No. 797,301. PATENTED AUG. 15, 1905.

W. E. MAGIE.

TRAVERSING MECHANISM.

APPLICATION FILED DEC. 16, 1904.

2 SHEETS—SHEET 1.

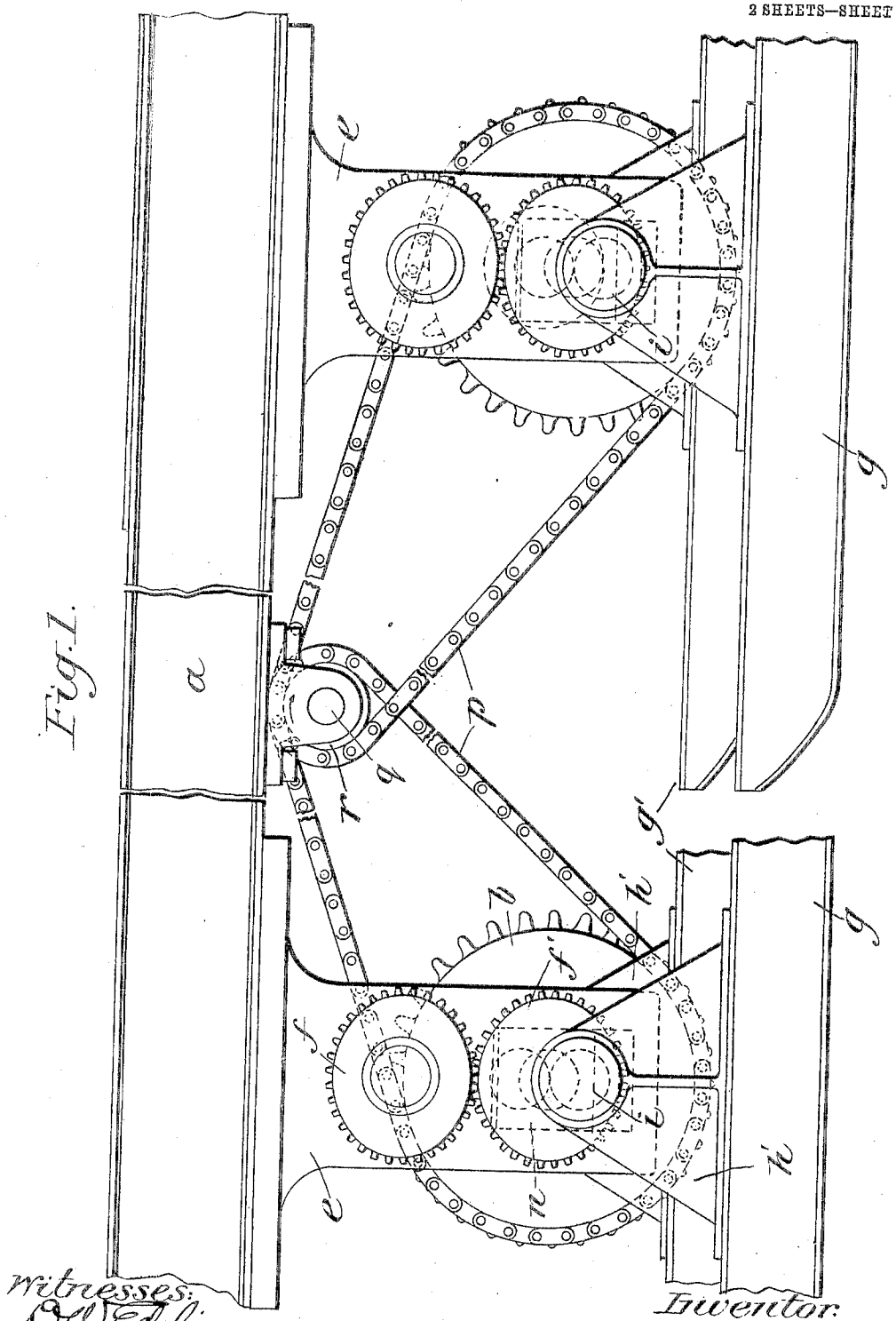


Fig. 1.

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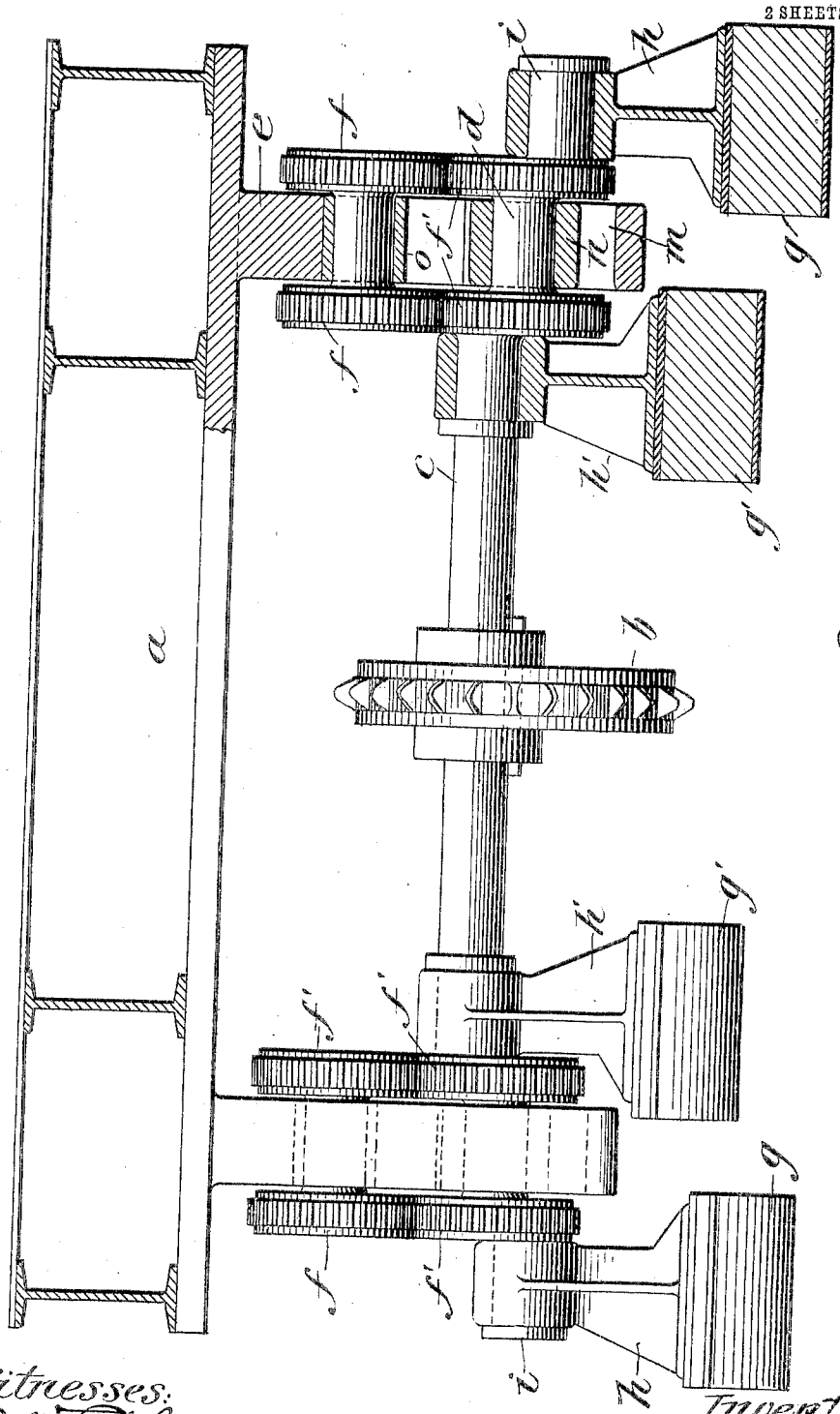


Fig. 2.

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UNITED STATES PATENT OFFICE.

WILLIAM E. MAGIE, OF SOUTH MILWAUKEE, WISCONSIN, ASSIGNOR TO THE BUCYRUS COMPANY, OF SOUTH MILWAUKEE, WISCONSIN, A CORPORATION OF WISCONSIN.

TRAVERSING MECHANISM.

No. 797,301. Specification of Letters Patent. Patented Aug. 15, 1905.

Application filed December 16, 1904. Serial No. 237,074.

To all whom it may concern:

Be it known that I, WILLIAM E. MAGIE, a citizen of the United States, residing in South Milwaukee, county of Milwaukee, Wisconsin, have invented certain new and useful Improvements in Traversing Mechanism; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to mechanism for traversing or transporting heavy machinery, such as excavators and the like, over the ordinary roads or highways or across country; and to this end the invention comprises one or more axles journaled in suitable trucks on the machine-frame and being provided at each end with oppositely-disposed crank-sections, upon which are hung skids arranged in pairs, so that the turning of the shaft will alternately advance and retract the respective pairs of skids, and thereby advance the machine in the desired direction. In order to prevent the up-and-down motion of the machine as the support thereof is transferred from one set of skids to the other, compensating connections are provided between the axles and the machine-body, which serve to neutralize the up-and-down motion of the axles and their bearings in the truck.

Referring to the accompanying drawings, Figure 1 is a side elevation of the frame or support of a machine having the invention applied thereto. Fig. 2 is an end view, partially in section, of the same.

In the drawings, *a* indicates the machine-body, upon which the excavator or other apparatus is supported, the whole apparatus being necessarily adapted to be moved from place to place to meet the varying conditions of the work. It has been common heretofore to traverse or transport machines of this character in sections remote from railways, to lay temporary track-sections ahead of the machine, upon which the latter was advanced, and to remove the track-sections in the rear of the machine to a point ahead of the same until the destination was reached. This mode of transporting the apparatus was necessarily slow and cumbersome and involved much labor. The present invention is designed to wholly obviate the difficulties above enumerated and to render the machine self-transporting.

Connected to the under side of the machine-body are trucks or pedestals *e*, which are provided with vertical longitudinal slots *m*, in which are slidably supported journal-bearings *n* of the axles *d*. Each of said axles *d* is provided with crank-sections *i i* at each end and an intermediate crank-section *c*, so that each end of the shaft adjacent to the normal sections *d* is provided with two oppositely-disposed cranks *i* and *c*. Journaled or hung upon the respective cranks by means of brackets *h* and *h'* are a series of skids *g* and *g'*, which are arranged in pairs, the outer skids of each axle constituting one pair and the inner the other, which pairs are alternately brought into engagement with the ground to support the machine, while the other pair is lifted from the ground by the supporting-cranks. These skids are preferably formed of heavy sections of wood properly shod or bound with metal.

The respective axles are driven from a power-shaft *q* on the machine-frame, which power-shaft may be operated by the prime mover on the machine, said power-shaft being connected to the respective axles by sprocket-gearing, consisting of chains *p*, driving sprocket-wheel *r*, and driven sprocket-wheels *b*. The sprocket-wheels *b* are keyed or splined to the axles and are perfectly eccentric and so disposed that the centers of said sprockets shall be in alinement with the normal sections *d* of the axle and the bearings *n* supporting the same.

If the bearings *n* were rigidly attached to the pedestals or trucks *e*, the whole machine would partake of the up-and-down movement of the axles relative to the ground. To prevent this vertical motion, the journal-bearings *n*, as above described, are mounted in the vertical slots *m* in the pedestals *e*. Mounted upon the shaft *b* are cam-wheels *f' f'*, which engage correspondingly-shaped cam-wheels *f f*, which are journaled in the upper portion of the slot *m*, and therefore connect the axles with the machine-body. The cam-wheels *f* and *f'* are provided with peripheral teeth which intermesh, so that the rotation of the wheels *f'* with the axle will also drive the wheels *f*. These cam-wheels, which are generally elliptical in contour, coöperate to neutralize the up-and-down motion of the machine-body hereinbefore referred to, so that

as the machine progresses the body always remains the same distance above the ground.

It will thus be seen that as the sprocket-wheels *b* are driven from the engine on the machine through the intermediate sprocket-gearing the axles *d* are rotated, causing the skids *g* to come in contact with the ground and support the machine. The further turning of the axles advances the skids *g'* forward in an arched path to a position in advance of the skids *g*, and on coming in contact with the ground said skids *g'* receive the weight of the machine, which is thereby advanced, and the skids *g* are in their turn by their supporting-cranks advanced forward through an arched path to a new position in advance of the skids *g'*. Thus the skids *g* and *g'* are advanced successively, and the machine, which is carried by the axles, is supported and advanced by the respective sets of skids alternately and prevented from up-and-down vibration by the cam-wheels *f* and *f'*.

What I claim is—

1. Traversing mechanism for heavy machines, comprising an axle having diametrically opposite cranked portions at each end, skids arranged in pairs and journaled on the crank portions so that the inner and outer pairs of skids alternately engage the ground and support the machine, and means for driving said axle.

2. Traversing mechanism for heavy machines, comprising axles having oppositely-disposed cranks thereon, skids journaled on said cranks, and means for driving said axles.

3. Traversing mechanism for heavy machines, comprising a vertically-movable axle having oppositely-disposed cranks on each end thereof, skids journaled on said cranks, means for driving said axle, and means connecting the machine-body and the axle to compensate for vertical movement of the axle.

4. Traversing mechanism for heavy machines, comprising trucks on the machine-frame, axles having oppositely-arranged cranks, and having journal-bearings vertically movable in said trucks, skids journaled on said cranks, and coöperating cam-wheels carried by the axles and the truck to compensate for the vertical movement of the axles.

5. Traversing mechanism for heavy machines, comprising trucks on the machine-frame, axles having oppositely-arranged cranks, and having journal-bearings vertically movable in said trucks, skids journaled on said cranks, and coöperating toothed cam-wheels carried by the axles and the truck to compensate for the vertical movement of the axles.

6. Traversing mechanism for heavy machines, comprising vertically-slotted trucks on the machine-frame, axles journaled in the slots of the trucks, said axles having two oppositely-disposed crank portions at each end, skids hung on said crank portions, means for driving the axles, and coöperating cam-wheels on the trucks and axles to compensate for the vertical movement of the axles.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM E. MAGIE.

Witnesses:

HARRY B. HAYDEN,

PAUL C. BODE.