J. P. KARR.

LOCK FOR A SLIDABLE SPUD.

APPLICATION FILED JULY 11, 1914.

1,233,582.

Patented July 17, 1917.

2 SHEETS—SHEET 1.

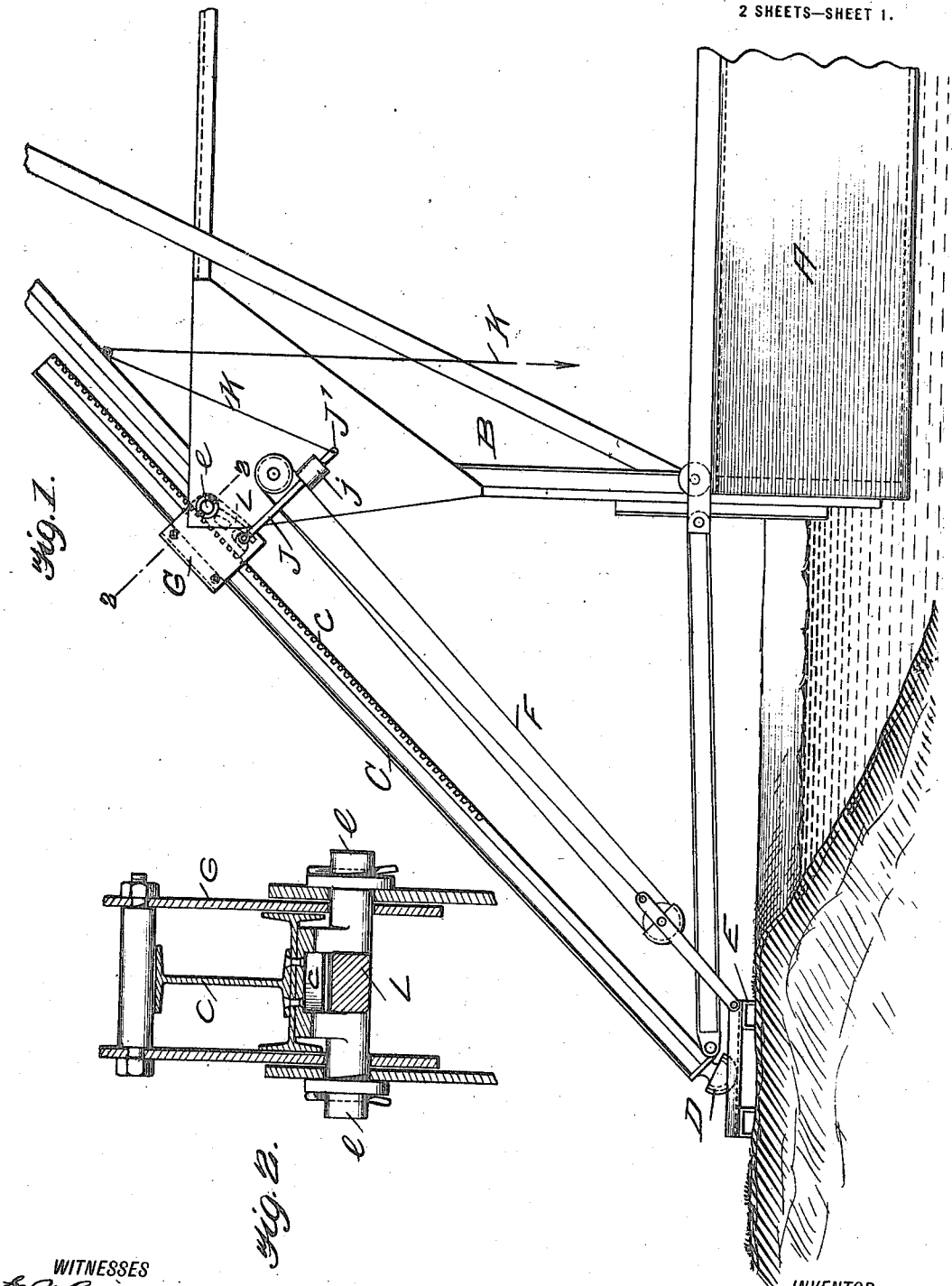


Fig. 1.

Fig. 2.

WITNESSES

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Fig. 3.

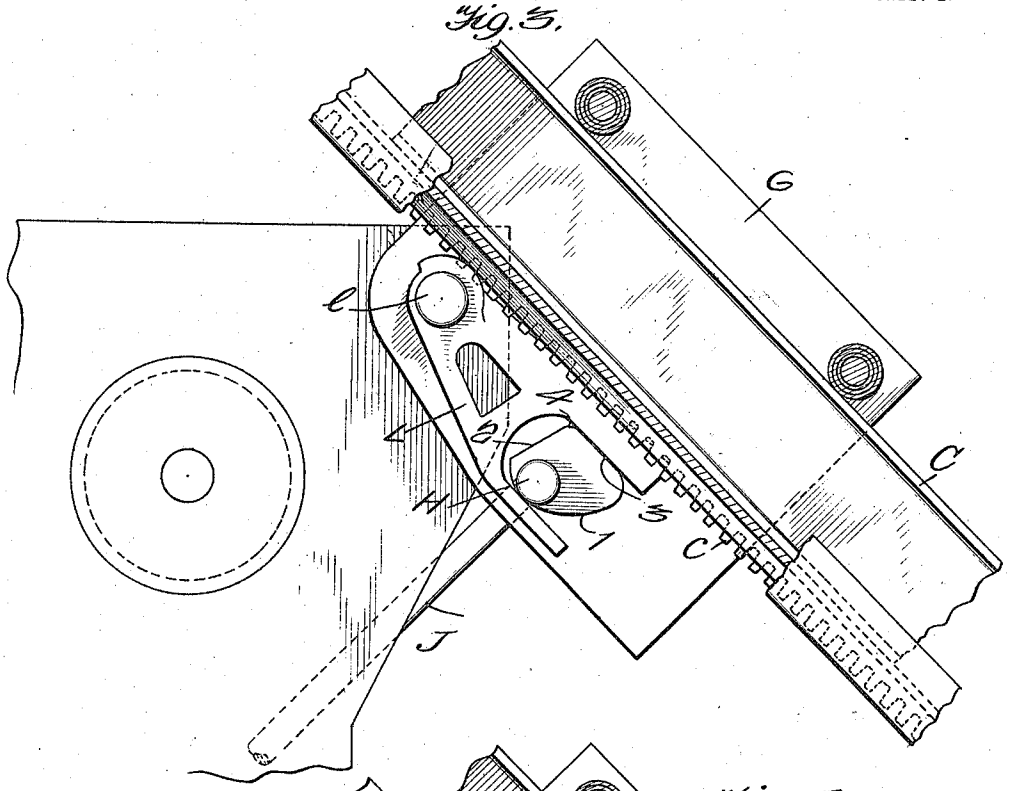
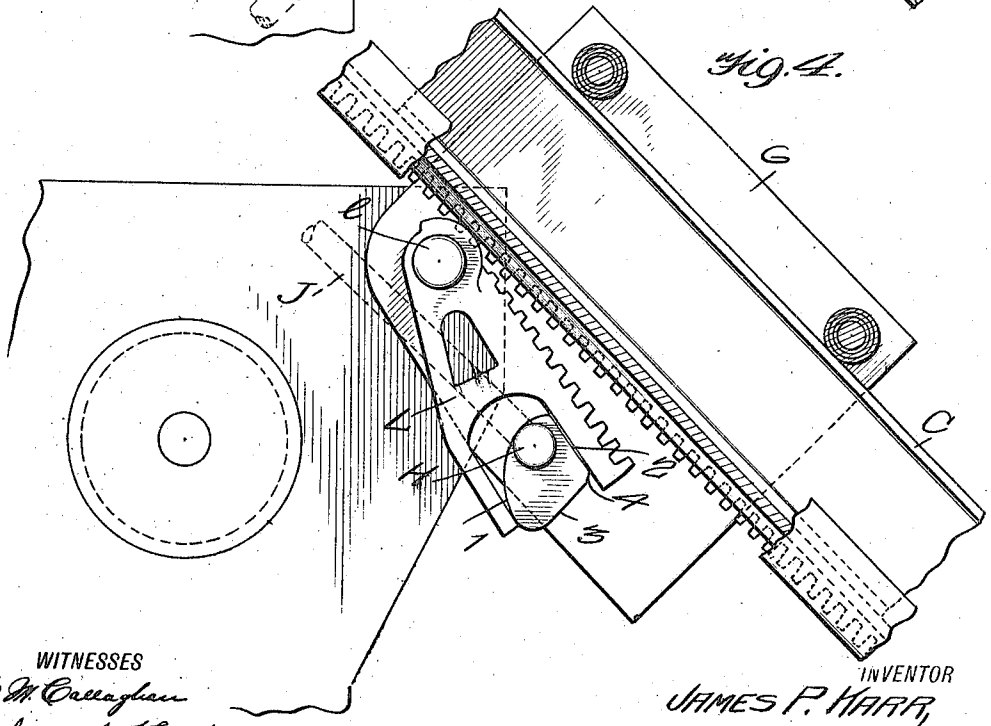


Fig. 4.



WITNESSES

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LOCK FOR A SLIDABLE SPUD.

1,233,582. Specification of Letters Patent. Patented July 17, 1917.

Application filed July 11, 1914. Serial No. 850,400.

To all whom it may concern:

Be it known that I, JAMES P. KARR, a citizen of the United States, and a resident of Fort Wayne, in the county of Allen and State of Indiana, have made an Improved Lock for a Slidable Spud, of which the following is a specification.

Dredges adapted for excavating canals are provided with spuds or side braces which may be adjusted so as to extend to the banks on both sides, for the purpose of supporting and steadying the scow on which the dredge apparatus is mounted, such supporting being required when the dredge is being operated. An effective example of a spud attachment of this character is seen in my Patent No. 812,043 granted Feb. 6, 1906. My present invention is an improvement upon the former one and relates particularly to an improved safety device for locking and releasing the spud, as hereinafter described.

In the accompanying drawing,

Figure 1 is a side view of my improved spud attachment attached to a dredging scow and supported upon the bank of a canal in operative position.

Fig. 2 is an enlarged cross section on the line 2—2 of Fig. 1.

Fig. 3 is an enlarged view, partly in section, showing the spud-locking attachment engaged with the spud.

Fig. 4 is a practically similar view illustrating the safety lock disengaged from the spud.

Referring in the first instance to Fig. 1, A indicates a portion of the front end of a scow or barge of light draft and B, a vertical rigid frame affixed thereon. C indicates one of the spuds or side braces applied in duplicate to the sides and front end of the scow. The same is connected by a ball-and-socket joint D with a broad foot or platform E, which in operation of the apparatus rests upon the bank of the canal or other excavation.

A block and tackle F is employed for hoisting the spud attachment, as will be readily understood. The upper portion of the spud C is provided on its under side with rack teeth *c* and the spud is guided in a metal frame G—see Fig. 2—which is pivoted at 1 to the main frame A.

A shaft H is journaled in the lower portions of the plates constituting the frame G and upon such shaft is fixed an irregular eccentric I. On one of the projecting ends of the shaft H is fixed detachably a lever J, which is shown in Fig. 1 is provided with a counter-weight *j* and may be raised by means of a pull-rope K. The cam is arranged in the fork of a spud locking device L, which is pivoted at 1 (see Fig. 3) between the plates of the frame G.

The inner straight side of the device L is provided with a series of teeth 1′ which increase gradually in length from the pivot end to the free or lower end of said device. In Fig. 3 the locking device L is shown adjusted by the cam I in the normal locking position, and in Fig. 4 it is shown in the disengaged position.

The cam or irregular eccentric I has a long curved side 1 which works in contact with the outer or lower jaw of the forked locking device L, and the opposite side of the eccentric has two flat portions 2 and 3 and a narrow intervening portion 4 which has a longer radius than the flat surfaces. The two flat surfaces are at a slightly obtuse angle to each other.

As before intimated, the spud is locked and unlocked by operating the cam, and this operation is effected by means of the weighted lever J; and the lock is effected when the parts are adjusted, as in Fig. 3, and completely released when the lever is thrown up and the cam in the position shown in Fig. 4. Thus, when the locking device is in the position shown in Fig. 3, its whole series of teeth is engaged with the corresponding teeth on the rack *c*, and the advantage of such multiple engagement is obvious as compared with the single tooth engagement of a rotatable gear. It is apparent that when the lever J is raised, the longer curved side 1 of the eccentric I acts upon the lower jaw of the forked locking device and thus forces the teeth of the latter out of engagement with and away from the rack teeth, as shown in Fig. 4, and the upper jaw of the device L then rests upon the flat side 2 of the eccentric as shown in Fig. 4.

The apex of the angle which intervenes the flat surfaces 2 and 3 has a longer radius than either of the latter, and it is hence obvious that when the cam is rotated, the

apex acts on the inner jaw of the locking device and forces it into closer engagement with the teeth *c* of the spud rack. In other words, when the locking device is raised by this action of the lever and cam, the teeth of the two opposing parts can not be thrust nearer together when weight is on the spud and hence by this construction of the cam I provide a perfect safety device that prevents release of the lock prematurely or while the load is on the spud; that is to say, if the dipper is on the side of the scow adjacent to the spud, the weight of the latter is increased to such a degree that if the lock were suddenly released, the scow would tend to capsize; but by swinging the boom that carries the dipper over to the other side it will relieve the spud of weight and thus allow the eccentric to be operated so as to throw it into the complete releasing position shown in Fig. 4 where one of its flat sides is in contact with the upper jaw of the locking device L.

What I claim is:

The combination with a spud having a rack and means for guiding the spud, of a locking device pivoted in the spud guide and having its straight inner side provided with teeth for engaging the spud rack, a locking device consisting of an irregular eccentric, and a transverse shaft on which it is mounted, two adjacent sides of said eccentric being flat, one of said sides being farther from the axis than the other and the apex of the angle formed by such adjacent flat sides being still farther from the axis of rotation of the shaft than either of said sides so that when the shaft is rotated the said apex forces the locking device into closer engagement with the spud rack, and means for rotating the shaft, as described.

JAMES P. KARR.

Witnesses:
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GEO. S. BROCK.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."