(Model.)

F. A. SELL & W. O'CONNOR.

GRAVITY HAULAGE MACHINE.

No. 445,088. Patented Jan. 20, 1891.

Fig. 1.

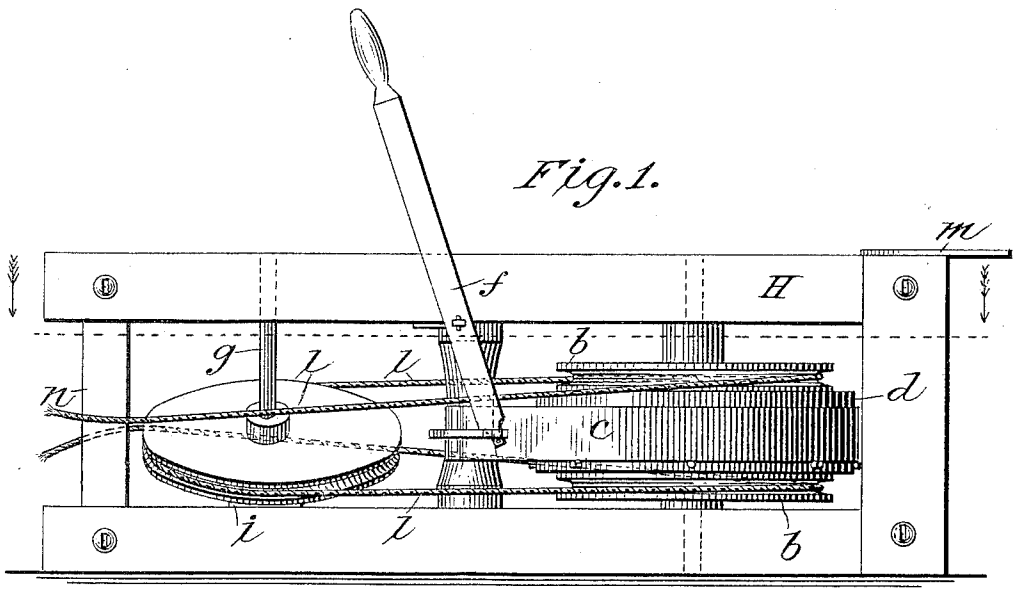


Fig. 2.

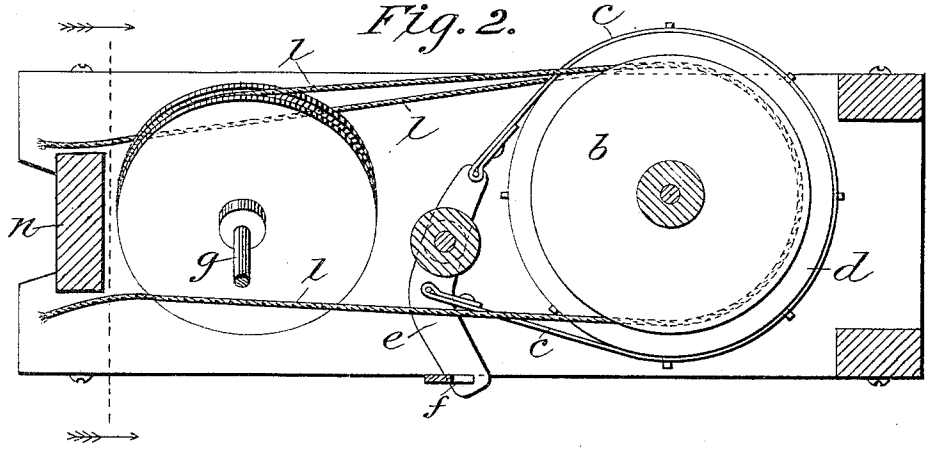
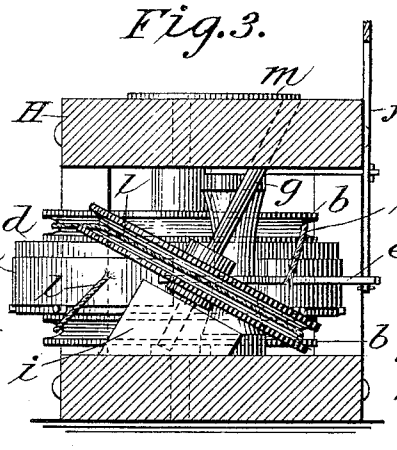


Fig. 3.



Witnesses:
F. Hess
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UNITED STATES PATENT OFFICE.

FRANK A. SELL AND WILLIAM O'CONNOR, OF RED LODGE, MONTANA.

GRAVITY HAULAGE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 445,088, dated January 20, 1891.

Application filed August 11, 1890. Serial No. 361,756. (Model.)

To all whom it may concern:

Be it known that we, FRANK A. SELL and WILLIAM O'CONNOR, citizens of the United States, residing at Red Lodge, in the county of Park and State of Montana, have invented a new and useful Gravity Haulage-Machine, of which the following is a specification.

The purpose of our machine is the underground haulage of coal and materials used in mining operations over inclined planes from and to the main entries or gangways of mines in which the veins of coal or other mineral deposits have a pitch of from eight to thirty-two degrees, and a thickness of from two feet upward to any height.

We have tested our machine in a coal-mine where the coal deposit has an average pitch of twenty degrees, and have found it to be a most convenient and economical substitute for the mule commonly employed in coal-mines to do the work of such machine in the various rooms and workings of a mine, and by its use we have been enabled to work in places wholly inaccessible to mules.

One of the many advantages of this machine is its portability on account of its compactness and lightness, enabling two men to transport it from place to place and set it up for work with ease.

The lever-and-brake attachment gives the person working it full control of the cars in transit on either track of the incline, so that the descending car or cars loaded with coal and the ascending car or cars empty or loaded with props, ties, rails, or other materials used in mining operations can be stopped and firmly held in place at any point of the incline where such material may be wanted, and the speed of their motion can be regulated at will.

The simplicity of our machine and the manner of its working will more fully appear from the accompanying drawings, to which reference is made.

Figure 1 represents a side view of our machine. Fig. 2 is a top view of the same without the upper frame, showing the ropes leading and holding the ascending and descending loads on the double track of the incline and the leverage controlling them. Fig. 3 is a front end view with the frame in section, showing the inclined pulley and horizontal pulleys attached to the drum.

The letters on each figure designate the same parts of the machine, as follows, viz:

a is the inclined pulley guiding the ropes to which the ascending and descending loads are attached, the upper and lower horizontal pulleys being attached to the drum.

b b are the horizontal pulleys, which, in conjunction with inclined pulley *a*, prevent the ropes from slipping and give the brake greater power.

c is the brake-band.

d is the drum.

e is an elbow-arm connecting the ends of the brake-band.

F is the lever attached to elbow-lever *e*.

g g are the gudgeons.

H is the frame.

i is the block holding pulley *a* in position.

l is the rope.

m is an iron half-circle, through which a post is driven holding the machine in place.

n is another post-holder to prevent the machine from slipping.

We claim—

1. The combination of a portable frame, an inclined pulley, a drum, a pulley connected to the drum at each side thereof, a rope passing about all the pulleys and adapted for connection with cars on opposite inclined tracks, and a brake applied to the drum, whereby to regulate the movement of the rope and thereby of the cars.

2. The combination of a frame, an inclined pulley mounted therein, a drum, a pulley secured to the drum at each side thereof, a rope passing about all the pulleys and adapted for connection with cars on opposite inclined tracks, a brake-band applied to the drum, and means connected with the end of said brake-band, whereby to regulate the operations of the drum, the pulleys, and the rope, substantially as set forth.

In witness whereof we have hereunto set our hands, at Red Lodge, Park county, State of Montana, on the 5th day of August, A. D. 1890.

FRANK A. SELL.
WILLIAM O'CONNOR.

Witnesses:
F. HESS,
E. E. BATCHELOR.