

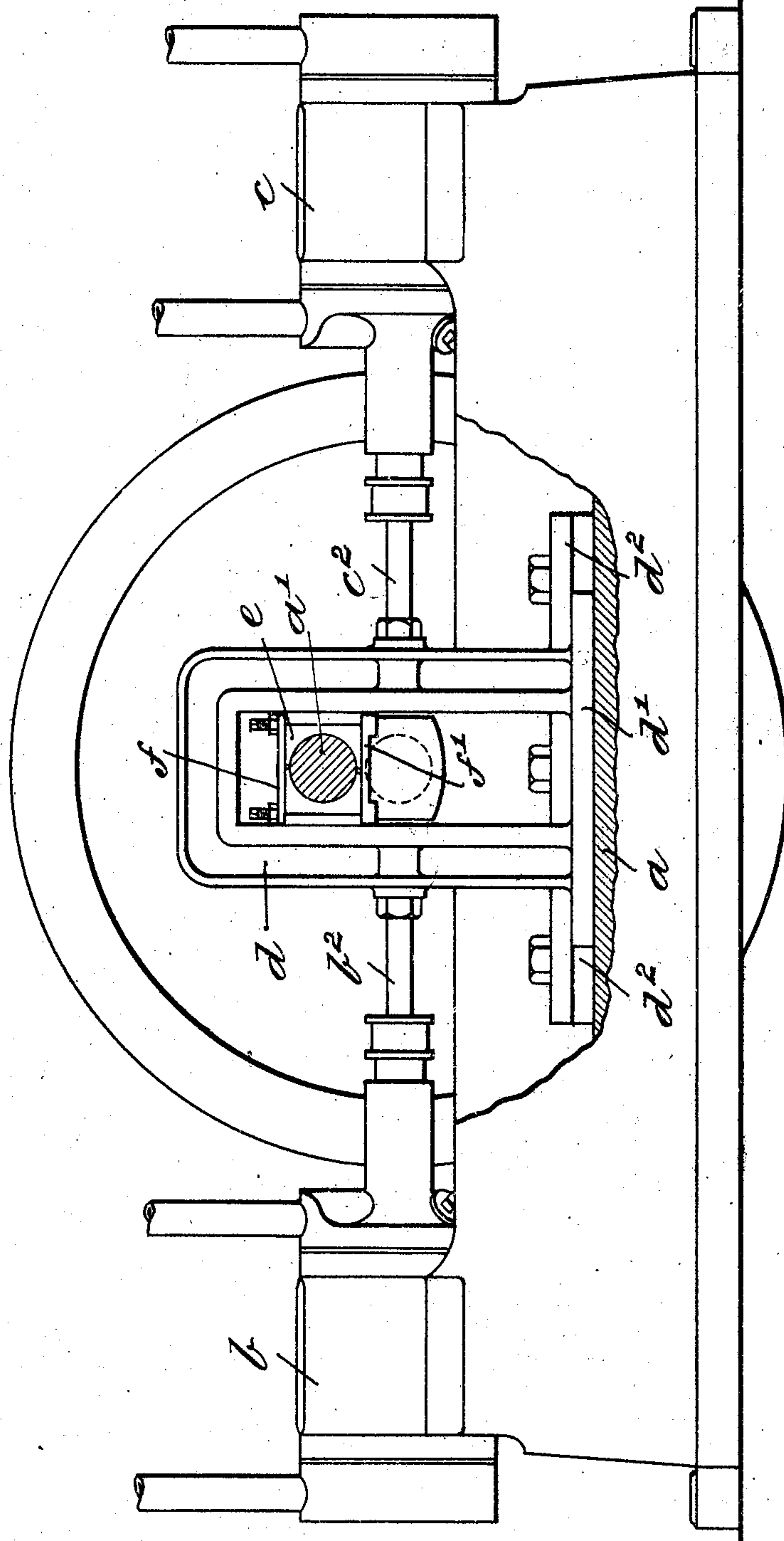
No. 791,121.

PATENTED MAY 30, 1905.

N. W. AKIMOFF.
TRANSMITTING DEVICE FOR ENGINES.

APPLICATION FILED JAN. 20, 1905.

2 SHEETS—SHEET 1.



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Thomas M. Smith.

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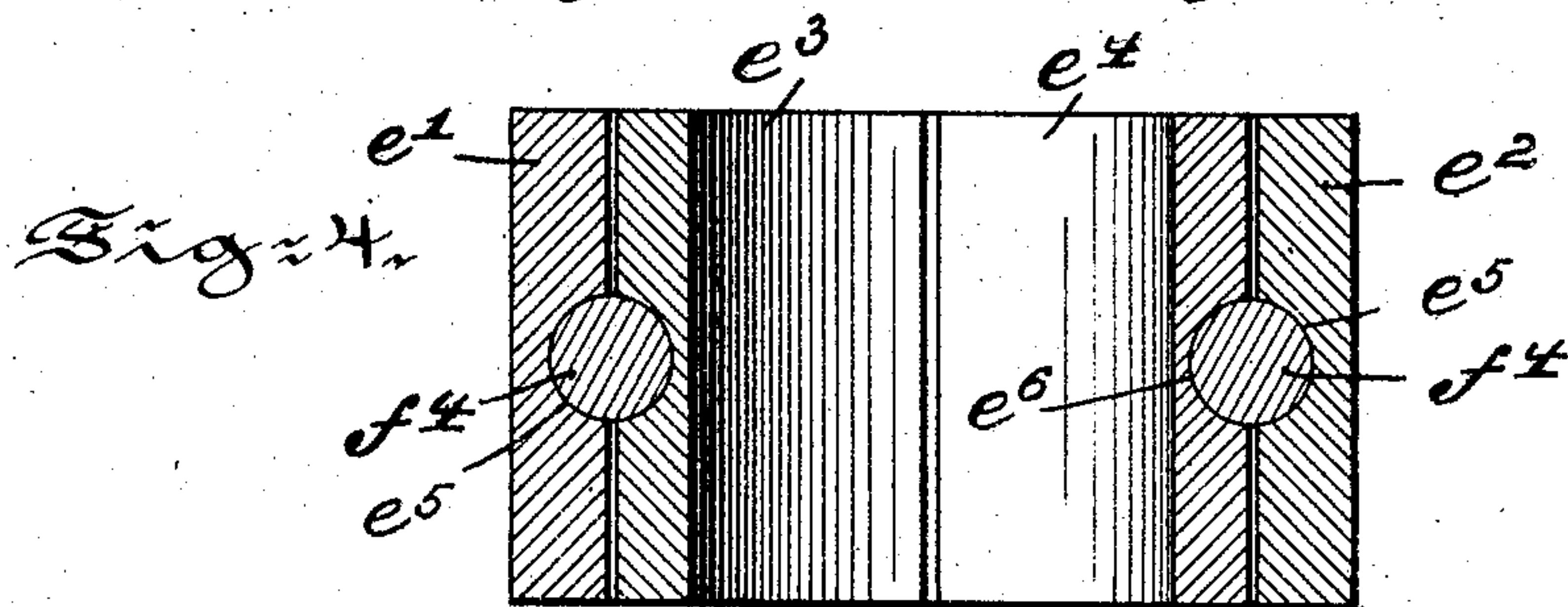
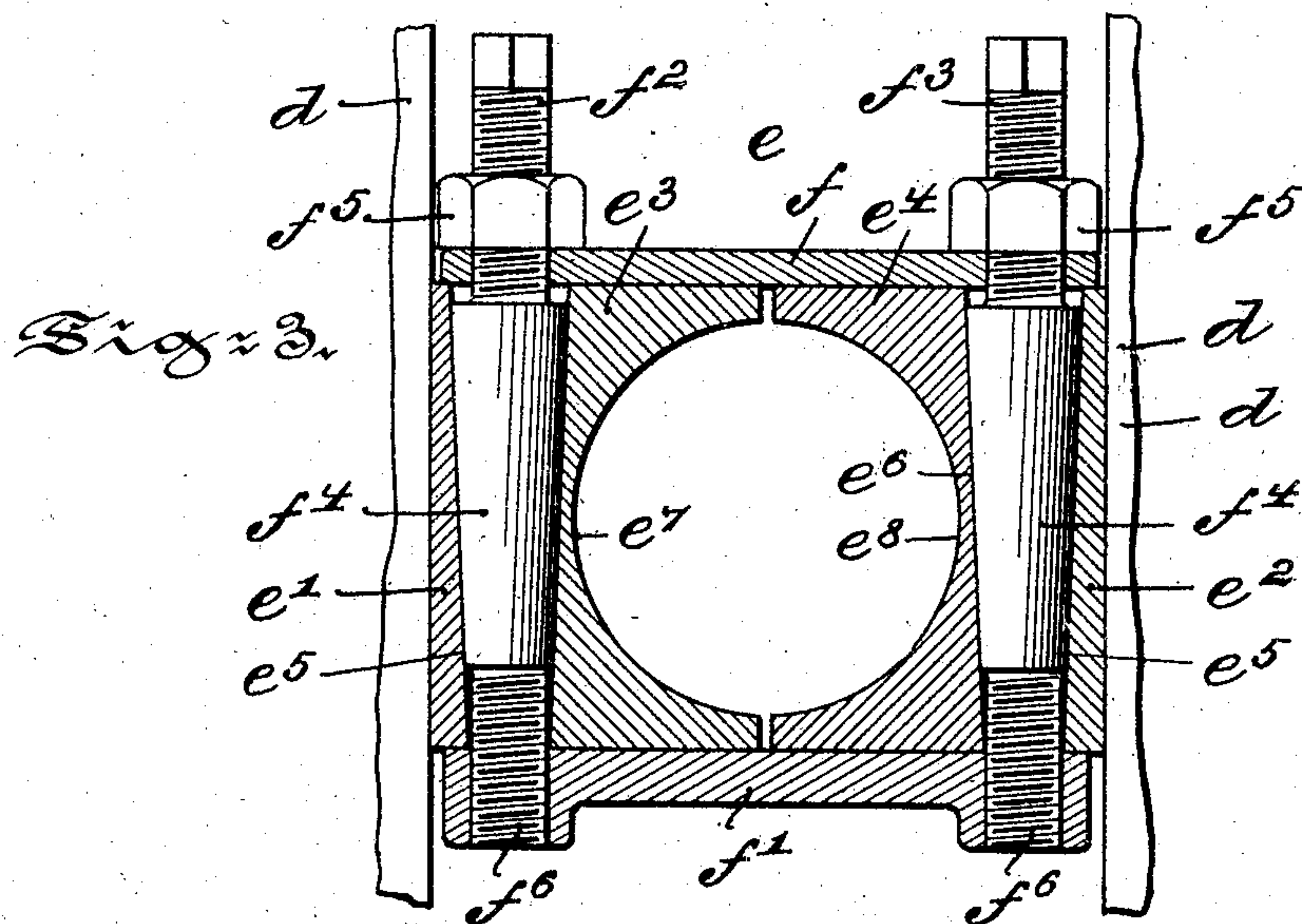
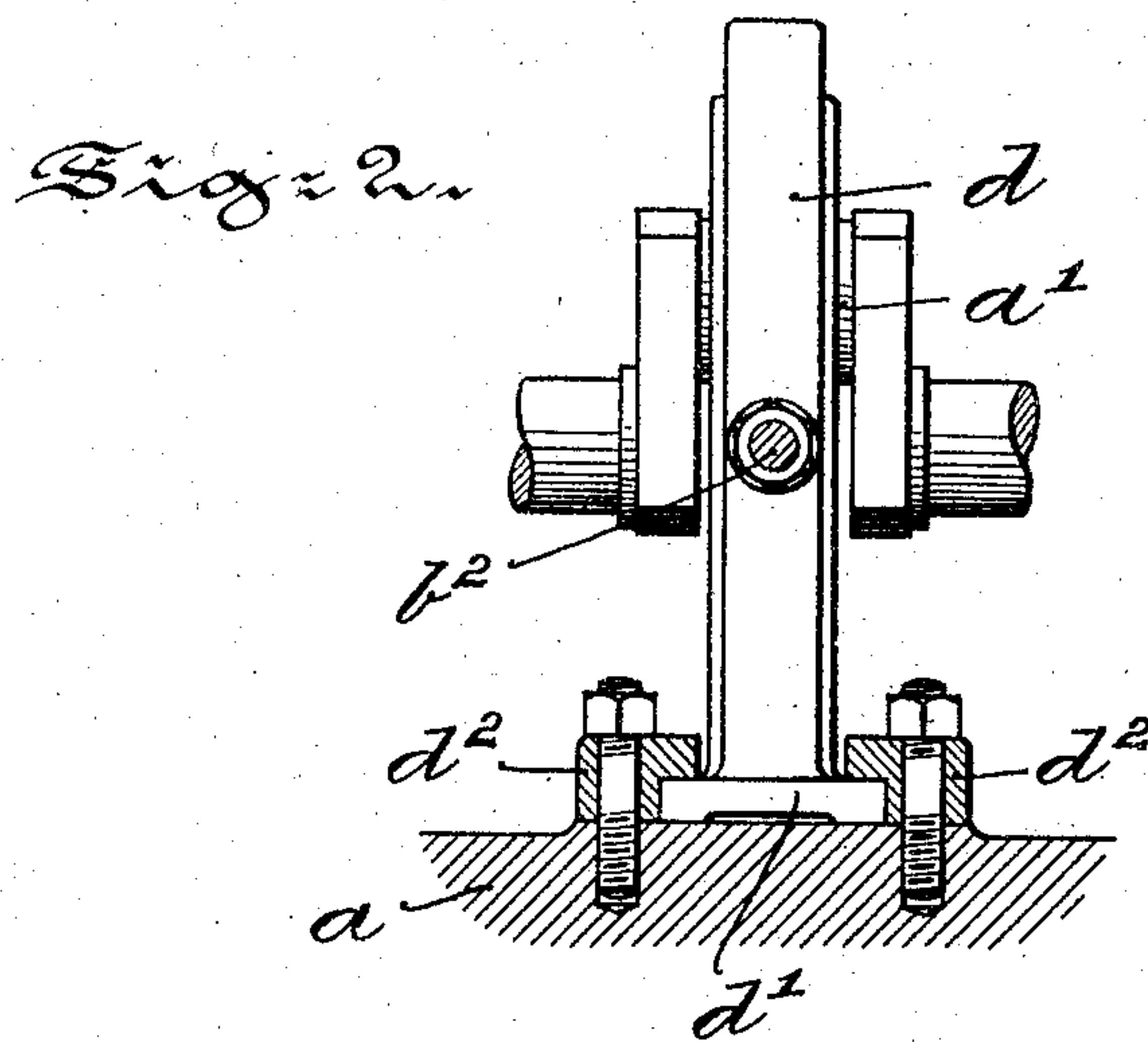
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UNITED STATES PATENT OFFICE.

NICHOLAS W. AKIMOFF, OF PHILADELPHIA, PENNSYLVANIA.

TRANSMITTING DEVICE FOR ENGINES.

SPECIFICATION forming part of Letters Patent No. 791,121, dated May 30, 1905.

Application filed January 20, 1905. Serial No. 241,933.

To all whom it may concern:

Be it known that I, NICHOLAS W. AKIMOFF, a subject of the Czar of Russia, residing in the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Transmitting Devices for Engines, of which the following is a specification.

My invention has relation to a transmitting device for engines, and in such connection it relates more particularly to a yoke connecting the piston-rods of an engine with each other and of a slidable block employed in connection therewith.

The principal objects of my invention are, first, to provide in a transmitting device for engines a slidable yoke arranged so as to be movably secured to a support to take up the bending and breaking strain of the yoke hitherto exerted on the piston-rods; second, to provide the yoke of the engine with a sectional block which is adapted to permit of its ready insertion and removal to and from the yoke and with a crank-shaft or crank-pin passing therethrough, and, third, to provide a sectional block with means adapted to permit of readily compensating for wear of the block and yoke, as well as the crank shaft or pin and block.

The nature, scope, and characteristic features of my invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, in which—

Figure 1 is a side elevational view, partly sectioned, of a transmitting device for engines, illustrating a yoke slidably connected with the bed-plate of the engine, and a sectional block or head reciprocating in said yoke, embodying main features of my present invention. Fig. 2 is a detail view illustrating partly in front elevation and partly in section the yoke and means for movably connecting the same with the bed-plate of the engine.

Fig. 3 is a detail view, enlarged, illustrating partly in section and partly in elevation the sectional block or head and the means for holding the sections in alinement and also for permitting of the adjustment of the same; and

Fig. 4 is a horizontal sectional view of Fig.

3, illustrating the manner of connecting with each other of two sections of the block.

Referring to the drawings, a is the bed-plate of a direct-acting engine, at the respective ends of which in the present instance compression-cylinders b and c are located. The piston-rods b^2 and c^2 of the cylinders b and c are connected with each other by a yoke d , consisting of a single casting. The yoke d at its lower end is provided with a base d' , extending beyond the casting and engaged at either side by guide-plates d^2 , suitably secured to the bed-plate a . The yoke d is thus slidably connected with the bed-plate a and is held by the same in operative position. The sliding of a block or head e in the yoke d , which actuates the same and causes the breaking and bending strain hitherto exerted on the piston-rods b^2 and c^2 by the yoke d , is now taken up by the base d' , the bed-plate a , and guides d^2 . The strain exerted on the piston-rods by the yoke d is therefore only in the direction of the central horizontal axis thereof, thus insuring the proper operation of the piston-rods b^2 and c^2 without undue friction in the cylinders b and c .

The block or head e , sliding in the yoke d , consists of four parts or sections, two of which, e' and e^2 , are held in engagement with the yoke d , while the parts e^3 and e^4 are held in engagement with the crank-shaft a' of the engine, which passes therethrough, as shown in Figs. 1 and 2. In a horizontal plane the end parts or sections e' and e^2 are held in engagement with the sections e^3 and e^4 by the yoke d , while in a vertical plane all the sections are held in their relative proper position by bars f and f' , connected with each other by bolts f^2 and f^3 . The bolts f^2 and f^3 are provided with tapering portions f^4 intermediate of their threaded ends, as shown in Fig. 3, which by engaging the tapering depressions e^5 and e^6 , semicircular in cross-section, arranged in each of the abutting faces of the sections e' and e^2 and e^3 and e^4 , serve to lock the end sections e' and e^2 to the intermediate sections e^3 and e^4 , as shown in Fig. 4. By the loosening of the nuts f^5 , which clamp the bolts f^2 and f^3 to the upper bar f , the same may be readily turned, and thus their threaded ends f^6 fur-

ther advanced or retracted from the lower bar f' . By this movement of the bolts f^2 and f^3 their tapering portions f^4 will either permit a movement of the sections e' , e^2 , e^3 , and e^4 of the block e toward each other or will move the end sections e' and e^2 outward and the intermediate sections e^3 and e^4 simultaneously inward or toward each other. When the bolts f^2 and f^3 are unscrewed from the bar f' and removed from the sectional block e , the same may be readily disengaged from the yoke d and crank-shaft a' without removing the former from its guides d^2 or to change the position of the latter. In the same manner the sectional block e may be readily inserted into the yoke d and brought into engagement with the crank-shaft a' in any position thereof. Any wear between the end sections e' and e^2 of the block e , held in sliding engagement with the yoke d , and between the intermediate sections e^3 and e^4 , surrounding with their semicircular depressions e^7 and e^8 the crank-shaft a' , may be readily compensated for by the advance of the bolts f^2 and f^3 in the bar f' . In this instance all the sections of the block or head e will adjust themselves, and thus automatically take up any wear of the sections between the yoke d and crank-shaft a' .

Having thus described the nature and objects of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a transmitting device for engines, a yoke having an opening adapted to receive a reciprocating block and a projecting base adapted to hold the same in an operative position, a bed-plate adapted to support said base and thereby said yoke, guides adapted to connect said base with said bed-plate, said bed-plate and guides arranged to permit of the movement of said base between the same and to take up the thrust imparted to said yoke by the reciprocatory movement of the block in said yoke.

2. In a transmitting device for engines, a yoke having an opening and a projecting base adapted to hold the same in an operative position, a bed-plate adapted to support said base and thereby said yoke, guides adapted to connect said base with said bed-plate, a block adapted to be reciprocated in said opening in a vertical plane and to reciprocate said yoke in a horizontal plane and said base, bed-plate and guides arranged to take up the

thrust imparted to said yoke by the reciprocatory movement in a vertical plane of said block.

3. In a transmitting device for engines, a yoke having an opening and a projecting base adapted to hold the same in an operative position, a bed-plate adapted to support said base and thereby said yoke, guides adapted to connect said base with said bed-plate, a block consisting of outer and inner sections adapted to be reciprocated in said opening in a vertical plane and to reciprocate said yoke in a horizontal plane, removable means arranged between said block-sections and adapted when removed from said sections to permit of the withdrawal of said block in the operative position of said yoke, and said base, bed-plate and guides arranged to take up the thrust imparted to said yoke by the reciprocatory movement in a vertical plane of said block.

4. In a transmitting device for engines, a yoke, a crank-shaft, a block slidably arranged in said yoke having inner and outer sections, said outer sections arranged to engage said yoke and said inner sections arranged to engage said shaft, bars engaging the free sides of said sections, and bolts interposed between said sections and engaging said bars, said bolts and bars adapted to hold said sections in alinement with each other, and said bolts arranged to permit of the adjustment of the sections with respect to said shaft and yoke.

5. In a transmitting device for engines, a bed-plate, a yoke having a flanged base sliding on said bed-plate, a shaft, a block slidably arranged in said yoke and having disconnected inner and outer sections, said outer sections arranged to engage said yoke and said inner sections arranged to engage said shaft, bars engaging the free sides of said sections, and tapering bolts interposed between said sections and adapted to hold the same in alinement with each other and to permit of the adjustment thereof in respect to said shaft and yoke.

In testimony whereof I have hereunto set my signature in the presence of two subscribing witnesses.

NICHOLAS W. AKIMOFF.

Witnesses:

J. WALTER DOUGLASS,
THOMAS M. SMITH.