-shaft M, and hook N thereon, the said hood being suspended
 125 from said hook N, lever T, having projection U and secured upon said shaft M, rod *a*, having shouldered end *b*, adapted to engage with
 130 projection U and carrying the weight *d*, ball *c* on said rod *a*, socket W, for receiving said ball, and support V for said socket, substantially as described.

5. The combination of the fire-pot A, shell or casing I, hood P, rock-shaft M, hook N thereon, the said hood being suspended from said hook N, lever T, having projection U and secured upon said shaft M, threaded rod *a*, shouldered end *b*, ball *c*, nut *e*, weight *d*, and on said rod socket W for said ball, and support V, substantially as described.

6. The combination of the fire-pot A, base E, of greater surface area than the bottom of said fire-pot therefor, flange F around said base, and hood P, disposed above said fire-pot and having its lower edge constructed to enter the interval between said fire-pot and said flange, substantially as described.

7. The combination of the fire-pot A, base E, of greater surface area than the bottom of said fire-pot therefor, flange F on said base, hood P, supported above said fire-pot and having its lower edge constructed to enter the interval between said fire-pot and said flange, flange Q on the lower edge of said hood, and

catches *f*, arranged in flange F, substantially as described.

8. The combination of the fire-pot A, base E, of greater surface area than the bottom of said fire-pot therefor, flange F on said base, hood P, supported above said fire-pot and having its lower edge constructed to enter the interval between said fire-pot and said flange, flange Q on the lower edge of said hood, and spring-catches *f*, provided with dogs *g*, having rounded upper edges, arranged in said flange F, substantially as described.

9. The combination of the stove-shell I, door *j* therein, chute *l*, having inner concave edges and hinged to said shell, and link-bars *n* between said door and said chute, substantially as described.

CHARLES BASSINI.

Witnesses:

WILLARD E. CASE,
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