

T. C. Hulett,
Suspension Bridge.

No. 84,827.

Patented Dec. 2. 1868.

FIG. I.

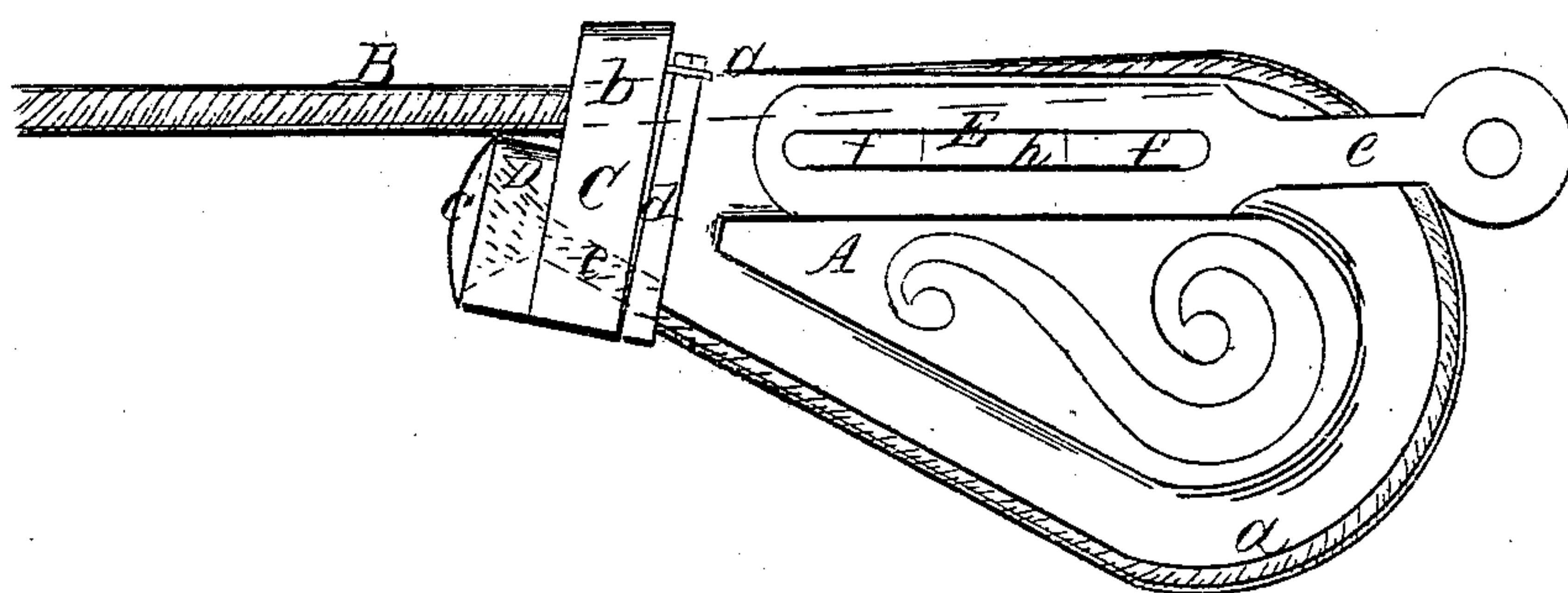


FIG. II.

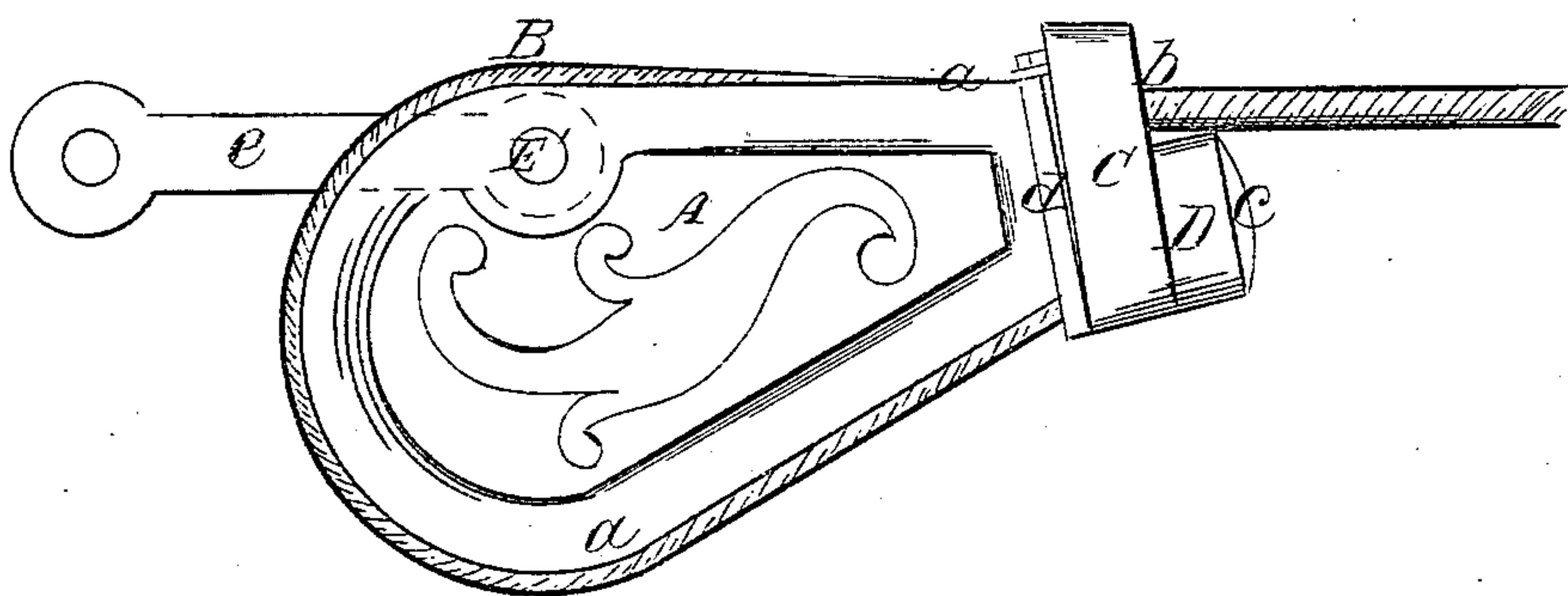


FIG. IV.

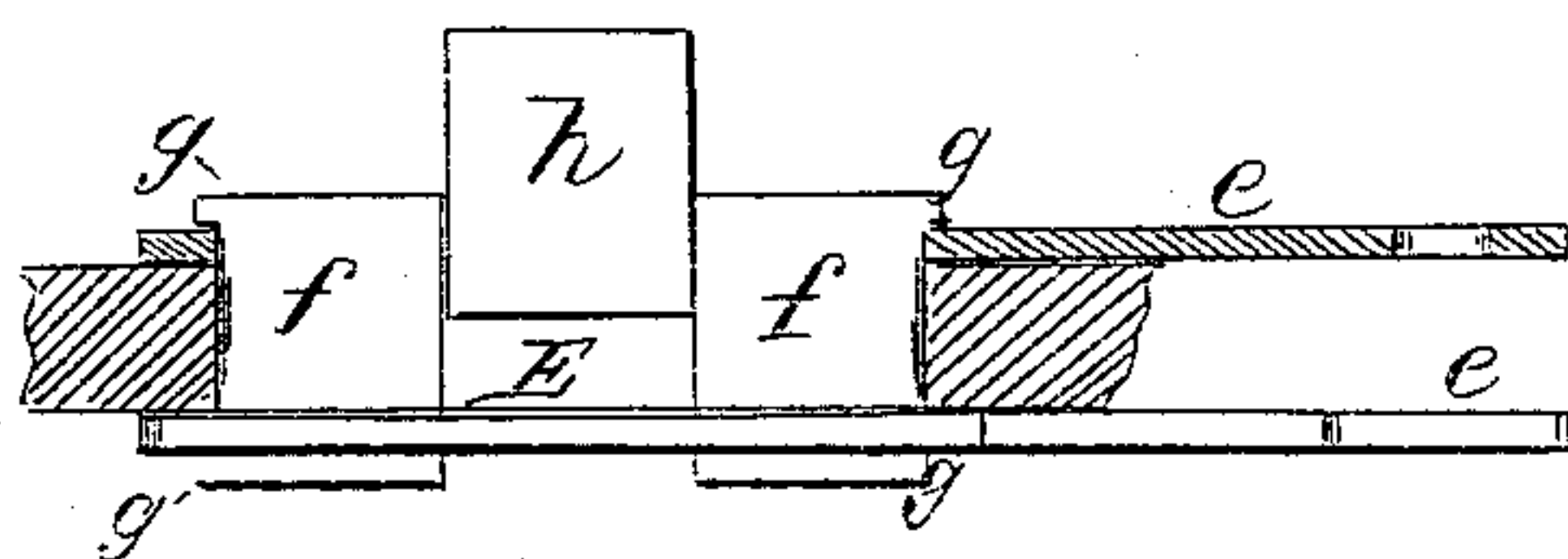
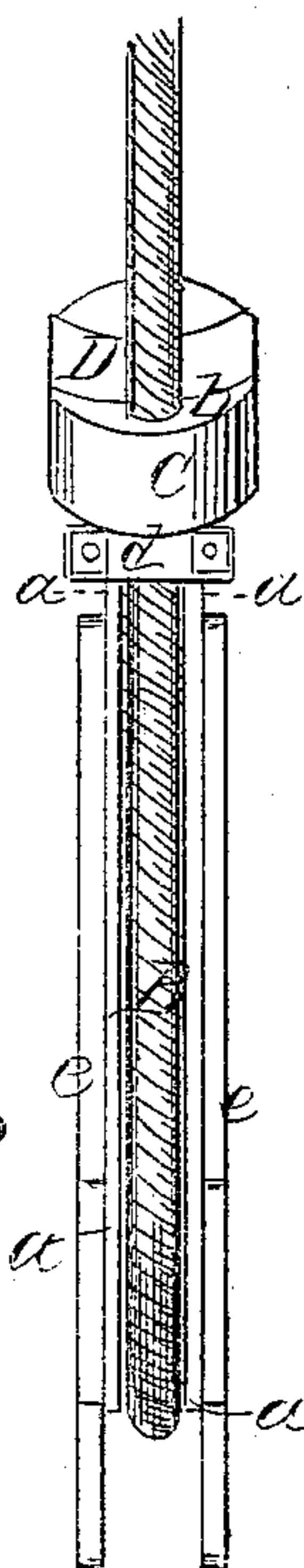


FIG. III.



WITNESSES.

J. R. Drake,
Geo. W. Mott

T. C. Hulett
J. Fraser & Co
Attys

United States Patent Office.

THEODORE G. HULETT, OF NIAGARA, NEW YORK.

Letters Patent No. 84,827, dated December 8, 1868.

IMPROVED CABLE-SHACKLE FOR BRIDGES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, THEODORE G. HULETT, of the town of Niagara, in the county of Niagara, and State of New York, have invented certain new and useful Improvements in Cable-Shackles; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing, making part of this specification.

The object of my invention is to provide an adjustable friction-shackle, to fasten and hold the ends of cables of wire, or other material, securely; and

It consists in making said shackle of ox-bow form, its outer edge being provided with a groove, in which the cable lies, and in having two holes in its end, one for entering the cable, the other to fasten it, all in combination with the shackle, with a slot or hole, to adjust the length or take up the slack of the cable, by means of slotted bars, pin-gibs, and keys, or links, as hereinafter set forth.

In the drawings—

Figure 1 represents a side view of my shackle, showing the cable, and having the adjustable bars held by keys and pin-gibs.

Figure 2 is also a side view, showing the holding-bar fastened with a pin.

Figure 3 is an edge view of shackle and cable.

Figure 4 shows the method of adjusting the gibs and keys.

Like letters of reference indicate corresponding parts in all the figures.

A represents the shackle, of an ox-bow form, made of cast-iron, or other suitable material, longer than it is wide, a little thicker than the diameter of the cable B, which it holds in a groove, *a*, running around its entire periphery, said groove being half the diameter of the cable.

At its narrow end is formed a head, C, somewhat wider and thicker than the body of the shackle, and provided with two holes, *b* and *c*. The first, *b*, is made with a straight hole, through which the cable is passed, which is then carried around the shackle in the groove, and the end inserted into hole *c*, which is made of conical shape, and is fastened therein by spreading the fibres, and then wedging them in, in the usual manner.

To resist the pressure in wedging, and hold the end more firmly, I put a band, of wrought-iron, around the cast-iron head. I also put a clip or bow, *d*, around the neck of the shackle, also encompassing the cable, thus keeping it from bulging, and holding it down in the grooves.

This shackle is connected with its anchorage by providing the shackle with a slot, E, made parallel with the cable.

On each side of this slot I arrange bars, *e e*, having

slots formed in them, corresponding to slot E in the shackle.

In each end of these slots I pass pin-gibs, *f f*, said pin-gibs having projecting heads, as shown at *g g*.

I then drive in a wedge or key, *h*, holding the whole securely.

This method allows me to adjust and take up the slack of a cable, by putting in more wedges, until the bars *e e* are pressed back to the end of the slot E in the shackle.

Fig. 4 fully shows this method of fastening.

Fig. 2 shows another method of mine of adjusting and holding the shackle, by fastening the bars *e²* by a pin, or axle, *E'*, instead of by means of slots, pins, and pin-gibs, as previously explained. The length is adjusted by merely putting in links with gibs, and keys between the end of the bars *e²* and the anchorage-point.

These slots or holes, by which the bars *e e* are arranged, I put as near the inner edge of the cable as possible with reference to keeping the strenght of the shackle unimpaired.

By my method of thus placing the bars, the strain comes in almost a straight line with the cable itself, as is plainly shown in the accompanying drawings, and by passing the cable around an eccentric circle, such as my invention shows, the leverage is greatly decreased, the friction around the circle of the shackle contributing greatly to the security of the cable at the point of fastening, there being, by this method, much less tension or strain on the fibres of the cable or rope at this point than at any other, so that an imperfect fastening or inequality of tension on the fibres, by reason of the driving of the wedges, or from any other cause, does not detract from the strength of the cable.

The shackles now in use on wire cables are especially subject to these objections and defects, as, when a cable gives way, it invariably breaks within a short distance of the shackle itself, showing conclusively that the method of fastening was the primary cause of it.

From long experience, and from actual tests, I find that my shackle is the only safe one, as, from the causes enumerated above, cables are more liable to break at a point near the shackles now in use than at any other, and my invention secures this fastening perfectly, giving it the greatest strength at this point. Therefore,

What I claim as my invention, and desire to secure by Letters Patent, is—

The adjustable cable-shackle, constructed and operating substantially as described.

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

Witnesses:

T. G. HULETT.

J. R. DRAKE,

W. J. CHAMBERLAIN.