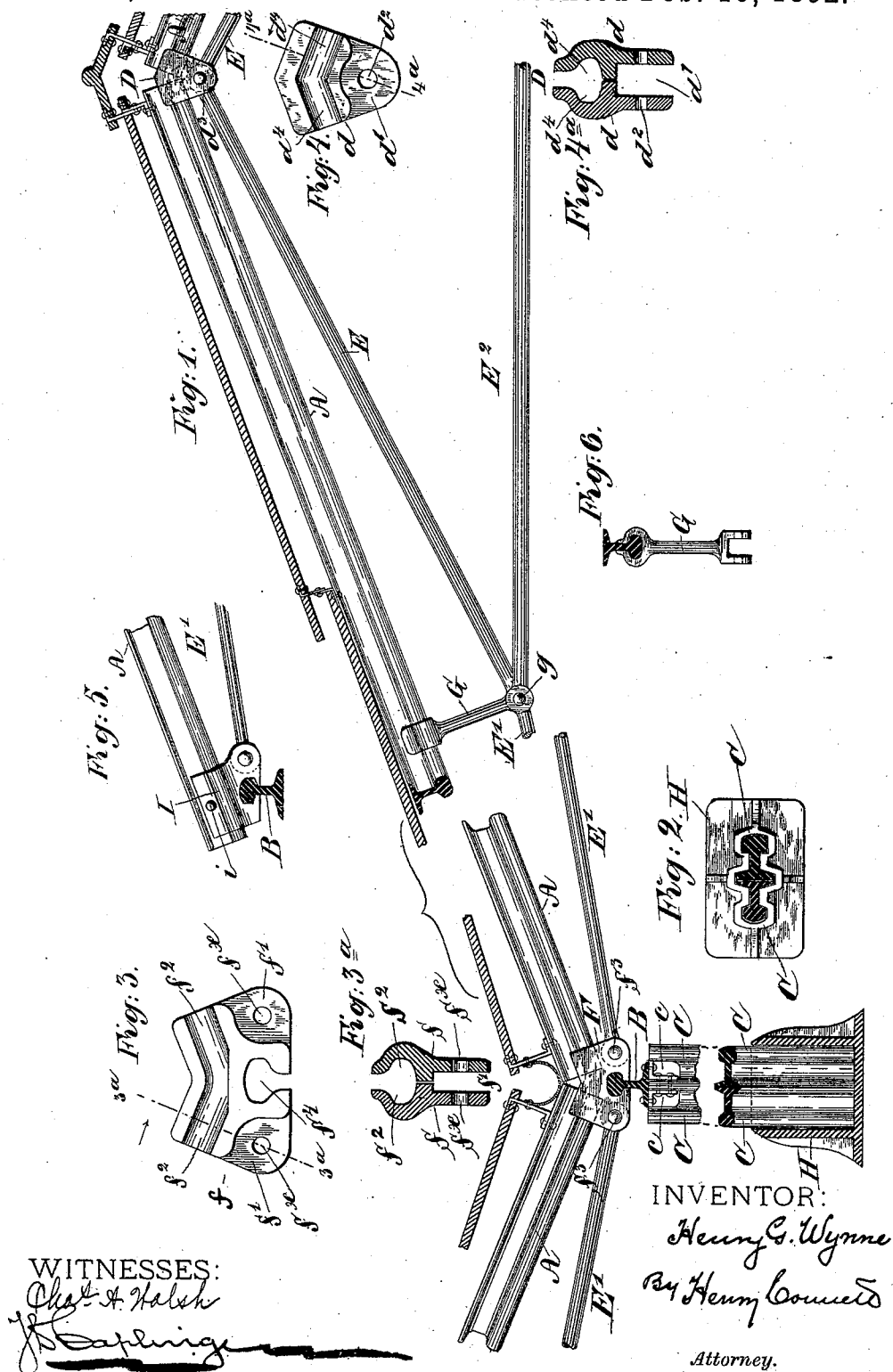


(No Model.)

H. G. WYNNE.
METALLIC STRUCTURE.

No. 468,924.

Patented Feb. 16, 1892.



UNITED STATES PATENT OFFICE.

HENRY G. WYNNE, OF NEW YORK, N. Y., ASSIGNOR TO THE NOVELTY IRON BUILDING COMPANY, OF SAME PLACE.

METALLIC STRUCTURE.

SPECIFICATION forming part of Letters Patent No. 468,924, dated February 16, 1892.

Application filed June 25, 1891. Serial No. 397,418. (No model.)

To all whom it may concern:

Be it known that I, HENRY G. WYNNE, a citizen of the United States, and a resident of the city, county, and State of New York, have invented certain Improvements in Metallic Structures, of which the following is a specification.

My invention relates to such metallic structures as are employed to form the frames of buildings, and particularly the class of buildings used on fair and exhibition grounds. Buildings of this class are usually required to be put up quickly, and are also generally required to be taken down after the exhibition is over. My structure is well adapted to buildings of this latter class.

One object I have in view is to utilize in the structure discarded railway-rails, which may usually be purchased at a comparatively low price, and when the structure has been taken down may be sold again for nearly as much as they cost. These rails together with ordinary bolts and rods and a few special cast-iron pieces used in uniting the rails at the ridges, valleys, and wall-plates constitute all that is required for the metal frame or skeleton.

My invention will be fully described hereinafter, and its novel features carefully defined in the claims.

In the accompanying drawings, serving to illustrate my invention, Figure 1 is a general view of a metal structure illustrating my invention. This view shows the roof-frame and one of the posts for supporting the wall-plate. The shoe of the post is in vertical section. Fig. 2 is a plan of said shoe, showing the post in horizontal section. Figs. 3 and 3^a are views on a larger scale than Fig. 1, illustrating the construction of the socket-piece which receives the rafters at the valley. Fig. 3 is a face view of one of the two plates of the said socket-piece, and Fig. 3^a is a section of the socket-piece in the plane indicated by line 3^a in Fig. 3. Figs. 4 and 4^a are similar views to Figs. 3 and 3^a, respectively, illustrating the construction of the socket-piece at the ridge. Fig. 5 is a side elevation on the same scale as Fig. 1 of the socket-piece to receive the rafter at the eaves; and Fig. 6 is a view

of the strut under the rafter, the view being taken at right angles to that in which the same part is seen in Fig. 1.

A represents the rafters, formed of T-rails laid with their bases uppermost.

B represents the wall-plate at the eaves or valley. This wall-plate is also a T-rail.

C C are two rails placed on end and base to base. They form a post to support the roof-frame at the valley or the eaves, as the case may be.

As herein shown, the roof-truss is constructed of the following-named parts: At the ridge is the socket-piece D, composed of two plates *d d*, which are alike and placed face to face for use. Fig. 4 shows the inner face of one of these plates, which is recessed at *d'* to receive the eyes on the ends of the tie-rods E, and provided with a bolt-hole *d*² to receive the bolt *d*³, Fig. 1, which secures the plates together and the tie-rods in place. Above the recess *d'* are two oppositely-inclined half-sockets *d*⁴ in the inner face of the plate, which are of such form that when the two plates are put together face to face, as seen in Fig. 4^a, the coincident half-sockets form sockets, which fit and embrace the heads of the T-rails, forming the rafters and the webs thereof. At the valley (see Fig. 1) the rafters coming down from opposite sides enter inclined sockets in a socket-piece F, which is formed of two like plates *f*, one of which is seen in elevation in Fig. 3. The socket-plates *f* have half-sockets or recesses *f'* to receive the eyes on the tie-bars E', and half-sockets *f*², adapted to receive and fit the heads of the T-rails forming the rafters, the same as those in the socket-piece D, (Fig. 4,) except that in the piece D the half-sockets are inclined upward, while in the piece F they are inclined downward. At the recesses *f'*, which receive the eyes on the tie-rods, are bolt-holes *f*^x to receive bolts *f*³, Fig. 1, which clamp the plates *f* together and secure the tie-rods, as will be readily understood.

In the base of the socket-piece F is a keeper-slot or key-hole slot *f*⁴, which is of the proper contour and size to receive and fit the head and web of the T-rail forming the wall-plate B.

G is a strut, which has a keeper-slot in its head to embrace the head and web of the inverted rail A, forming the rafter, and a recess in its lower end to receive the eyes on the tie-rods E, E', and E². These are secured by a bolt *g*.

The rails C C, which form the post, fit at their lower ends into a shoe H. (Seen in vertical section in Fig. 1 and in plan in Fig. 2.) This shoe has a socket of the proper size and contour to properly receive and fit the rails C, as clearly shown. The wall-plate B rests on the post and is secured in place by suitable angle-brackets *c*, which may also be employed to secure together the rails C of the post.

Fig. 5 shows a socket-piece I for use at the eaves to receive the end of the rafter A. This piece is constructed on the same principle as the piece F and differs from it only in that it receives the rafter from but one side and the tie-rod E' from but one side. The socket for the rafter extends through, so as to allow the rafter to project at the eaves to any desired extent. A bolt *i* may be used with this socket-piece I, said bolt passing through the web of the rail A and the embracing-plates of the socket-piece.

For an inclined roof having no ridge, but a row of posts under the higher as well as the lower side of the roof, the socket-piece I may be used at both wall-plates.

In setting up a structure with a roof-frame like that shown the posts C C are set on end in their shoes and the brackets *c* secured thereto. The socket-pieces F are threaded on the wall-plate B, and the latter then set and fixed in place on the posts. The socket-pieces D at the ridge are secured to the rafters, the struts G threaded on the latter, and the truss formed by placing the tie-rods. The truss is then lifted into place. After it is in place the plates of the socket-pieces F are made to embrace the ends of the respective rafters at the valley and the tie-rods E' and the bolts *f*³ inserted and screwed up.

The covering of the roof-frame may be of any kind and forms no part of my invention.

It will be obvious to those skilled in the art that this structure may be put up and taken down very quickly and without material injury to the parts employed, as bolts alone will be, by preference, used in securing together the parts of the frame.

What is known as "I-iron" or "H-iron" may of course be used in lieu of T-rails, in which case the sockets, &c., in the socket-pieces will be shaped to fit the flanges on the bar. I prefer, however, to employ railway-rails from motives of economy. Any form of metal bar having a flanged head and flanged base with a connecting-web may be employed.

Having thus described my invention, I claim—

1. In a metal structure, a socket-piece to receive the rafter, composed of two similar plates

provided each with a half-socket to receive the flanged head of the rafter, and a bolt to secure said plates together face to face on the said head and provided with a keeper-slot to receive the flanged head of the wall-plate, in combination with the rafter A and wall-plate B, said rafter and wall-plate each consisting of a bar having a flanged head and base, substantially as set forth.

2. In a metal structure, the combination, with a socket-piece F, composed of two like plates *f*, each having in it coinciding inclined half-sockets *f*², coinciding bolt-holes *f*¹, and coinciding keeper-slots *f*⁴, the said half-sockets and keeper-slots having the proper proportions and dimensions to fit the flanged heads of the respective rafters and wall-plate, of the said rafter and wall-plate, each consisting of a bar having a flanged head and base and the securing-bolts, as set forth.

3. In a metal structure, the combination, with the wall-plate B, composed of a T-rail, of the post consisting of two T-rails C C, arranged base to base, the brackets *c*, which unite the post to the flanges of the wall-plate, and the socket H, as set forth.

4. In a metal structure, the combination, with the rafters A and wall-plates B, each consisting of a bar with a flanged head and base, of the socket-piece D at the ridge, constructed of two plates and provided with inclined sockets to receive the rafters and a bolt to secure said plates together, and a socket-piece constructed of two plates, having a keeper-slot to receive the flanged head of the wall-plate, and an inclined socket to receive the flanged head of the rafter, and a bolt to secure together the plate forming said socket-piece, substantially as set forth.

5. In a metal-roof structure, the combination of the oppositely-inclined rafters A and the wall-plates B, each consisting of a bar with a flanged head and base, a sectional socket-piece D at the ridge, provided with inclined sockets to receive the flanged heads of the opposite rafters, a recess to receive the ends of the tie-rod, and a securing-bolt *d*³, a sectional socket-piece at the wall-plate, having an inclined socket to receive the flanged head of the rafter, a recess to receive the tie-rod, a keeper-slot to receive the flanged head of the wall-plate, and a securing-bolt, the tie-rods E, E', and E², and the strut G, said strut having a keeper-recess in one end, which embraces the flanged head of the rafter, a recess at its other end, which embraces the ends of the tie-rods, and a securing-bolt *g*, all arranged substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

HENRY G. WYNNE.

Witnesses:

HENRY CONNETT,
CHAS. A. WALSH.