

(No Model.)

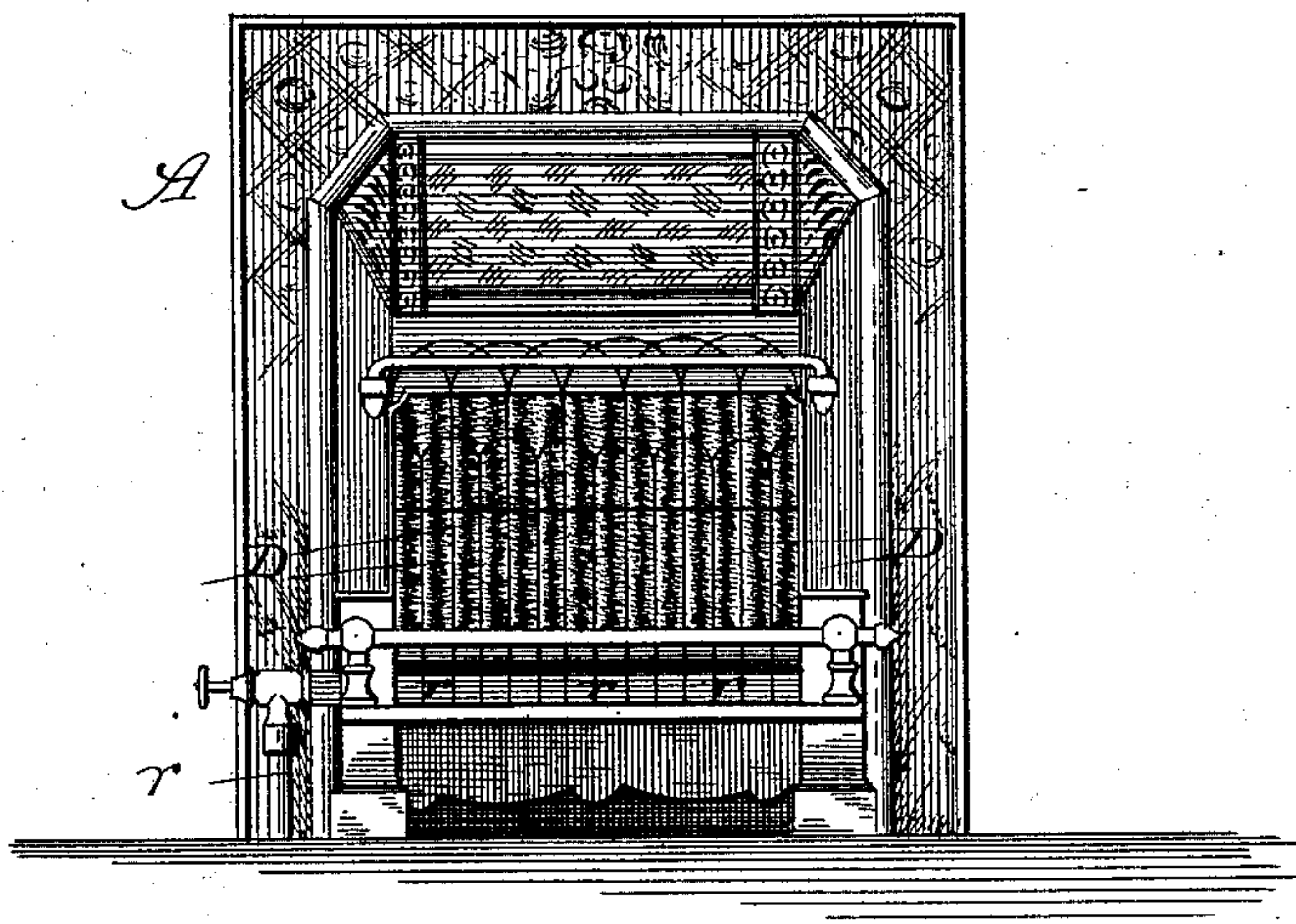
S. BERNSTEIN.

FIRE BACK.

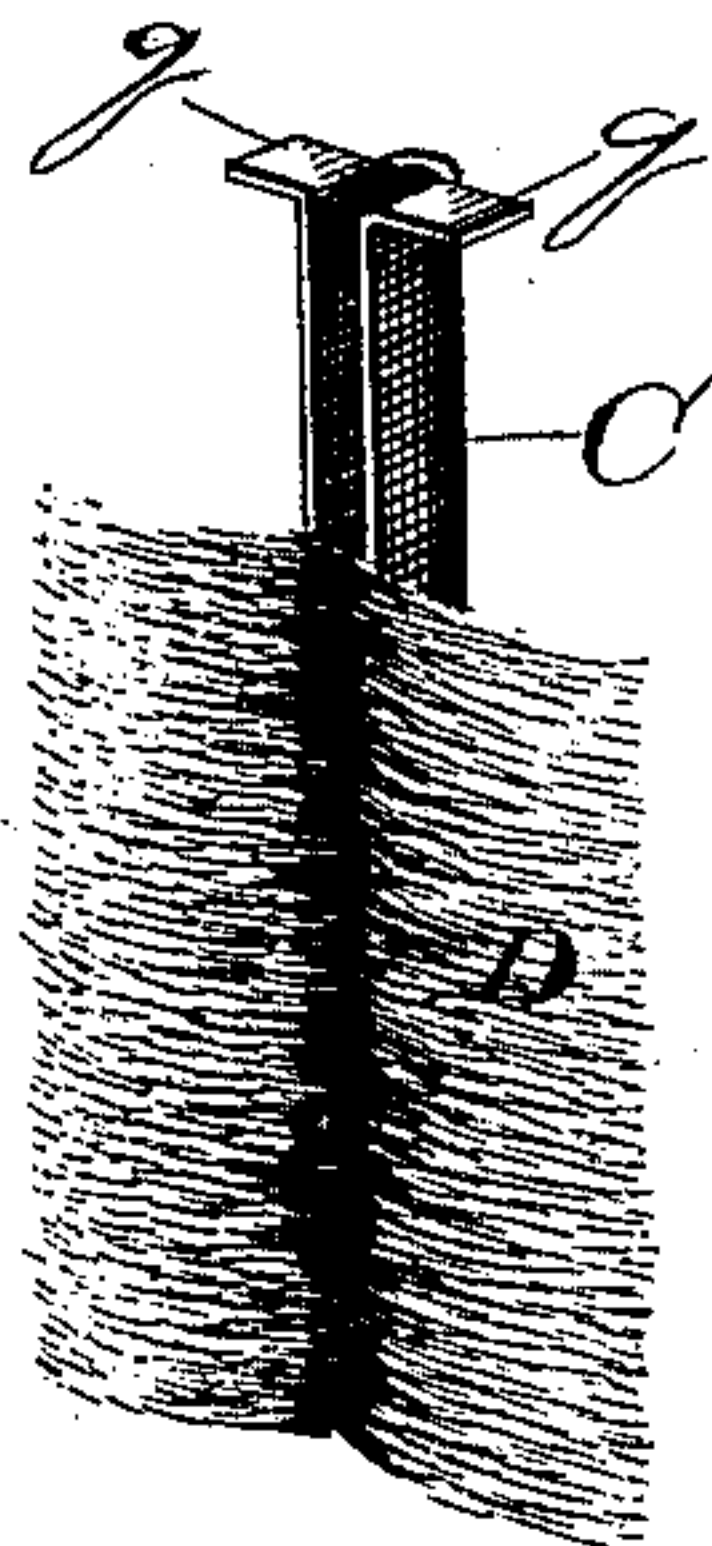
No. 393,959.

Patented Dec. 4, 1888.

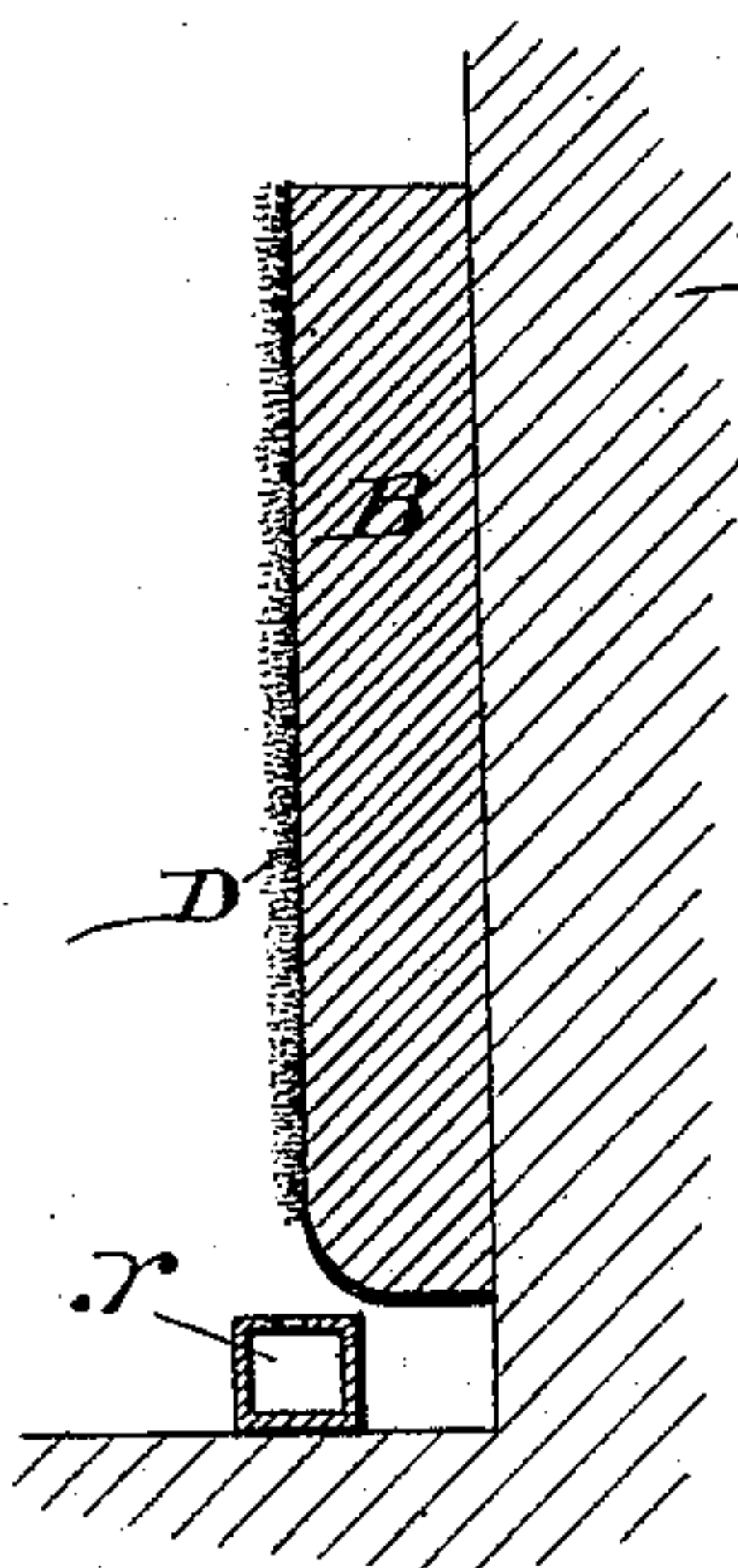
*Fig. 1.*



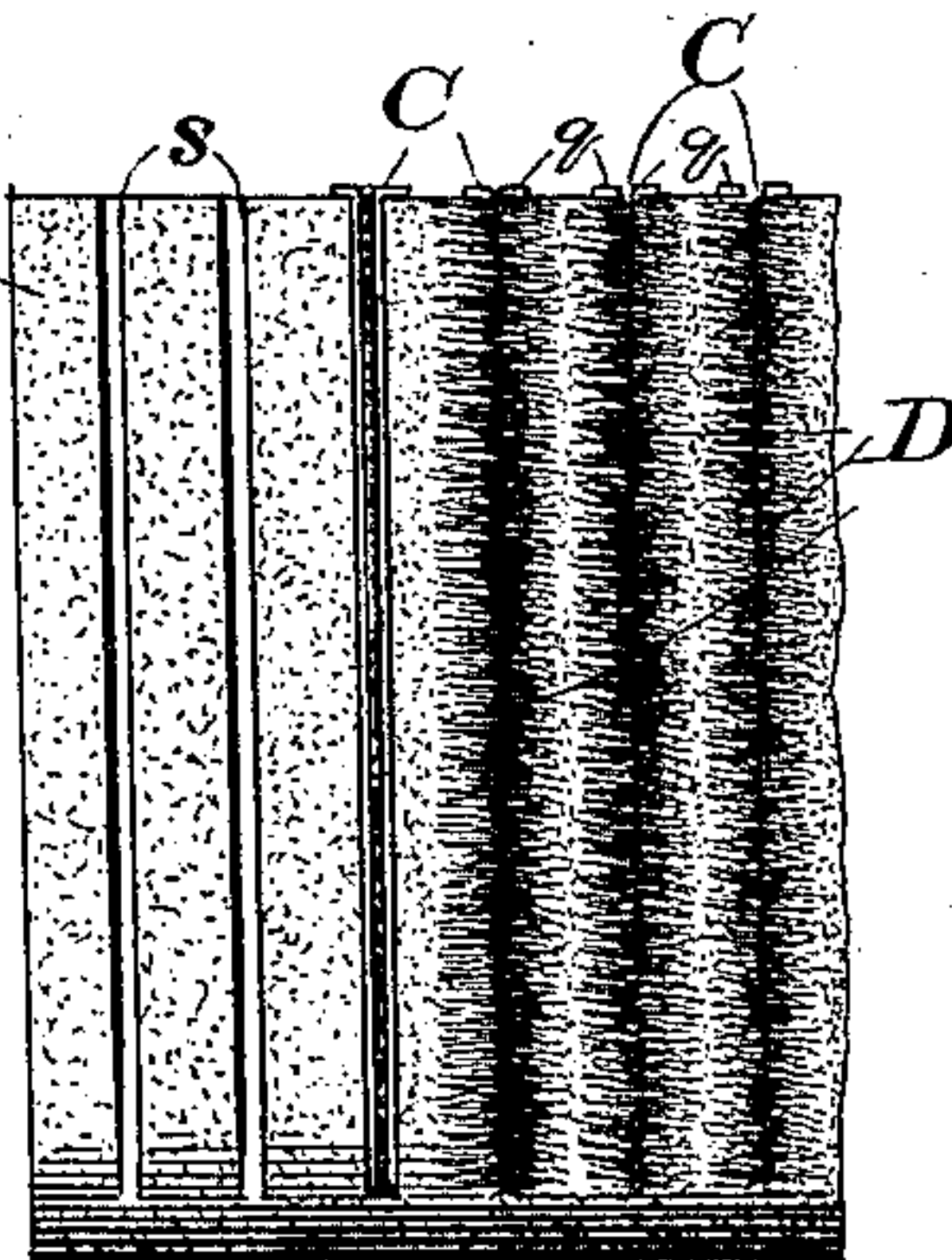
*Fig. 2.*



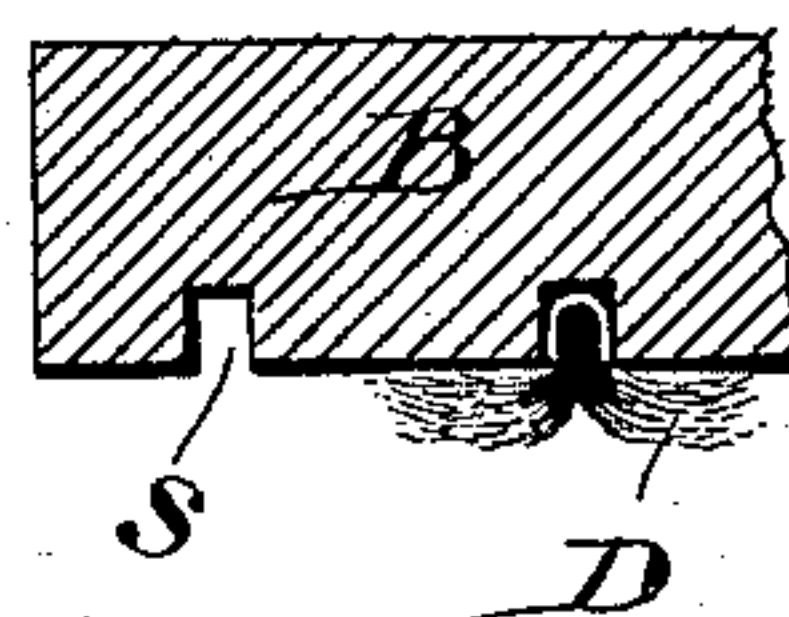
*Fig. 3.*



*Fig. 4.*



*Fig. 5.*



Witnesses:

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# UNITED STATES PATENT OFFICE.

SAMUEL BERNSTEIN, OF CHICAGO, ILLINOIS.

## FIRE-BACK.

SPECIFICATION forming part of Letters Patent No. 393,959, dated December 4, 1888.

Application filed December 19, 1887. Serial No. 258,380. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL BERNSTEIN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Fire-Backs, of which the following is a specification.

My invention relates to an improvement which may be applied with advantage to fire-backs generally, and whatever may be the particular adaptation thereof—that is, whether for stoves or the like, or open fire-places—provided it be applied to the surface immediately affected by the flame. I design my improvement, however, more particularly for use in fire-places or open grates, and especially for such as employ gas as fuel. This being the immediate connection for which I have designed my improvement, I limit it in the main thereto, for the sake of convenience in the description hereinafter contained, and illustrate it in such connection in the accompanying drawings, in which—

Figure 1 shows an open grate in front elevation provided with my improved fire-back. Fig. 2 is an enlarged perspective view of a clamp I employ for applying asbestos fiber to the fire-brick and showing it as holding such asbestos fiber. Fig. 3 is a vertical section through Fig. 1 and enlarged; Fig. 4, a broken view, in front elevation, of the slotted fire-brick enlarged and partly provided with the asbestos-fiber adjunct; and Fig. 5, a broken transverse section of the fire-brick, enlarged, and showing slots and the means I employ for applying the asbestos fiber.

My invention consists in the specific construction of the clamp holding the asbestos fiber, and in combinations of parts.

A is an open fire-place at the back of which is fire-brick B, provided at suitable intervals with vertical slots *s*, and at the base of the fire-place, slightly forward and transverse thereof, is a perforated pipe or conduit, *r*, through which gas is supplied.

C C are clamps, each formed of a flat strip of metal bent longitudinally flatwise upon itself at the center and having the upper ends of the sides, where they are separated at the back, as shown, bent in opposite lateral directions to afford stops *q*, Fig. 2. Strands of

asbestos or asbestos fiber, D, are bent at their centers each upon itself and inserted between the sides of the clamps throughout the length of the latter, or substantially so, and clamped to hold the strands by compressing the sides of the clamps C. The clamps are inserted into the slots *s*, in which they fit snugly, and are supported by the stops *q*, which extend from the slots over the lateral edges thereof, as shown. The asbestos fiber is then combed or otherwise treated to extend it laterally in both directions from each clamp over the surface of the fire-brick, which thus becomes substantially covered therewith. When the fire is lighted, (by touching a match or other lighter to the perforated conduit *r*, to which gas is admitted,) the flame spreads over the surface of the fire-back which the brick and asbestos fiber thus constitute, and rapidly (almost instantly) reduces the asbestos fiber to an incandescent state, which, besides producing a most attractive appearance as an incident, affords a large heat-radiating surface and intercepts and radiates into the apartment a large portion of the heat which would otherwise escape through the flue.

The slots in the fire-brick permit the medium for holding the asbestos fiber to be so effectually shielded from contact with the flame that it is not injured thereby. The clamps C render the asbestos fiber readily removable and adjustable, so that when the latter becomes impaired with use, as by being coated with soot or otherwise, it, or so much as is contained in any number of the clamps and requires removal, may be taken out and replaced by new. Therefore dealers in my improvement may find it necessary to keep on hand clamps C, containing the asbestos fiber, to supply the demand of users.

Fire-brick forms the most desirable substance for the application of the asbestos fiber. I do not, however, wish the term "fire-brick" in the following claims to be understood as a limitation to the article known as "fire-brick," since any other suitable substance, including metal, is included as within the spirit of my invention.

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

1. The combination of asbestos fiber D and

a clamp, C, comprising a strip of metal bent lengthwise upon itself and holding the asbestos fiber between its sides and having stops *q*, substantially as and for the purpose set forth.

2. The combination, with a fire-place, A, of a fire-brick, B, provided on its front surface with vertical slots *s*, asbestos fiber D, and clamps C, comprising strips of metal bent

lengthwise upon themselves, holding the asbestos fiber between their sides, and having stops *q* and inserted into the slots *s*, substantially as described.

SAMUEL BERNSTEIN.

In presence of—

JULIUS W. DYRENFORTH,  
CHAS. E. GAYLORD.