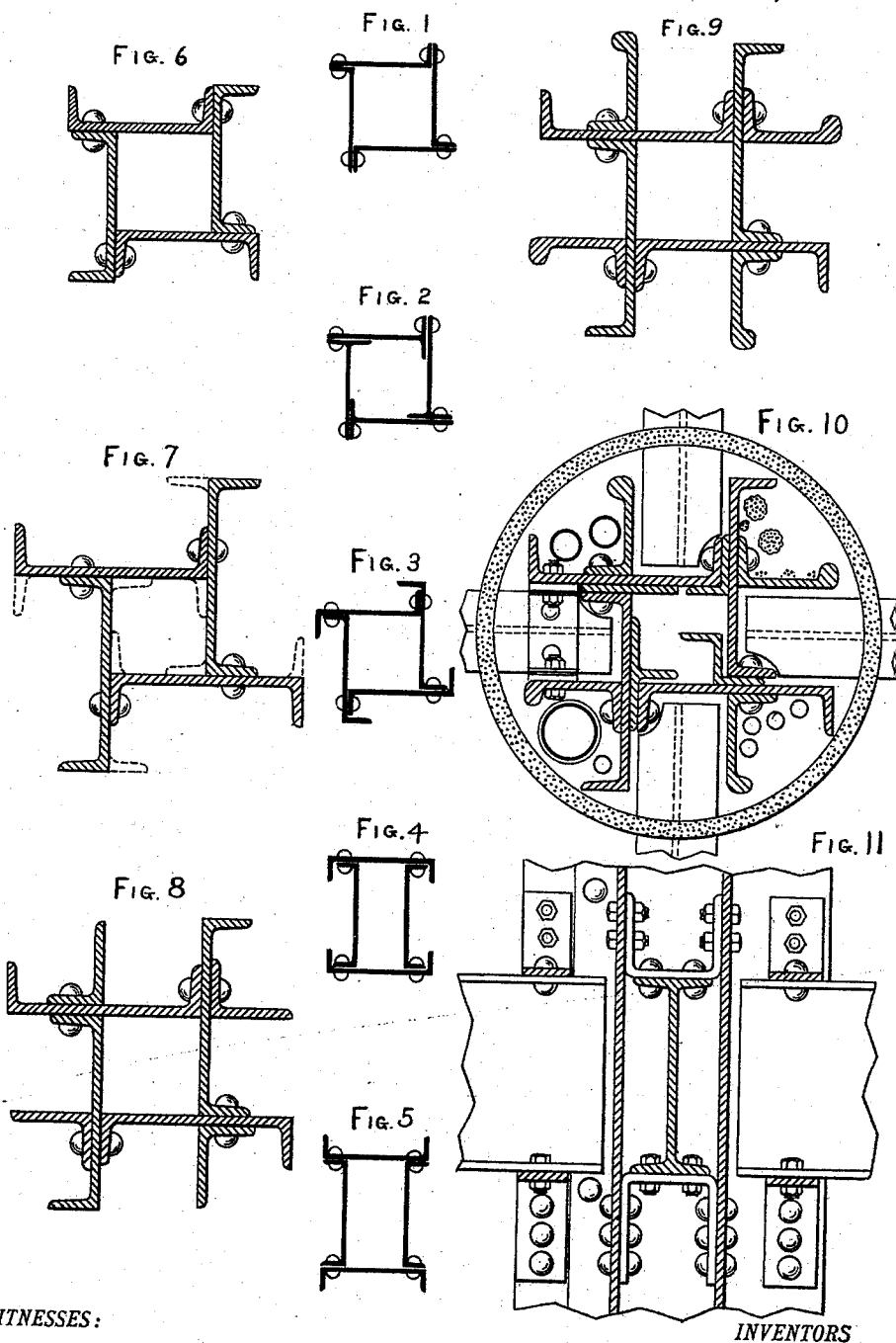


(No Model.)

N. POULSON & B. E. J. EILS.  
WROUGHT IRON OR STEEL COLUMN.

No. 498,859.

Patented June 6, 1893.



WITNESSES:

*Chas. E. Paulson*  
*Jens L. Hval*

INVENTORS

*Nich. Poulsen*  
*Bert. E. Eils*

# UNITED STATES PATENT OFFICE.

NIELS POULSON, OF FORT HAMILTON, AND BETTE E. J. EILS, OF NEW YORK, N. Y.

## WROUGHT IRON OR STEEL COLUMN.

SPECIFICATION forming part of Letters Patent No. 498,859, dated June 6, 1893.

Application filed December 31, 1892. Serial No. 456,861. (No model.)

*To all whom it may concern:*

Be it known that we, NIELS POULSON, residing at Fort Hamilton, county of Kings, and BETTE E. J. EILS, residing at New York, county of New York, State of New York, citizens of the United States, have invented a new and useful Column, of which the following is a specification.

This invention relates to columns built up of rolled wrought iron or steel bars so assembled together that the finished column has an interior hollow space, and hence may be called a box column, as distinguished from wrought iron and steel columns in which the rolled bars are assembled to radiate from the center of the column and form a solid central core.

The principal features of our invention are, first, a wrought iron or steel box column made of flanged bars each of which is riveted by a flange to the web of one of the adjoining bars; second, a box column composed of flanged wrought iron or steel bars so assembled together that the web of each bar lies against the outer face of the flange of the adjoining bar riveted to it.

In the annexed drawings, Figure 1 represents a cross-section of one of our improved columns made of angle irons. Fig. 2 represents a cross-section of a column made of T irons. Fig. 3 represents a cross-section of a column made of "Z" bars. Fig. 4 represents a cross-section of a column made of channel irons. Fig. 5 represents a cross-section of a column made of channel irons. Fig. 6 represents a cross-section of a column made of channel irons. Fig. 7 represents a cross-section of a column made of channel irons, the dotted lines showing that "I" beams may be used instead of channel irons. Fig. 8 represents a cross-section of a column made of channel irons and the application of angle irons for strengthening it. Fig. 9 represents a cross-section of a column made of channel irons and the application of bulb angles for strengthening it. Fig. 10 represents a cross-section of a fireproofed column made of angle irons illustrating the application of various sections of bars for strengthening it. Fig. 11 illustrates a sectional elevation of one of our improved columns showing the method for securing the girders or beams to it. Figs.

6 to 11 are drawn on a larger scale than Figs. 1 to 5.

The same letters of reference are used on the several figures to indicate identical parts.

The drawings so fully illustrate the construction of our improved column that it is sufficient, without further detail description, to point out the advantages inherent in it.

By assembling the flanged bars or beams as illustrated we obtain a column of great rigidity by reason of the fact that the bars are connected together each along two lines; and by arranging the bars in such a way that the web of one lies against the outer face of the flange of the adjoining one we are enabled to so construct heavy and light columns that the webs of the bars of a light column when erected over a heavy column may stand vertically over the webs of the bars of the latter. This latter feature is illustrated by examining Figs. 6 and 7, where it will be seen that the lighter column shown in Fig. 6 so fits on the heavier column shown in Fig. 7 that the webs of the two columns run in the same vertical planes.

Another advantage of assembling the bars so that the web of one will lie against the outer face of the flange of the adjoining bar is that the perimeter of the column can be kept within the smallest possible compass.

It will be observed that the various flanged bars shown are such as are on the market, so that no special roll will have to be provided to make them. Also, that the lines of connections are so arranged as to provide for practical riveting. Furthermore, that strengthening bars can be applied without additional riveting.

In Fig. 10 we have illustrated how gas and water pipes and electric wires may be arranged in the exterior angles of the columns.

We claim as our invention—

1. A box column composed of flanged wrought iron or steel bars each riveted by a flange to the web of one of the adjoining bars, substantially as before set forth.

2. A box column composed of flanged wrought iron or steel bars each riveted by a flange to the web of one of the adjoining bars, the bars being assembled as described, namely, so that the web of each bar lies against the

outer face of the flange of the adjoining bar riveted to it, substantially as before set forth.

3. A box column composed of flanged wrought iron or steel I beams each riveted by a flange to the web of one of the adjoining I beams, the I beams being assembled as described namely so that the web of each I beam lies against the outer face of the flange of the adjoining I beam riveted to it, substantially as before set forth.

4. A box column of several lengths varying in strength, composed of flanged wrought iron or steel bars each riveted by a flange to the

web of one of the adjoining bars, the bars in each length of the column being assembled as described namely so that the web of each bar lies against the outer face of the flange of the adjoining bar riveted to it and that the webs of the different lengths of the column stand vertically over each other, substantially as before set forth.

NIELS POULSON.  
BETTE E. J. EILS.

Witnesses:

CHAS. E. POULSON,  
JENS L. HOLST.