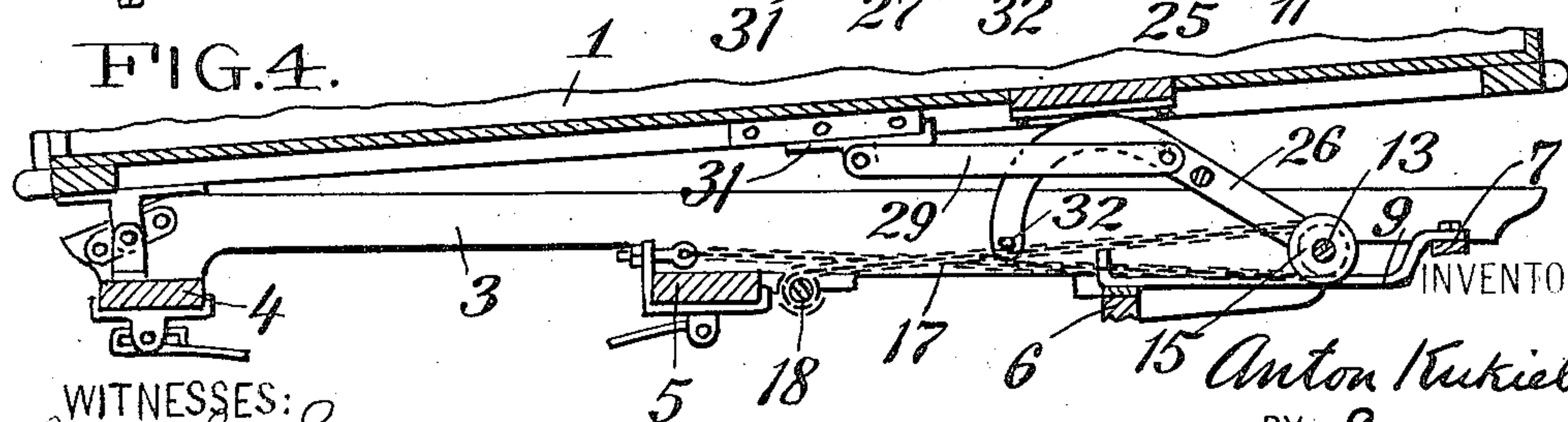
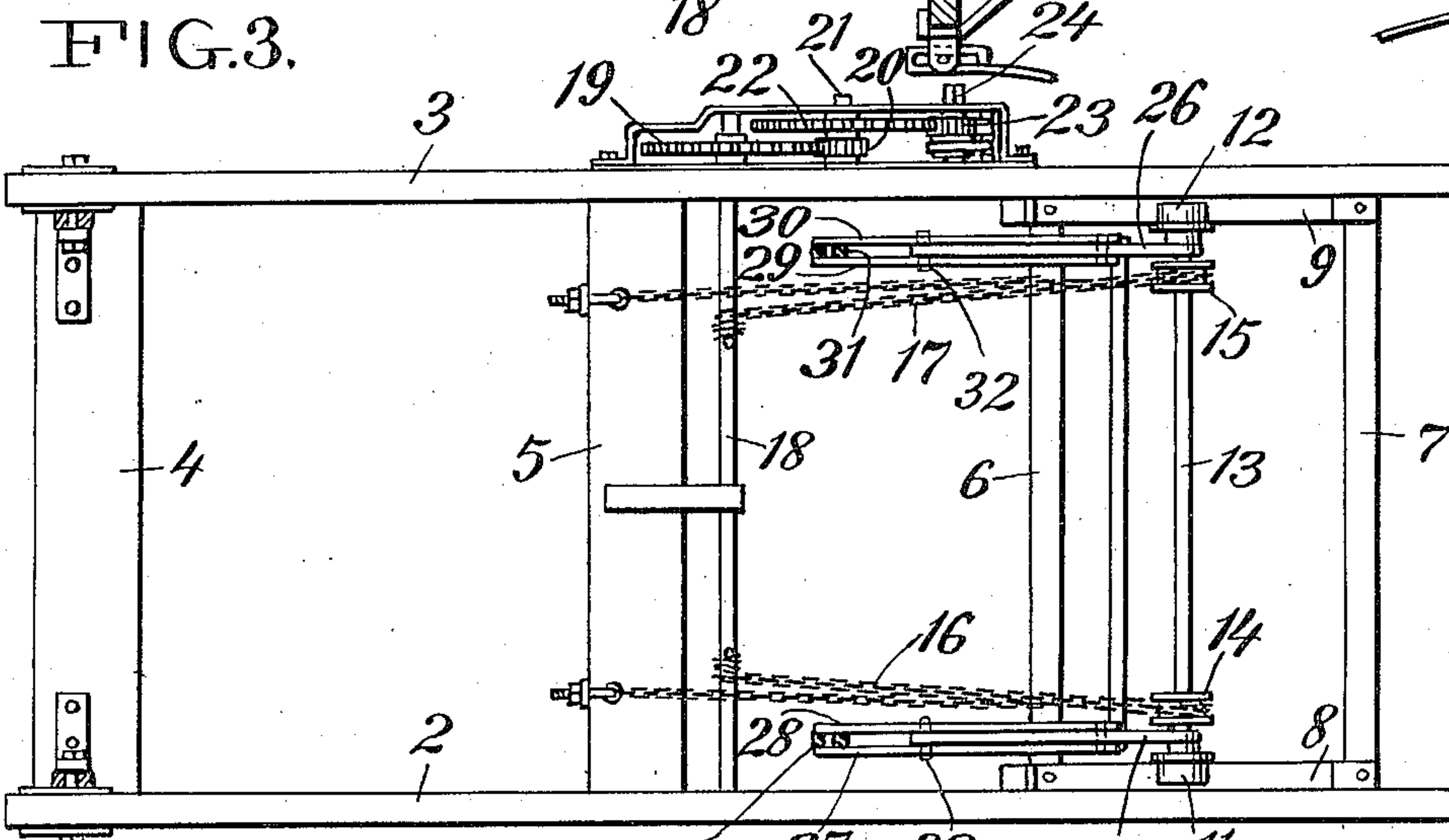
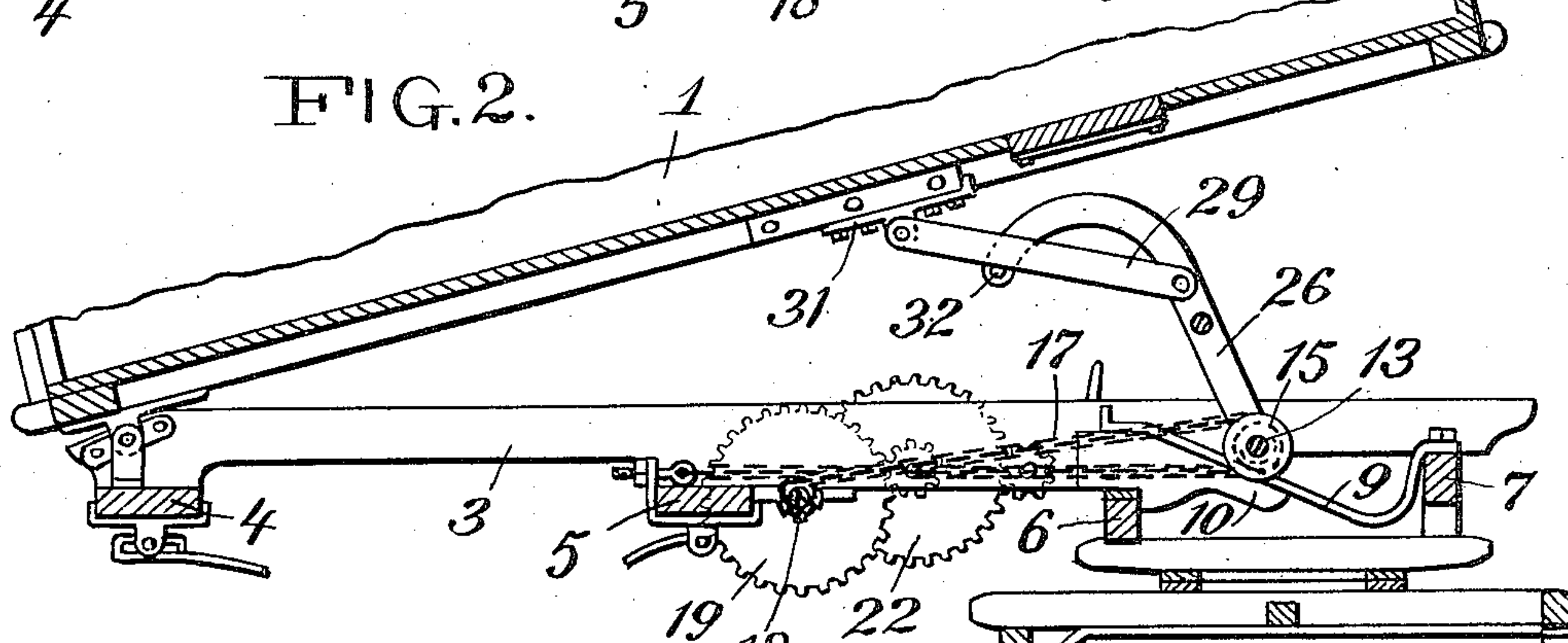
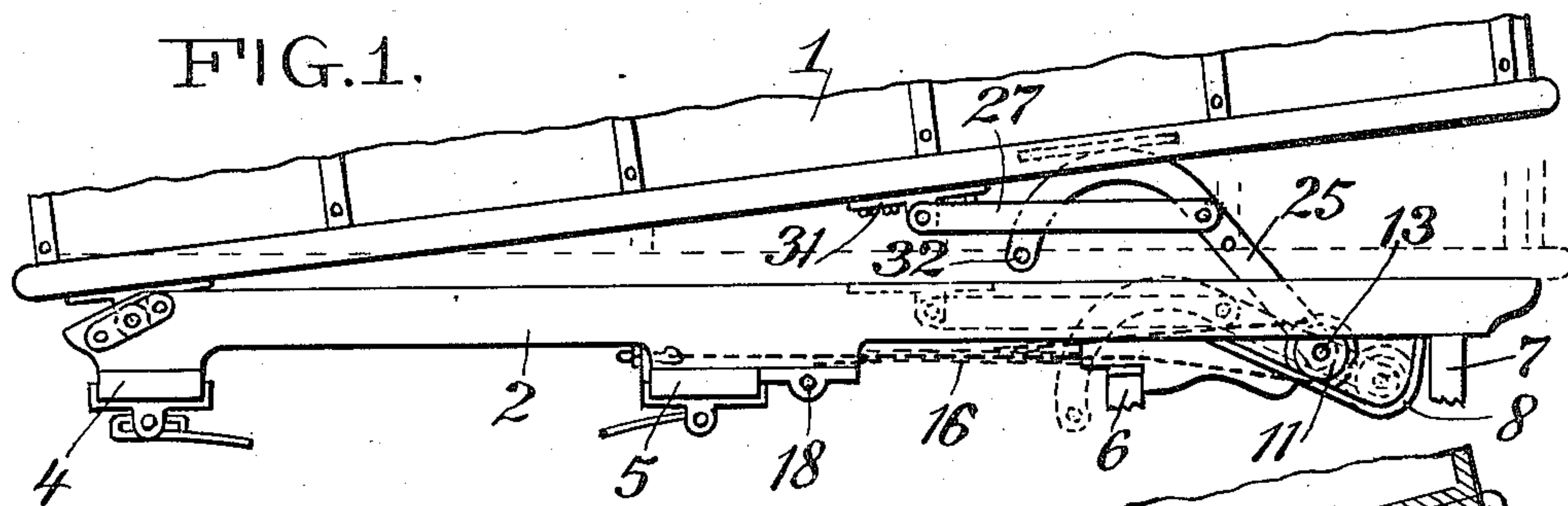


No. 840,854.

PATENTED JAN. 8, 1907

A. KUKIELSKI.
WAGON DUMPING MECHANISM.

APPLICATION FILED FEB. 6, 1906.



WITNESSES:

Harry G. Sanders.
Oliver Williams

INVENTOR

BY

Anton Kukielski
Seward Davis
ATTORNEY

UNITED STATES PATENT OFFICE.

ANTON KUKIELSKI, OF JERSEY CITY, NEW JERSEY.

WAGON-DUMPING MECHANISM.

No. 840,854.

Specification of Letters Patent.

Patented Jan. 8, 1907.

Application filed February 6, 1906. Serial No. 299,674.

To all whom it may concern:

Be it known that I, ANTON KUKIELSKI, a citizen of the United States, and a resident of Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Wagon-Dumping Mechanism, of which the following is a specification, reference being had to the accompanying drawings, which form a part thereof.

My invention relates to mechanism applicable to coal-wagons or the like for the purpose of tilting the bodies thereof, and thus dumping their contents.

The object of my invention is to provide a simple and effective mechanism for accomplishing the purposes in view which will enable a greater elevation to be secured than is possible with the forms of dumping mechanism with which I am familiar.

Referring to the drawings, Figure 1 is a side view of the frame and a portion of the wagon-body having my improved mechanism applied thereto, showing in dotted lines the position of the various parts when the wagon is in the normal position and in solid lines the position assumed when the forward end of the wagon has been slightly elevated. Fig. 2 is a sectional view through the longitudinal diameter of the wagon, showing a view of the lifting mechanism from the inside. Fig. 3 is a plan view of the wagon-frame having the dumping mechanism attached thereto. Fig. 4 is a view similar to Fig. 2, showing a slightly-modified form of my device.

Throughout the drawings like reference-numerals refer to like parts.

I am aware that many dumping devices are in use and that many of them employ the movable counter-shaft having lifting-bars attached to its ends and that in many of these devices the counter-shaft is moved by means of chains attached to a winch-shaft journaled to the sills of the wagon-body.

The important features of my invention, however, reside in the form of the lifting-bars and in the method of attaching the lifting-bars to the wagon-body, and these devices I believe to be new.

In Figs. 1 to 4, 1 is the wagon-body, which of course may be of any suitable form. This body rests upon a suitable frame, which in the form shown in the drawings consists of side sills 2 and 3, secured to cross-braces 4, 5, 6, and 7, and the rear end of said body is secured to the sills by pivotal attachments,

which permit the tilting movement desired. Within the wagon-frame, one adjoining each sill, are placed the inclined tracks or ways 8 and 9, which are firmly secured in place by any suitable means, such as by securing one end to the brace 7 and supporting a considerable portion of its length upon the wooden block 10. These ways are designed to form bearing-surfaces for flanged disks 11 and 12, which are journaled to the ends of a movable counter-shaft 13, the length of the shaft being properly proportioned to allow the disks to bear upon these ways. Upon the counter-shaft inside the two disks are placed pulleys 14 and 15, which are suitably grooved to form proper bearings for the chains 16 and 17. One end of each chain is secured to some fixed point, such as the cross-bar 5, the attachment being permanent. From these points of attachment the chains lead forward and pass about the pulleys and back to a winch-shaft 18, to which they are both secured. This winch-shaft is journaled in suitable bearings attached to the sills and extends at right angles thereto. One end of the shaft 18 projects beyond the outer face of the sill 3, and upon this projecting end is mounted the gear-wheel 19. This gear meshes with a pinion 20, which is mounted upon a short revolving shaft 21. A large gear-wheel 22 is also attached to this same shaft, and this in turn meshes with a pinion 23, which is also mounted upon a suitable revolving shaft 24. The end of this last-mentioned shaft is fitted to receive a crank or similar device by which it may be revolved. The motion of this crank is thus transmitted through the train of gears to the winch-shaft 18, and when this revolves the chains are wrapped about it, and thus draw the counter-shaft along the parallel ways.

The part of my device to which this application has particular reference consists of the form, location, and manner of attachment of the lifting-bars which are attached to the counter-shaft. These lifting-bars 25 and 26 have one end firmly attached to the counter-shaft 13, preferably at points at each end thereof between the rolling disks and the pulleys. These lifting-bars are of a form similar to that shown in the drawings, where they consist of flattened metal bars, straight for something more than half their length and then curved edgewise toward the rear of the wagon. To each lifting-bar, at a point near the beginning of the curved portion,

are pivoted a pair of connecting-bars 27 and 28, 29, and 30. These bars are similar in cross-section to the lifting-bars, but are straight, one end, as before stated, being pivoted to the lifting-bar and the other end to a bracket 31, which is bolted to the bottom of the wagon-body at a suitable point. The extremity of the curved portion of the lifting-bar projects downwardly between the connecting-bars, and laterally through this extremity passes a stout pin 32, which prevents this terminal from passing between the connecting-bars. The form of these parts may be varied considerably without departing from the spirit of my invention, the particular form shown and described being chosen merely for the sake of convenience, economy of construction, and strength.

The operation of my device is as follows: The wagon-body being in its normal position—that is, resting upon the sills—if it be desired to dump the load a crank is attached to the shaft 24 and revolved in either direction. This rotary motion is transmitted through the train of gears to the winch-shaft 18, thus gradually wrapping the chain about the said shaft. As the chains are similar in length this movement will draw the counter-shaft toward the center of the wagon, the disks at its extremity rolling along the ways. The ends of the lifting-bars are thus drawn toward the rear of the wagon; but inasmuch as the upper parts of the bars are secured to the wagon-body by the connecting-bars the lifting-bars are tilted. The curved portions of these lifting-bars will then take against the bottom of the wagon-body or against a metal plate suitably secured to the said bottom, and a lifting force will be exerted upon the forward end of the wagon-body. The lifting movement continues until the pin 32 seats against the connecting-bars. The tilting movement of the lifting-bars continues; but the lifting force is exerted by this pin against the connecting-bars and is thus transmitted to the bracket to which the connecting-bars are attached. In this manner the wagon-body continues to be tilted a considerable distance beyond the greatest length of the lifting-bars themselves, the mode of operation being that of a first-class lever until the pin 32 engages with the connecting-bars, after which the device acts as a lever of the third class. By altering the proportions of these parts any desired lifting height may be attained, and it will be noticed that throughout the lifting movement the wagon-body is always under the control of the operator instead of being rapidly accelerated at the end of the operation, as in many of the commonly-used forms. To restore the wagon to its normal position, the crank is revolved in the other direction or allowed to run free, in which case the weight of the wagon-body, even when empty, will usually restore the

device to the normal position. To lock the mechanism in any desired position, I prefer to provide some suitable braking device—as, for example, a pawl engaging with one of the pinions or a friction-brake bearing upon one of the shafts.

With my lifting device it is not necessary that the ways be inclined, as shown in the first two figures, but they may be flat, as in the modification shown in Fig. 4.

Having described my invention, what I claim is—

1. In a device of the character described the combination of a winch-shaft journaled to the wagon-frame, means for rotating said winch-shaft, a movable counter-shaft parallel with said winch-shaft, flexible connections between said shafts, lifting-bars having their lower ends connected to said counter-shaft, and a connecting-bar pivotally attached to each lifting-bar and to the bottom of the wagon-body.

2. In a device of the character described the combination of a lifting-bar connected to a movable counter-shaft, a connecting-bar having one end pivoted to said lifting-bar and its other end pivoted to the bottom of the wagon-body; the upper end of said lifting-bar being backwardly and downwardly bent, its extremity extending below said connecting-bar and provided with means for engaging therewith when moved upwardly by the tilting movement of said lifting-bar.

3. In a device of the character described the combination of a lifting-bar, means for tilting said lifting-bar, a double connecting-bar having one end pivoted to the said lifting-bar and the other end pivoted to the bottom of the wagon-body, the portion of the said lifting-bar above the connecting-bar pivot being bent backwardly and downwardly, so that its extremity passes downwardly between the members of said connecting-bar, and a stop at the extremity of said bent portion adapted to prevent said extremity from passing between said connecting-bar members.

4. In a device of the character described the combination of a lifting-bar and a connecting-bar, the end of the latter pivotally attached to the middle portion of the former, the lower end of the lifting-bar being connected to a movable counter-shaft, the second terminal of the connecting-bar being attached to the bottom of the wagon-body, the said lifting-bar having its upper portion bent backwardly and downwardly in the plane of the connecting-bar, its extremity normally lying below said connecting-bar and provided with a stop adapted to seat against said connecting-bar and to exert a lifting force thereon when the lifting-bar is tilted.

5. In a device of the character described the combination of a wagon-frame, a wagon-body having its rear portion pivotally at-

5 tached to said frame, a winch-shaft journaled
to said frame, means for rotating said winch-
shaft, a counter-shaft movably mounted
upon bearing-tracks and parallel to said
winch-shaft, flexible connections between
said shafts, lifting-bars attached to said coun-
ter-shaft, and connecting-bars pivotally at-
tached to said lifting-bars and to the bottom
10 of the wagon-body, the upper portion of said
lifting-bars being bent backwardly and down-

wardly, so that their extremities normally lie
below their respective connecting-bars, each
of said extremities being provided with a
stop adapted to seat against the connecting-
bar at a suitable point in the tilting move-
ment of the lifting-bar.

ANTON KUKIELSKI.

Witnesses:

OLIVER WILLIAMS,
HARRY G. SANDERS.