

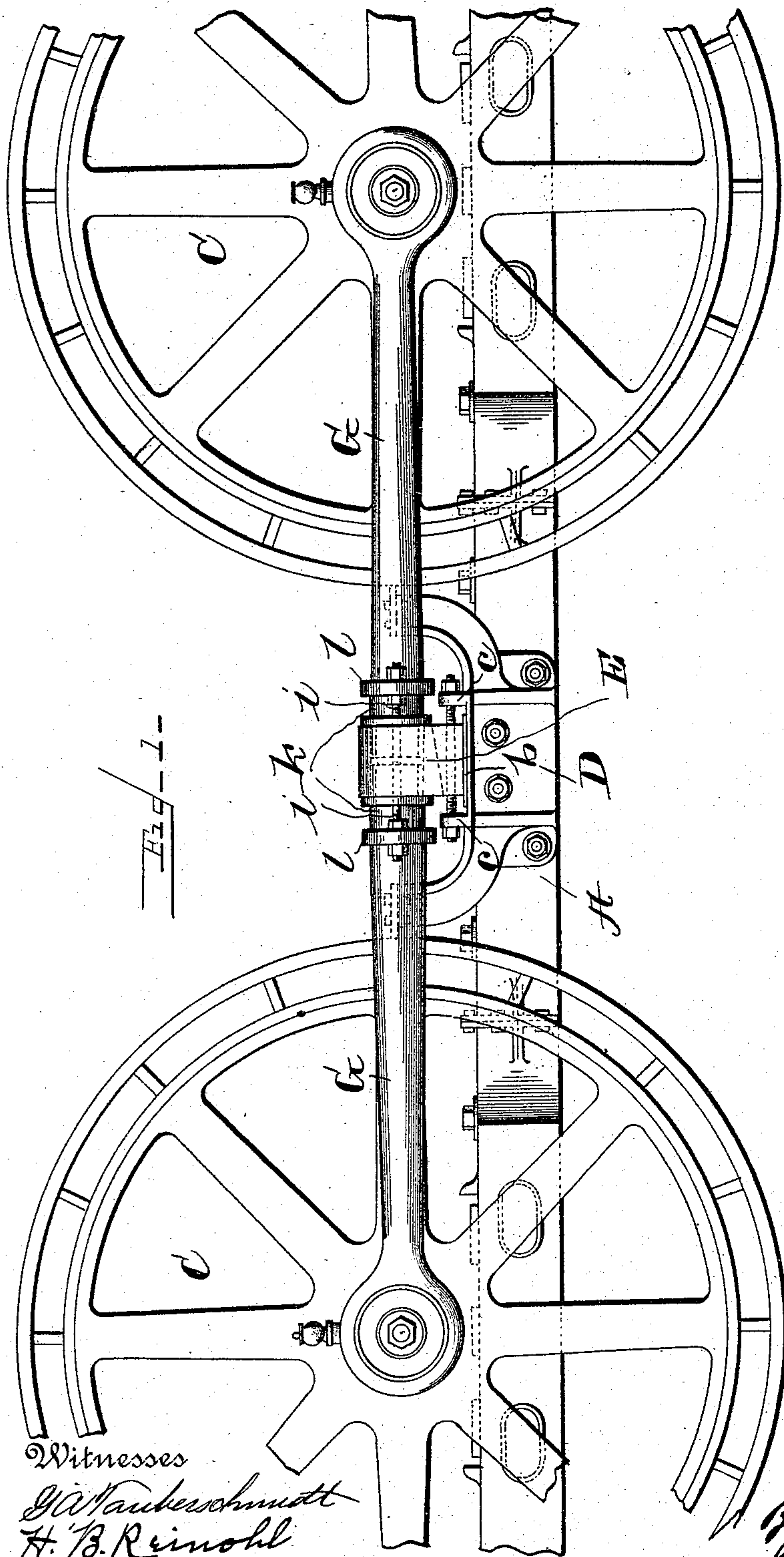
(No Model.)

3 Sheets—Sheet 1.

B. W. GRIST.
POWER TRANSMITTING MECHANISM.

No. 486,287.

Patented Nov. 15, 1892.



Witnesses
J. A. Taubenschmitt
H. B. Reinohl

Inventor
Benjamin
W. Grist
By D. C. Reinohl
Attorney

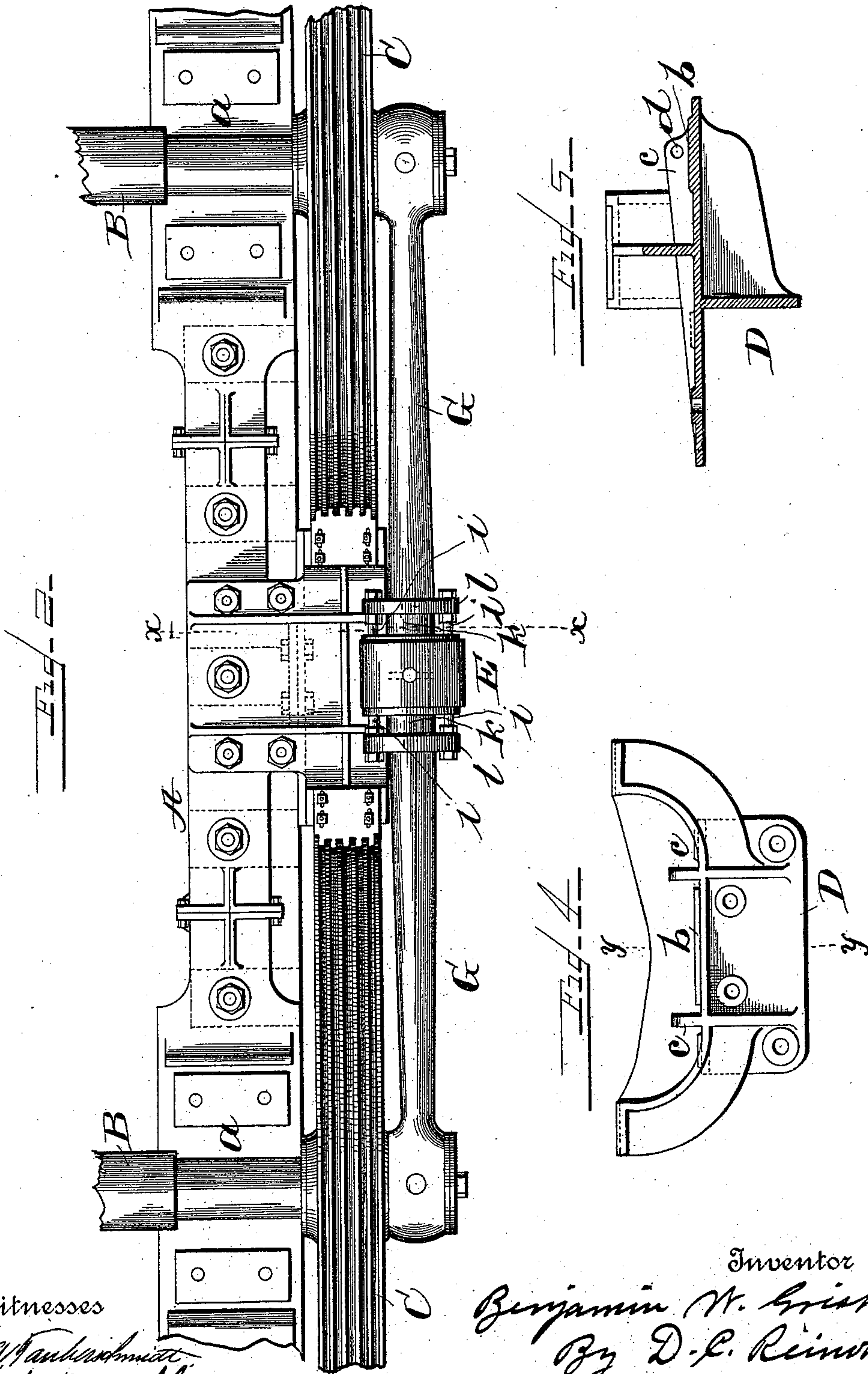
(No Model.)

3 Sheets—Sheet 2.

B. W. GRIST.
POWER TRANSMITTING MECHANISM.

No. 486,287.

Patented Nov. 15, 1892.



Witnesses

J. A. Fandrich
H. B. Reinohl

Inventor
Benjamin W. Grist
By *D. C. Reinohl*
Attorney

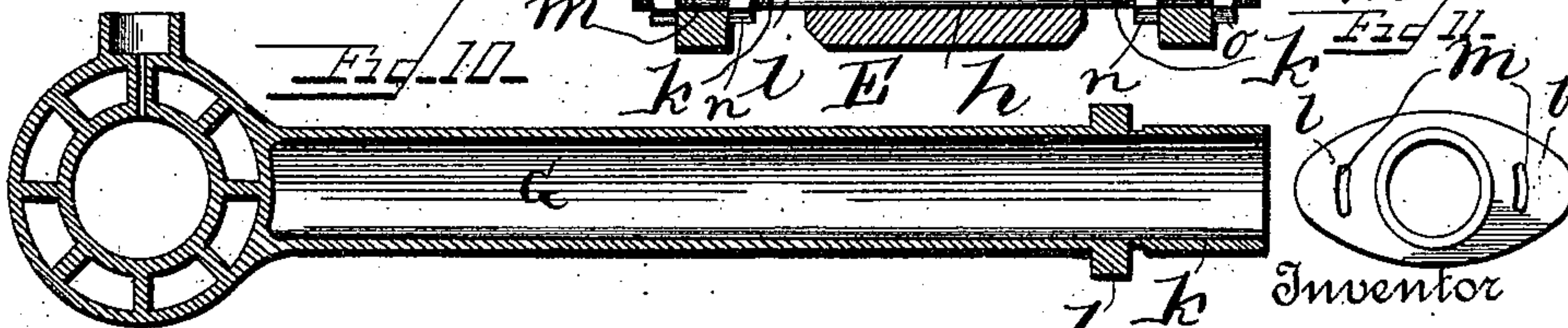
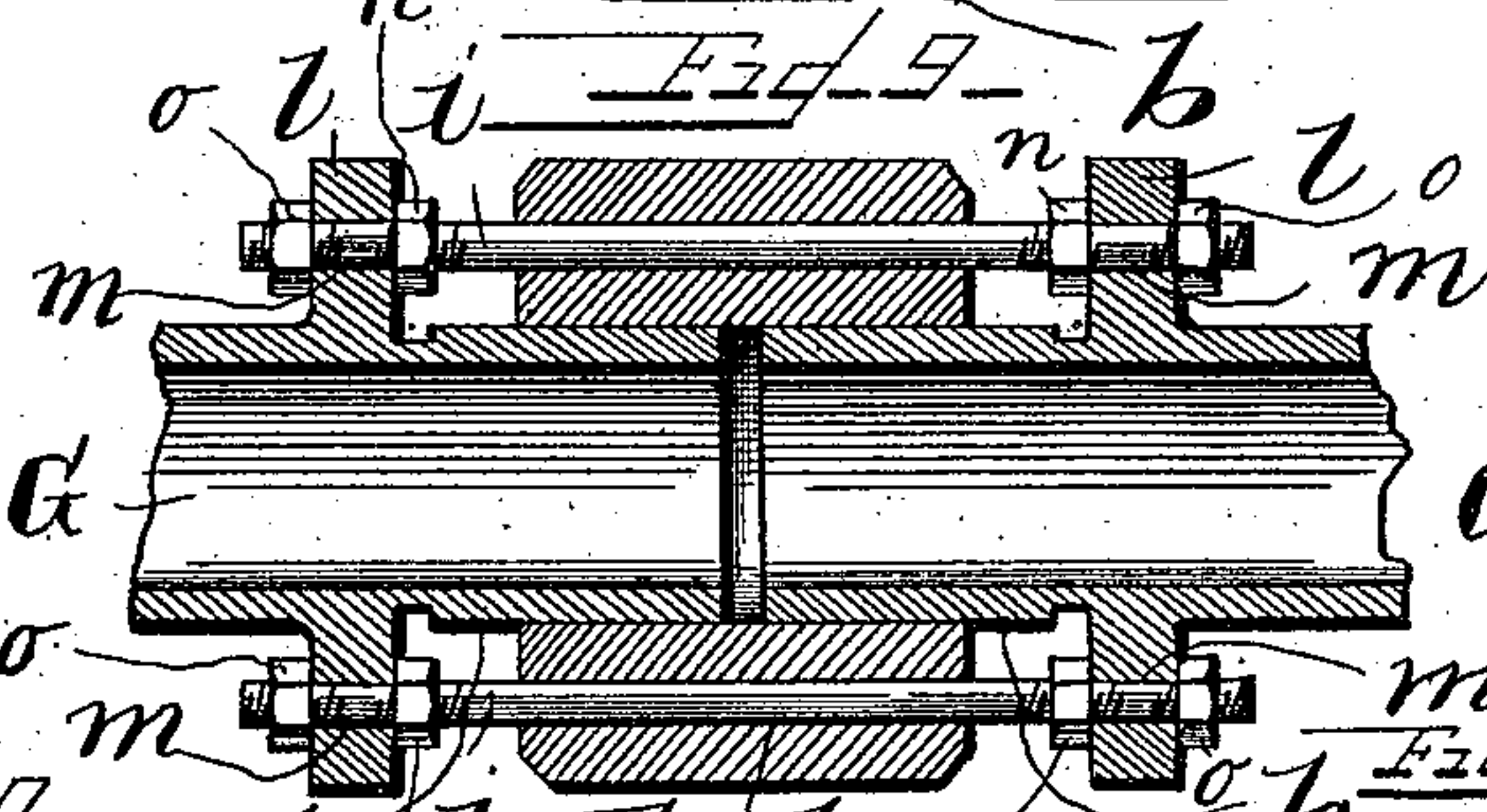
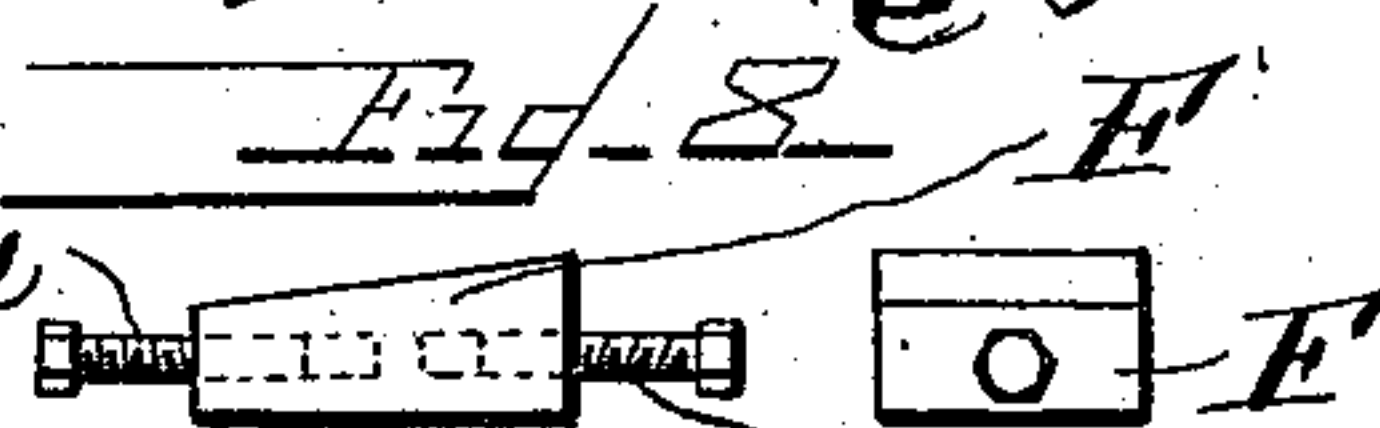
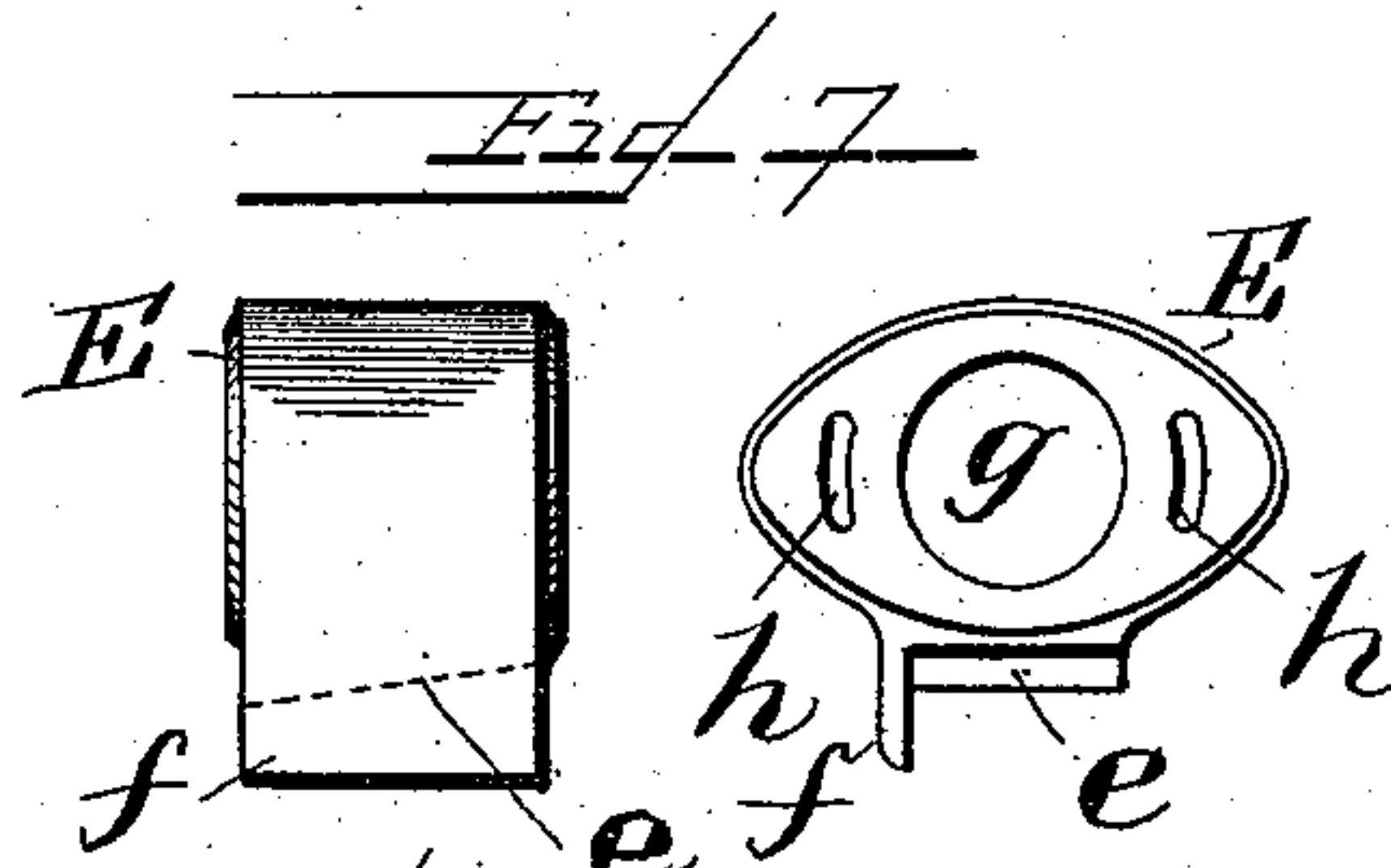
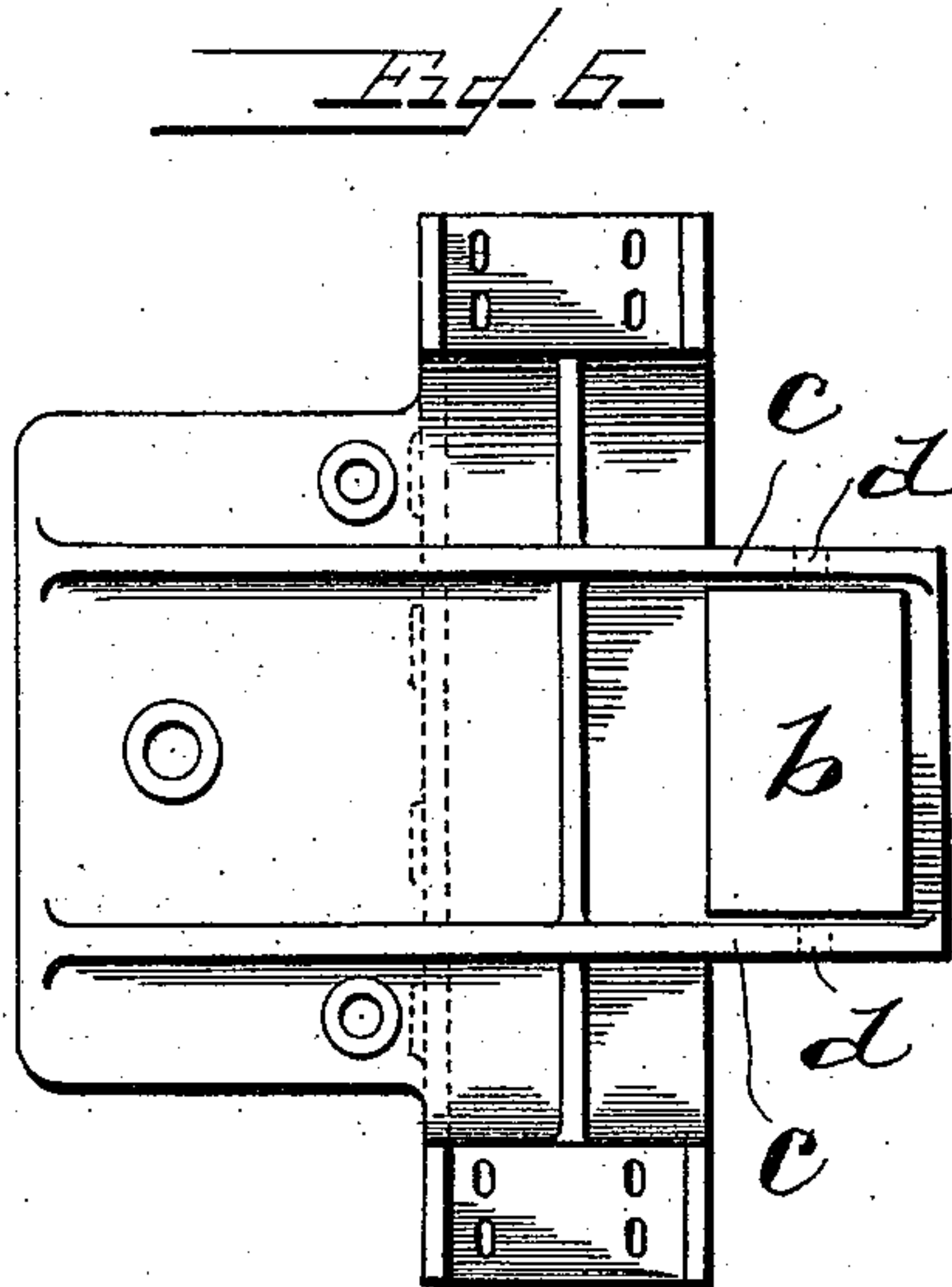
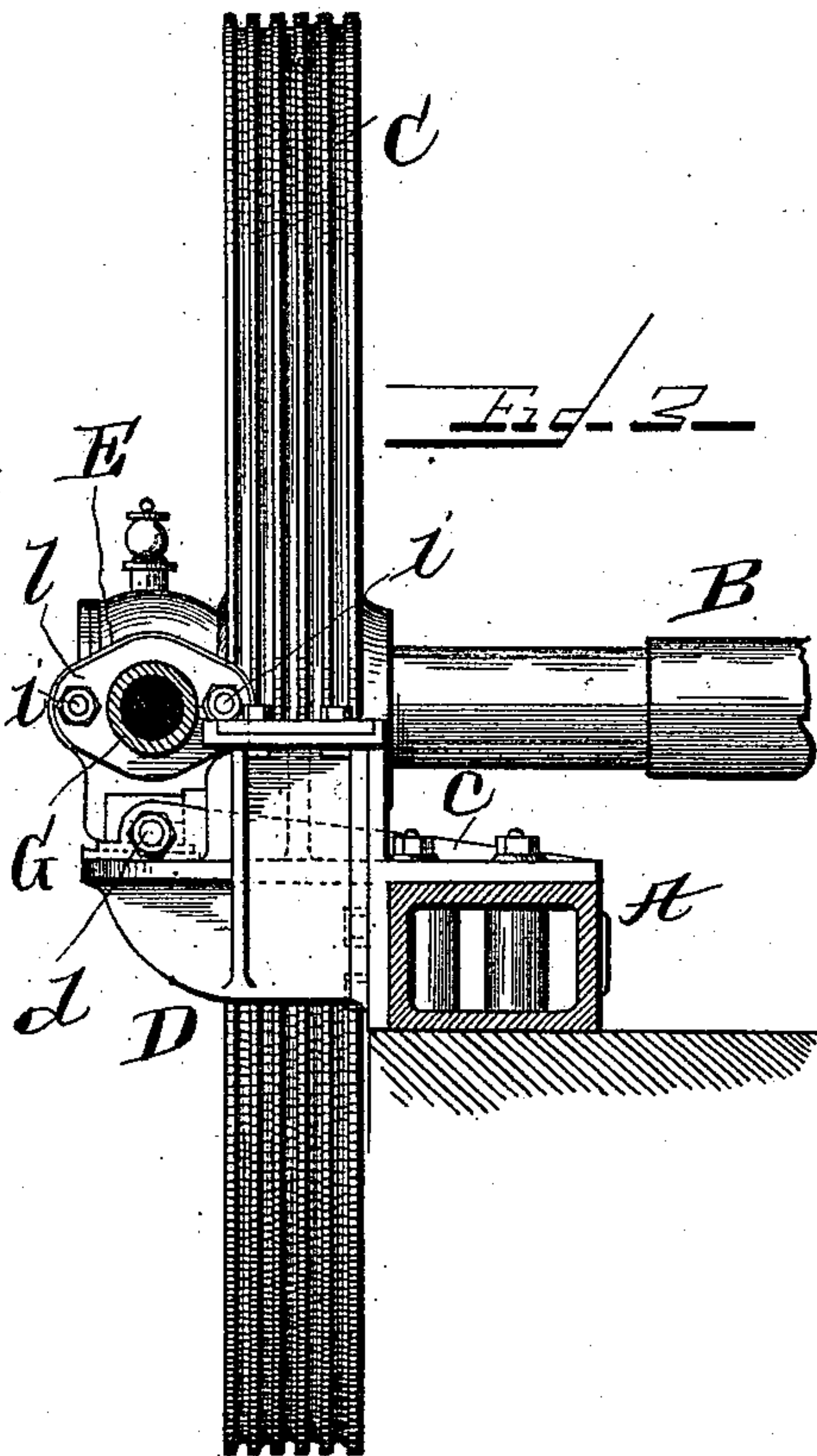
(No Model.)

3 Sheets—Sheet 3.

B. W. GRIST.
POWER TRANSMITTING MECHANISM.

No. 486,287.

Patented Nov. 15, 1892.



Witnesses

W. A. Fuchs
H. B. Reinohl

Benjamin W. Grist
By D. E. Reinohl
Inventor
Attorney

UNITED STATES PATENT OFFICE.

BENJAMIN W. GRIST, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE
PENNSYLVANIA IRON WORKS COMPANY, OF SAME PLACE.

POWER-TRANSMITTING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 486,287, dated November 15, 1892.

Application filed August 11, 1892. Serial No. 442,779. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN W. GRIST, 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 Power-Transmitting Mechanism; 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.

My present invention relates to power-transmitting mechanism such as is employed in endless-cable railways, and has especial reference to the means employed for securing the ends of the shafts upon which sheaves, drums, or pulleys are mounted in fixed relative position.

In cable-railway and like machinery the grooved sheaves or drums are supported upon overhanging shafts, and the ends of the shafts outside of the sheaves or drums are provided with an interposed strut adjustable longitudinally to take up the distance between the power-transmitting shafts; but no means have been provided for aligning the strut.

The object of my invention is to provide an adjustable strut and means for aligning the strut accurately to relieve the shafts of strain and unnecessary weight and compensate wear of the journal-bearings of the shafts.

The invention will be fully disclosed in the following specification and claims.

In the accompanying drawings, which form part of this specification, Figure 1 represents a side elevation; Fig. 2, a top plan view; Fig. 3, a transverse section on the line *x x*, Fig. 2, and an end view; Fig. 4, a side elevation of the bracket detached; Fig. 5, a vertical transverse section of the bracket on the line *y y*, Fig. 4; Fig. 6, a top plan view of the bracket; Fig. 7, a side and end view of the strut-coupling sleeve; Fig. 8, a similar view of the wedge for adjusting the strut vertically; Fig. 9, a vertical longitudinal section through the coupling-sleeve and the inner ends of the struts; Fig. 10, a vertical longitudinal section of one of the struts, and Fig. 11 an end view of the stub end of the strut.

Reference being had to the drawings and the letters thereon, A indicates a bed-plate having at each end a seat *a* for the pillow-

blocks for the journal-bearings for the shafts B B. The pillow-blocks and journal-bearings, being of ordinary construction, need not be illustrated. C C are the sheaves or drums upon which the cable (not shown) is wound in the usual manner. These several parts may be of any approved construction and form no part of my present invention.

D indicates a bracket, which is secured to the bed-plate A in or near the longitudinal center thereof and is provided with a seat *b* on the upper side and near the outer edge, and on each side of said seat is a lug *c*, through which are holes *d d*.

E is a coupling-sleeve having an inclined seat *e* on its under side and a vertical flange *f* on the outside of the seat, which conceals the wedge F and forms a guide therefor in its adjustment across the seats *b* and *e*, which adjustment is effected by means of the bolts *a' b'*, which engage the ends of the wedge and pass through the holes *d* in lugs *c*. The body of the sleeve E is elliptical in cross-section, as shown in Fig. 7, is provided with a central cylindrical bore or opening *g* to receive the cylindrical stub ends of the struts G G, and with a longitudinal arc-shaped slot *h* on each side of the bore or opening *g* through which the adjusting-bolts *i i* pass.

The struts G G are tubular and provided at the outer end with an opening and journal-boxes which engage the outer end of each shaft B, and at their stub end *k* they are turned off to fit the bore or opening *g* in the coupling-sleeve E and are provided with a flange or collar *l*, in which are arc-shaped slots *m*, which coincide with the slots *h* in the sleeve E, and through which the bolts *i i* extend. The bolts *i i* are provided with nuts *n* on the inside of the flanges *l* and nuts *o* on the outside of the flanges for adjusting the strut longitudinally by slackening on one side of the coupling-sleeve and taking up on the other. The arc-shaped slots *m* and *h* admit of lateral adjustment of the coupling-sleeve E in seating it upon the wedge F in aligning the strut vertically.

The several parts having been constructed substantially as described, they are assembled as follows: The shafts B B, having been placed in position in their respective pillow-blocks and journal-bearings and the sheaves or

drums C C secured thereon, the shaft is properly aligned, the distance between the centers of the shafts taken, and the stub ends of the strut inserted in the coupling-sleeve E. The
5 strut is then adjusted longitudinally by means of the bolts *z z* until the centers of the openings in the outer ends of the strut coincide with the center of the shafts B B. The strut is then applied to the shafts, when the sleeve E
10 is placed over the bracket D with the wedge F between the seat *b* on the bracket and the seat *e* on the sleeve. The strut is now aligned vertically by the adjustment of the wedge by means of the bolts *a' b'*, the sleeve being turned
15 on the stub ends of the strut until it seats itself squarely and firmly on the wedge F. If it is now desired to give lead to the cable from one groove in the sheave or drum to another, the sheaves may be given an angle by
20 adjusting the strut. The arc-shaped slots in the coupling also admit of turning the strut axially in aligning the strut to accommodate any slight difference between the journals on the ends of the shafts B B and the bearings
25 in the outer ends of the strut.

Having thus fully described my invention, what I claim is—

1. The combination of a pair of shafts provided with sheaves or drums, a strut made in
30 two parts and having smooth cylindrical adjacent stub ends, a coupling-sleeve provided with a smooth cylindrical bore to receive said stub ends, means for connecting and adjusting said strut longitudinally, and means for
35 adjusting the strut vertically.

2. The combination of a pair of shafts provided with sheaves or drums, a strut made in two parts and having smooth cylindrical adjacent stub ends, a coupling-sleeve provided

with a smooth cylindrical bore to receive said
40 stub ends, bolts for connecting the two parts of the strut and adjusting them longitudinally, a bracket supporting the sleeve, and means for adjusting the strut vertically.

3. The combination of a pair of shafts provided with sheaves or drums, a strut connecting the ends of the shafts, a coupling-sleeve provided with longitudinal slots, and adjusting-bolts in said slots and engaging the strut.

4. The combination of a pair of shafts provided with sheaves or drums, a strut connecting the ends of the shafts, a coupling-sleeve, a bracket supporting said sleeve, a wedge for adjusting the strut vertically, and suitable means for adjusting the strut longitudinally.

5. The combination of a pair of shafts provided with sheaves or drums, a strut connecting the ends of the shaft, a coupling-sleeve provided with an inclined seat on its under side, a bracket, a wedge between the seat on
60 the sleeve and the bracket, bolts for adjusting the wedge, and suitable means for adjusting the strut longitudinally.

6. The combination of a pair of shafts provided with sheaves or drums, a strut connecting the ends of the shaft, a sleeve connecting the contiguous ends of the strut and provided with arc-shaped longitudinal slots, and bolts passing through said slots and engaging
70 flanges or collars on the strut, also provided with arc-shaped slots.

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

B. W. GRIST.

Witnesses:

JAMES E. GRIST,
EMMANUEL NEAGLÉ.