

No. 713,698.

Patented Nov. 18, 1902.

J. SEWELL.
AUTOMATIC ELEVATOR, OR HOIST.

(Application filed Feb. 3, 1902.)

(No Model.)

Fig. 1.

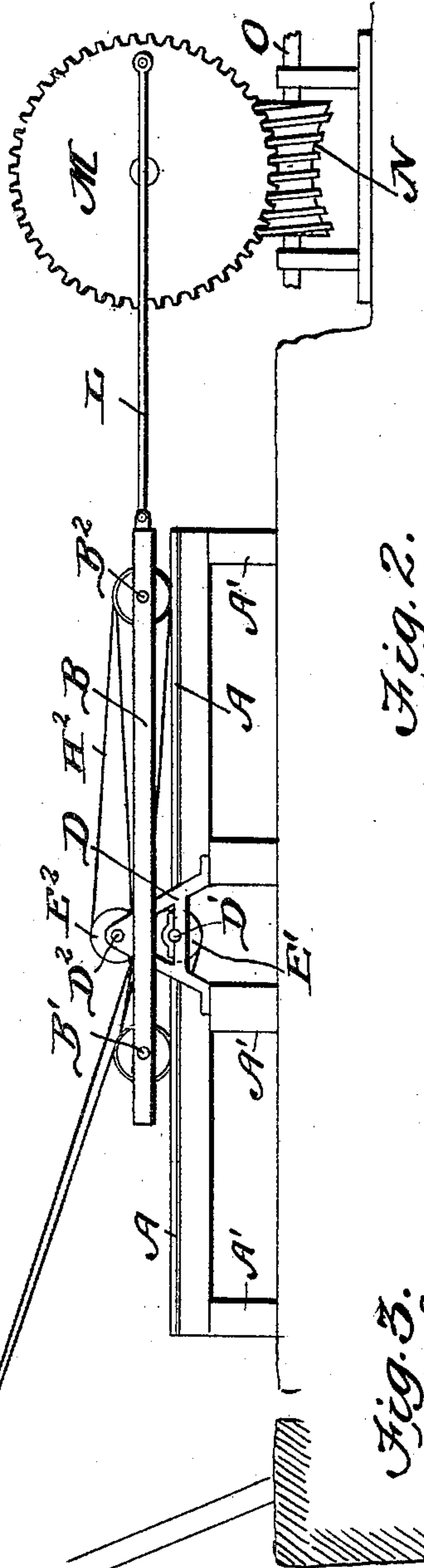


Fig. 2.

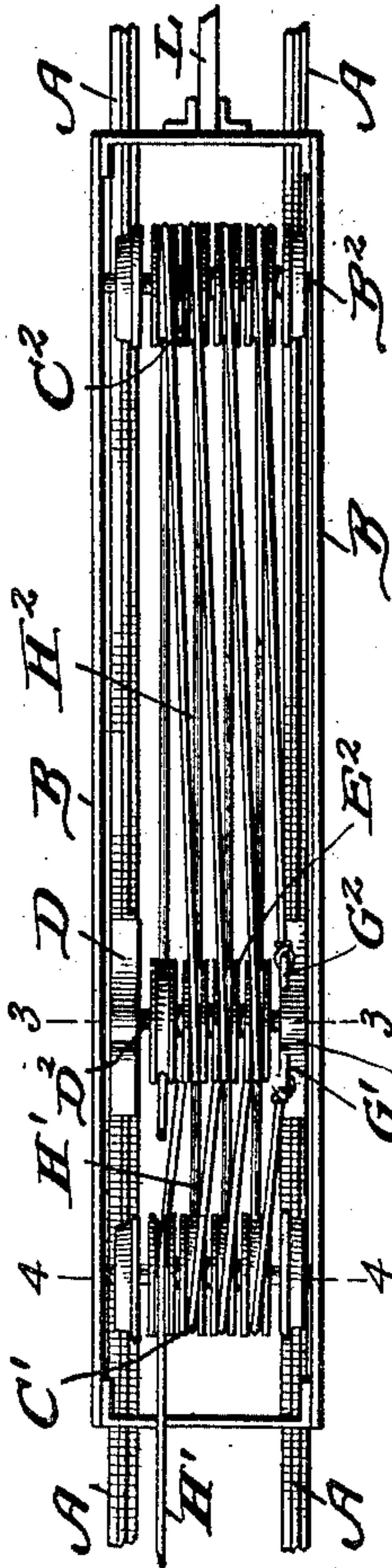


Fig. 3.

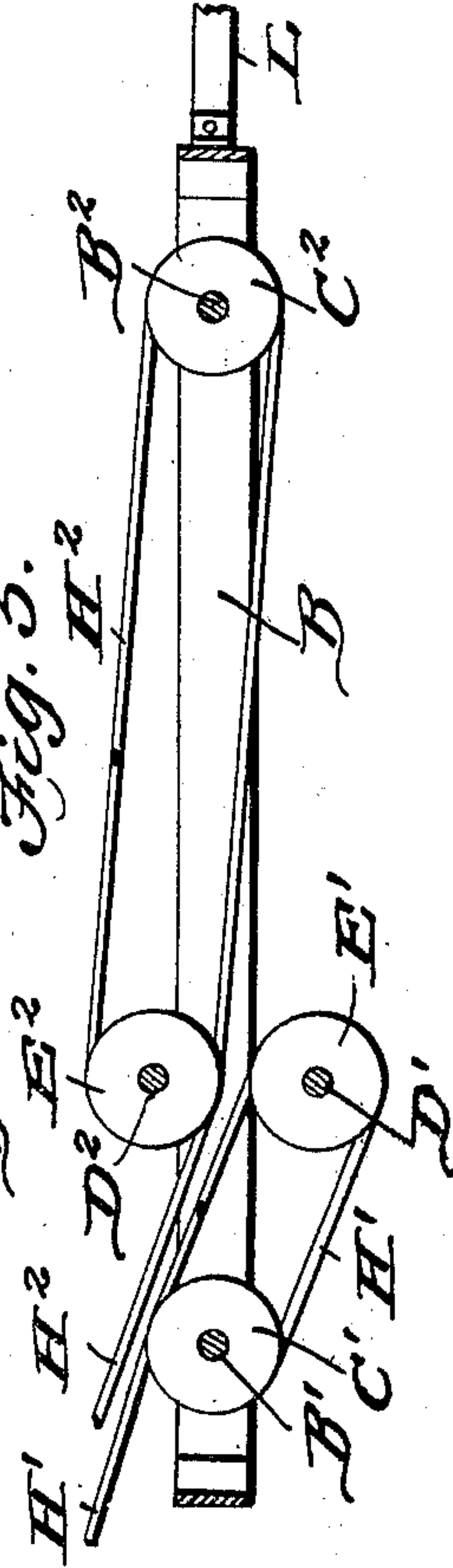


Fig. 4.

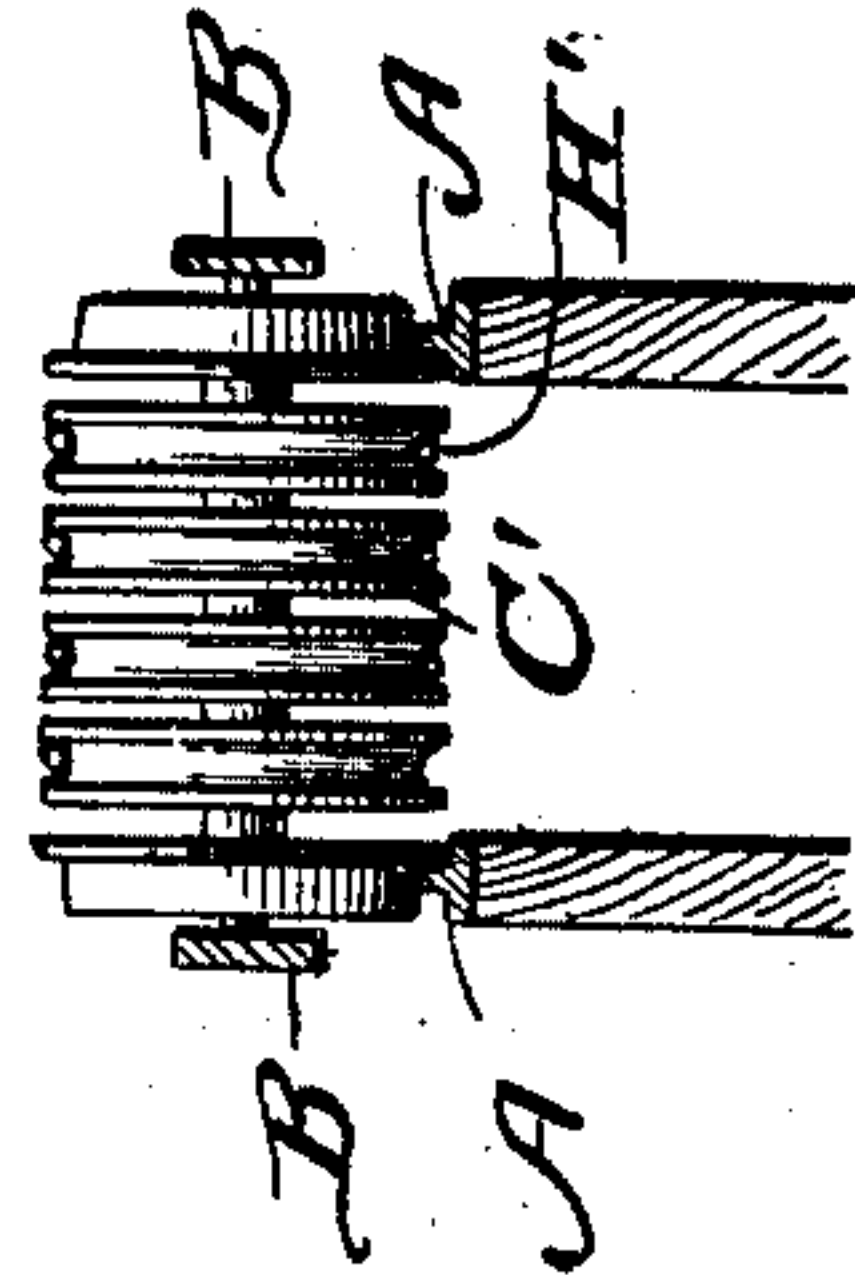
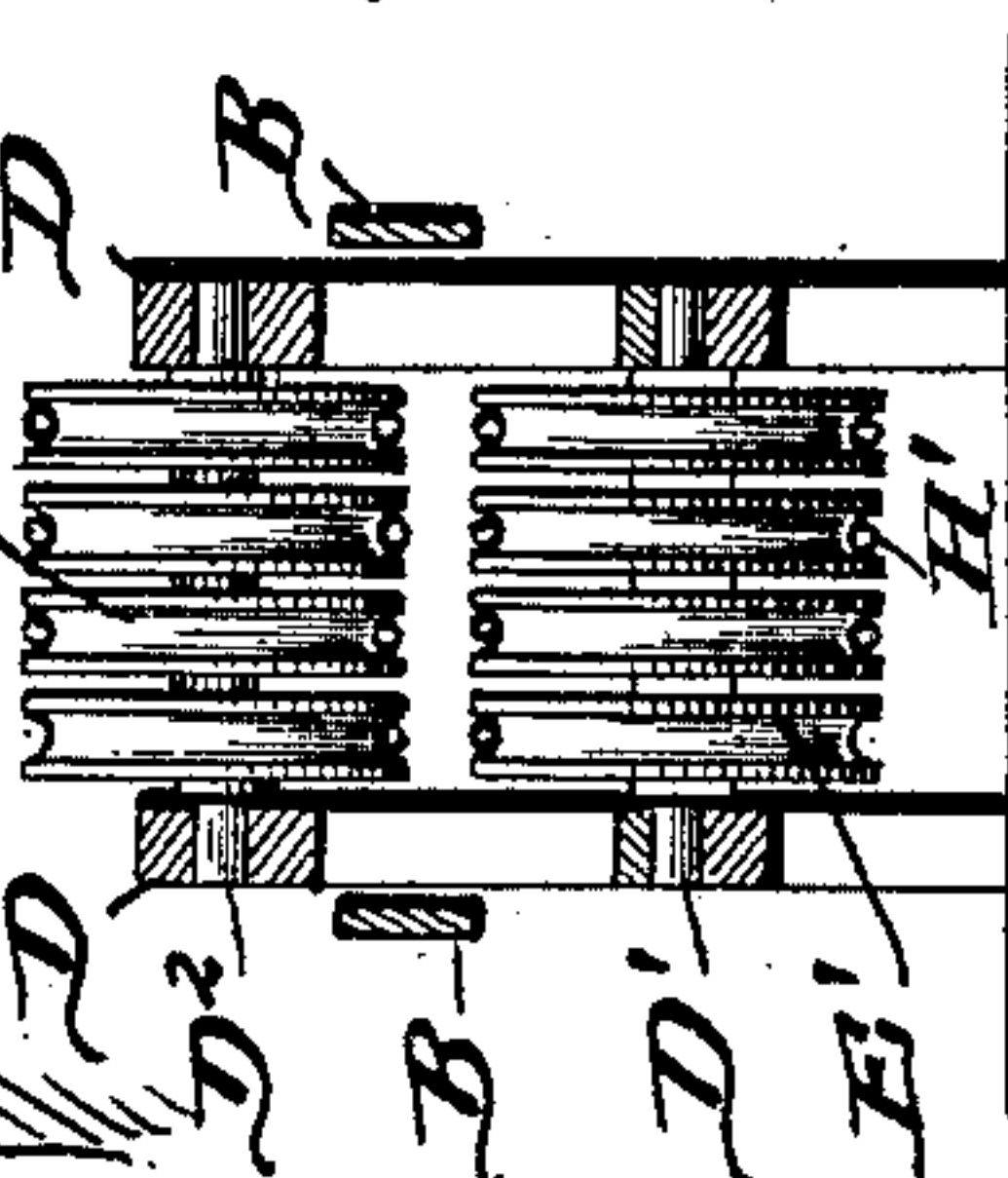


Fig. 5.



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JONATHAN SEWELL, OF ANACONDA, MONTANA.

AUTOMATIC ELEVATOR OR HOIST.

SPECIFICATION forming part of Letters Patent No. 713,698, dated November 18, 1902.

Application filed February 3, 1902. Serial No. 92,451. (No model.)

To all whom it may concern:

Be it known that I, JONATHAN SEWELL, a citizen of the United States, residing at Anaconda, in the county of Deerlodge and State of Montana, have invented a new and useful Automatic Elevator or Hoist, of which the following is a specification.

This invention is an improved device for raising and lowering buckets or skips for raising and lowering coal, ore, and similar materials, and the invention can also be employed for elevating ashes and similar material from the hold of a vessel.

The object of the invention is to provide an exceedingly simple and efficient construction of operating mechanism which will not be easily damaged by the coarse nature of the material handled.

Another object of the invention is to provide an apparatus wherein a continuous rotary motion can be utilized for creating a reciprocating motion for the purpose of raising one bucket or skip simultaneously with the lowering of the other bucket or skip.

With these objects in view the invention consists in the novel features of construction and combination, all of which will be fully described hereinafter and pointed out in the claims.

In the drawings forming part of this specification, Figure 1 is a diagrammatic view illustrating my invention. Fig. 2 is a plan view. Fig. 3 is a section on the line 3 3 of Fig. 2. Fig. 4 is a section on the line 4 4 of Fig. 2. Fig. 5 is a sectional elevation illustrating the position of the ropes.

In constructing an elevator or hoisting apparatus in accordance with my invention I employ a track A, mounted upon suitable supports A', and moving on said track is a carriage B, the axles B' and B² having a series of sheaves C' and C² mounted thereon.

A fixed frame D is arranged upon the track midway its length, said frame having parallel horizontal shafts D' and D² journaled therein and upon which are mounted the sheaves E' and E², respectively. The fixed frame D is arranged within the carriage B and is provided with ears or lugs G' and G², to which the ropes or cables H' and H², respectively, are connected, said ropes or cables passing around the pulleys or sheaves, as hereinafter

explained, and then over a pulley or sheave I, the said ropes carrying the buckets or skips K' and K² at their lower ends. The rope H', which is attached to the lug G', is first passed around one of the pulleys or sheaves B, then around one of the pulleys or sheaves E', back around the next sheave or pulley B', and so on until the entire series have been passed and the said rope or cable passes over the sheave or pulley I. The rope or cable H², which is attached to the lug G², first passes around one of the pulleys C², thence back to the sheave or pulley E², back to the next pulley C², and so on until all of the pulleys C² and E² have been passed. The rope then passes over the sheave or pulley I. A pitman L is connected to one end of the carriage B, the opposite end of the said pitman being connected to a worm-disk M, operated by the worm N, mounted upon the shaft O.

In the construction herein shown and described the carriage is supposed to move a distance of five feet in each direction, and inasmuch as four sets of pulleys or sheaves are employed it will be readily understood that this distance is multiplied four times in each direction, thereby giving each bucket or skip a lift of forty feet, and these movements are occasioned by the reciprocation of the carriage upon the track, and the continuous rotary movement of the shaft O and worm N causes the worm-disk to travel gradually around, thereby uniformly moving the carriage back and forth, causing one set of ropes to be wound up while the other set is being unwound, and inasmuch as two periods of comparative rest will be obtained during each revolution these periods can be utilized for the loading and unloading of the buckets or skips, thus enabling the machinery to be kept continuously in motion and at the same time affording those loading and unloading sufficient opportunity to perform their operations.

It will thus be seen that I provide an exceedingly cheap, simple, and efficient device for elevating or hoisting buckets or skips, and it will also be noted that inasmuch as raising and lowering mechanism does not come in contact with the material to any great extent the damage incidental to such contact is reduced to a minimum.

Having thus fully described my invention,

what I claim as new, and desire to secure by Letters Patent, is—

1. A device of the kind described, comprising a fixed frame, tracks arranged thereon, 5 a reciprocating carriage adapted to travel on said track, a plurality of pulleys mounted on said carriage, means for reciprocating said carriage, a plurality of cables secured at one end to the fixed frame, and buckets attached 10 to the free ends of said cables.

2. A device of the kind described, comprising a fixed frame, tracks arranged thereon, a reciprocating carriage on said track, a plurality of pulleys mounted on said carriage, 15 brackets secured centrally of the fixed frame, a plurality of pulleys carried by said brackets, a plurality of cables secured at one end to the brackets and passing around their respective pulleys, buckets secured to the other 20 ends of the cables, and means for reciprocating the carriage.

3. A device of the kind described, comprising a fixed frame having tracks thereon, a movable carriage, pulleys secured to each end 25 of the carriage, brackets secured to the fixed frame, pulleys loosely mounted in the brackets,

a worm-gear shaft, a pitman secured to the carriage at one end and to the worm-gear at the other, cables secured to the brackets and passing in opposite directions around 30 their respective pulleys, and buckets secured to the other ends of the cables.

4. In a device of the kind described, the combination with a fixed frame, tracks on the frame, of brackets secured thereto, pulleys mounted in said brackets and arranged 35 in an upper and lower series, a reciprocating carriage adapted to move on the track, a plurality of pulleys at each end of said carriage, a worm-shaft, a worm-gear meshing 40 with said worm-shaft, a pitman connected at one end to the carriage and at the other to the worm-gear, cables attached to the opposite sides of one of the brackets passing in opposite directions, first around the carriage- 45 pulleys and then around the pulleys on the brackets, and buckets secured to the other ends of the cables.

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Witnesses:

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