

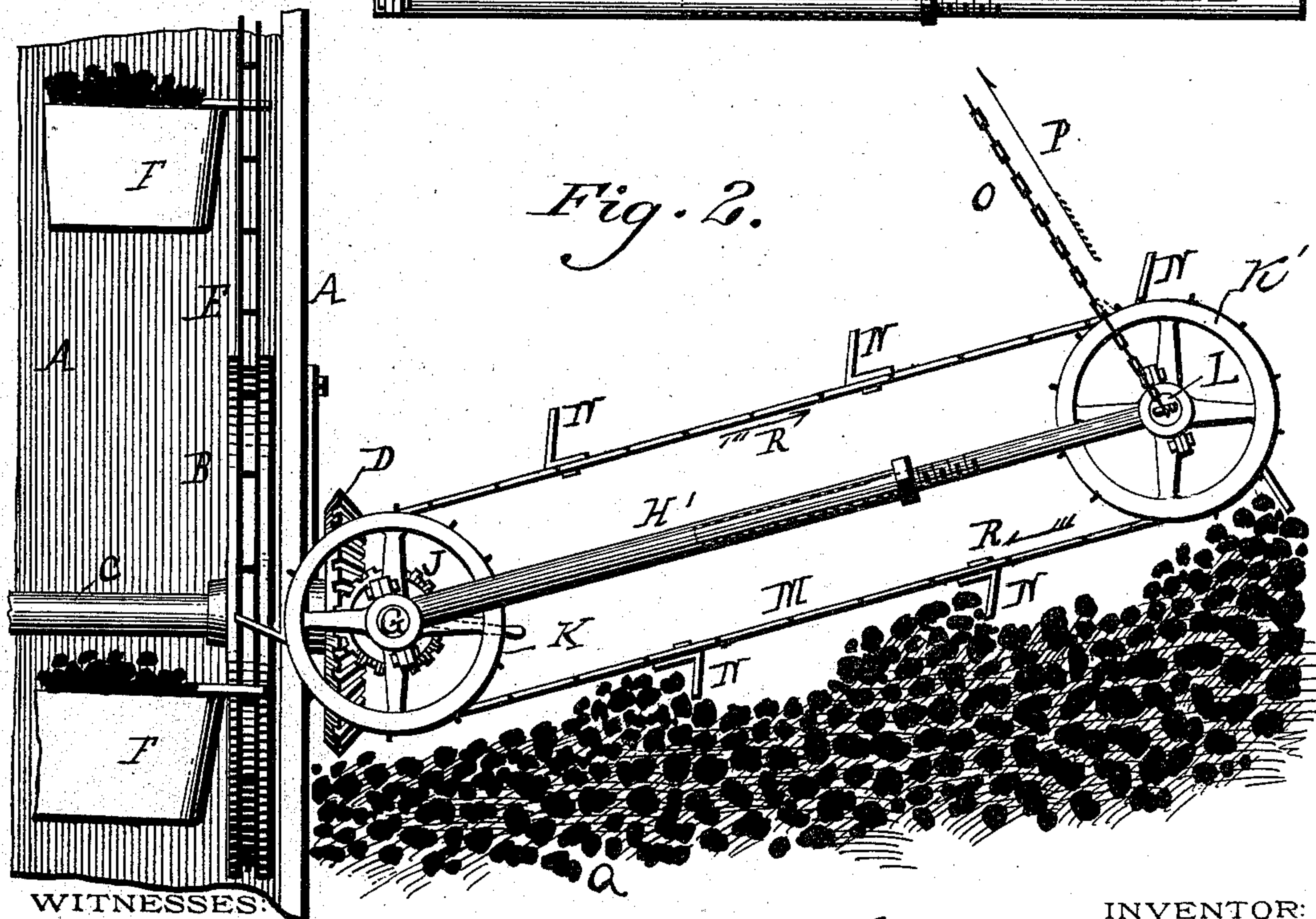
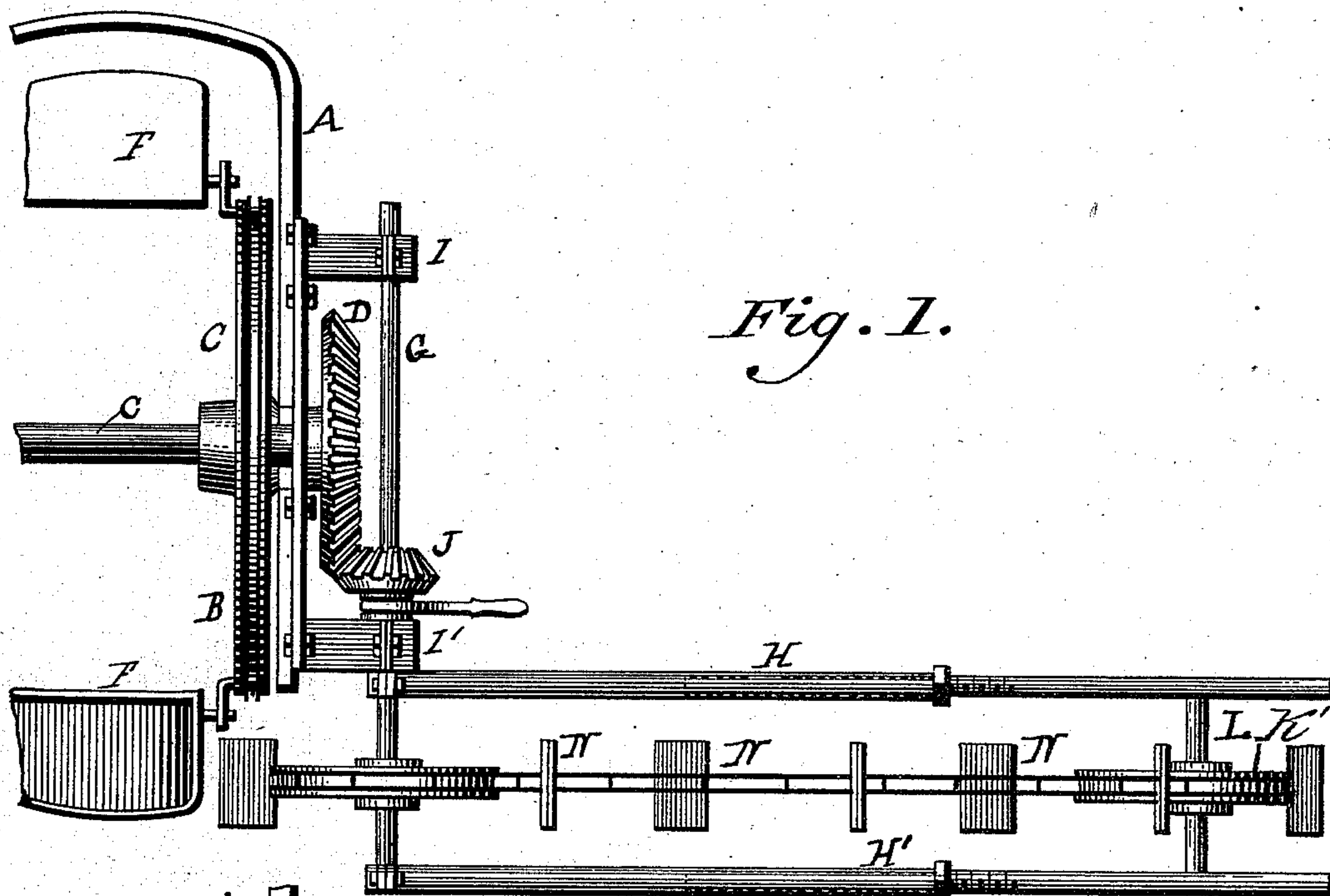
(No Model.)

L. D. HOWARD.

TRIMMER OR GATHERER FOR COAL ELEVATORS.

No. 412,621.

Patented Oct. 8, 1889.



WITNESSES:

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INVENTOR:

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UNITED STATES PATENT OFFICE.

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TRIMMER OR GATHERER FOR COAL-ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 412,621, dated October 8, 1889.

Application filed July 28, 1888. Serial No. 281,344. (No model.)

To all whom it may concern:

Be it known that I, LYMAN D. HOWARD, a citizen of the United States, and a resident of Brooklyn, State of New York, have invented a certain new and Improved Trimmer or Gatherer for Elevators, of which the following is a full, clear, and exact description, reference being had to the annexed drawings, making part hereof.

The object of my invention is to facilitate the unloading of coal, grain, &c., from the holds of vessels or other depositories by providing an apparatus which will gather the material being acted upon to or near to the foot of an elevator.

The nature of my invention will be fully apparent from the following specification and claim.

In the drawings, Figure 1 is a plan view of my device applied to the foot of an elevator, the buckets of which are mounted on an endless sprocket-chain belt engaging with revolving sprocket-wheels, the trimmer, being arranged to be raised and lowered, being pivoted to the foot of the elevator; Fig. 2, a side elevation of the same.

My device, as shown, is adapted to be used with a chain-belt elevator, and the frame of the trimmer is pivoted to a horizontal shaft, whereby it may be raised or depressed, the shaft being its pivotal center.

A is a vertical frame or conduit, in the lower part of which the sprocket-wheel B is rigidly mounted on a shaft C. On one end of this shaft is similarly mounted the beveled gear-wheel D. On the sprocket-wheel B is an endless chain belt E, to which motion is imparted by a sprocket-wheel and shaft above. (Not shown.) The chain belt E and wheel B are duplicated on the other side of the buckets F F, as well as the upper driving sprocket-wheel; but, as these are well-known mechanical devices, they are not shown. The buckets F F are swung at intervals between the chain belts E E, and are upset and delivered of their loads at the upper discharge-points of buckets F F.

A lateral horizontal shaft G is mounted loosely in any ordinary bearings in frame A and in bearing-blocks I I' on frame A. This shaft G has mounted rigidly upon it the bev-

eled gear-wheel J, which engages with beveled gear-wheel D.

K is a sprocket-wheel mounted, also, upon shaft G and turning with it. On each side of sprocket-wheel K long bars H H', respectively, are pivoted on shaft G. At the outer ends of these bars H H' is a cross-connecting non-rotary shaft L, on which is loosely hung the sprocket-carrying wheel K'. The sprocket-wheel K operates an endless sprocket-chain belt M, which is sustained at the outer ends of rods H H' by wheels K'. Flights or gatherers N N N are set up at intervals on chain M. The bars H H' and shaft L form a frame, which, with the sprocket-wheels K K' and chain belt M and its flights or gatherers N N N, constitutes the vertically-moving pivoted trimmer or gatherer. The latter is raised in the direction of arrow P by chain O, which is secured at its lower end to the non-rotary shaft L at the will of the operator, and drops by slackening this chain.

Q is a cargo of coal being elevated.

Arrows R R indicate the direction of the traverse of chain M with its flights or gatherers.

The operation of my machine will be readily understood from the foregoing description, taken in connection with the drawings, and, briefly stated, is as follows: The chain belts E, carrying buckets F F, operated by the shaft and sprocket-wheels above, (not shown,) drive sprocket-wheels B and beveled gear-wheels D J. Thus sprocket-wheels K and K' are rotated, driving the chain belt M with its flights N N. This latter action causes said flights N N to operate on the coal, as shown, and to shift it to and into the vicinity of the space beneath the lifting-buckets F F, which scoop it up and carry it to the discharge-point. As the heap of coal gets lower, the chain O is slackened, thus lowering the trimmer and keeping the flights N N in constant contact with the coal. When the operation is concluded, the trimmer is raised by the chain O up into parallelism, or nearly so, with the vertical line of the elevator, and the latter and trimmer can then be removed together.

The chain P is intended to raise and lower the trimmer; but it will be evident to any mechanic that it can be replaced by a rod or

rope, and I have in my claim used the word "pull" as a generic term to cover these devices.

My trimmer or gatherer is intended to be used as an attachment to the foot-shaft of any elevator, either chain or belt elevators, and is provided with a flange and hub that only requires an additional length of foot-shaft to form a seat for the hub and the beveled gear, when the flange can be bolted to the usual wood or iron construction forming the foot of elevators as usually made.

I am aware that it is not new to employ in elevating devices a trimmer adjustably secured to the elevating-conduit, and such I do not broadly claim; but I am not aware that it is old to connect to the shaft which carries the gearing operating the buckets a pivoted frame, as herein described and claimed, carrying sprocket-wheels and chain having flights or gatherers thereon, the same having at its outer end a chain-connection with the upper part of the elevating device.

What I claim is—

The herein-described trimming device for an elevator, consisting of the shaft G, journaled in the bearings I I', the bevel-wheel J, adapted to mesh with a bevel-wheel on the lower shaft of the elevator, a frame consisting of side bars, with the non-rotary shaft L connecting the same near their outer ends, the bars H H' being journaled on one end of said shaft G, sprocket-wheels on said shafts L and G, and a chain with flights N thereon, said parts being combined substantially as described.

In witness that the above is my invention I have hereunto set my hand.

LYMAN D. HOWARD.

Witnesses:

CHARLES K. LEXOW,
F. W. SHELDON.