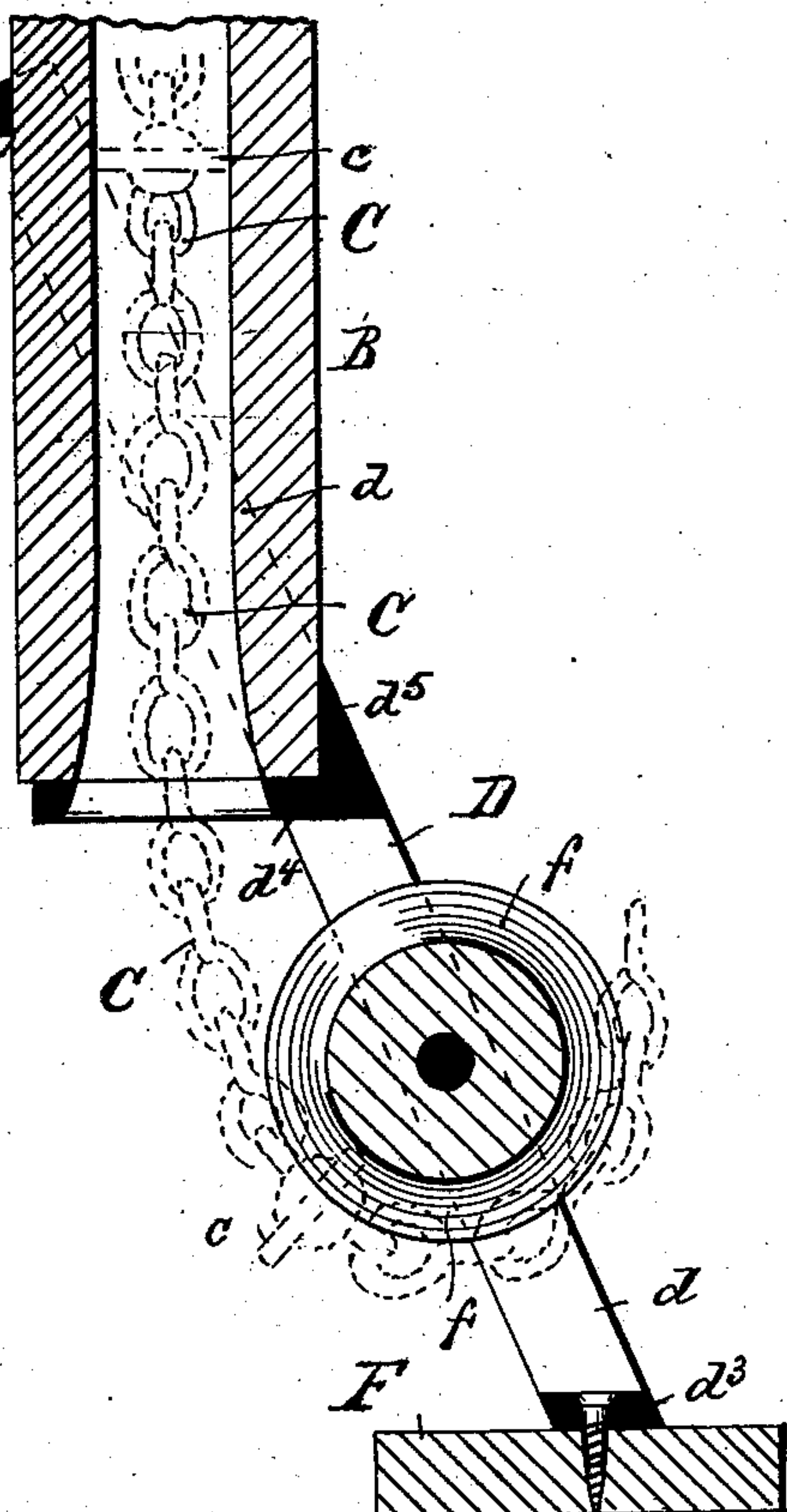
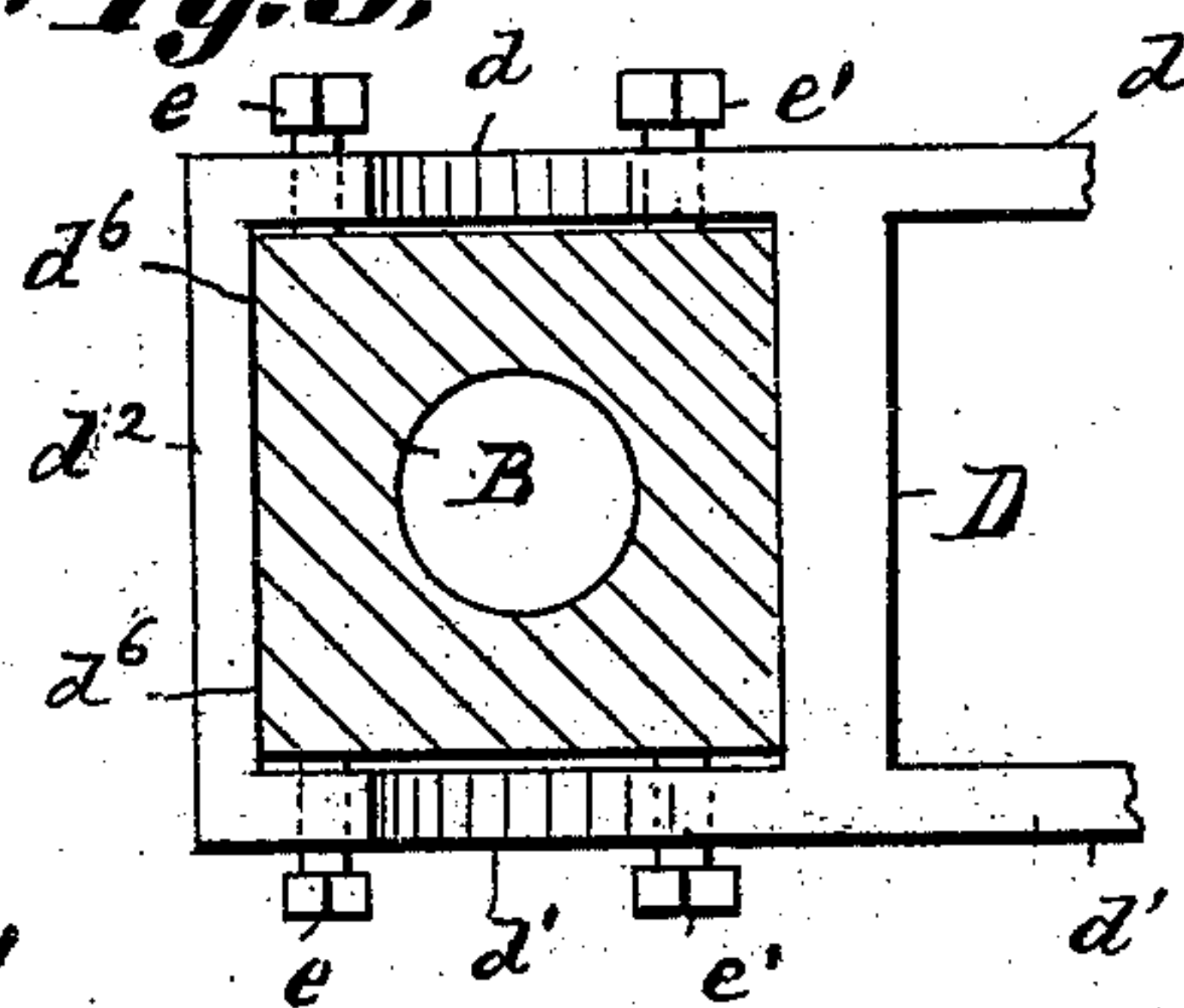


Patented Mar. 4, 1884.

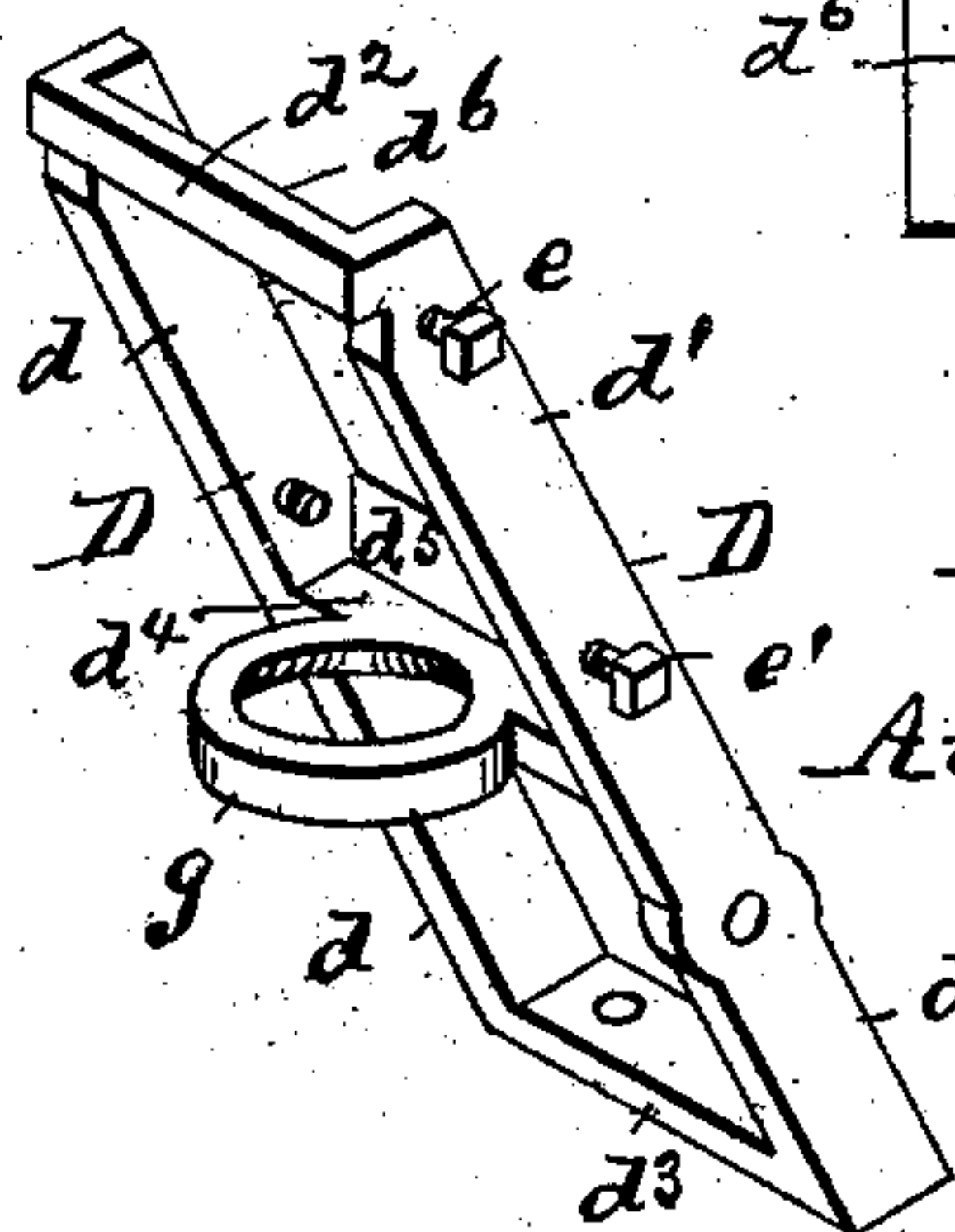
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



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# UNITED STATES PATENT OFFICE.

AUGUST BECKMANN, OF ST. LOUIS, MISSOURI.

## CHAIN-PUMP.

SPECIFICATION forming part of Letters Patent No. 294,434, dated March 4, 1884.

Application filed August 17, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, AUGUST BECKMANN, a citizen of the United States, residing at St. Louis, and State of Missouri, have invented a new and useful Improvement in Chain-Pumps, of which the following is a specification.

My invention relates to improving that class of pumps or water-elevators in which an endless chain with buttons passes upward through wood tubing or well-curbing; and the chief object of my improvement is to provide a foot-support with roller attachment, by means whereof the wood tubing can be readily and properly supported in the well in a plumb line, and the chain with buttons in passing upward be directed and made to enter the mouth or lower end of the wood tubing in a true perpendicular line, and prevented from striking against and damaging the bore of the tubing, and otherwise incurring the disadvantages of imperfect action and imperfect lift of the water. I attain this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of an ordinary chain-pump, showing my improvement applied to the bottom of the well-tubing. Fig. 2 is an enlarged sectional elevation of the bottom portion of well-tubing and my improved foot-support for same, showing the manner in which the chain with buttons is made to enter the lower end of the tubing. Fig. 3 is a plan section taken on line 3 3, Fig. 1. Fig. 4 is a perspective view of the foot-support as it appears without the roller or sheave.

Similar letters refer to similar parts throughout the several views.

The pump-housing A, with its reel, fixtures, &c., to operate the endless chain, are in manner usual.

B represents the common wood tubing or well-curbing, and C the endless chain, with buttons *c* arranged in manner usual.

My improvement relates to the foot-support D, with roller or sheave for the purpose of supporting the tubing in a plumb line, and guiding the passage of the chain and its buttons, and said parts are constructed as follows: The foot-support D is a frame consisting of the incline sides *d d'*, arranged opposite each other, united at top by the cross-frame *d<sup>2</sup>*, and at bot-

tom by the cross-frame *d<sup>3</sup>*, also having the central cross-frame, *d<sup>4</sup>*, all as shown. The frames *d d'* are just the distance apart to suit the width of the well-tubing C, which can, therefore, be inserted between said frames until the bottom of the tubing is seated upon the central cross-frame, *d<sup>4</sup>*. (See Figs. 1, 2.) Further, it is essential that the tubing or curbing C should be supported and mounted in the foot-support D in a plumb line. This I accomplish by making that portion of the face of the cross-frame *d* marked *d<sup>5</sup>* a true vertical face, and that portion of the top cross-frame marked *d<sup>6</sup>* also a vertical face, as shown in Figs. 2, 3, 4. Thus the right-angle bearing-face of the central cross-frame corresponds to the corner edge of the bottom portion of the well-tubing, (see Fig. 2,) and the inner face, *d<sup>6</sup>*, forms a corresponding face at that point, to suit the vertical side of the tubing. (Also shown in Figs. 2, 3.) The well-tubing C seated in a true vertical line in the foot-support D, the parts are fastened and kept together in place by the respective side screws, *e e'*, which, as shown in Figs. 3, 4, enter the tubing so as not to interfere with the bore thereof.

F is a long foot-board, forming a base, to which the frame D is kept fastened in position at the bottom of the well.

*f* is a sheave or pulley-wheel, around which the chain passes. The sheave *f* turns on an axis-bolt, and is arranged nearly midway between the central cross-frame and the bottom of the foot-support, as indicated in Figs. 1, 2. The inclined position of the foot-support D locates the sheave sufficiently to one side to permit the chain to pass around the sheave and assume a vertical line, preparatory to entering or passing up the bore of the well-tubing. also, the buttons of the chain are thus brought in a more nearly horizontal plane, preparatory to passing up the bore of the tubing, and the chain and its buttons can thus ascend the tubing without jar or striking and damaging the same, especially the bottom portion thereof.

As apparent, the entire foot-support D (illustrated in Fig. 4) can be made a casting, and as such can be with or without the ring or collar *g*. (Shown in Fig. 1, 2, 4.) When the collar is cast with the foot-support, it is made to project from and be part of the central cross-



frame, as indicated in Figs. 1, 2, 4. The collar *g* just fits to the bottom edge of the bore of the tubing, so that the orifice of the collar will be in line with the bore and permit the passage of the chain parts. The collar has its inner face flaring to suit the flare inside the tubing, and otherwise by its use the collar helps to support the well-tubing, as indicated.

By the use of my improvement no difficulty is experienced in setting the well-tubing in plumb line, since the act of seating same in its place in the foot-support brings and maintains the tubing in its said required position.

What I claim is—

1. In combination with well tubing or curbing, the foot-support D, consisting of the inclined sides *d d'*, united by top and bottom cross-frames, *d<sup>2</sup> d<sup>3</sup>*, and central cross-frame, *d<sup>4</sup>*, having the vertical face *d<sup>5</sup>*, also the inner face of the top cross-frame, being a vertical face, *d<sup>6</sup>*, by means whereof the said curbing can be kept supported, in the manner and for the purposes set forth.

2. In combination with the foot-support D, consisting of the inclined frames *d d'*, top and

bottom cross-frames, *d<sup>2</sup> d<sup>3</sup>*, and central cross-frame, *d<sup>4</sup>*, said top and central cross-frames having the vertical faces at *d<sup>5</sup> d<sup>6</sup>*, the ring or collar *g*, projecting from the central cross-frame, substantially as and for the purposes set forth.

3. In combination with the foot-support D, consisting of the inclined frames *d d'*, top and bottom cross-frames, *d<sup>2</sup> d<sup>3</sup>*, central cross-frame, *d<sup>4</sup>*, and the vertical faces at *d<sup>5</sup> d<sup>6</sup>*, the sheave or pulley-wheel *f*, substantially as and for the purposes set forth.

4. The combination, with the well-tubing and endless chain in chain-pumps, of the foot-support D, consisting of the incline frames *d d'*, having top, bottom, and central cross-frames, *d<sup>2</sup> d<sup>3</sup> d<sup>4</sup>*, and the vertical faces at *d<sup>5</sup> d<sup>6</sup>*, the sheave *f* and ring or collar *g*, to operate in the manner and for the purposes set forth.

In testimony of said invention I have hereunto set my hand.

AUGUST BECKMANN.

In presence of—

WILLIAM W. HERTHEL,  
JOHN W. HERTHEL.