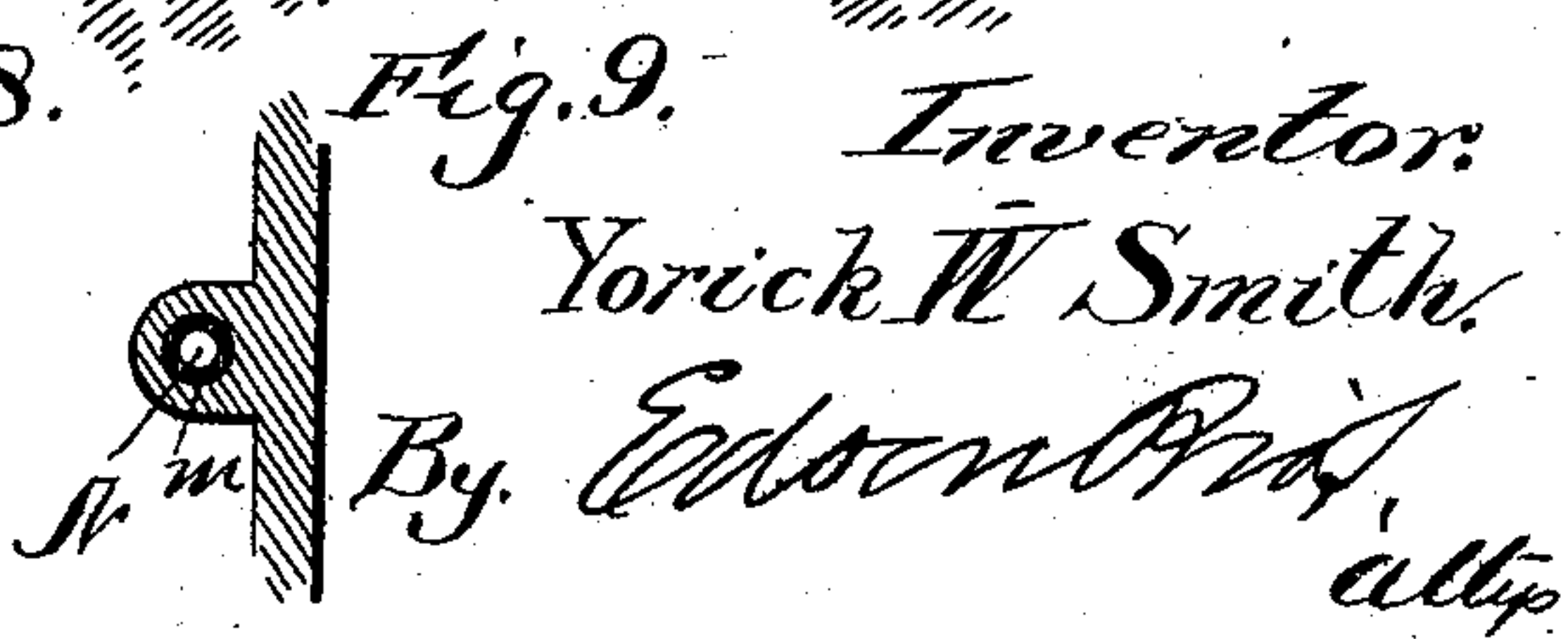
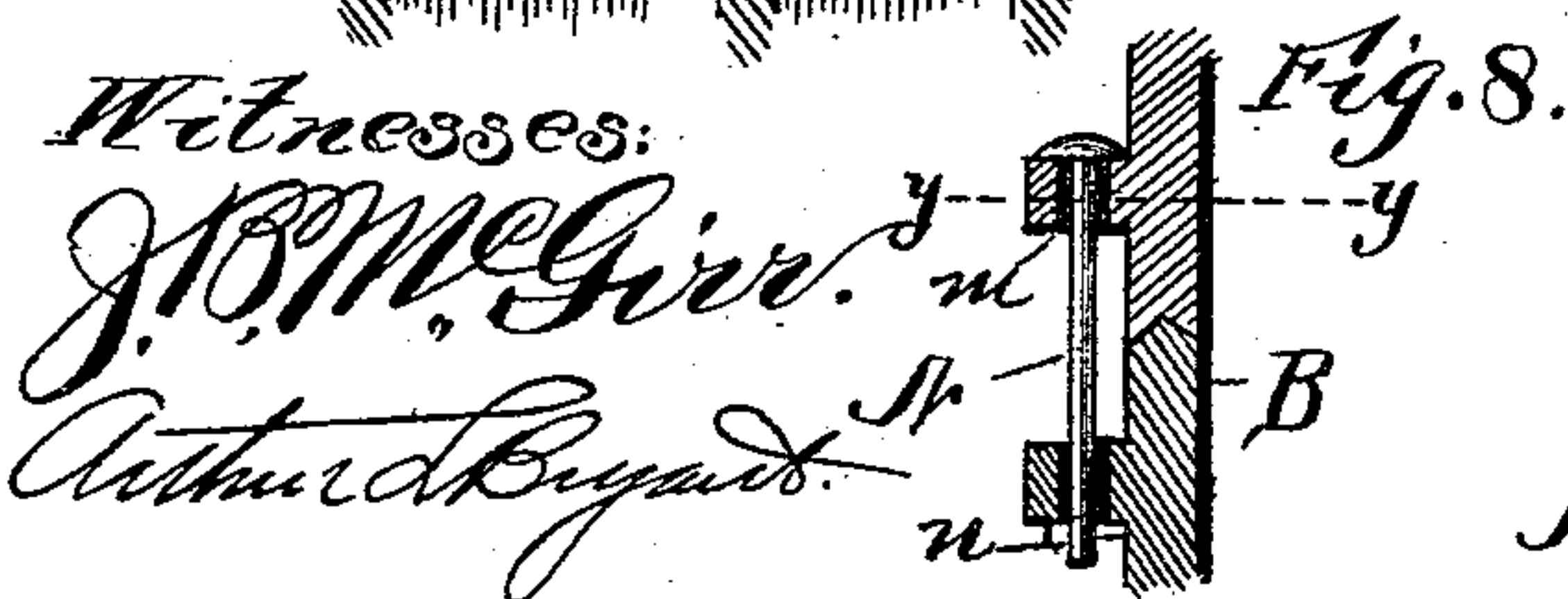
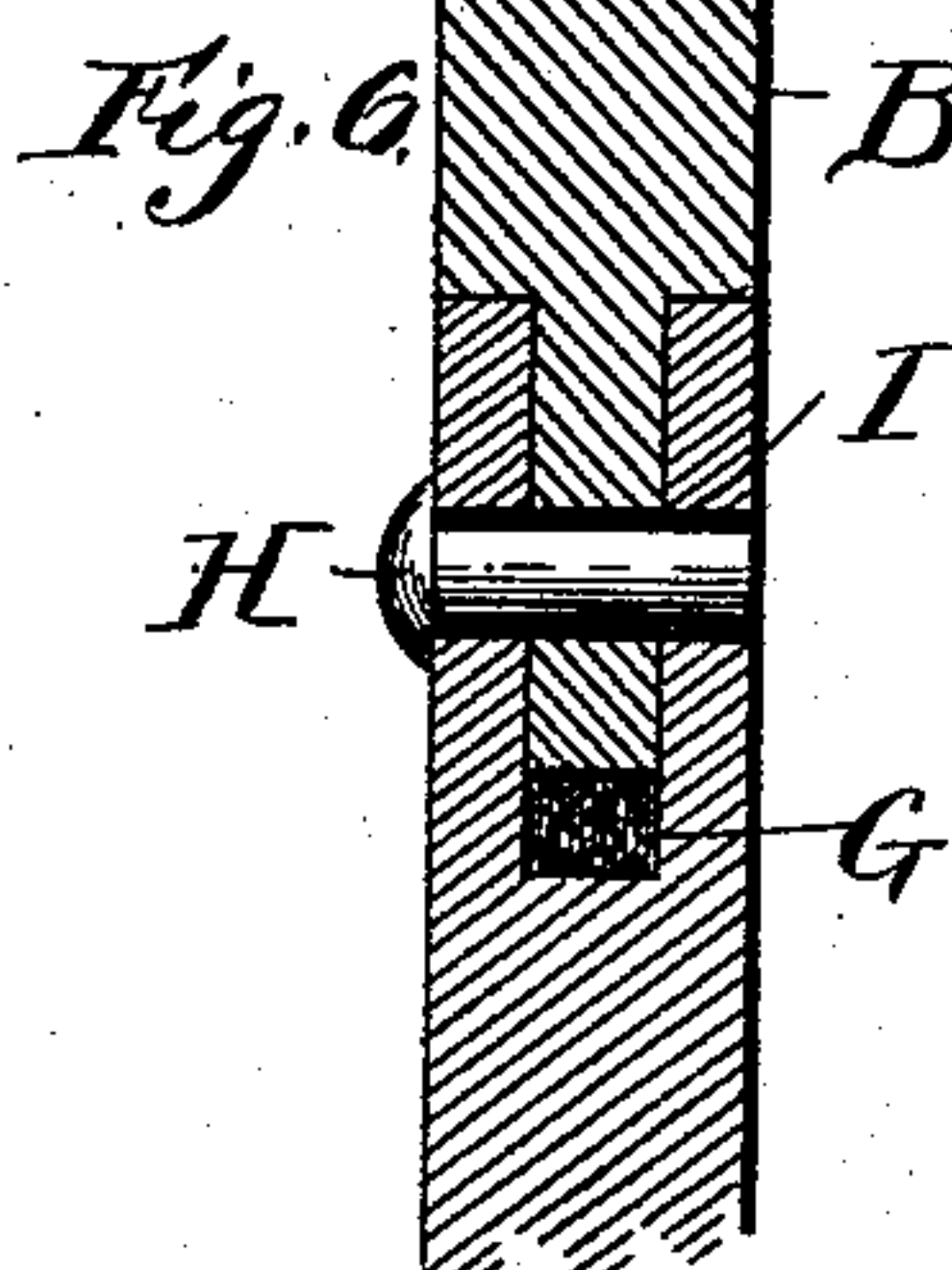
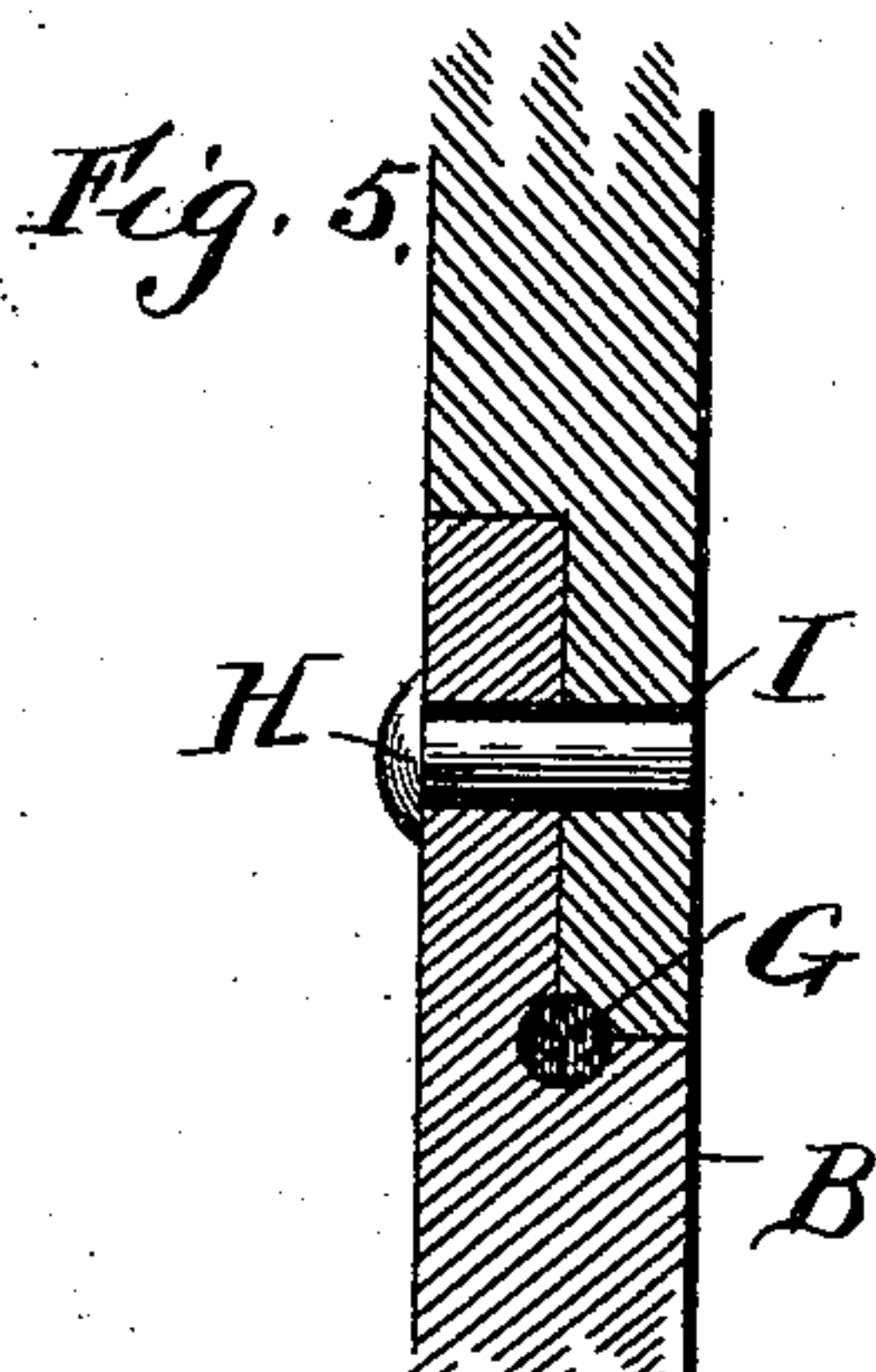
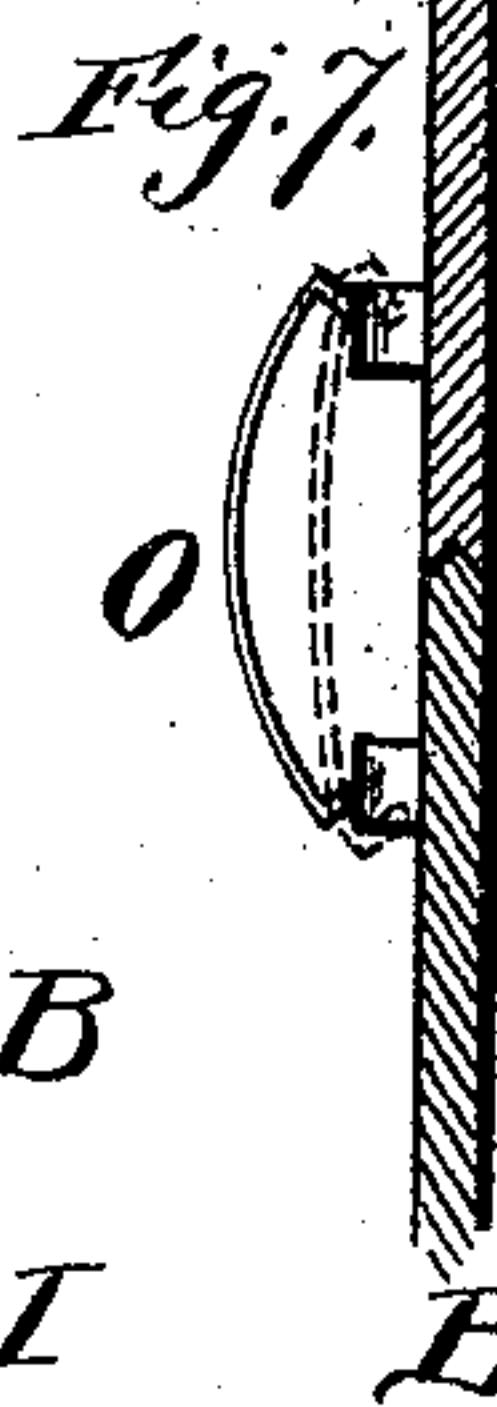
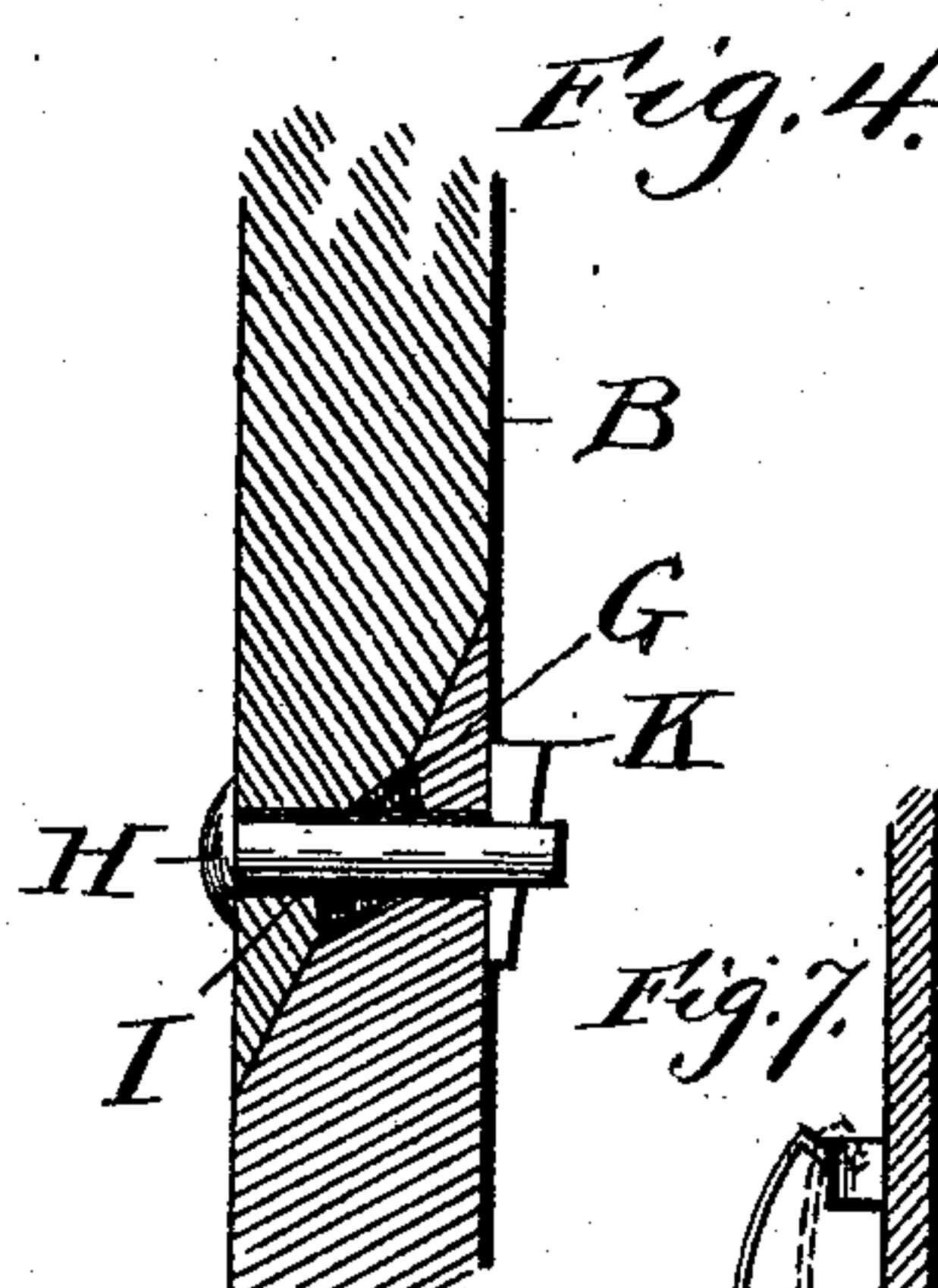
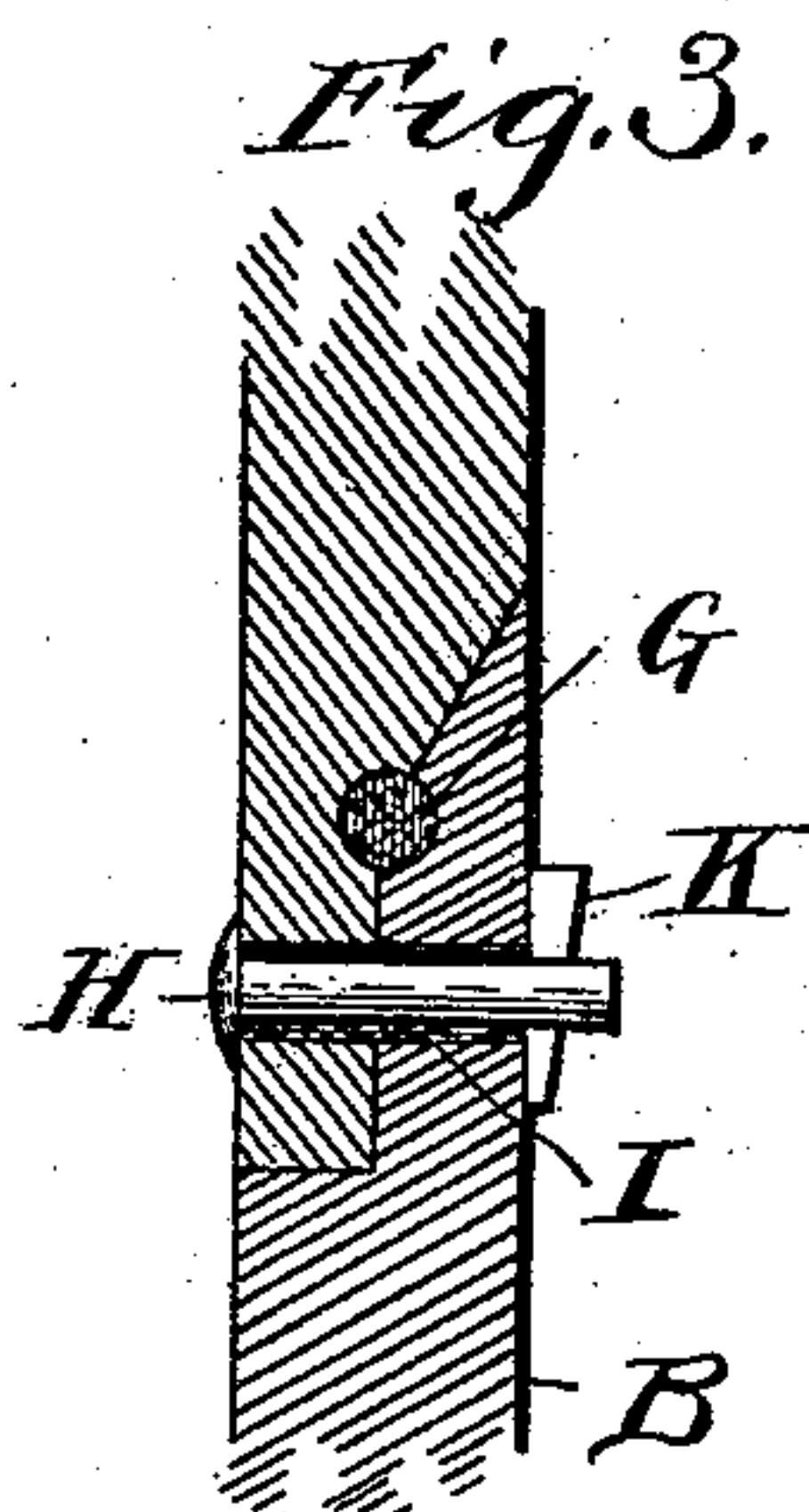
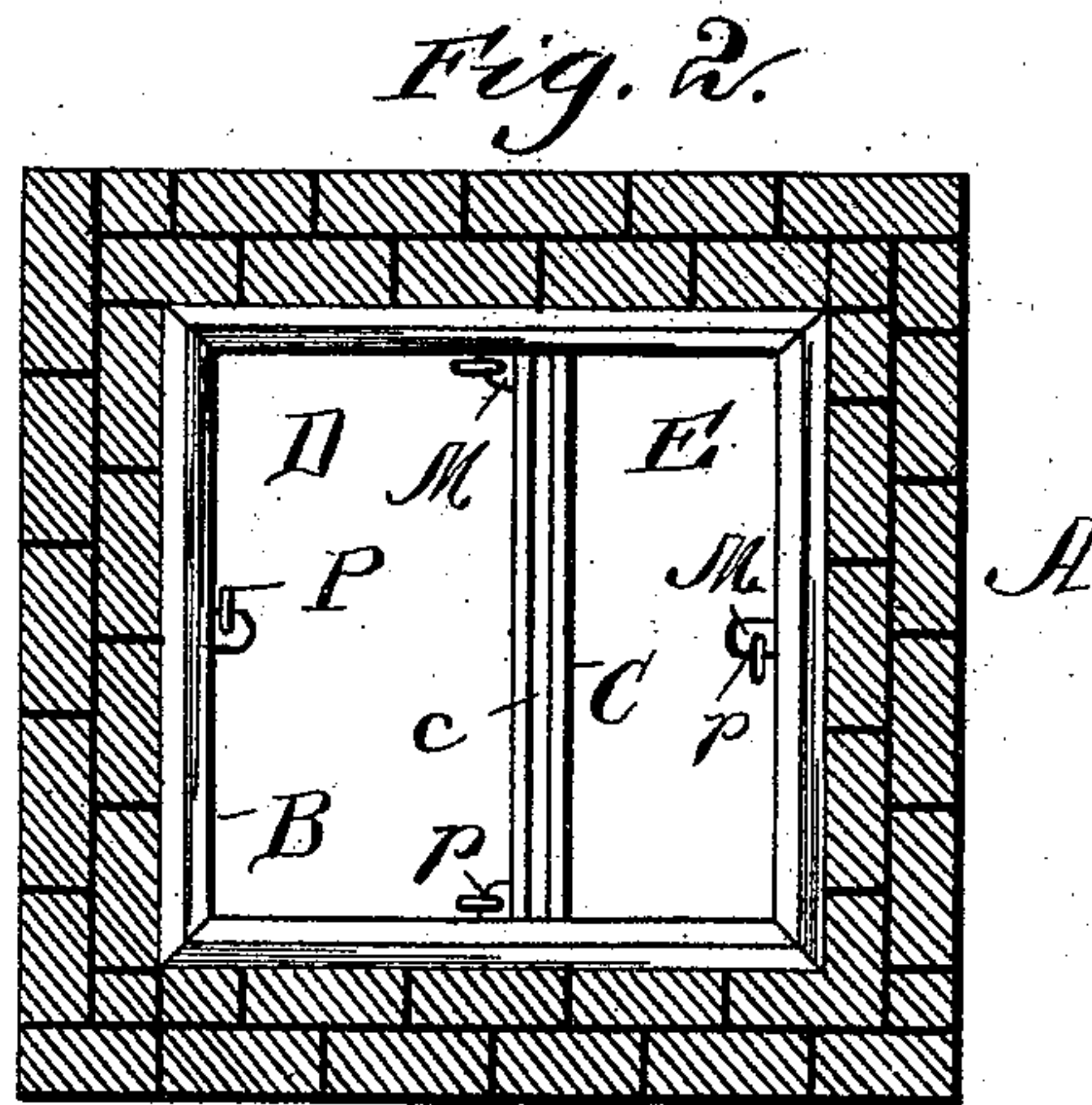
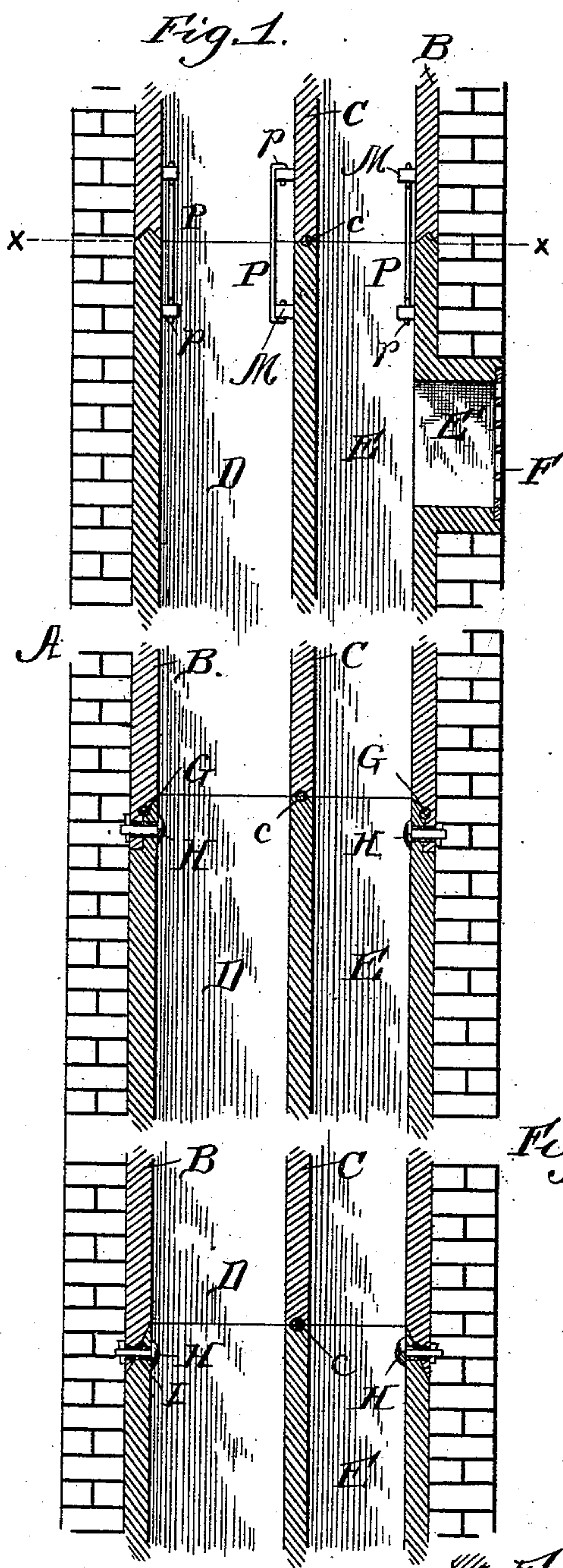


(No Model.)

Y. W. SMITH.
LINING FOR FLUES OR CHIMNEYS.

No. 494,036.

Patented Mar. 21, 1893.



UNITED STATES PATENT OFFICE.

YORICK W. SMITH, OF WASHINGTON, DISTRICT OF COLUMBIA.

LINING FOR FLUES OR CHIMNEYS.

SPECIFICATION forming part of Letters Patent No. 494,036, dated March 21, 1893.

Application filed August 30, 1892. Serial No. 444,550. (No model.)

To all whom it may concern:

Be it known that I, YORICK W. SMITH, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Linings for Flues or Chimneys; 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 flue or chimney linings of that class which employ a series of sections, formed of suitable refractory material, placed one upon the other and attached together; and the object of the present invention is to provide a solid and firm joint between the meeting ends of such sections.

With these ends in view my invention consists in the combination with a series of hollow sections having their meeting ends arranged to form a lap joint, of fastening devices arranged to hold the adjacent sections firmly together.

My invention further consists in the peculiar construction and arrangement of parts as will be hereinafter fully pointed out and claimed.

In the accompanying drawings:—Figure 1 is a vertical sectional view through a chimney or flue provided with my improved lining. Fig. 2 is a plan view on the line *x x* of Fig. 1. Figs. 3 to 8 inclusive are enlarged detail views of various forms of joints and fastening means; and Fig. 9 is a plan view on the line *y y* of Fig. 8.

Like letters of reference denote corresponding parts in all the figures of the drawings, referring to which:—

A designates a chimney or flue the interior of which is provided with a lining composed of a series of sections, B, composed of clay or other suitable refractory material. The sections, B, are of any desired form and size and said sections are provided with an integral division wall or partition, C, whereby the interior of the chimney is divided into two parallel flues D, E, the flue, D, being designed to convey away the smoke and products of combustion generated in the furnace or other form of heating apparatus connected therewith, while the other flue, E, is designed to

conduct heated air to the various floors or stories of a building; registers, F, being arranged in the inner wall of the chimney and at the inner ends of short branch pipes, E'. The adjacent or meeting ends of the sections, B, are shaped or formed so that when one section is placed upon the other, the ends thereof will lap and form a tight joint. In the adjacent faces of the lapped end portions of adjoining sections are formed recesses or grooves, which, when the sections are placed in position, will align and form an intermediate pocket, G, designed to be filled with mortar or cement placed between the meeting ends of the sections; and in the ends of the division wall or partition are formed grooves, *c*, for the same purpose. The sections, B, may be firmly attached together by means of transverse pins, H, preferably composed of the same material as the sections, B, extending through aligned passages, I, formed in the lapped ends of the sections.

In constructing the lining for the chimney the passages, I, are filled with cement and the pins, H, forced through the same. When the cement is set or hardened the pin will be firmly secured therein. If desired the pins, H, can be made long enough to extend entirely through the sections and wedges K fitted in suitable cross passages formed therein.

In Figs. 3 to 6 inclusive I have shown various forms of lapped joints formed by the meeting ends of adjacent sections B, and said sections held together by transverse pins, H, as above described. The sections, B, may be provided, near their ends, with integral laterally projecting lugs or ears, M. The lugs, M, are provided with an aperture or passage *m* and the lugs on adjacent sections are connected by headed pins, N, extending through said passages and held in place by transverse pins or wedges *n*, as shown in Fig. 8; or by means of a spring clamp O having its ends sprung over the lugs, M, and entering the apertures or passages formed therein, as shown in Fig. 7.

Another form of connecting the lugs on adjacent sections is shown in Fig. 1 in which a metallic rod, P, is provided at its ends with hooks *p* which are inserted in the apertures or passages *m* formed in the lugs, M.

From the foregoing description and the

drawings it will be seen that I have provided a simple and effective means for connecting the meeting ends of the tubular or hollow sections B, of a chimney lining by means of which the meeting ends of the sections are held firmly together and no passage or aperture is left between the sections through which flame or heat can pass.

Although I have shown the lugs, M, as formed on the inner surfaces of the sections, B, yet I would not be understood as limiting myself to this exact construction as I am aware that said lugs can be formed on either the inner or outer surfaces of said sections.

If desired the division wall or partition, C, may be omitted without departing from the spirit or sacrificing the advantages of my invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a chimney lining, the combination of

a series of hollow sections having their meeting ends arranged to form a lap joint, and cement-embedded securing pins fitted in passages extending through the lapped ends of adjacent sections, substantially as described.

2. In a chimney lining, the combination of a series of hollow sections having their meeting ends arranged to form a lap joint, headed cement-embedded securing pins extending through passages formed in the lapped ends of adjacent sections, and pins K, extending through apertures formed in the securing pins on opposite sides of the sections from the heads of the securing pins, substantially as described.

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

YORICK W. SMITH.

Witnesses:

HENRY E. COOPER,
ARTHUR L. BRYANT.