

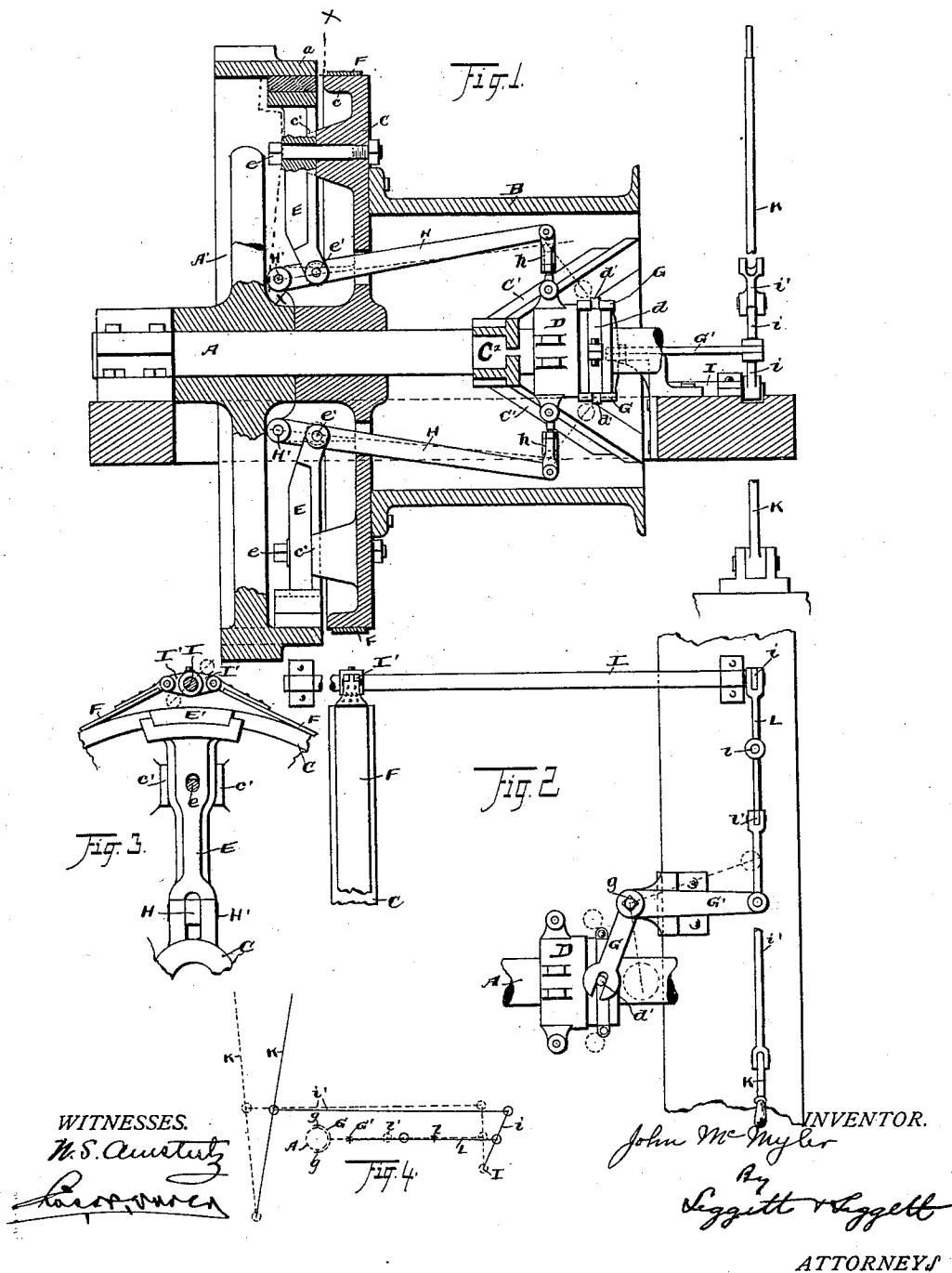
(No Model.)

2 Sheets—Sheet 1.

J. McMYLER.
HOISTING APPARATUS.

No. 428,691.

Patented May 27, 1890.



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2 Sheets—Sheet 2.

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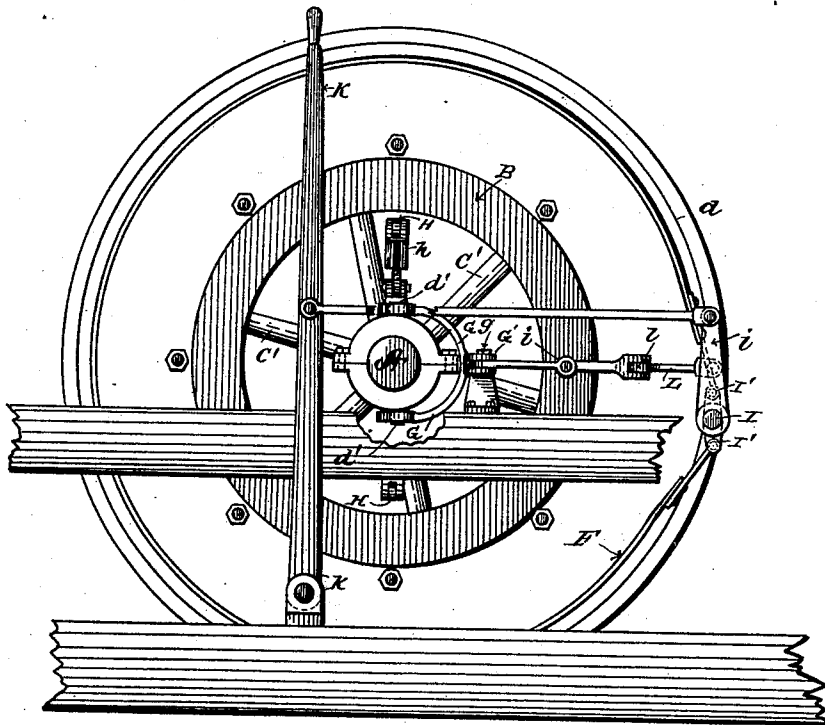


Fig. 5.

Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN McMYLER, OF CLEVELAND, OHIO.

HOISTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 428,691, dated May 27, 1890.

Application filed January 18, 1889. Serial No. 296,707. (No model.)

To all whom it may concern:

Be it known that I, JOHN McMYLER, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Hoisting Apparatus; 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 pertains to make and use the same.

My invention relates to improvements in hoisting apparatus; and it consists in certain features of construction and in combination of parts hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation in section. Fig. 2 is a detail view in plan of the levers and mechanism for actuating the brake-band and clutch-arms. Fig. 3 is a section on line *xx* of Fig. 1. Fig. 4 is a diagrammatic elevation of hand-lever and link-movement, and Fig. 5 is an end elevation of my improved apparatus.

A is a shaft, upon which is mounted loosely the gear A', the latter engaging a gear or pinion of the driving-shaft. (Not shown.) Gear A' has an overhanging rim *a*, that constitutes the female member of the friction-clutch.

B is the drum on which the hoisting-cable winds, this drum being attached to and supported by spiders C and C', these spiders being mounted rigidly on shaft A. The arms of spider C' extend obliquely inward, as shown, to join the hub thereof C², thus making room inside the drum for the sliding head D, whereby considerable space is saved. Spider C has a rim *c*, upon which operates the brake-band F. This spider has a series of lugs projecting toward gear A', each lug terminating in a pair of flanges *c' c'*, and each pair of flanges embracing one of the clutch-arms E. Arms E are usually four in number, more or less, according to the size of the clutch, and extend radially, and at their outer ends are provided, respectively, with friction-shoes E', for engaging the inner periphery of rim *a* aforesaid. These friction-shoes are of course removable, so that they may be renewed from time to time, and are of wood or other suitable material. Arms E are held to their respective seats against the

lugs and between flanges *c' c'* aforesaid by bolts *e*, the latter passing loosely through radially-elongated holes in the arm, that admits of a radial movement necessary to these arms. Arms E are respectively pivoted at *e'* to levers H, the latter being fulcrumed at H' to ears of spider C. Levers H extend between the arms of this spider and inside the drum, and are connected by links *h* with the sliding head D aforesaid. It will readily be understood that by sliding hub D endwise on the shaft in the one direction or the other arms H are extended or collapsed in applying or loosening the clutch. Hub D has a circumferential groove, in which is fitted loosely collar *d*, the latter having pins or lugs *d'* projecting from opposite sides of the collar, these pins or lugs being engaged by slotted arms G of a bell-crank lever. The latter is fulcrumed at *g* and has a single arm G' for operating the clutch.

I is a rock-shaft for operating the brake-band. This shaft at one end has arm I' extending in opposite direction from the shaft, the extremes of these arms being pivotally connected with the respective ends of the brake-band. When arms I are in approximately the position shown in solid lines, Fig. 3, the brake-band is loose, and when these arms are turned toward the position shown in dotted lines the brake-band is of course tightened on rim *c*. A vertical rock-arm *i* is mounted on the other end of shaft I, and is connected at its extreme upper end to one end of rod *i'*, the opposite end of rod *i'* being secured to hand-lever K.

Midway of rock-arm *i* and below rod *i'* is attached a jointed link L, leading to and connecting with the free end of arm G' of the bell-crank-lever device aforesaid. The link L, which, as before stated, connects arm *i* and bell-crank arm G', is provided with a lateral joint at *l* and with a vertical joint at *l'*, so that the link may accommodate itself to the different movements of the two arms without cramping. The movement of the hand-lever in the one direction sets the brake and at the same time loosens the clutch, and when moved in the opposite direction sets the clutch and loosens the brake-band.

In hoisting mechanism, especially where such mechanism is operated on a revolving

derrick, it is a matter of importance to arrange the machinery as snug and compact as possible, as the room on such derrick is necessarily limited. With the construction shown
5 the mechanism is operated in a small compass, which, together with the fact that but one hand-lever is required for operating both clutch and brake-band, renders such hoisting mechanism in every way desirable.

10 What I claim is—

1. In hoisting apparatus, the combination, with a rock-shaft and a connected rock-arm for operating the brake-band, said rock-arm being connected with a suitable hand-lever,
15 of a friction-clutch and a bell-crank lever for operating the clutch and a link connecting the bell-crank lever with the rock-arm of the brake-band mechanism, such link having horizontal and vertical joints, substantially as described.
20

2. The combination, with drum for the hoisting-cable, a friction-clutch for operating the drum, levers, a link, and a sliding hub, substantially as indicated, for operating the
25 clutch, of a spider for supporting one end of the drum, such spider having arms extending

obliquely inward to the hub thereof, whereby the sliding hub aforesaid is operated inside of the brake-band for engaging the drum, and connections between the band and mechanism
30 for operating the clutch, whereby said parts are actuated simultaneously, substantially as set forth.

3. In hoisting apparatus, in combination, a spider connected with the hoisting-drum, such
35 spider having laterally-projecting lugs, each lug having a pair of flanges, radial arms embraced by such flanges, studs engaging the respective lugs and extending through radial
40 holes in the respective arms, friction-blocks connected with the free end of the arms for engaging the female member of the clutch, and levers, links, and a sliding hub for operating the radial arms, substantially as set
45 forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this
17th day of November, 1888.

JOHN MCMYLER.

Witnesses:

CHAS. H. DORER,
ALBERT E. LYNCH.