No. 617,953. Patented Jan. 17, 1899.

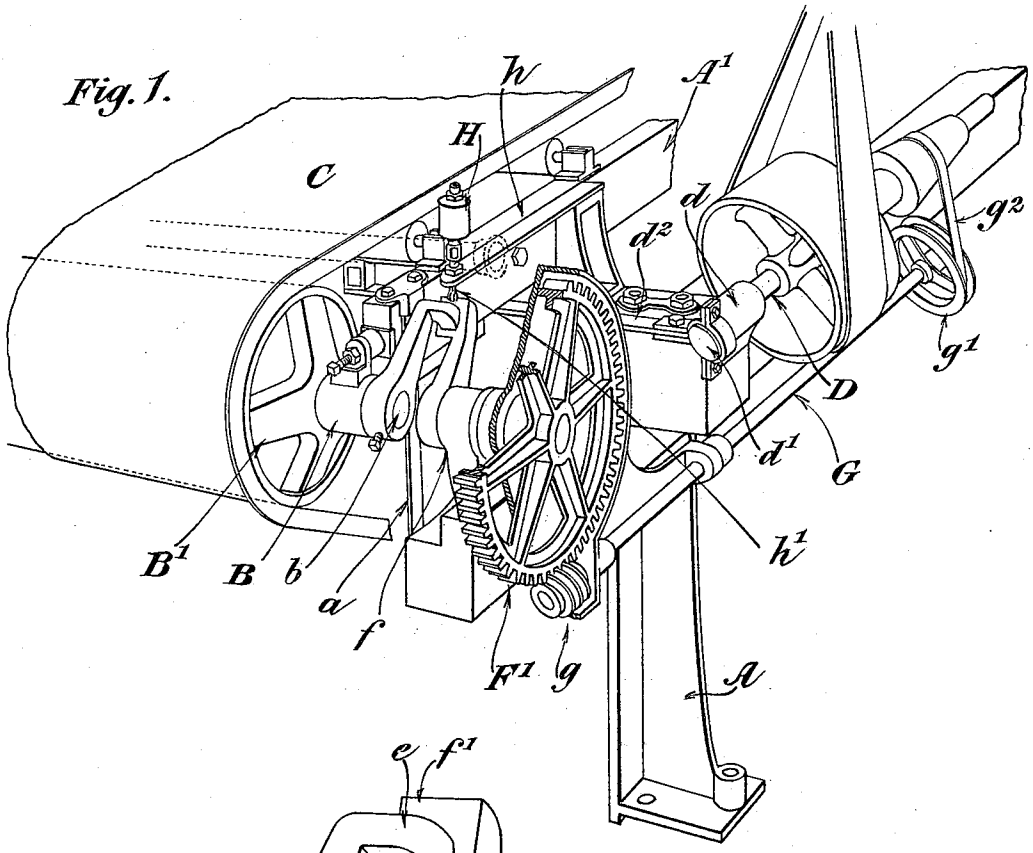
C. L. CARMAN.

VANNER.

(Application filed Dec. 18, 1897.)

(No Model.)

Fig. 1.



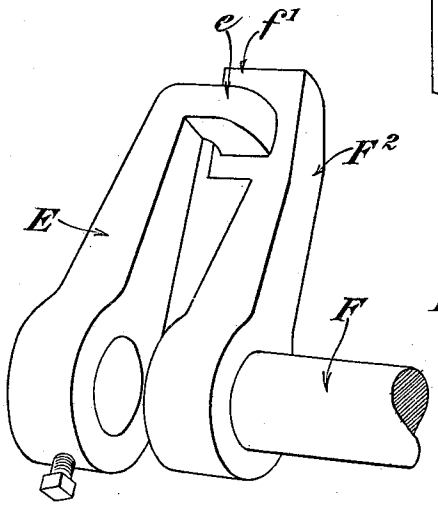


Fig. 2.

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CHARLES L. CARMAN, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE GATES IRON WORKS, OF SAME PLACE.

VANNER.

SPECIFICATION forming part of Letters Patent No. 617,953, dated January 17, 1899.

Application filed December 18, 1897. Serial No. 662,399. (No model.)

To all whom it may concern:

Be it known that I, CHARLES L. CARMAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Vanners, of which the following is a specification.

This invention relates to that class of machines for separating ores known as "vanners," in which there is an ore-belt having a continuous longitudinal movement variable at the will of the operator and a transverse vibration.

The object of my invention is to provide a vanner with simple, economical, and efficient driving mechanism for imparting a longitudinal movement to the belt, while permitting it to be vibrated transversely and independently; and the invention consists in the features, combinations, and details of construction hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a perspective view of a portion of a vanning-machine fitted with my improvements, and Fig. 2 a perspective view of the crank mechanism by which the driving-drum upon which the ore-belt travels is rotated and allowed to have an independent vibration.

In constructing a vanner in accordance with my improvements I make a main frame portion A of the desired size, shape, and strength to support and hold the driving mechanism. A second or supplemental frame A′ is provided, having flexible supports *a* connecting it with the main frame. This supplemental frame carries the bearings B, in which spindle *b* of the driving-drum B′ is journaled, and the drum in turn supports and moves the ore-belt C. The flexible supports *a* are so constructed that they prevent any longitudinal movement of the supplemental frame, but permit it to have a vibratory transverse movement.

To impart the vibratory motion to the supplemental frame, a main driving-shaft D is provided and journaled in bearings *d* on the main frame. This main driving-shaft has an eccentric *d′*, connected by means of an eccentric-strap and link d^2 with the supplemental frame, so that during the rotations of the driving-shaft a transverse vibratory motion is given to the supplemental frame with its driving-drum and ore-belt.

To operate the drum longitudinally and permit it to vibrate as desired, the spindle *b*, upon which the drum rotates, is provided with a crank-arm or dog E, having a right-angular projecting lug E extending outwardly therefrom. An intermediate shaft F is provided and arranged in a bearing portion *f*, practically in line with the spindle upon which the drum is mounted. This intermediate shaft is provided with a worm-gear F′ at one end and a crank-arm F^2 at the other end, which has a projecting portion *f′*, engaging with the projecting lug on the crank-arm of the driving-drum. One of these cranks, preferably F^2, has its lug *f′* provided with a radial face, so that the projecting lug *e* may contact it and have either a transverse or radial movement thereon, as desired.

To operate the intermediate shaft F, I provide a second shaft G, arranged parallel with the main driving-shaft and which has a worm *g* engaging with the worm-gear and a pulley *g′* arranged to be driven from the main shaft by means of the belt g^2.

The rubbing-surfaces between the driving-dogs should be lubricated in order to prevent undue wear and friction, and in order to accomplish this result an oil-cup H is provided and mounted upon a suitable bracket *h*, directly over the path of rotation of the dogs. A brush *h′* extends downwardly from the oil-cup, so as to contact one of the dogs and allow a small amount of oil to be wiped therefrom during each rotation of the driving-dogs.

In operation the main driving-shaft is rotated and by means of the eccentric-strap and link the supplementary frame is vibrated transversely. The second driving-shaft G is also rotated by means of the belt g^2, so as to impart a rotary movement to the intermediate shaft F, and by means of the crank-arms the supporting driving-drum which carries the ore-belt is rotated. The crank-arms while positively rotating the supporting driving-drum permit it to move transversely at all times.

I claim—

1. In an ore-vanner, the combination of a rotatable driving-drum having an ore-belt

mounted thereon, means for vibrating the drum and ore-belt transversely of the machine, a crank-arm rigidly connected with the driving-drum and having an outwardly-projecting lug, an independent intermediate driving-shaft arranged substantially in line with the axis of the driving-drum and provided with a rigid crank-arm at its inner end having a radial face loosely contacted by the first-named crank whereby the rotations of this crank are used to impart power and motion to the first-named crank, substantially as described.

2. In an ore-vanner, the combination of a rotatable driving-drum having an ore-belt mounted thereon, means for vibrating the drum and ore-belt transversely, a crank-arm rigidly mounted on the projecting end of the driving-drum spindle and having a right-angular projecting lug thereon for rotating the driving-drum, an independent intermediate driving-shaft arranged in line with the axis of the driving-drum and provided with a crank-arm at its inner end having a radial face engaging with the projecting lug of the first-named crank, means for rotating the intermediate driving-shaft, and an oil cup or reservoir provided with a flexible projection arranged to be contacted by one of the dogs during their rotations so as to lubricate the engaging faces of the crank-arms, substantially as described.

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Witnesses:
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