Nov. 15, 1927. 1,648,971

J. H. SWEDENBORG

STRUCTURAL ELEMENT

Filed Feb. 12, 1926

Fig. 1.

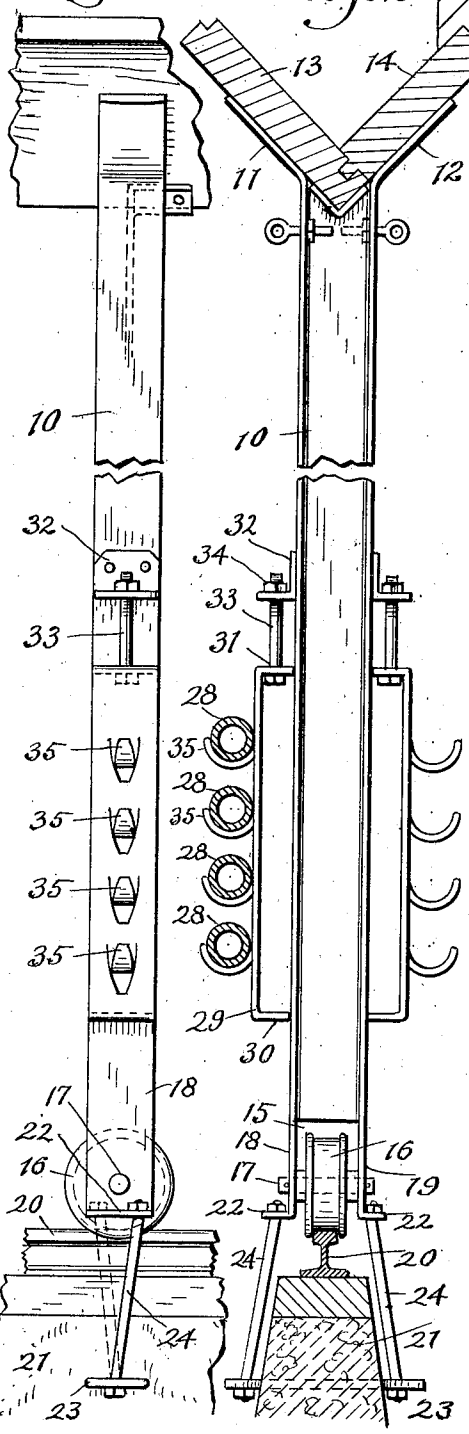


Fig. 2.

Fig. 3.

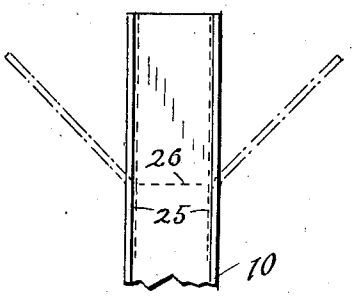


Fig. 4.

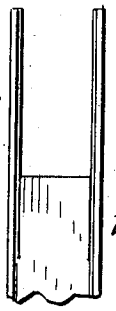


Fig. 5.

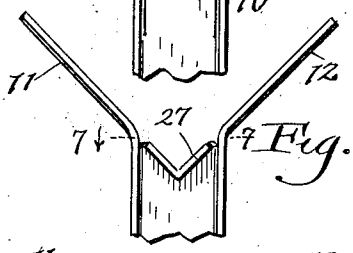


Fig. 6.

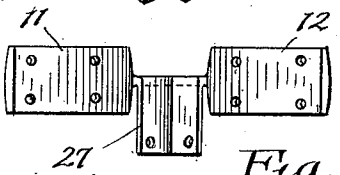
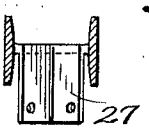


Fig. 7.



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UNITED STATES PATENT OFFICE.

JOHN HENRY SWEDENBORG, OF ASHTABULA, OHIO.

STRUCTURAL ELEMENT.

Application filed February 12, 1926. Serial No. 87,752.

This invention relates to structural elements especially adapted for use as columns in greenhouses and similar structures.

It is one of the objects of the invention to provide a column that may be manufactured economically from a standard I-beam and will have the requisite characteristics of strength and durability for the purpose of supporting the superstructure of a greenhouse.

A further object of the invention is to provide a column, for the purposes specified, that will be equipped with a wheel or roller at its lower end for the purpose of permitting the greenhouse structure to be moved from one location to another.

A further object of the invention is to provide an improved form of supporting means for the heating pipes of a greenhouse, such supporting means to be so designed as to be capable of manufacture at a very low cost and readily assembled and adjusted on the supporting column of the greenhouse structure.

Other objects of the invention and the features of novelty will be apparent from the following description taken in connection with the accompanying drawings, of which:

Fig. 1 is a side elevation of a column embodying my invention;

Fig. 2 is another elevation of the column shown in Fig. 1;

Fig. 3 is a side elevation of an I-beam from which the column, shown in Fig. 1, is constructed;

Fig. 4 is a view similar to Fig. 3 but showing the end of the I-beam before the flanges are bent;

Fig. 5 is another side elevation showing the upper end of the column after the bending operations;

Fig. 6 is a plan view of the structure, as it appears in Fig. 5; and

Fig. 7 is a section on the line 7—7 of Fig. 5.

Referring to the drawings, 10 indicates a column, made from an I-beam, the flanges of the I-beam, at the upper end of the column, being bent outwardly into V-form, as shown at 11 and 12, for the purpose of forming a support for the members 13 and 14 which constitute the gutters between two sloping greenhouse roofs.

The lower end of the column 10 may be embedded in concrete, according to the common practice in building stationary greenhouses or, when it is desired to have a portable greenhouse, the lower end of the column will have the web cut away to form a recess 15 for the wheel or roller 16, the latter being mounted on a shaft 17 that is carried by the I-beam flanges 18 and 19. The wheel 16 is mounted on a rail 20 which is suitably supported on a foundation 21. For the purpose of anchoring the column 10, the downwardly projecting flanges 18 and 19 are turned outwardly to form the ears 22 which may be secured to an anchoring member 23, in the foundation 21, by means of the bolts 24.

The method of forming the upper end of the column is illustrated in Figs. 3 to 7. The web of the I-beam is first severed from the flanges along the dotted lines 25, by shearing or sawing the cuts 25 extending for the requisite distance longitudinally of the beam. A portion of the web is then removed by a transverse cut, indicated by the dotted line 26, thus producing the structure shown in Fig. 4. The flanges 11 and 12 are then bent outwardly away from the web to provide the V-shape, shown in Fig. 5. The web is then bent laterally and formed into a V-shape, as shown at 27, in Fig. 5, by means of a suitable press, the operation being preferably performed while the metal is hot. The flanged web is so arranged as to constitute practically a continuation of the inclined flanges 11 and 12 and the bottom or point of the V, as shown in Fig. 5. There is thus provided an integral structure having all of the necessary features for supporting and securing the members 13 and 14.

In greenhouses it is the usual custom to heat by steam or hot water which is conducted through a series of pipes and, in connection with my improved column structure, I provide a hanger or support for the pipes which are indicated at 28. This hanger consists of a bar 29 having its ends bent laterally, as indicated at 30 and 31, to engage the side of the column. An angle clip 32 is riveted or bolted to the column and carries a bolt 33 which extends through the part 31 of the hanger so that by adjusting the nut 34, the hanger may be raised or lowered. A series of tongues 35 is stamped from the bar 29 and preferably curved so as to receive and support the pipes 28.

By having the pipes supported on columns

of the greenhouse structure, the heating system does not have to be dismantled when the house is moved from one location to another.

Having thus described my invention, I claim:

1. As a new article of manufacture, a structural column consisting of an I-beam having its flanges severed from the web for a portion of the length thereof and bent away from the web, and the severed portion of the web being bent so as to extend laterally from the plane of the web.

2. As a new article of manufacture, a structural column consisting of an I-beam having its flanges severed from the web for a portion of the length thereof and bent away from the web, and the severed portion of the web being bent into a V-shape extending laterally from the plane of the web.

3. As a new article of manufacture, a structural column consisting of an I-beam having its flanges severed from the web for a portion of the length thereof and bent away from the web, and the severed portion of the web being bent into a V-shape extending laterally from the plane of the web with its sides substantially in the planes of the bent portions of the flanges.

4. As a new article of manufacture, a structural column consisting of an I-beam having its flanges severed from the web for a portion of the length thereof and bent away from the web, in the form of a V, and the severed portion of the web being bent into a V-shape extending laterally from the plane of the web and so positioned as to constitute the point of the V formed by the flanges.

5. As a new article of manufacture, a structural column consisting of an I-beam having its flanges, at one end, severed from the web for a portion of the length thereof and bent away from the web in the form of a V, the opposite end of the I-beam having the web cut away to provide a recess, a shaft supported in the flanges, and a wheel carried by said shaft in said recess.

In testimony whereof, I hereunto affix my signature.

JOHN HENRY SWEDENBORG.