(No Model.) 2 Sheets—Sheet 1.

W. C. WESTAWAY & L. W. BEARD.

JOINT CONNECTION FOR METAL FRAME WORK.

No. 454,691. Patented June 23, 1891.

Fig. 1.

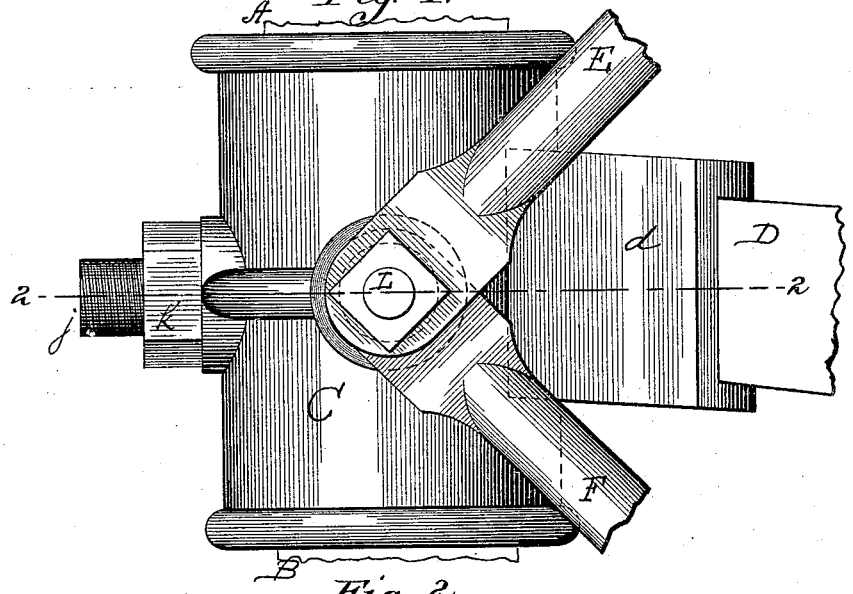
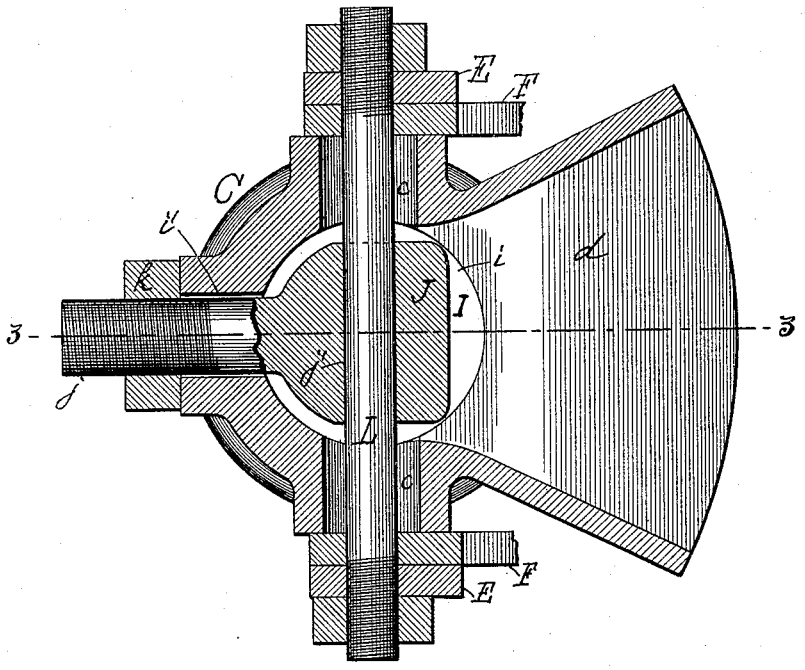


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

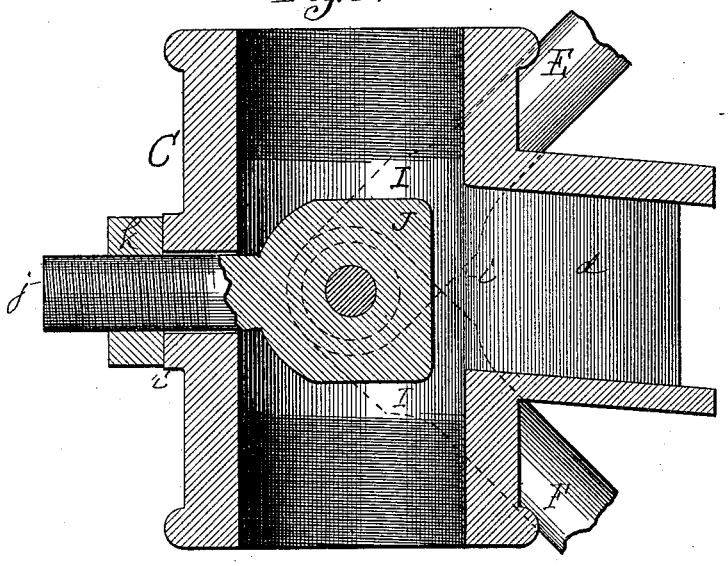
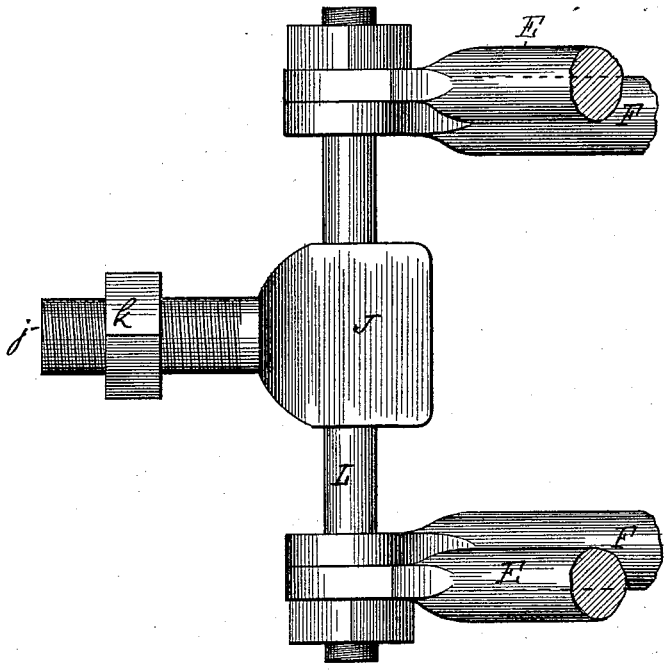


Fig. 4.



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UNITED STATES PATENT OFFICE.

WALTER C. WESTAWAY AND LEWIS W. BEARD, OF DECORAH, IOWA.

JOINT-CONNECTION FOR METAL FRAME-WORK.

SPECIFICATION forming part of Letters Patent No. 454,691, dated June 23, 1891.

Application filed November 3, 1890. Serial No. 370,204. (No model.)

To all whom it may concern:

Be it known that we, WALTER C. WESTAWAY and LEWIS W. BEARD, citizens of the United States of America, residing at Decorah, in the county of Winneshiek and State of Iowa, have jointly invented certain new and useful Improvements in Joint-Connections for Metal Frame-Work, of which the following is a specification.

In the accompanying drawings, wherein like reference-letters indicate like parts, Figure 1 is a side elevation, Fig. 2 a cross-section, Fig. 3 a vertical section, and Fig. 4 a top plan, of the parts connected together without the coupling-tube.

Our invention is adapted to metallic frame structures generally, but is more particularly intended for windmill-towers, electric-light towers, and similar buildings composed of vertical pipes coupled together and connected by transverse horizontal beams and diagonal brace-bars—a form of embodiment selected for illustration in the drawings, wherein—

A B indicate the vertical or slightly-inclined pipe-sections connected together by coupling-tubes C. D shows one of the transverse beams, and E F represent two of the diagonal brace-bars. It is already customary to connect the members A B D and E F together by means of the coupling-tube C, and in this respect we follow the ordinary usage.

Difficulty has, however, been experienced in adjusting and tightening up the diagonal brace-bars, and heretofore no simple, cheap, convenient, and effective means has been available for this purpose.

It is the object of our invention to supply this want. To this end we cast the coupling C with a suitable chamber or space I at the middle between the points to which the pipe-sections A B are capable of screwing, and make an opening *i* into one side of the chamber to admit an adjusting-block J, and also provide a hole *i'* at the opposite side, through which extends a stem *j*, formed on or connected with the block. The outer end of the stem *j* is screw-threaded and provided with a screw-nut *k*, by which the position of the block may be adjusted in the chamber. The block is bored transversely, as shown at *j'*, to accommodate the bolt L, which passes horizontally through the coupling-tube and to the projecting ends of which the brace-bars are attached. The bolt L fits closely the hole *j'* in the block, so that any material movement of the block will move the bolt; but the holes *c* in the cheeks of the coupling, through which said bolt extends, are sufficiently larger than the bolt to permit the latter to be moved laterally. A difference of three-eighths of an inch in the respective diameters of the bolt and the holes *c* is ordinarily sufficient for the purpose. Preferably we prefer to construct the opening *i* at the back end of the socket *d*, in which the ends of the transverse beams D are secured.

In practice the pipe-sections A B are coupled, the blocks J inserted and secured by their nuts *k*, the beams D stepped in their sockets *d*, the bolts L inserted transversely through the coupling and its contained adjusting-block, and the diagonal bars E F connected to the ends of the bolts L and properly secured. Then by tightening up the adjusting-nuts *k* the bolts L are drawn back, straining and tightening simultaneously all the diagonal brace-bars attached thereto.

The construction is simple, involving but slight changes in the form of the coupling, and proving very convenient and effective in practice.

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

In combination with the diagonal brace-bars and the coupling, the bolt L, working loosely in the walls of the coupling, the movable adjusting-block through which said bolt passes within the coupling, and means for forcing the block back and thereby putting the brace-bars under strain, substantially as described.

WALTER C. WESTAWAY.
LEWIS W. BEARD.

Witnesses:
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L. HILL.