

No. 661,034.

Patented Nov. 6, 1900.

C. H. BURWINKLE.
CENTER.

(Application filed June 25, 1900.)

(No Model.)

FIG. 1.

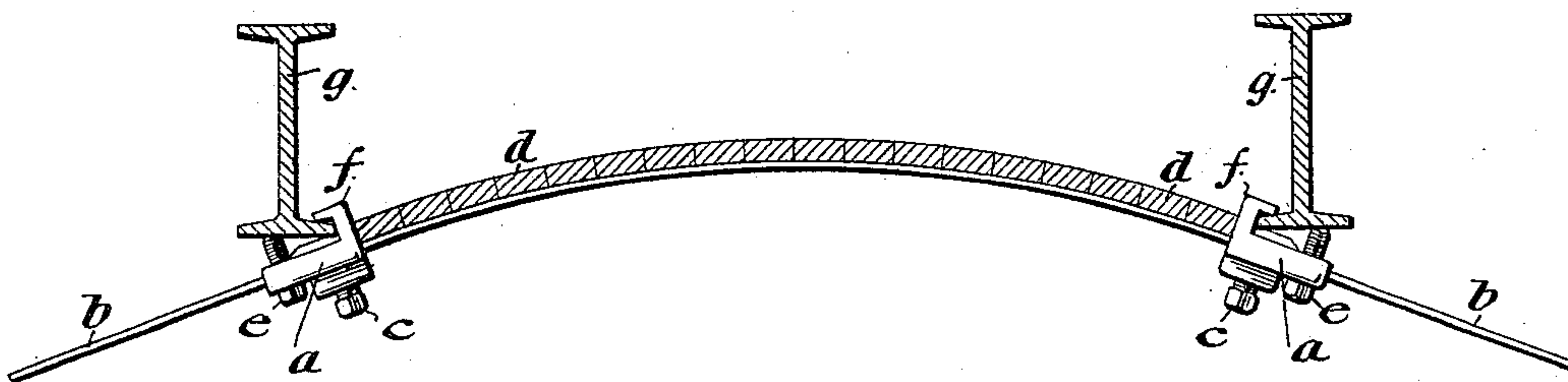


FIG. 2.

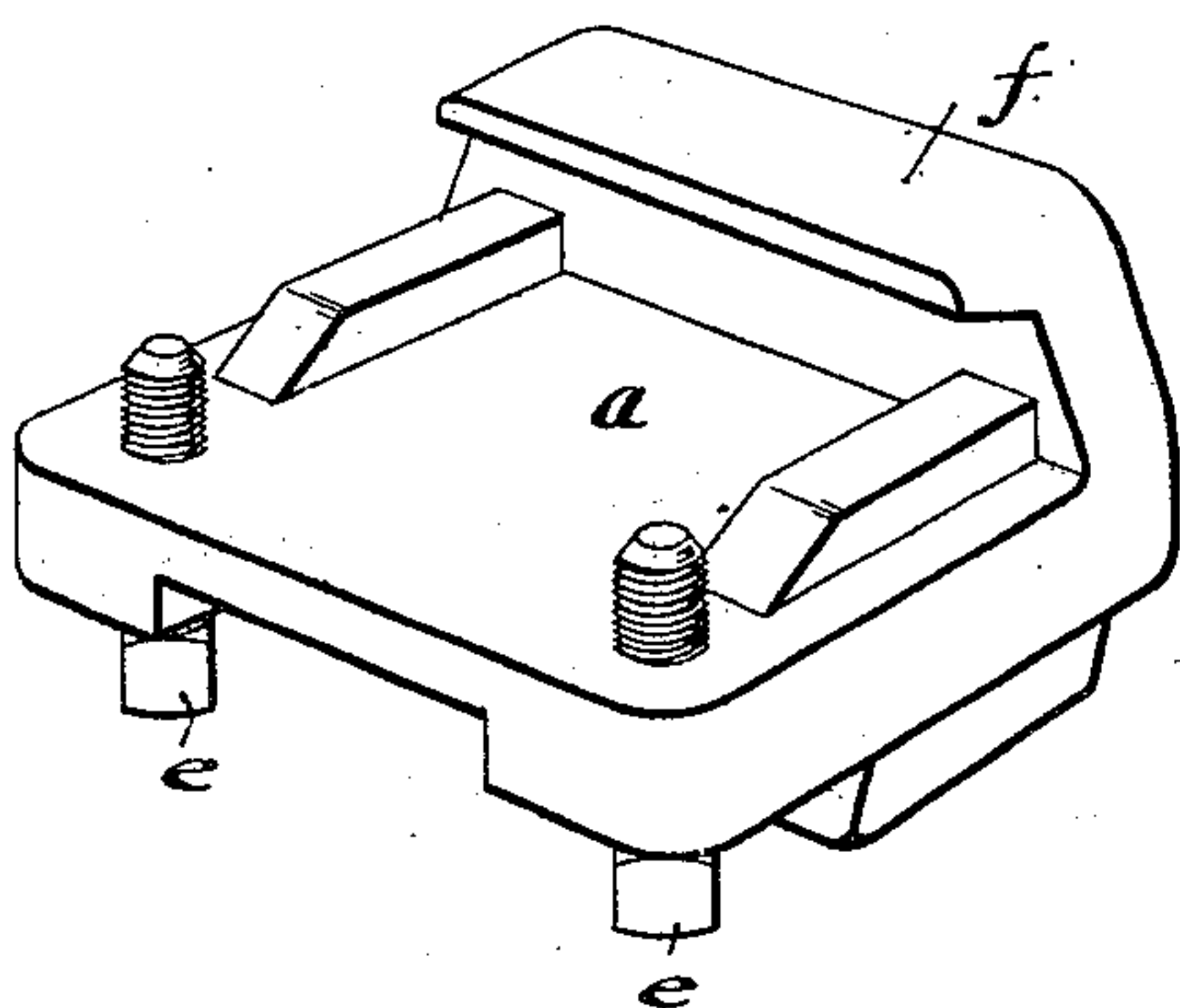
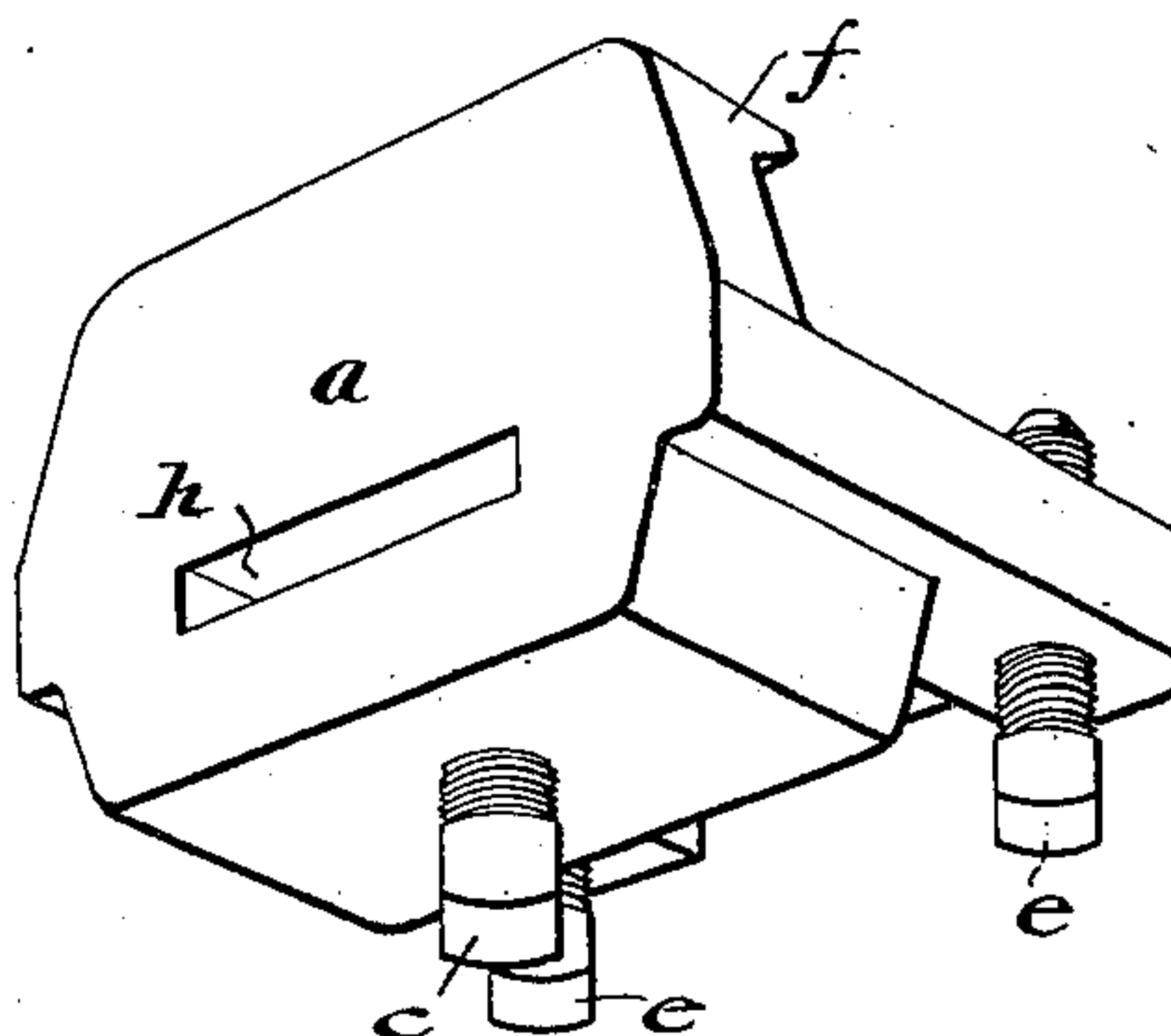


FIG. 3.



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UNITED STATES PATENT OFFICE.

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CENTER.

SPECIFICATION forming part of Letters Patent No. 661,034, dated November 6, 1900.

Application filed June 25, 1900. Serial No. 21,418. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. BURWINKLE, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Centers, of which the following is a specification.

Centers, although employed in the construction of buildings in various connections, find their largest usefulness in bridging the spaces between I-beams and serving as the supports upon which concrete or cement, in plastic condition, or other material, is placed, to maintain such material in position until it becomes set and self-sustaining.

The centers thus employed are thereupon usually removed and a suitable flooring placed across the upper surfaces of the I-beams and a suitable ornamental or other ceiling applied to the under surface of the cement and I-beams.

Inasmuch as I-beams are spaced at various distances apart and are of various heights, and inasmuch as it is necessary in conforming to specifications of buildings, to provide the cement masses of various predetermined thicknesses,—a matter determined in part by the spring or height of the arched center,—builders have been obliged to either keep on hand a large supply of centers representing the range of variation in breadth and curve likely to be required, or else to specially construct sets of centers for each building upon which they may be engaged, either of which expedients involves considerable expense.

Furthermore, wooden centers as hitherto employed, have been cumbersome, and difficult to elevate to the upper portions of partly completed buildings, and to place in position therein.

It is the object of my invention to provide a center so constructed as to be capable of being taken apart for convenience in transportation from one place to another, the parts of which may, by a single workman, be expeditiously and easily assembled to form an arch in any desired location, the devices being of such construction, furthermore, as to be adapted to fit between I-beams separated by any ordinary distance, and to form an arch of any desired curvature.

In the accompanying drawings I show, and herein I describe, a good form of a convenient embodiment of my invention, the particular subject-matter claimed as novel being hereinafter definitely specified.

In the accompanying drawings,

Figure 1 is a view in side elevation of a center embodying my invention, shown in position upon I-beams of usual construction.

Figures 2 and 3 are views in perspective of the keepers.

Similar letters of reference indicate corresponding parts.

In the accompanying drawings,

a a are keepers, as I term them, mounted upon the lower flanges of the I-beams, *g g*, the two keepers employed in an arch facing each other across the interspace between the I-beams. Each keeper is provided with a suspension hook *f*, engaged over the lower flange of the I-beam on which it is mounted, and with an adjusting screw or screws *e* in threaded engagement with its body, the advance ends of which screws are adapted to engage against the under face of the beam.

Manifestly, as the weight of the arch and any superposed material tends to throw the outer ends of the basal portions of the keepers upward toward the I-beams, and maintain the advance ends of the screws *e* constantly in contact therewith, the keepers may, by manipulation of said screws *e*, be set at any desired inclination with respect to the I-beam.

Each keeper embodies a bar socket *h*, being conveniently, as shown, an opening extending through its base, and open at both ends, such sockets being intended for the reception of the respective ends of the bridge bar *b*.

b is what I term the bridge bar, being preferably a strip of steel or suitable spring metal, of appropriate dimensions, conveniently arranged to accurately fit within the sockets *h*, the respective ends of which bar are, when the parts are assembled, entered in the respective sockets of the two keepers with which the bar is associated, the central portion or body, of the bar, remaining in the form of an arch between the I-beams.

The bridge bar is of length in excess of the ordinary distance between I-beams between which the arch is arranged, and, when in po-

sition, one or both of its ends projects beyond the keeper or keepers. The bar, having this excess of length, may, therefore, to increase the height of its arched central portion, be drawn inward through the sockets, the dimensions of the arch being manifestly determined by the length of the bar existing between the two keepers.

When the bar has, by adjustment with respect to the keepers, been set to form an arch of the desired dimensions, binding screws *c*, which pass through the walls of the keepers and into the sockets *h*, may be tightened up to bear against said bar and lock it in position. Of course, the bar may be adjusted by shifting one of its ends through its socket in the keeper, the other end remaining fixed with respect to the other keeper. The arrangement set forth herein, however, which enables the bar to be adjusted by shifting either end through its socket, is desirable, as sometimes one end may be close to a wall or very difficult of approach, whereupon it is very convenient to effect the necessary manipulation at the other end.

A series of keepers and bridge bars are, of course, employed, at desired intervals along the length of the I-beams and between each pair of said beams. Narrow boards *d*, or kindred devices, are then laid upon the upper surfaces of the bridge bars, to complete the structure.

When the centers are thus in position, the concrete or other material may be placed upon them in the usual manner, as hereinbefore explained.

Centers made according to my invention may be repeatedly used, and employed in any location and for any purpose in and for which centers are ordinarily used.

In my improved construction features of especial value reside in the fact that the keepers may be adjusted to hold the lower ends of the bridge bars at any desired angle, thus setting the arch, and in the fact that the body of the bar itself may be adjusted lengthwise to produce any desired amplitude of curve.

The weight of the load on the center does not, in my improved construction, operate to spread the I-beams apart, but forces the outer ends of the bases of the keepers upward, and through the screws *e*, bears against the under faces of the I-beams, the keepers themselves tending to rock or turn in the planes of the length of the bridge bars, on the points of contact of their hooks *f* with the flanges of the beams.

Having thus described my invention, I claim—

1. A supporting arch for a center, consisting of a pair of keepers provided with hooks adapted to engage upon the upper edges of the flanges of I-beams, and with bases adapted to extend across the under faces of said I-beams, screws extending through the bases of said keepers into contact with the under faces of said I-beams to adjust the inclina-

tion of said keepers, bar engaging devices formed in or on said keepers, a spring bar the respective ends of which are entered in said devices and free for longitudinal adjustment with respect thereto, and means for securing the respective ends of said spring bars at various positions of adjustment with respect to said devices.

2. The combination, to form a supporting arch for a center, of a spring bar, means for engaging one end of said spring bar to the lower portion of an I-beam, and, as a means for connecting the other end of said bar to the adjacent I-beam, a keeper consisting of a base, embodying a socket open at both ends, a hook extending from said base and adapted to engage upon the upper edge of the lower flange of the I-beam, a screw passing through said base and adapted to engage the lower face of said I-beam, and a binding screw engaged in said base and entering said socket.

3. A keeper or support for a center arch, consisting of a block or body provided with a hook adapted to engage upon the lower flange of an I-beam, which hook sustains the weight of said body and permits its movement in a plane perpendicular to the axis of said beam, means carried by said block, and operative against the lower portion of the I-beam, for adjusting the set of said body in different positions in said plane of movement, and means for engaging the end of a bridge bar, substantially as set forth.

4. A keeper or support for a center, consisting of a block or body provided with a supporting hook adapted to engage upon the lower flange of an I-beam, to support the weight of said block, said block being adjustable in a plane transverse with respect to the axis of the I-beam, a screw carried by said block adapted to abut against the lower face of the I-beam and by its set control the adjustment of the block, and means carried by said body or block for securing in different positions of longitudinal adjustment, the end of a bridge bar, substantially as set forth.

5. A keeper or support for a center, consisting of a body or block provided with a hook adapted to engage upon the upper edge of the flange of an I-beam, and formed with a base adapted to extend across the lower face of said beam, a screw extending through said base into contact with the lower face of said beam, and a bar engaging device formed in or on said keeper.

6. A keeper or support for a center, consisting of a body or block, provided with a hook adapted to engage upon the upper edge of the flange of an I-beam, and formed with a base adapted to extend across the lower face of said beam, a screw extending through said base into contact with the lower face of said beam, and a bar engaging device formed in or on said keeper and adapted to secure a bridge bar in different positions of longitudinal adjustment with respect thereto.

7. A keeper for a supporting arch, con-

sisting of a body provided with a hook, a
screw passing in an approximately vertical
direction through said body, a socket extend-
ing through said body for the reception of a
5 bridge bar, and a screw adapted to engage a
bridge bar extending through said socket,
substantially as set forth.

In testimony that I claim the foregoing as
my invention I have hereunto signed my
name this 23d day of June, A. D. 1900.

CHARLES H. BURWINKLE.

In presence of—

F. NORMAN DIXON,
THOS. K. LANCASTER.