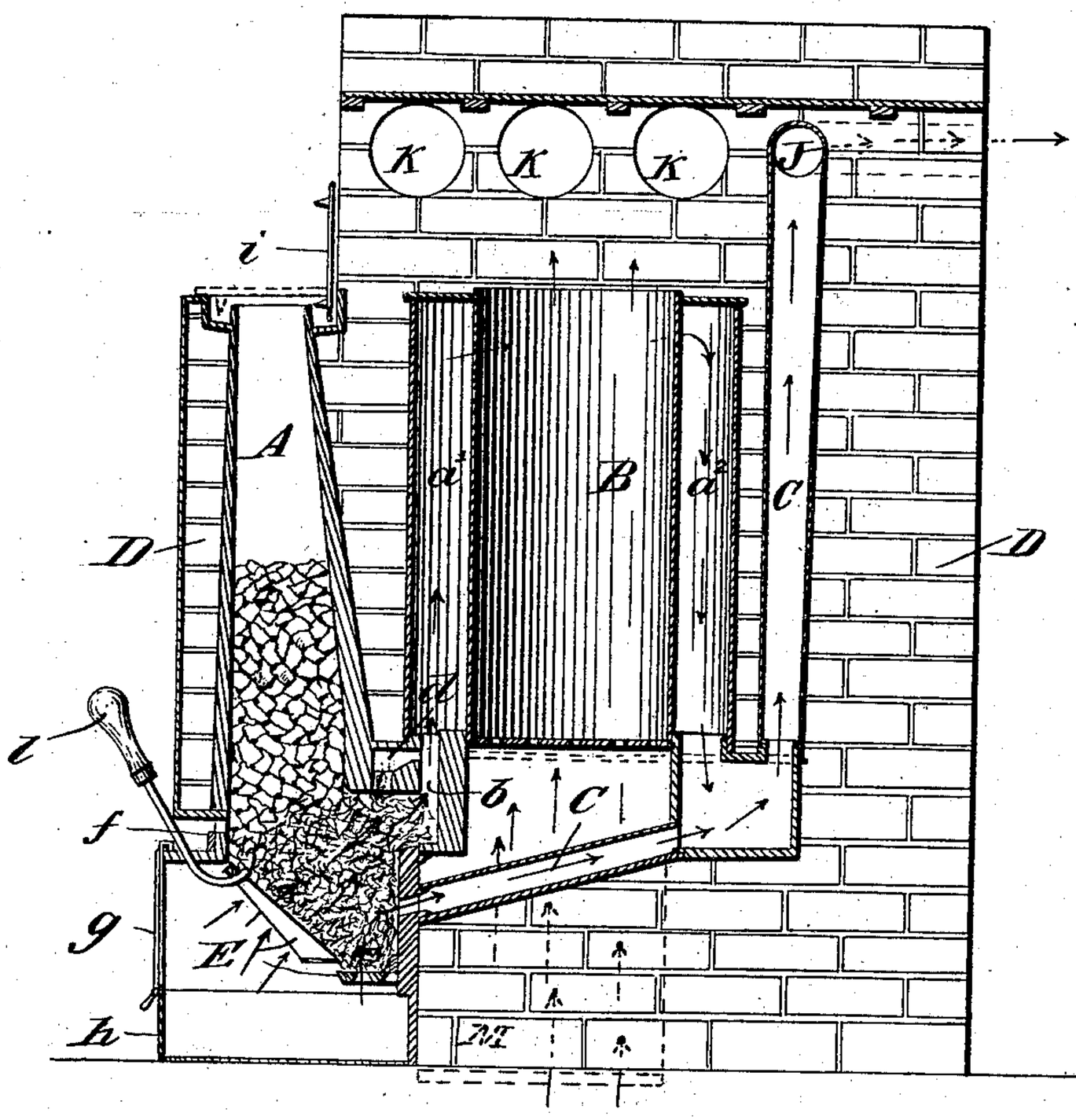
(No Model.)

J. A. P. BERG.

HEATING FURNACE.

No. 503,641. Patented Aug. 22, 1893.



Witnesses:
E. L. Cook
W. L. Christie

Inventor:
John A. P. Berg

UNITED STATES PATENT OFFICE.

JOHN A. P. BERG, OF MOLINE, ILLINOIS.

HEATING-FURNACE.

SPECIFICATION forming part of Letters Patent No. 503,641, dated August 22, 1893.

Application filed October 17, 1892. Serial No. 449,171. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. P. BERG, a citizen of the United States, residing at Moline, in the county of Rock Island and State of Illinois, have invented certain new and useful Improvements in Heating-Furnaces; 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.

My invention relates to improvements in heating furnaces, and the object of my improvement is in order to obtain more heat and more uniformity of the same from the same amount of fuel than is generally obtained in the ordinary heating furnaces. I attain this object by a series of ducts and drafts leading from a fuel magazine—illustrated in the accompanying drawing—in which the figure is a perspective elevated side view of a heating furnace showing ducts, drafts and chutes leading in and from a fuel magazine, and showing by arrow points the manner of the heating furnace in its operation when in use.

Similar letters refer to similar parts throughout the view.

A represents the feed or fuel magazine. It is formed at the top of size sufficient to receive the fuel needed, and enlarges in size downward forming the fire pit with grate bars E.

B. is a circular hot air drum having a perforated bottom through which hot air passes from chute *c*, passing upward to the hot air thimbles *k*. *k*.

a'. a^2. are spaces open entirely around drum B. between it and the inclosed sides of furnace, the heat passing in at *b*. forming the combustion chamber *a'*. a^2. in which the hot air circling around drum B. passes out at a^2. into the spark chamber C. and smoke pipe *j*.

D. represents brick inclosure, of the furnace proper which is principally made of iron, except the combustion chamber *a'*. a^2., fuel magazine A., chute *c*. and spark chamber C. but all may be made of and inclosed in iron upon this principle if desired.

c. is the chute running from the fire pit or magazine A. for the purpose of carrying hot air to the drum B. and smoke to spark chamber C. also to enable one to clean out soot or any substance that may gather in the chute or spark chamber. Spaces or openings are made at *d*. to carry off gases that may arise from burning fuel into the combustion chamber *a'*. a^2.

E. represents fire grates part of which is hinged and held in place by lever *l*. at angle or half upright position, and can be let down when cleaning the fuel magazine or chute *c*.

f is a series of slide dampers which are placed in front of fire pit of the fuel magazine. *g*. is a large door used for draft or when cleaning the furnace.

h. is the ash pan. *i*. is the door to the fuel magazine and is made to fit close to the top to prevent escape of gas.

j. represents the smoke pipe. *k*. *k*. hot air thimbles, and *m*. is an opening in the base of the furnace for supply of fresh air.

I am aware that prior to my invention heating furnaces have been made with ducts, drafts and chutes and inclosed with iron brick and other substances. Therefore I do not claim a combination broadly.

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

1. A hot-air furnace comprising the following parts. a fuel magazine. a hot-air drum, a spark chamber. a soot chute. combustion chamber .*a'*. a^2. around hot-air drum .B. revolving grate bars .*e*. and grate lever *l*. The lower section being provided with air-inlets and upper with air outlets. with the drum .B. said tubes all opening in one air chamber substantially as specified.

2. The combination with a hot air furnace of the fuel magazine .A. hot air drum .B. spark chamber C. combustion chamber .*a'*. a^2. soot chute .*c*. revolving grate .*e*. and grate lever .*l*. substantially as specified and set forth.

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

JOHN A. P. BERG.

Witnesses:
B. L. CLUBER,
E. L. COAK.