

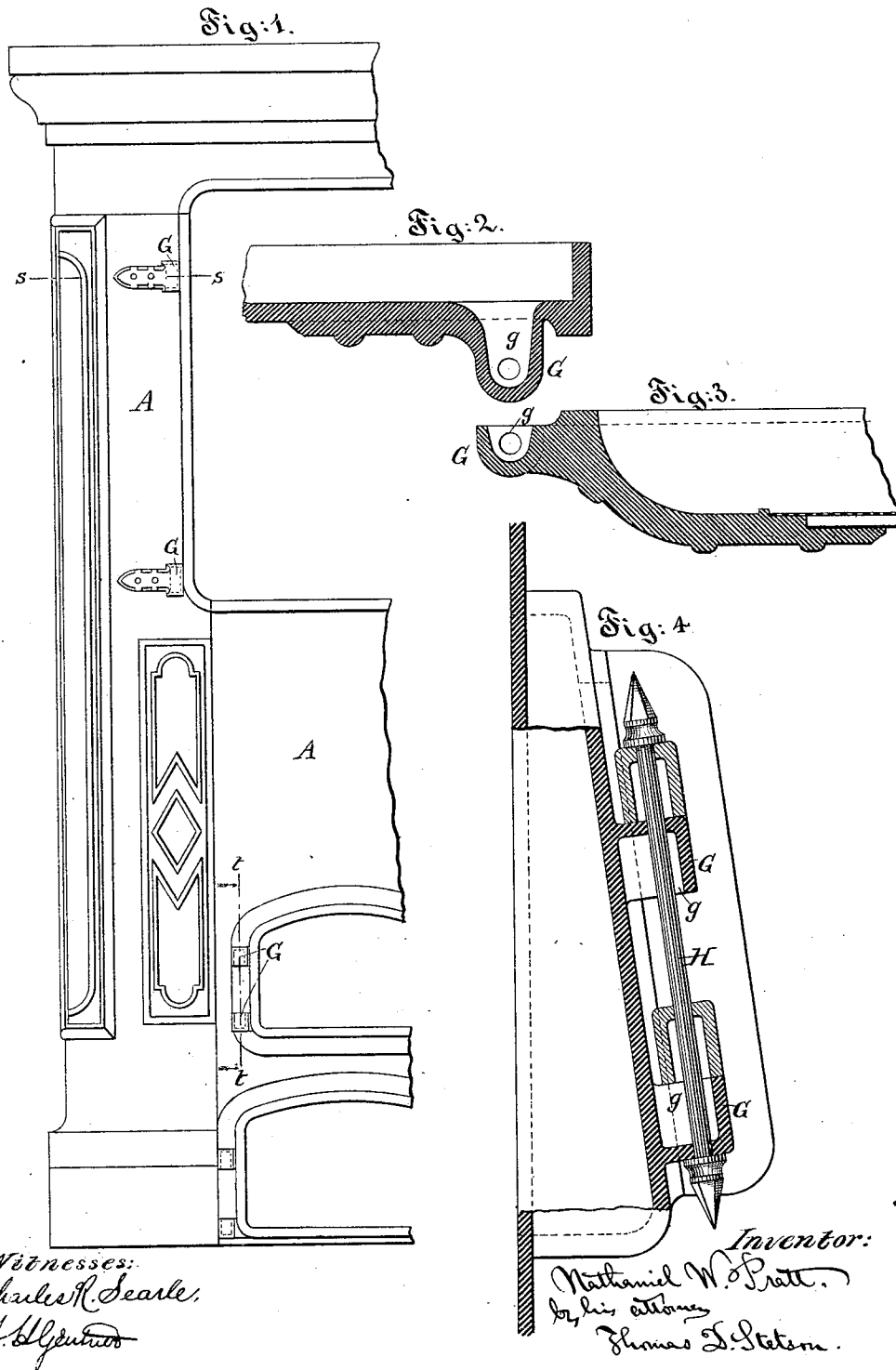
(No Model.)

N. W. PRATT.

HINGE FOR BOILERS, STOVES, &c.

No. 273,601.

Patented Mar. 6, 1883.



# UNITED STATES PATENT OFFICE.

NATHANIEL W. PRATT, OF BROOKLYN, ASSIGNOR TO THE BABCOCK & WILCOX COMPANY, OF NEW YORK, N. Y.

## HINGE FOR BOILERS, STOVES, &c.

SPECIFICATION forming part of Letters Patent No. 273,601, dated March 6, 1883.

Application filed September 4, 1882. (No model.)

To all whom it may concern:

Be it known that I, NATHANIEL W. PRATT, of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Hinges; and I do hereby declare that the following is a full and exact description thereof.

My invention is more particularly intended to be used in connection with structures made either entirely of cast metal or having an external covering or lining of cast metal, provided with openings which it is intended to close by means of doors of similar material.

I will describe the improvements as applied to a boiler-front.

The object of the invention is to produce a cast hinge of such construction that very little labor is required to fit it. For this purpose I cast the hinges hollow or box-shaped, leaving only sufficient metal at the top or at the bottom, or both at the bottom and top, to properly support the pin or bolt which forms the axis of the hinge. In cases where the entire surface is formed of cast metal I prefer to cast the lugs forming the stationary portion of each hinge in one with the boiler-front, and the turning portion of each hinge in one with the door.

The accompanying drawings form a part of this specification, and represent what I consider the best means of carrying out the invention.

Figure 1 is a front elevation of a part of a boiler-front with the doors removed. Fig. 2 is a horizontal section, on a larger scale, on the line *s s*, Fig. 1. Fig. 3 is a horizontal section through a portion of a door and the hinge part cast thereon. Fig. 4 is a vertical section on the line *t t*, Fig. 1, but showing in addition thereto the lugs of the door applied in position to form hinges with the projections from the stationary part.

Similar letters of reference indicate corresponding parts in all the figures.

A is a casting formed, if desired, in two pieces, rigidly secured together to constitute a boiler-front.

G are hinge-lugs, cast in one piece with the part A, at one side of a large opening to be closed by a door. Each lug G is cored, as in-

dictated by *g*, the cored cavity being considerably larger than the hinge-pin which is to be received therein. They are cored out from the rear, as illustrated in Fig. 2. The door D is similarly formed with hinge-lugs, cored out from the rear, as shown in Fig. 3. By reason of the cavities cored in the lugs the casting is of more uniform thickness, and is less liable to be strained or warped by the shrinkage in cooling in the mold. Furthermore, the labor of drilling the holes for the hinge pin or bolt is greatly reduced, as there are only two relatively thin portions to be penetrated in each lug, instead of the entire height thereof. Fig. 4 shows a similar arrangement of hinges, but still more simplified, inasmuch as there is only one thin face to be penetrated in each lug by boring. According to this construction, the lugs cast on the stationary part are box-shaped, with the open sides facing each other. In this manner a single core held in that part of the mold which forms the face of the casting suffices for the formation of the hollows in both lugs. In this figure the lugs of the door are also formed with only one thickness in each to receive the hinge-pin H; but the hollows are here both open downward in order to preserve the appearance of the structure. I believe it suffices in most cases to bore out the holes for the reception of the hinge-pin in the stationary lugs only, and that the corresponding holes in the lugs of the door can be formed by simply continuing on a smaller diameter the core which forms the general hollows in the lug through the top or bottom web of the lug.

Modifications may be made in the forms and proportions. With the general construction shown in Fig. 4 the two lugs on the stationary portion may both present their hollows downward instead of toward each other. In all the forms the thin portions which form the bearings for the hinge-pin may be presented in direct contact with each other, so as to subject the pin only to a direct shearing strain. I can apply the invention so as to realize some of the benefits thereof by similarly coring out separate hinges, to be riveted or otherwise secured on the door and on the stationary portion, respectively; but I prefer to cast these parts in one, as shown.

I claim as my invention—

1. A hinge made of cast metal, the several  
lugs of which are cast hollow or box-shaped,  
so as to avoid boring through the entire thick-  
5 ness of said lugs, substantially as herein speci-  
fied.

2. A casting adapted to serve in a boiler-  
front or in a similar structure as a part of the  
general surface thereof, cast with hollow pro-  
10 jecting lugs, in combination with a door cast

with similarly-formed lugs, and with a pin or  
bolt, H, substantially as herein specified.

In testimony whereof I have hereunto set my  
hand, at New York city, this 29th day of Au-  
gust, 1882, in the presence of two subscribing 15  
witnesses.

NAT. W. PRATT.

Witnesses:

A. H. GENTNER,

E. H. BENNETT.