(No Model.)

2 Sheets—Sheet 1.

H. C. CROWELL.

DEAD PULLEY RIG.

No. 285,467. Patented Sept. 25, 1883.

Fig 1.

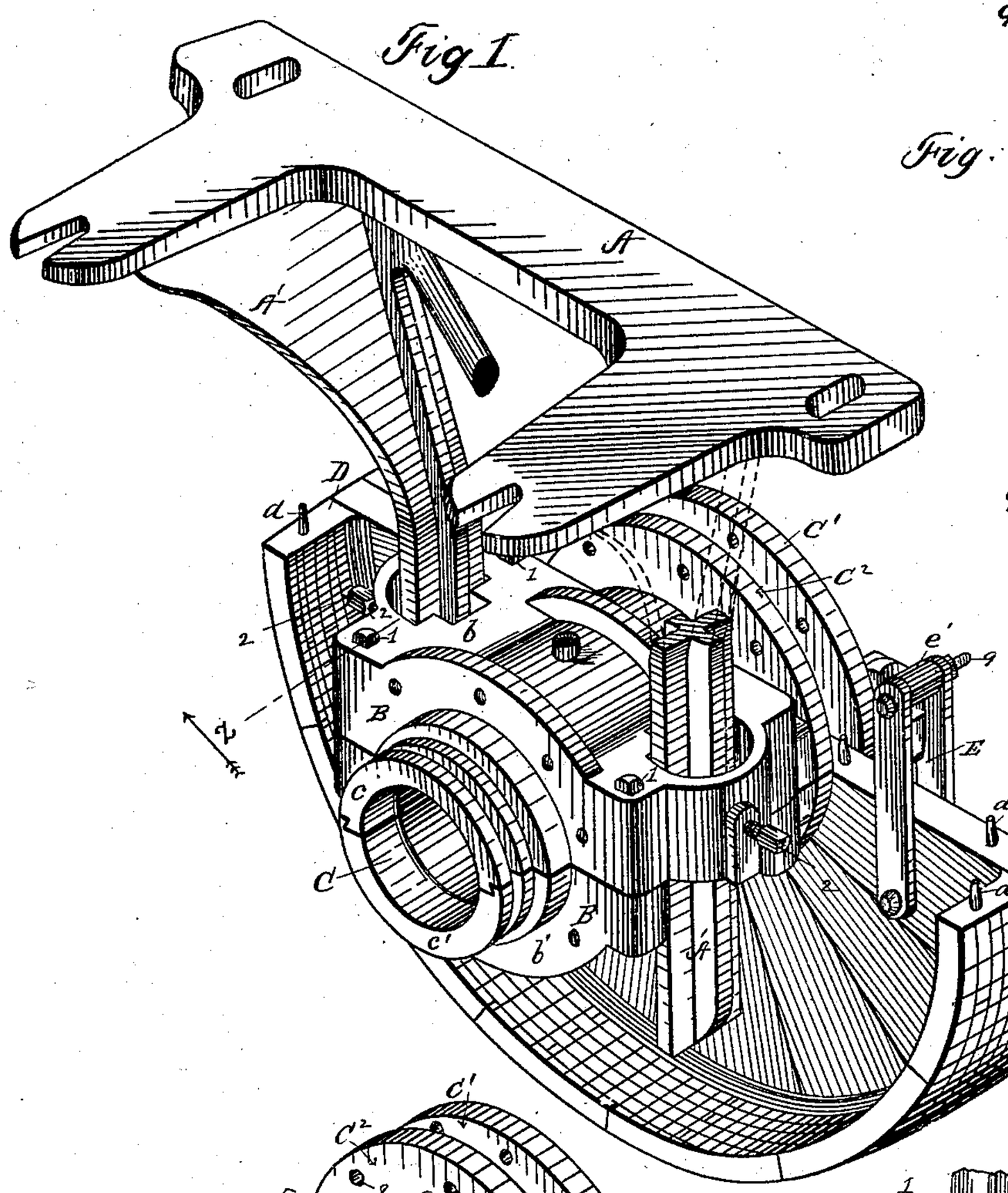


Fig. 7.

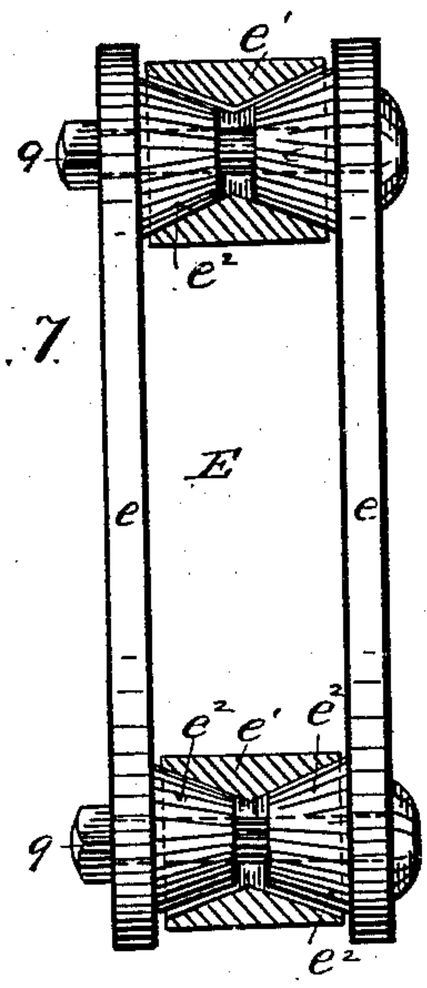


Fig. 4.

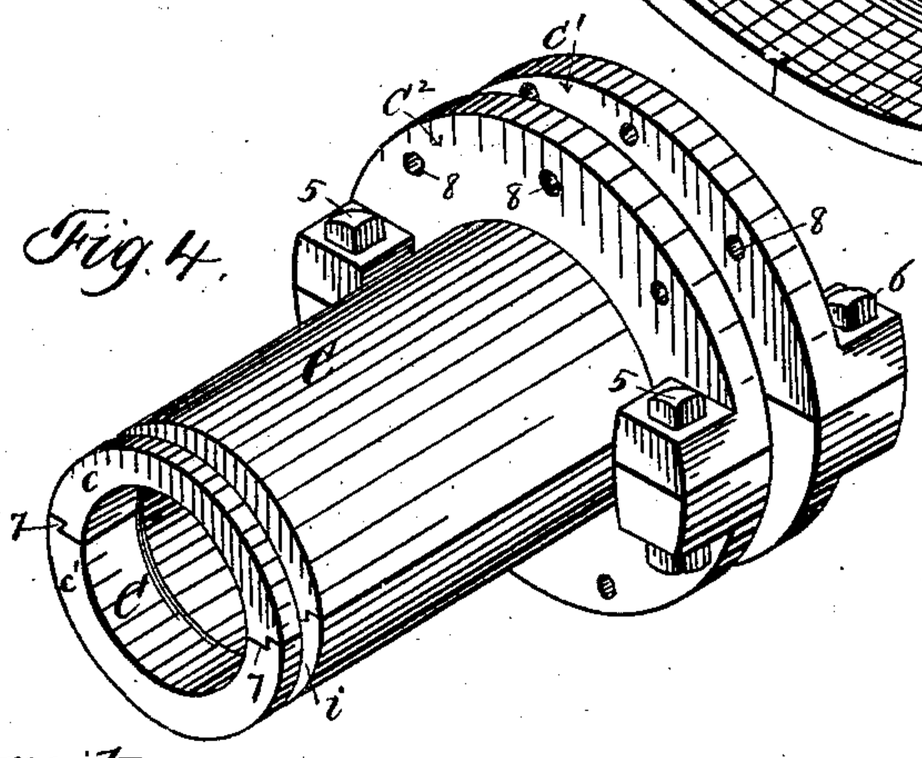
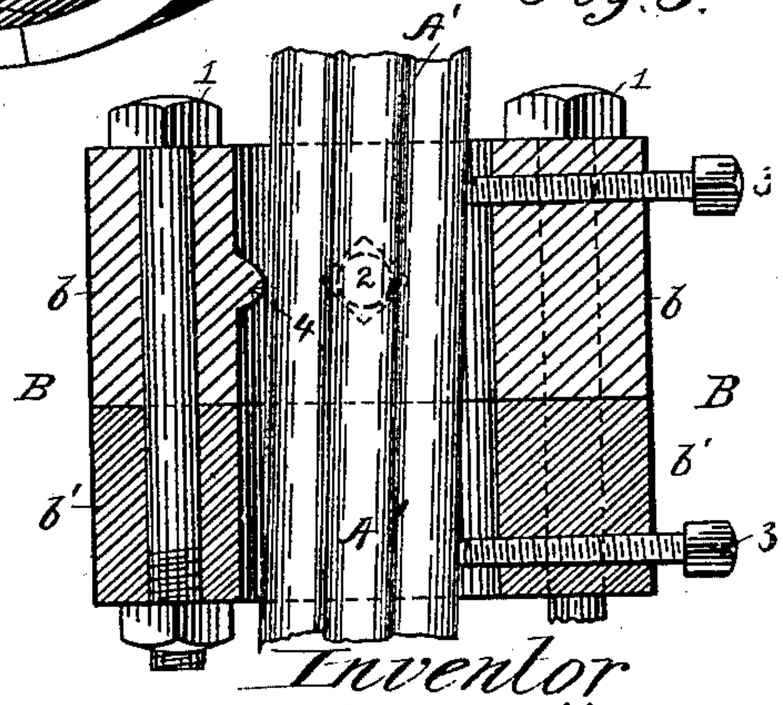


Fig. 5.



Witnesses.
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(No Model.) 2 Sheets—Sheet 2.

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DEAD PULLEY RIG.

No. 285,467. Patented Sept. 25, 1883.

Fig. 6.

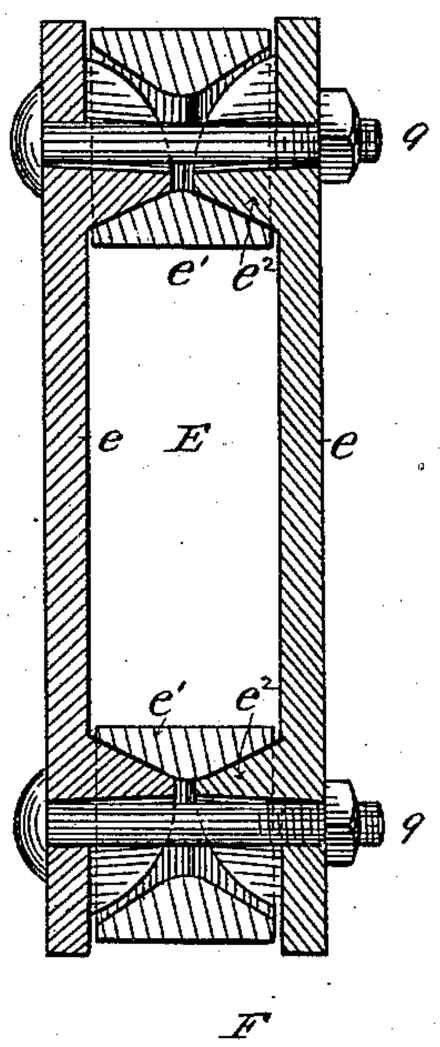

Fig. 2.

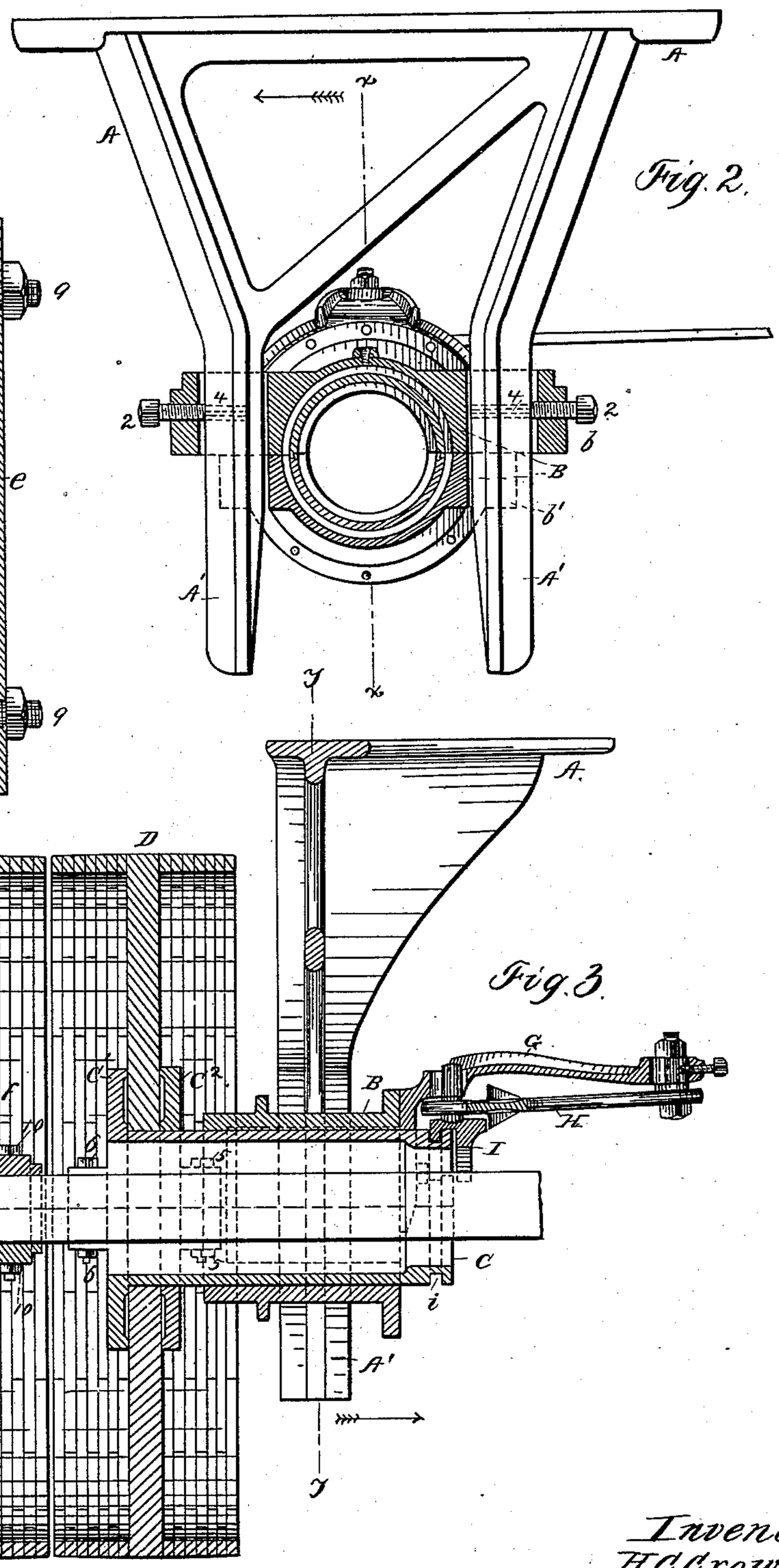

Fig. 3.

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UNITED STATES PATENT OFFICE.

HILEN C. CROWELL, OF ERIE, PENNSYLVANIA.

DEAD-PULLEY RIG.

SPECIFICATION forming part of Letters Patent No. 285,467, dated September 25, 1883.

Application filed October 5, 1882. (No model.)

To all whom it may concern:

Be it known that I, HILEN C. CROWELL, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Dead-Pulley Rigs; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to the construction and adjustment of what are known as "dead-pulley rigs;" and it consists in the construction, adjustment, and combination of parts, as hereinafter fully set forth.

The invention is illustrated in the accompanying drawings, as follows:

Figure 1 is a perspective view, showing the hanger-frame A A′ A′, the journal-box B, one-half of the dead-pulley D, the elongated hub or sleeve of the pulley C, with its flanges C′ C², and the clamp E, by which the parts of the pulley D are held together. Fig. 2 is an elevation view of the hanger A A′ A′, viewed from the shaft-line, and a vertical transverse section of the box B. Fig. 3 is a vertical section view, taken on a line longitudinal with the shaft, and shows the fixed pulley F, dead-pulley D, the elongated hub C, the hanger A A′ A′, the box B, and the shifting apparatus G H. Fig. 4 is a perspective view of the elongated hub C and the flanges C′ C². Fig. 5 is a vertical section through one of the wings of the box B on the line *z* in Fig. 1. Fig. 6 is a vertical section through the clamp E; and Fig. 7 is a like view, showing a change in construction.

The objects of the invention are as follows: first, to construct the hanger and the box so as to obtain perfect adjustment; second, to construct both the fixed and dead pulleys, their attachments, hubs, &c., and the box and hanger, so that the rig can be put in place upon the shaft without taking down or in any way interfering with the shaft; third, to securely clamp together the parts of the split pulleys in a cheap and efficient manner.

The construction of the devices is as follows:

A fixed pulley, F, is clamped or keyed upon the shaft. Beside of this is a loose pulley, D, which, in place of having its bearing upon the shaft, is journaled independently by its elongated hub C in a box, B, which is supported by the hanger A, so that it does not come in contact or rest upon the shaft at all. The pulley D can be moved laterally by sliding the sleeve-hub C in the box B by the shifting apparatus G H. The pulley D, when pushed up against the pulley F, will revolve by frictional contact, which occurs when it receives the belt from F, and when the belt is shifted from it to F. The pulleys shown are wooden pulleys, which are the kind most commonly used in this kind of rig.

So far the arrangement and operation just described is old.

The hanger-frame consists of the upper portion, A, which is substantially the same as all hangers, being provided with a bearing-face to rest upon the beam above, and with openings for the attaching-bolts. It is provided with two prongs or legs, A′ A′, which hang down vertically, and it is upon them that the box is secured in place.

The box B is composed of two parts, *b b′*, of which *b* is provided with wings, having openings for the legs A′ A′ to pass through. The box, when in place upon the legs A′ A′, can be moved up and down at pleasure. The openings through which the legs A′ pass are sufficiently large to permit the box to be tilted somewhat, especially in a vertical plane, through the shaft longitudinally, by which means it can be leveled perfectly, if the hanger should not depend perfectly vertically from the fastening overhead. The screws 2 2 (seen in Fig. 1) and 3 3, and the pivot-point 4, (seen in Fig. 5,) are the means by which the box B is secured upon, and tilted so as to horizontally adjust it upon, the hanger, and it is by these screws that the box is adjusted vertically upon the hanger. At this point it should be stated that the screws 3 3 and pivot-point 4 (seen in Fig. 5) are not seen elsewhere, as the views are such as not to show them. The position of the point 4 is shown in Fig. 2 by dotted lines. These screws lie at right angles to the screws 2 2 at each end of the box, and as one is above and the other below said screws 2, and the pivot-point is in a plane with said

screw 2, it will be seen how the box, after it is held in place by said screws 2, can be tilted so as to adjust the opening through the box into line by the screws 3 3. The two parts *b b'* of the box are held together by the bolts 1 1.

The hub of the pulley D is seen in Fig. 4. It consists of the sleeve C, having thereon permanently the flange C', which is cast solid with its parts. This sleeve is in two parts, *c c'*, which go together with a rabbet-joint, 7, and are secured together by the bolts 6 6. The flange C^2 is loose upon the sleeve, and is made of two parts, fastened together by the bolts 5 5. The pulley is secured between these flanges by bolts passing through the holes 8 8 8, &c. The pulleys are in halves, and go together with dowels *d d*, &c., and near their peripheries there are clamps E, for holding them firmly together.

The construction of the clamps E is as follows: Holes are bored in the web of the pulley, and in these are put iron bushings *e'*, which have inclined inner surfaces. (See Figs. 6 and 7.) Straps *e e*, having inclined lugs e^2, are placed on each side of the web of the pulley, the inclined lugs e^2 entering the tapered openings in the bush-irons *e'*, and bolts 9 9 pass through both straps and the bush-irons. The bush-irons are so set in the pulley that the drawing of the lugs e^2 into the bush-irons will draw the two parts of the pulley together, and therefore, as the bolts 9 9 are tightened or screwed up, the two bush-irons *e'* are drawn closer together. The construction shown in Fig. 6, I consider preferable. It does not differ materially from that shown in Fig. 7, except that in Fig. 7 the lugs e^2 on the straps *e* are conical, while in Fig. 6 they are open on one side, giving them a **U** shape.

My device, as before stated, can be adjusted upon the shaft without taking it down or in any way disturbing it.

The operation of putting up the rig is as follows: The upper half of the box is put upon the hanger-legs, and is secured by the screws 2 2, and the hanger is then straddled over the shaft and put in place on the beam above, and then the lower half of the box is put in place and secured to the upper half by the bolts 1 1, and the box is then properly adjusted. The two parts of the sleeve C are then put together upon the shaft and fastened by the bolts 6 6, and then the two parts of the flange C^2 are put together upon the sleeve and fastened by the bolts 5 5, and then the two parts of the pulley D are put together upon the sleeve, between the flanges C' C^2, and fastened there by the bolts which go in the holes 8 8 8 &c., and the clamps E are applied. The sleeve C is then put in the box, and the shifting-rig is adjusted and engaged with the groove *i* in the extreme end of the sleeve. The fixed pulley F is then adjusted upon the shaft in proper relation to the pulley D, and the device is then ready for action.

I am aware that hangers having legs provided with screw-threaded ends clamped to the wings of the box by means of nuts placed at the top and bottom of said wings are old, and to that I make no claim, as it differs from mine in that I dispense with the equivalent of two of the clamping-nuts by substituting set-screws placed laterally in the wings.

What I claim as new is as follows:

1. In a dead-pulley rig, the hanger A, having legs or prongs A' A', in combination with the box B, having wings with openings for the said legs A' A', and lateral set-screws, substantially as shown, for clamping the said box in place upon said legs and adjusting the same thereon with reference to the horizontality of the shaft-line, all substantially as and for the purposes set forth.

2. In a dead-pulley rig, the hanger A, having legs or prongs A' A', in combination with the box B, having wings with openings for the legs A' A', and the set-screws 2 2 and 3 3 3 3, and the pivot-points 4 4, arranged and operating to secure and adjust said box upon said legs, substantially as and for the purposes set forth.

3. In a dead-pulley rig, the hanger A, having legs or prongs A' A', in combination with the box B, formed of the parts *b b'*, said parts *b* having wings with openings for the legs A' A', and having the part *b'* attached thereto by bolts 1 1, substantially as shown.

4. In a dead-pulley rig, the hanger A, with legs A' A', in combination with the split box B, split sleeve C, with flange C', split flange C^2, and split pulley D, all substantially as and for the purposes mentioned.

5. The combination, with the two parts of the split pulley D, of the clamp E, formed of the straps *e e*, with inclined **U**-shaped lugs e^2, the bush-irons *e'*, with flaring inner walls, and the bolts 9 9, all substantially as and for the purposes set forth.

In testimony whereof I affix my signature in presence of two witnesses.

H. C. CROWELL.

Witnesses:
JNO. K. HALLOCK,
C. SWALLEY.