

No. 723,688.

PATENTED MAR. 24, 1903.

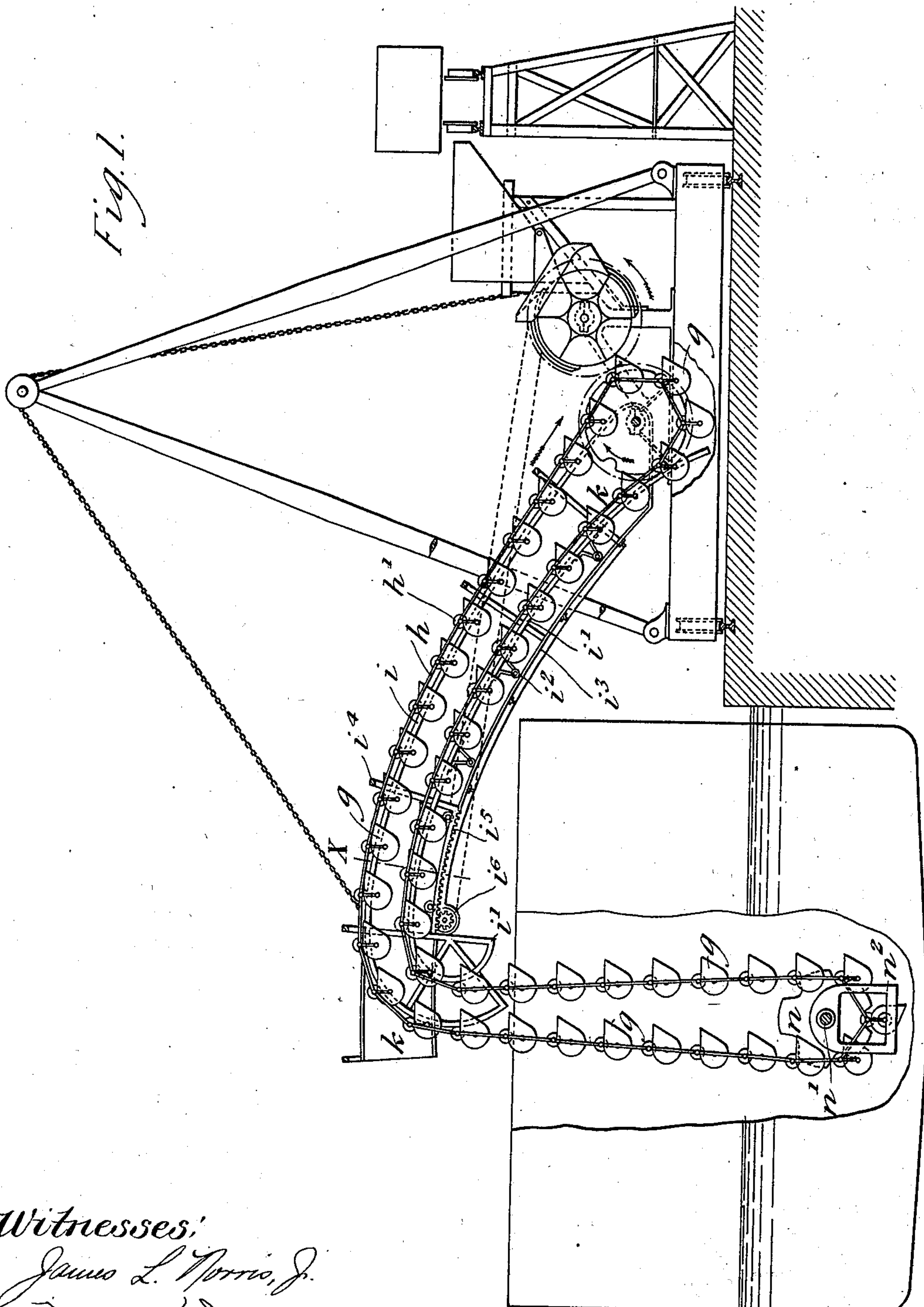
B. LESLIE.

APPARATUS FOR MEASURING AND CONVEYING COAL OR THE LIKE.

APPLICATION FILED DEC. 8, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:

James L. Norris, Jr.

J. B. Keeler

Inventor
By Bradford Leslie
James L. Norris, Jr.

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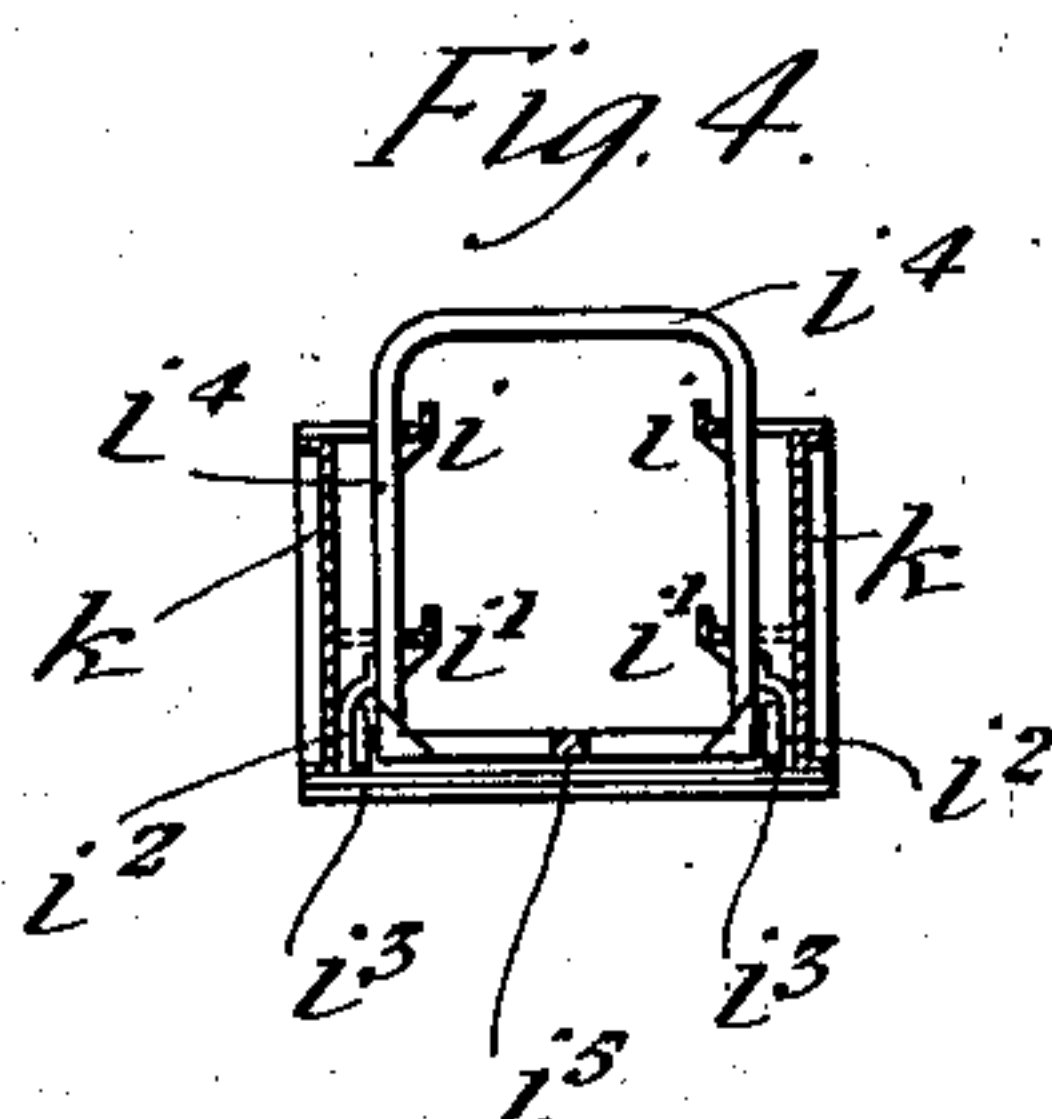
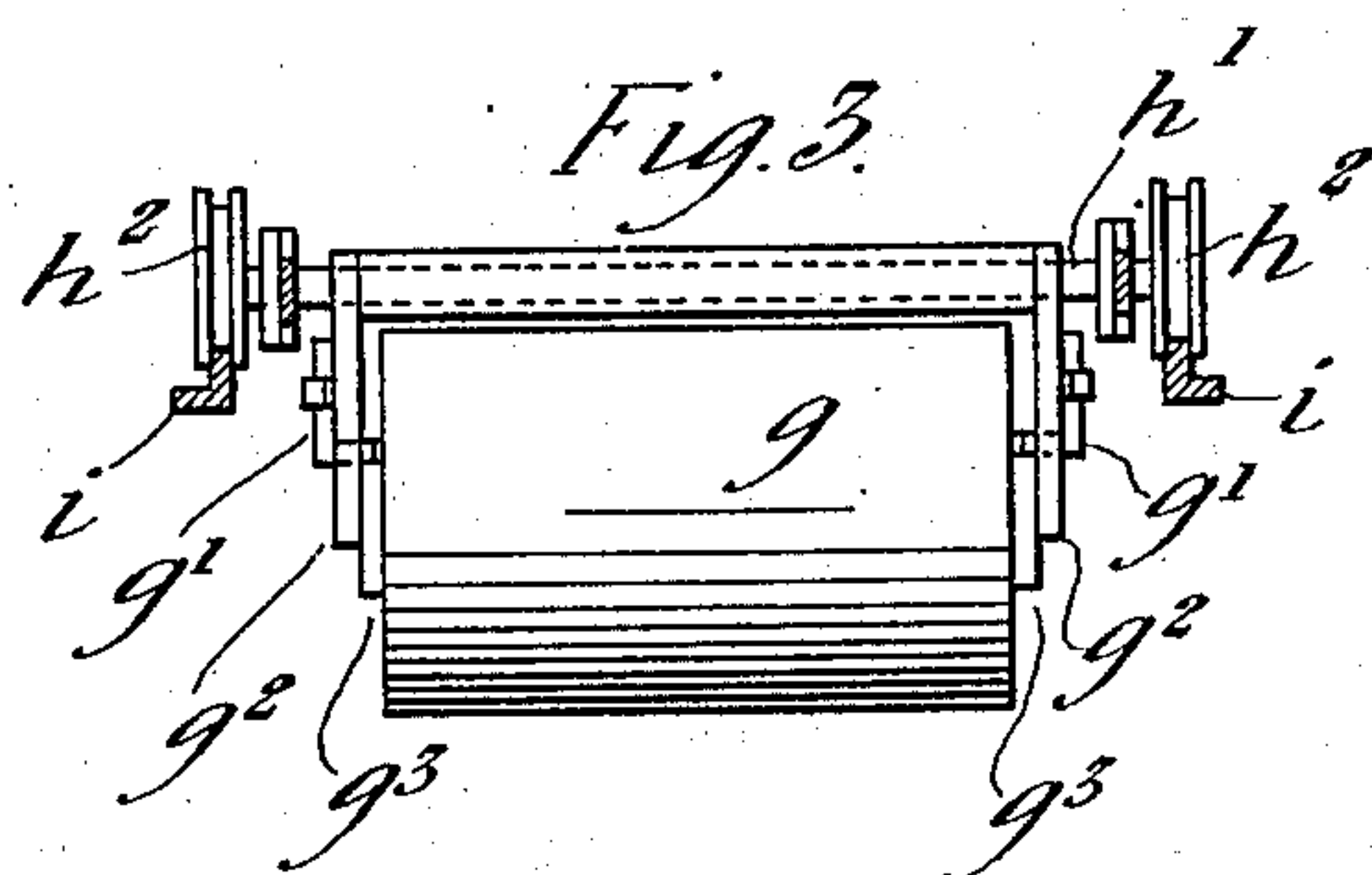
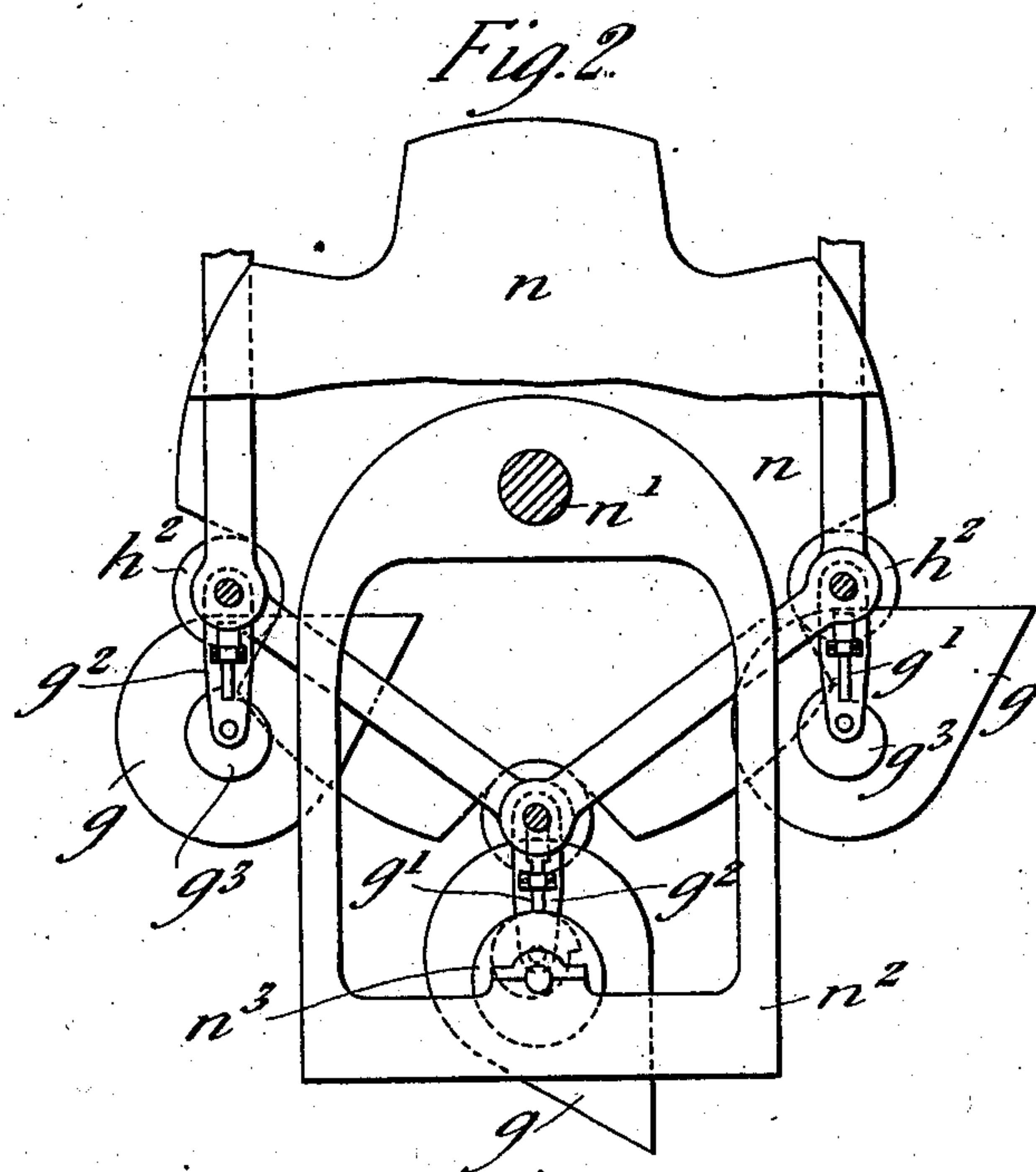
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APPLICATION FILED DEC. 8, 1902.

NO MODEL.

2 SHEETS—SHEET 2.



Witnesses:
James L. Norris, Jr.
J. B. Keefe

Inventor
Bradford Leslie
James L. Norris
Atty.

UNITED STATES PATENT OFFICE.

BRADFORD LESLIE, OF HARROW-ON-THE-HILL, ENGLAND.

APPARATUS FOR MEASURING AND CONVEYING COAL OR THE LIKE.

SPECIFICATION forming part of Letters Patent No. 723,688, dated March 24, 1903.

Application filed December 8, 1902. Serial No. 134,338. (No model.)

To all whom it may concern:

Be it known that I, BRADFORD LESLIE, K. C. I. E., a citizen of England, residing at The Moat, Harrow-on-the-Hill, in the county of Middlesex, England, have invented a certain new and useful Apparatus for Measuring and Conveying Coal or the Like, (for which I have applied for a patent in Great Britain, dated November 5, 1901, No. 22,292,) of which the following is a specification.

My invention the subject-matter of which was originally included in my application dated May 31, 1902, Serial No. 109,746, relates to a conveyer for coal or like material which delivers the material automatically, as I will describe with reference to the accompanying drawings, in which—

Figure 1 is a longitudinal vertical section through the conveyer arranged to plumb the hold of a vessel. Fig. 2 is an elevation of the sprocket-wheels and frame carried thereby suspended in the bight of the hanging portion of the conveyer-chain. Fig. 3 is a transverse section through the rails on which the conveyer-chain travels, showing one of the buckets in front elevation; and Fig. 4 is a transverse section on the line X X of Fig. 1 without the buckets. Figs. 2 and 3 are drawn to a larger scale than that of Fig. 1.

As shown in Fig. 1, the conveyer consists of an endless chain h , to the cross-pins h' of which are suspended by hangers g^2 the buckets g , Fig. 3. The cross-pins also carry wheels h^2 , which run on rails $i i'$, carried by a cage i^4 , presently to be described. This cage is supported between girders k , as shown in Fig. 4. As they leave the rails the wheels h^2 are engaged by the sprocket-wheels l (of which one has been removed in Fig. 1) on a common axle l' , suitably driven, so as to move the conveyer. To keep the bight of the hanging portion of the conveyer-chain extended, the wheels h^2 engage with sprocket-wheels n , Fig. 2, which revolve on the shaft n' in the frames n^2 , the whole being thus suspended in the chain.

The device for automatically discharging the buckets is shown in Figs. 2 and 3. The bucket is so shaped that when charged its center of gravity is in front of its point of support, but has its weight so distributed that when it has fallen forward and discharged

its contents it returns to its normal position. Thus the charged bucket is always tending to discharge itself, but is prevented by pins g' , which slide in slots in the hangers g^2 , wherein the bucket is pivoted, and engage with snail-cams g^3 , riveted to the sides of the bucket. As each bucket arrives at its lowest point on the sprocket-wheels n the pins g' ride on wheels n^3 , mounted in the frame n^2 , and are raised out of engagement with the shoulder of the cams g^3 . The bucket thereupon turning over discharges its contents; but as soon as the bucket is empty it rights itself, and the pins g' drop back into engagement with the shoulder of the cams g^3 .

In order that the conveyer may be used with ships of various beam, provision must be made for extending the rails $i i'$. This is the object of the cage i^4 , which is mounted on wheels i^2 , which run on rails i^3 , supported on the girders. This cage, as aforesaid, carries the conveyer-rails $i i'$. On a suitable part of this cage is a rack i^5 , gearing with a pinion i^6 , mounted on the girder. When the reach of the conveyer is to be extended, the pinion i^6 is rotated by suitable gear from the landing-stage, whereupon the frame i^4 is moved forward, carrying with it the rails $i i'$, which may extend beyond the conveyer at their rear ends, so that the buckets may still be supported when the cage is moved forward. The girders k are hinged at their rear ends and may be raised and lowered by aid of a suitable derrick and tackle. As each bucket g arrives at the rear end of the girders it is charged with the material to be conveyed, so that the charged buckets travel along the lower rails i' , descend into the hold of the ship, where they are automatically tipped, as hereinbefore described, and ascend empty to return along the upper rails i .

Although in the foregoing description the conveyer is said to be driven by a motor, when the buckets are suitably proportioned and there is a sufficient number of them in the hanging portion of the conveyer the weight of the material conveyed may suffice to drive the conveyer.

Having thus described the nature of this invention and the best means I know of carrying the same into practical effect, I claim—

1. A conveyer comprising a girder hinged

at its rear end, an endless chain hanging over the front end of the girder, cross-pins on the chain, self-righting buckets suspended from the cross-pins, running wheels carried by the cross-pins, rails on the girder whereon the said wheels run, a framing hanging in the bight of the suspended portion of the chain, sprocket-wheels in the said framing, and sprocket-wheels at the rear end of the girder with which the said running wheels engage, substantially as described.

2. In combination with a conveyer consisting of an endless chain a portion of which at the place of delivery hangs over the rails on which the chain runs, a framing suspended in the bight of the said portion and carrying a surface against which the pins that prevent the self-tipping loaded buckets from discharging themselves slide and are moved to release the loaded buckets, each as it passes the framing, substantially as described.

3. A conveyer comprising a hinged girder, a cage running on rails thereon, a rack on the said cage, a pinion engaging with the rack, rails in the said cage on which runs an endless chain and self-righting buckets sus-

pended from the cross-pins of the chain, substantially as described.

4. A conveyer comprising a girder hinged at its rear end, an endless chain depending from the front end of the girder, cross-pins on the chain, self-righting buckets suspended from the cross-pins, running wheels also carried by the cross-pins, rails on the girder whereon the said wheels run, a framing disposed in the bight of the suspended portion of the chain, sprocket-wheels on the framing, sprocket-wheels at the rear end of the girder with which the said running wheels engage, snail-cams rigid with the buckets, locking devices carried by the chains and engaging the cams to hold the buckets in upright position, and means carried by the framing to release the locking devices and thus permit the buckets to discharge.

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

BRADFORD LESLIE.

Witnesses:

WALTER J. SKERTEN,
GERALD L. SMITH.