

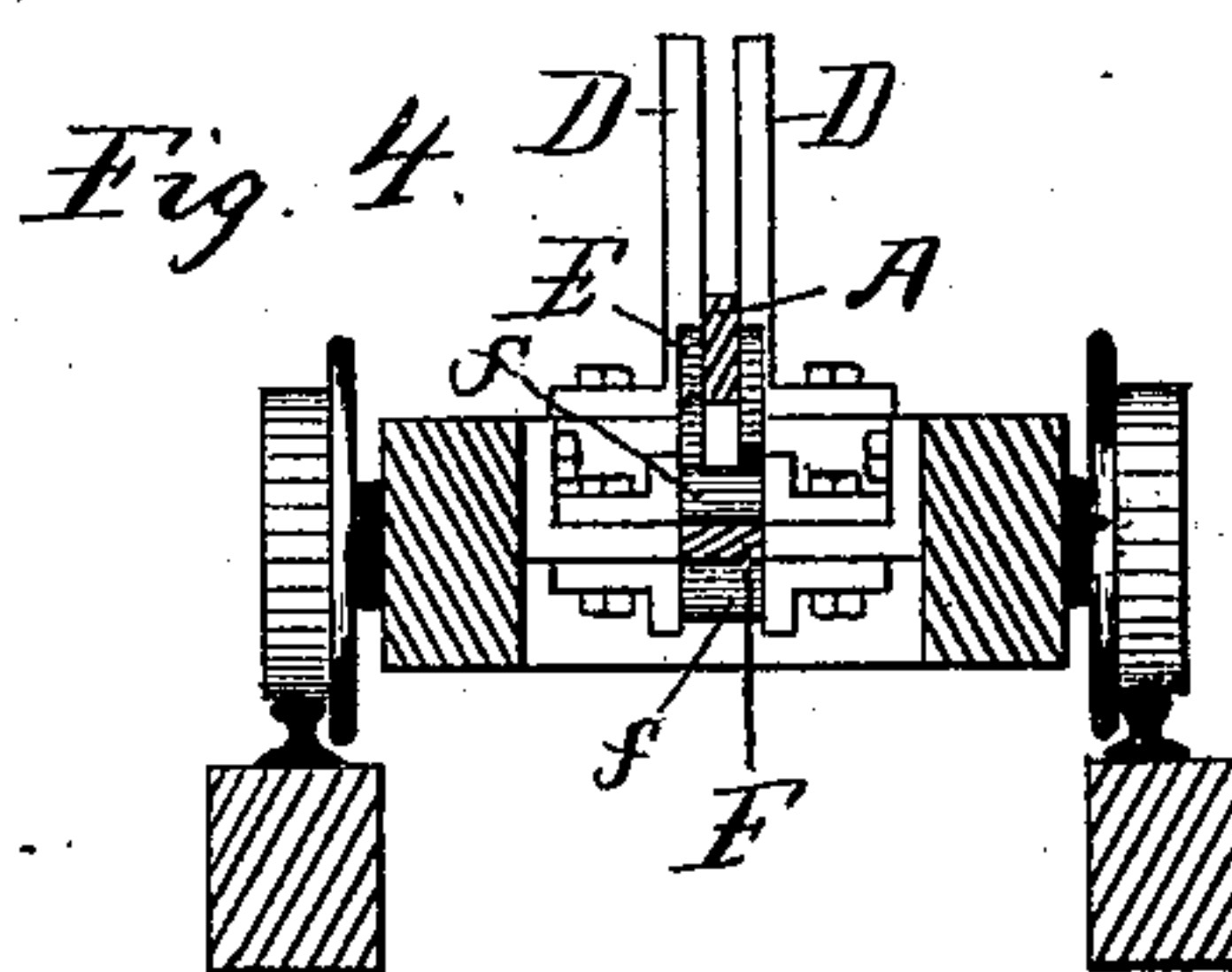
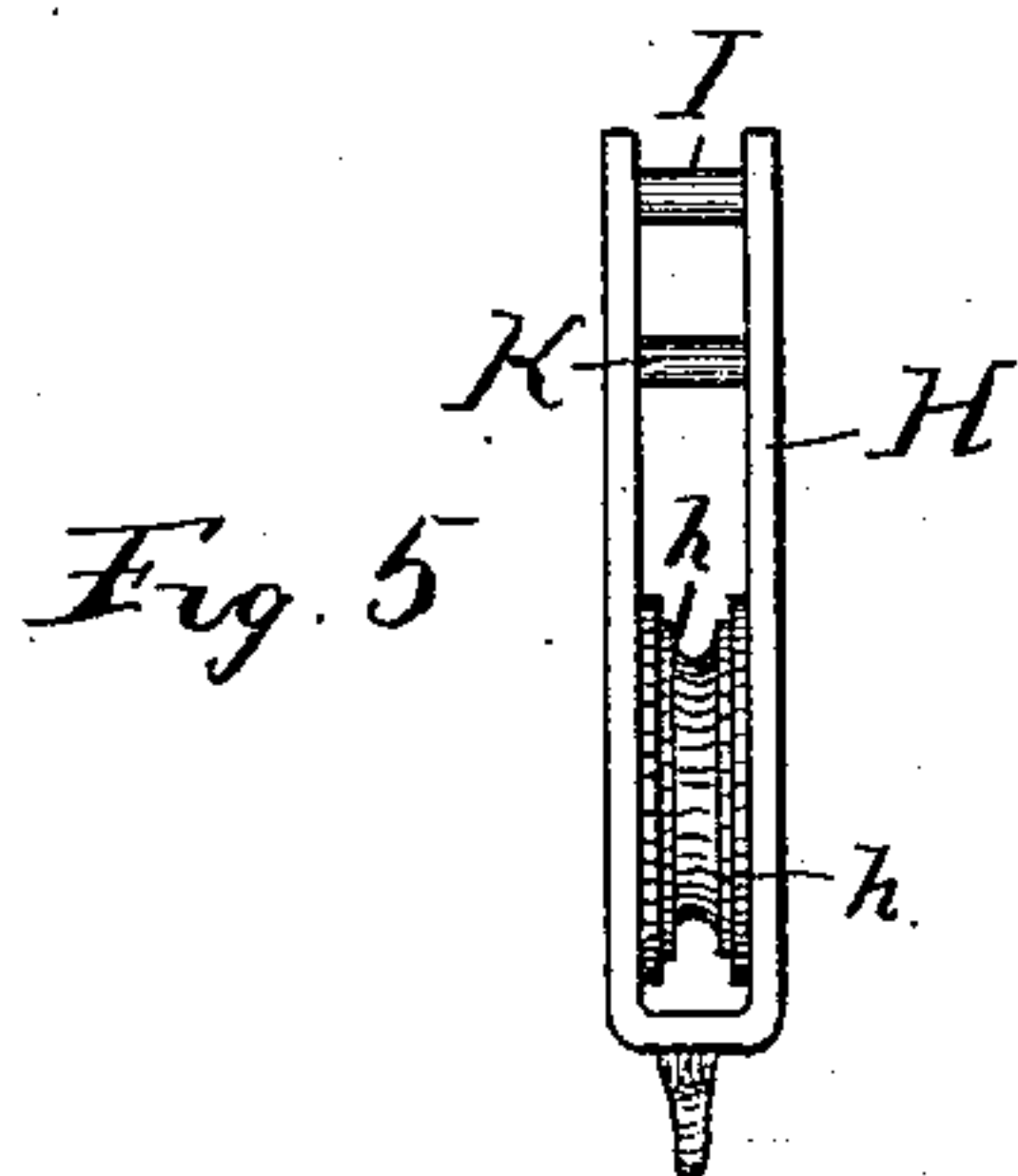
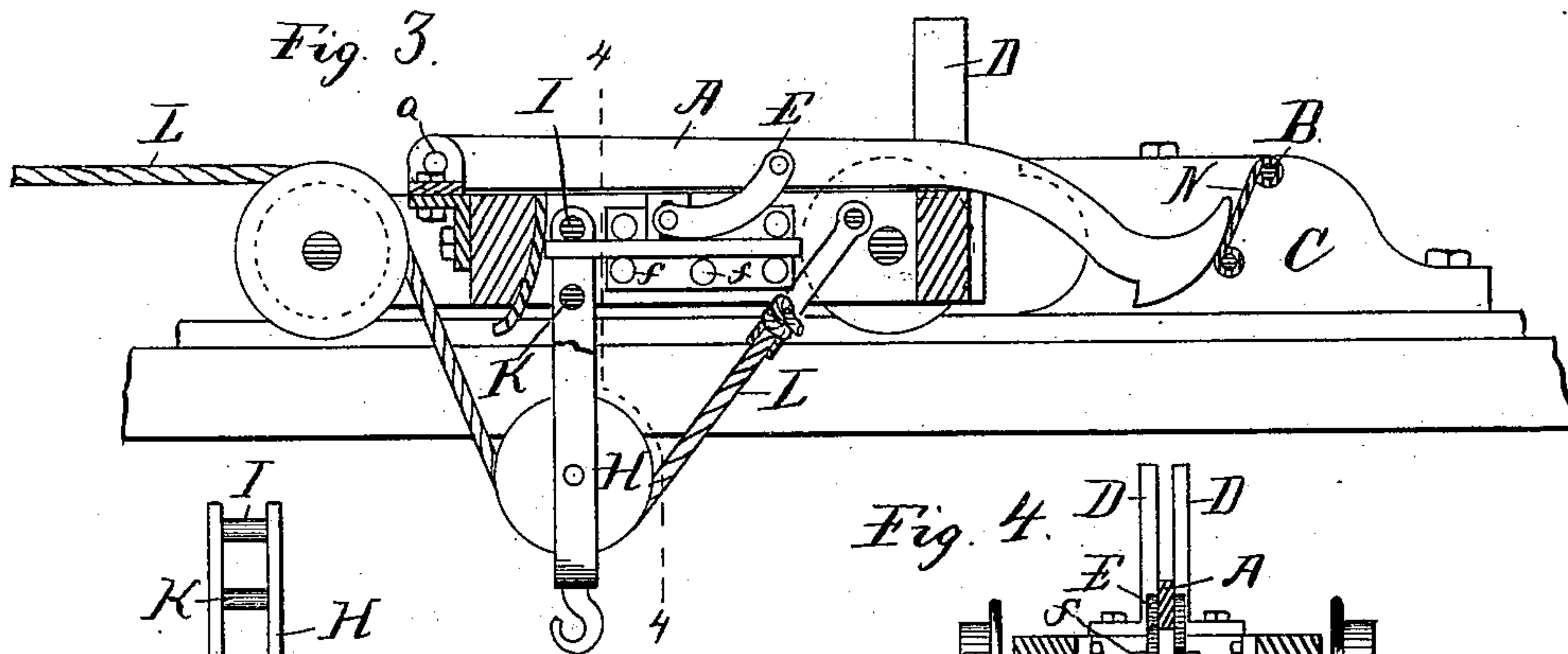
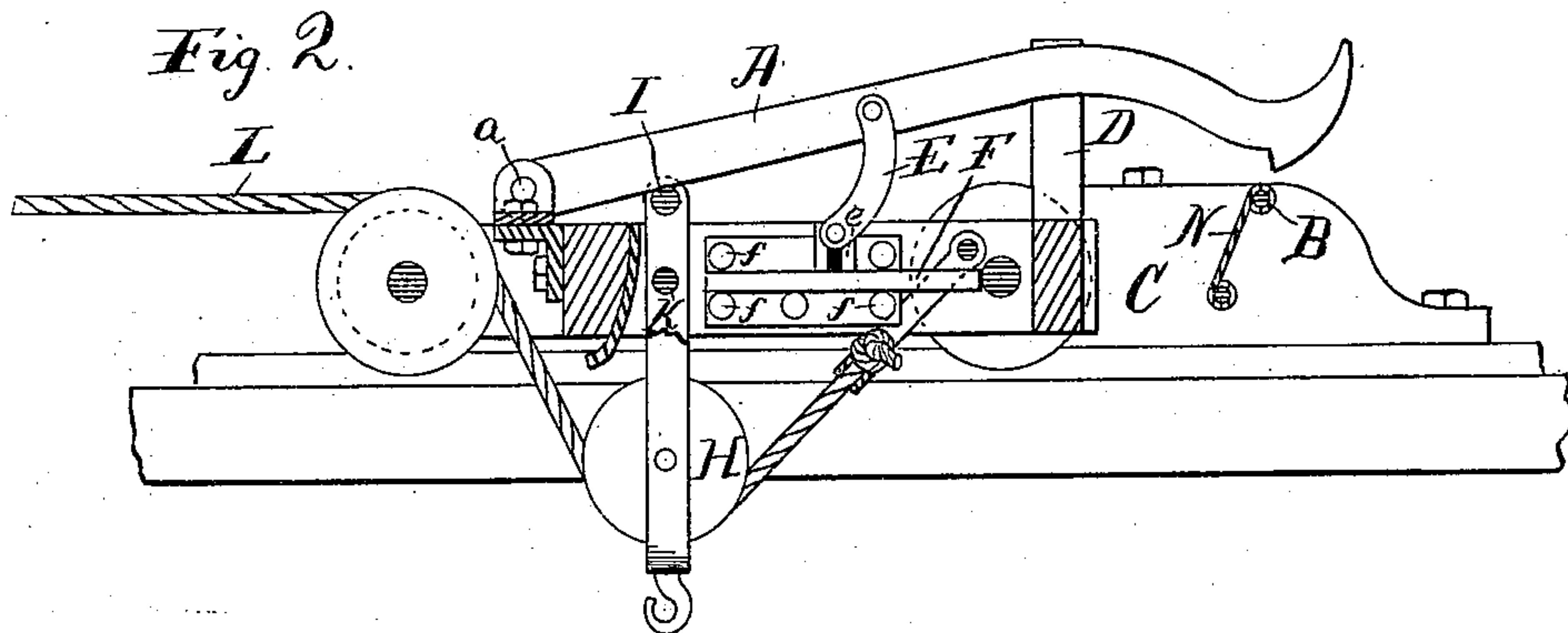
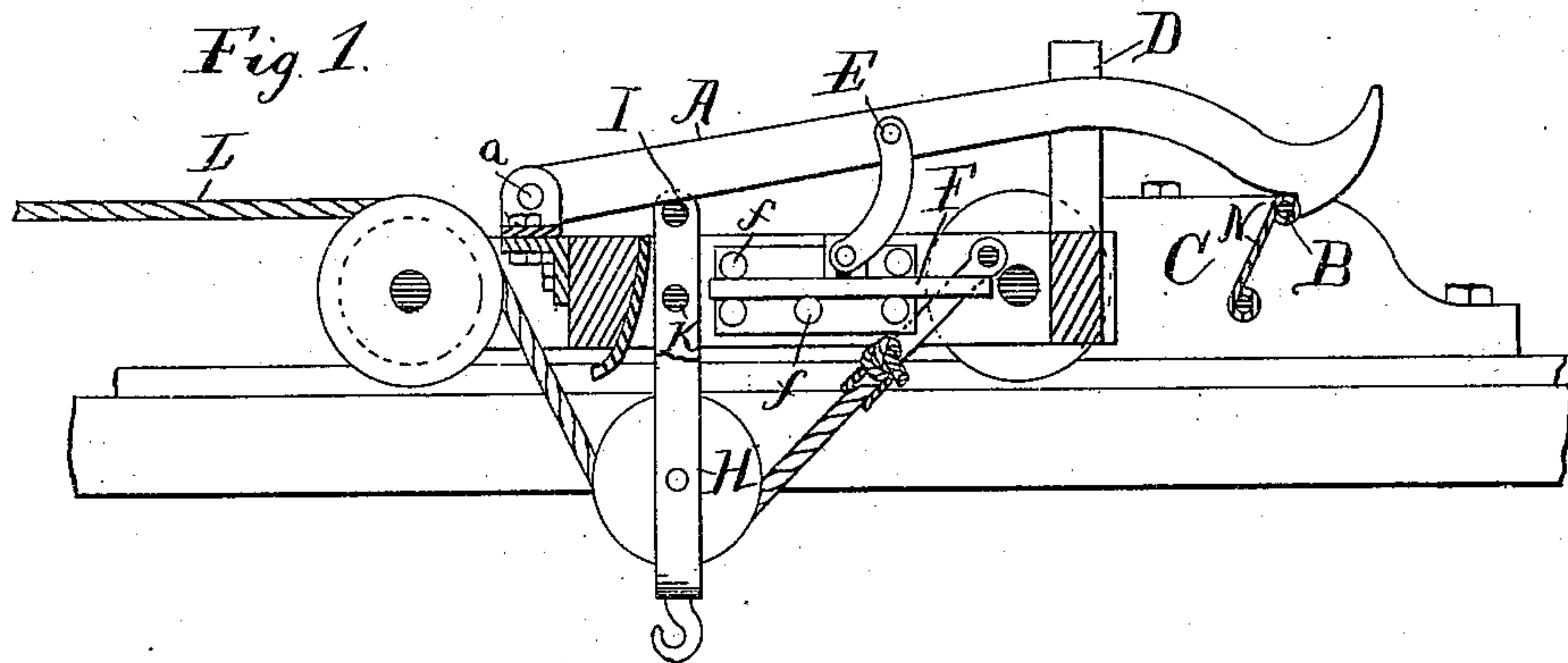
(No Model.)

W. S. BOGLE.

LOCKING DEVICE FOR COAL HANDLING APPARATUS.

No. 333,278.

Patented Dec. 29, 1885.



Witnesses:
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UNITED STATES PATENT OFFICE.

WALTER S. BOGLE, OF CHICAGO, ILLINOIS.

LOCKING DEVICE FOR COAL-HANDLING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 333,278, dated December 29, 1885.

Application filed October 23, 1885. Serial No. 180,715. (No model.)

To all whom it may concern:

Be it known that I, WALTER S. BOGLE, of Chicago, Illinois, have invented certain new and useful Improvements in Locking Devices for Coal-Handling Apparatus, of which the following is a specification.

In the handling of coal, particularly in the loading of cars and wagons, it is frequently desirable to convey the coal from the floor of the shed or yard to an elevation from whence it is discharged through a chute or hopper, and in loading it frequently becomes necessary to take up the coal from a large floor area. In doing this work it is common to provide an elevated suspended track, on which travels a four-wheeled truck or carriage impelled by ropes wound commonly by steam-power, and to which carriage large iron buckets to receive the coal are suspended and operated by block and tackle. The bucket must be free to be lowered to receive the coal; and capable of being elevated and locked to the carriage, by which it is carried along the track to the unloading-point. It has heretofore been found impractical to handle coal with the above appliances upon a level track, because the operation of hoisting the bucket, which is suspended upon a rope, one end of which is made fast to the carriage, resulted in starting the carriage forward along the track, and hence only inclined tracks have heretofore been commonly employed. These inclined tracks are not so convenient as level tracks, are more expensive to construct, cover less floor-space with a given length of track, and require more power in operation.

My improvements provide means for automatically locking the carriage to the track during the lowering, filling, and hoisting the bucket and for locking the bucket to the carriage while the latter is being propelled along the track, whereby coal may be taken up at any point of a level track and carried to any point on said track, or upon an inclined track.

In the accompanying drawings, Figure 1 is a side elevation, partly in section, of the ordinary carriage mounted on a section of level suspended track, and provided with my improved locking devices, the carriage shown locked to the track, and the bucket-block elevated. Fig. 2 is a similar view, the carriage being unlocked and ready to be drawn for-

ward on the track. Fig. 3 is a similar view showing the carriage unlocked and slightly advanced from the starting-point, the bucket locked to the carriage, and both in position to be drawn along the track to the point where it is desired to unload. Fig. 4 is a vertical transverse section of the carriage on line 4 4 of Fig. 3, and Fig. 5 is a detail view of the block for carrying the bucket.

As illustrated in the drawings, my improved locking devices comprise a lever, A, one end of which is pivoted to the carriage at *a*, and the other end projects rearwardly, and is provided with a shoulder adapted to engage a latch, B, secured permanently to a bumper, C, fastened to the track. This lever A is made preferably of heavy bar-iron, set edgewise to the carriage, and of such weight as to operate by gravity alone, the bucket-lock, hereinafter described. Lever A moves up and down between suitable guides, D D. This lever A has pivoted thereto one end of a short link or lever, E, the other end of said link being pivoted to a slotted arm, *e*, on a bolt or dog, F, which latter travels in suitable guides, preferably anti-friction rollers *f f*, secured upon the carriage. Said guides are so arranged as that the bolt or dog F moves in a line parallel to the track. These guides are particularly illustrated in Fig. 4. The construction and arrangement of lever A, bolt F, and link E is such that when lever A is elevated or depressed dog F is withdrawn or thrust forward.

The bucket (not shown) is to be attached to a block, H, having a pulley, *h*, and having the upper ends of its members provided with two pins or stops, I K. A rope, L, has one end made fast to the carriage, passes under pulley *h* and over a sheave at the front of the carriage, thence along the track, and over a suitable sheave at the end thereof, and thence to the spool, upon which it is wound in operation. It will be observed that the block H is free to pass up through the frame of the carriage, so that the pin I in its upper end shall come in contact with lever A.

Now, when it is desired to load a bucket suspended from a carriage mounted on an elevated track, the carriage is run back against the bumper, the free end of lever A drops over and engages latch B, and the carriage is se

curely locked to the track. The hoisting-rope being slackened, the bucket descends ready to receive the coal. The rope being wound up, the bucket is hoisted until the pin I engages the under side of lever A, as shown in Fig. 1. Being hoisted still further, lever A is raised by the pressure of the block against its under side until its rear end clears the latch, when, the bucket of coal being heavier than the carriage, the latter commences to move forward on the track and the former to descend. This frees lever A, which, descending by its own weight, acts through link E to thrust bolt F forward in time to enter the block between the pins or stops I and K, thus locking the bucket to the carriage. The continued winding of the rope now impels the carriage along the track to the unloading-point, which is usually the summit of an inclined track. After the bucket is unloaded the car is left free to travel down the incline, in doing which it acquires sufficient momentum to cause it to retrace the level track to the starting-point, where the rear end of lever A strikes and passes up an incline, N, whereby it is raised until its under side engages latch B, locking the carriage against the track. At the same time the raising of lever A, acting through link E, withdraws bolt F and the bucket descends.

It is obvious that the unloading may take place at any point on either the level or the inclined track, as the weight of the loaded bucket is sufficient to hold the carriage to the track. If it be desired to load at different points along the track, the bumper C, carrying latch B, is simply moved to the desired point and there secured. The purpose in providing pin K is to prevent the lifting of lever A by the block and the consequent unlocking of the

bucket, should any obstruction on the track be encountered by the carriage-wheels during its forward movement. As the space between this pin and pin I is less than the space between the latter and lever A, pin K acts as a safety-stop during the movement of the carriage.

The above particular description is intended to illustrate an efficient and tested method of operating, and is not intended to exclude variations of detail in construction and arrangement of parts, for, so far as I am aware, I am the first to provide for automatically locking the carriage and bucket in the handling of coal on a level track. I have contemplated variations of construction and arrangement of the locking devices.

I claim—

1. An automatic locking device for coal-handling apparatus, comprising a lever pivoted at one end upon the carriage, and having its free end adapted to engage a latch, a suitable latch for locking the carriage to the track, a locking-bolt supported on the carriage, and adapted to slide in suitable ways parallel to the track, and a connecting-link pivotally connected to said lever and said bolt, whereby the movement of the lever operates said bolt automatically to lock and unlock a bucket, substantially as described.

2. In automatic locking devices for coal-handling apparatus, the combination of lever A, latch B, curved link E, and locking-bolt F, having slotted arm e, substantially as described.

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Witnesses:

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