

No. 871,791.

PATENTED NOV. 26, 1907

H. D. FIDLER.

SAND LINE REEL FOR DEEP WELL DRILLING MACHINERY.

APPLICATION FILED MAY 9, 1907.

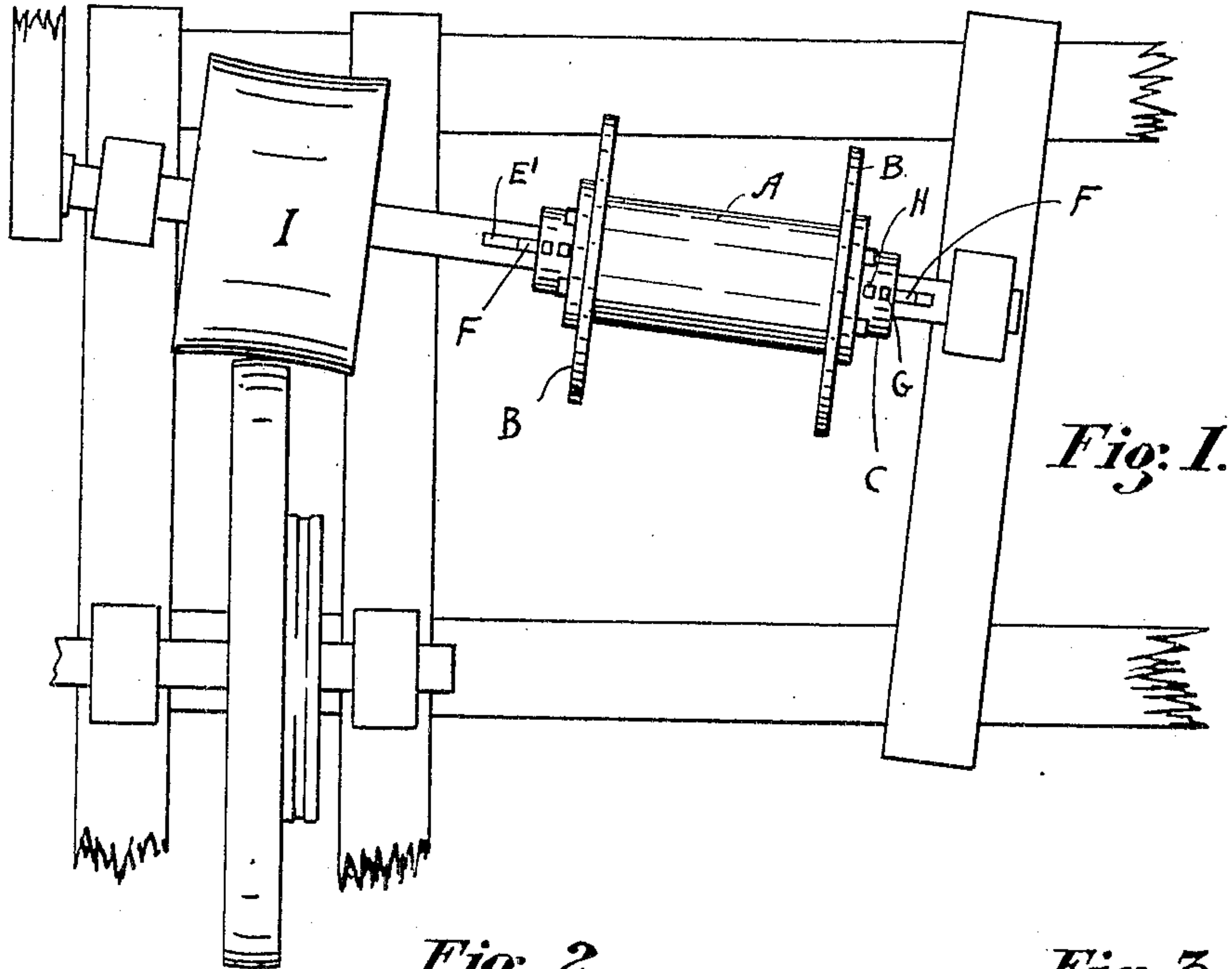


Fig. 1.

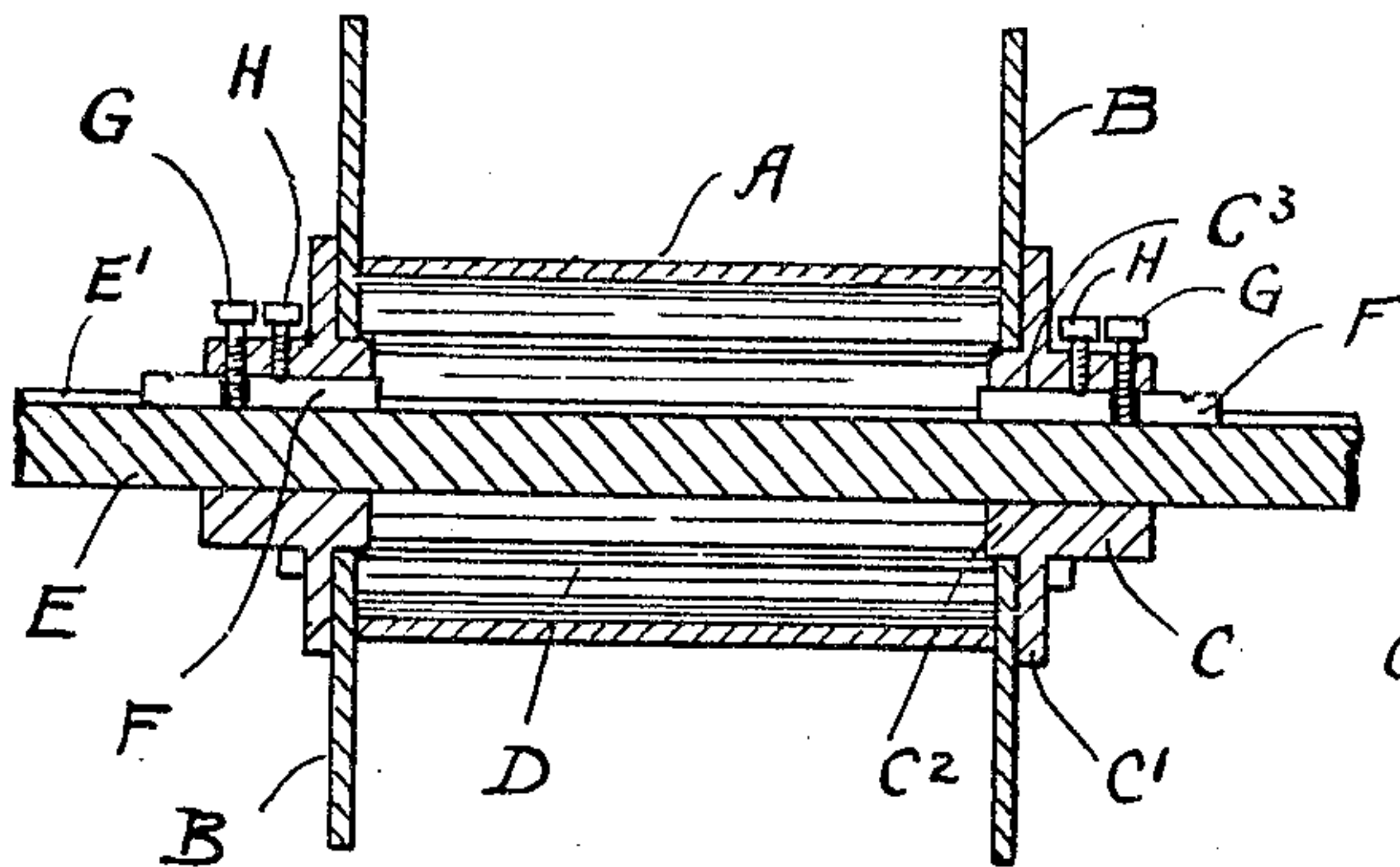


Fig. 2.

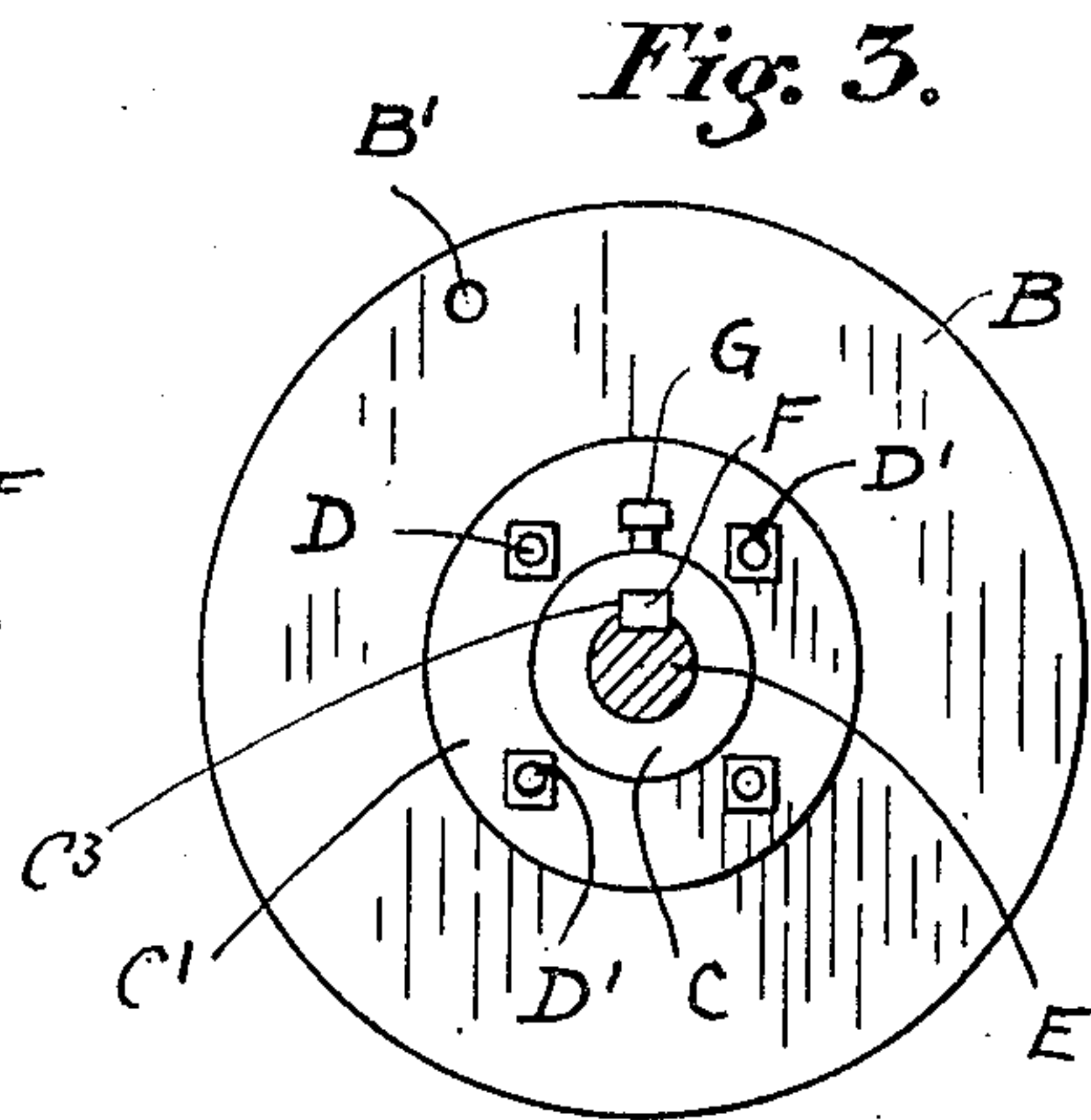


Fig. 3.

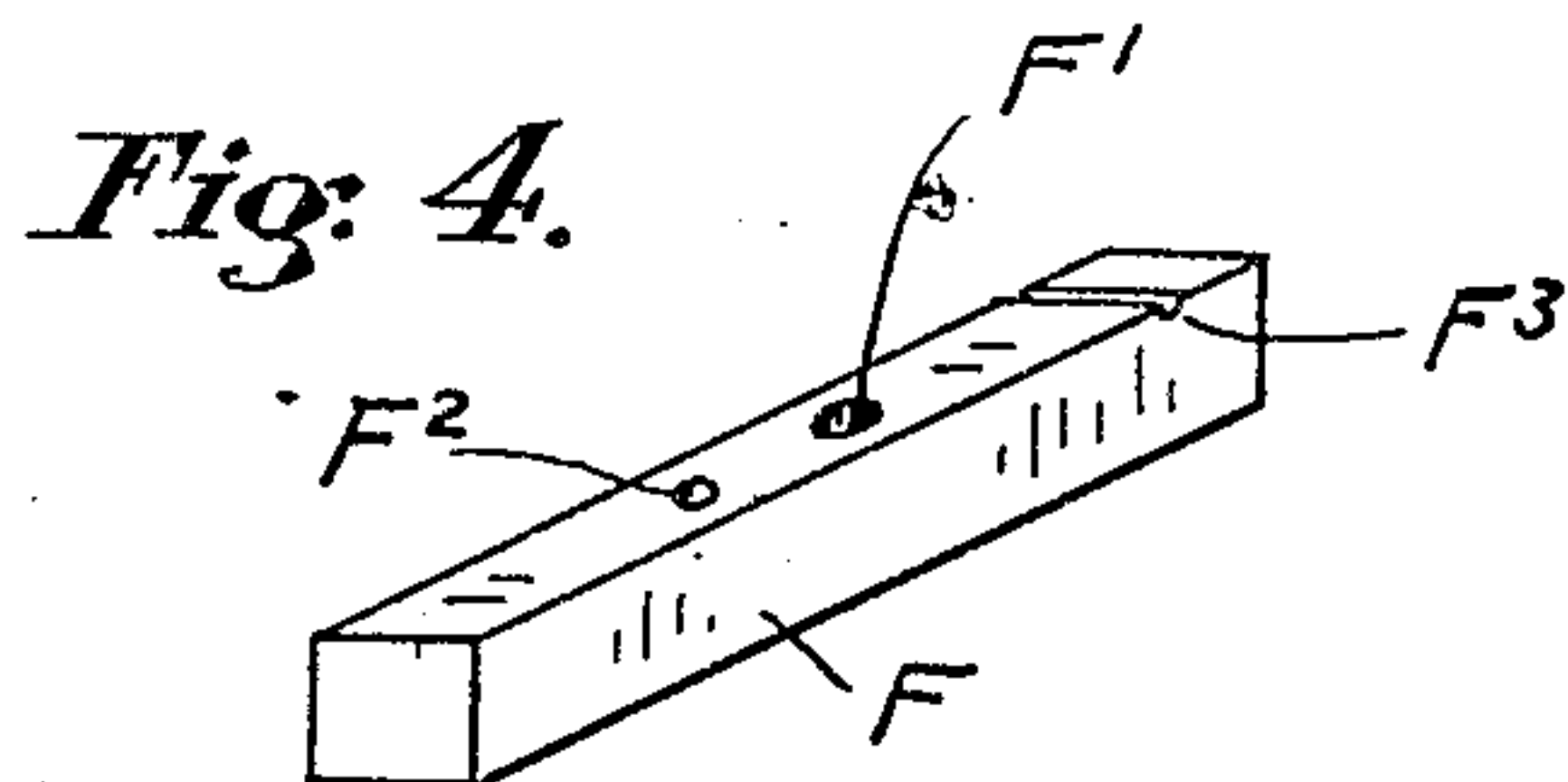


Fig. 4.

WITNESSES:

Ethel L. Lister.
John W. Jones.

INVENTOR

Homer D. Fidler,

BY

Thomas L. Ryan
ATTORNEY

UNITED STATES PATENT OFFICE.

HOMER D. FIDLER, OF MUNCIE, INDIANA.

SAND-LINE REEL FOR DEEP-WELL-DRILLING MACHINERY.

No. 871,791.

Specification of Letters Patent.

Patented Nov. 26, 1907.

Application filed May 9, 1907. Serial No. 372,727.

To all whom it may concern:

Be it known that I, HOMER D. FIDLER, a citizen of the United States, and resident of Muncie, in the county of Delaware and State of Indiana, have invented a new and useful Sand-Line Reel for Deep-Well-Drilling Machinery, of which the following is a specification.

My invention relates to improvements in reels upon which is manipulated the sand-lines or cables used in the drilling and bailing and the operation generally of deep wells such as oil and gas wells, and has for its objects to provide a device of this character which will be substantial and rigid, economical of construction, and composed entirely of metal, and which may be easily assembled and taken apart.

Further objects are to provide improved facilities whereby the reel may be easily attached to or detached from the shaft upon which it is operated.

These and other objects are accomplished by the new combination construction and arrangement of parts shown in this specification, illustrated in the accompanying drawings and designated in the appended claims.

In the drawings Figure 1 represents a portion of a drilling rig and shows my improved sand-line reel complete; and in operative position on the reel shaft. Fig. 2, is a longitudinal central sectional view, and Fig. 3 is an end view of the reel, and a portion of the reel-shaft. Fig. 4 is an enlarged detached detail view of the key.

Similar characters of reference refer to corresponding parts throughout the several views.

A designates the drum which consists of an ordinary wrought iron or steel cylinder of the length desired for the reel. Ten inch pipe of standard manufacture has been found desirable for this drum.

B designates the side-plates made circular in form as shown in Fig. 3, these plates are preferably of cast metal and are made of proper thickness to obtain rigidity, stiffness and strength.

C designates the hubs which are also made of cast metal of suitable dimension, and each has the flange C¹ and the annular shoulder C².

As plainly shown in Fig. 2 the side plates B are adapted to engage the annular shoulder

of the hubs C² and reside laterally against the flanges C¹. Holes are provided in the flanges of the hubs through which holes the bolts D may be passed.

E designates the shaft upon which the reel is adapted to be secured; a key-seat or channel, E¹ is provided in this shaft, the function whereof will be presently disclosed.

F designates the key, made of suitable width and thickness and provided with the hole F¹ and the depression F²; these keys are adapted to fit slidingly in the channel E¹ and to engage a suitable groove C³ in the hubs as shown in Fig. 3.

F³ designates a transverse groove in the key to render easy the use of a suitable instrument to jolt the key loose in the event said key should for any reason adhere abnormally.

To assemble my improved device the side plate B is placed in position on one of the hubs, then the bolts D are inserted through the flange of the hub, and the drum is placed in position with its face against the side-plate and the bolts D are then passed through the holes B of the opposite side-plate and flange and the nuts D¹ are then screwed tightly against flange of the hub. Thus the device is speedily and completely assembled.

When it is desired to secure the device to the shaft it is slipped into position thereon, the groove C³ being brought into registration with the key-seat E¹ then the keys are slipped into position the lower portion of each coming into engagement with the key-seat E¹ and the upper portion of each coming into engagement with the groove C³, then the set-screw H is screwed into the depression F² in the key and the set-screw G is screwed towards the shaft, through the key and into actual engagement with the bottom of the key-seat E¹ thereby securing in an improved manner the sand-reel to the shaft against any rotary movement or sliding movement on the shaft. By this device the connection of the sand-line reel is secure at all times, and at the same time free to be easily removed, or shifted to desired different positions of the shaft.

In the manipulation of sand-line reels the construction hitherto adopted difficulties have been experienced in getting same into proper engagement and position with reference to the machinery used for driving it and on account of the great weight necessarily

carried by such devices the transportation and manipulation of the same have been expensive and inconvenient.

My improved reel may be as readily removed from the shaft as secured thereto and may be easily assembled for use, and as easily taken apart for transportation.

In the construction of the parts which go to make up my improved reel, machine work is necessary only to truing up the ends of the drum, and also to dress out the groove C³. When the bolts D are tightened, all of the parts are brought and held together rigidly.

B¹ designates a suitable aperture in which the end of the sand line is intended to be secured.

In the handling and transportation of the reel-shaft which universally has secured rigidly thereto the heavy pulley I, it is sometimes convenient for the reel to be permitted to remain secured on the reel-shaft, the great disadvantage however in this lies in the fact that the reel-shaft, pulley, and reel when all combined, are exceedingly heavy and unwieldy.

The faults of all-metal reels, as hitherto devised, are that reason of their being substantially of single-piece construction they are necessarily of great weight and unwieldy to handle, and in the event of breakage of any part of the same, the entire reel is rendered defective if not useless, and also same require in their construction a great deal of machine work.

In my invention I accomplish a reel composed of a plurality of parts and so joined and combined together that excessive weight is dispensed with, and the same can be easily

and effectively manipulated, whether transported combined with or separate from the shaft and pulley.

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

1. The combination of a reel-shaft having a key-seat therein, a sand-line reel comprising a pair of hubs having grooves therein to register with the said key-seat, annular side plates adapted to reside with their faces against the said hubs, a drum having its ends finished so as to engage the interior faces of said side-plates, bolts positioned inside of said drum to pass through said side-plates and the said hubs and to tighten and retain the said hubs, side-plates and drum rigidly together the set screws H and G in the said hubs to pass into the said grooves therein, a pair of keys each having the aperture F¹ and the depression F² adapted to receive said set-screws respectively, substantially as described.

2. In a device of the kind described the combination of a reel-shaft having a key-seat therein, a sand-line reel having its hubs provided with grooves to register with the said key-seat, set-screws in said hubs, keys to engage said grooves and key-seat each of said keys having a depression and an aperture therein to receive said set screws in the manner and for the purpose substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HOMER D. FIDLER.

Witnesses:

ETHEL L. LISTER,
R. E. GOLDSTEIN.