

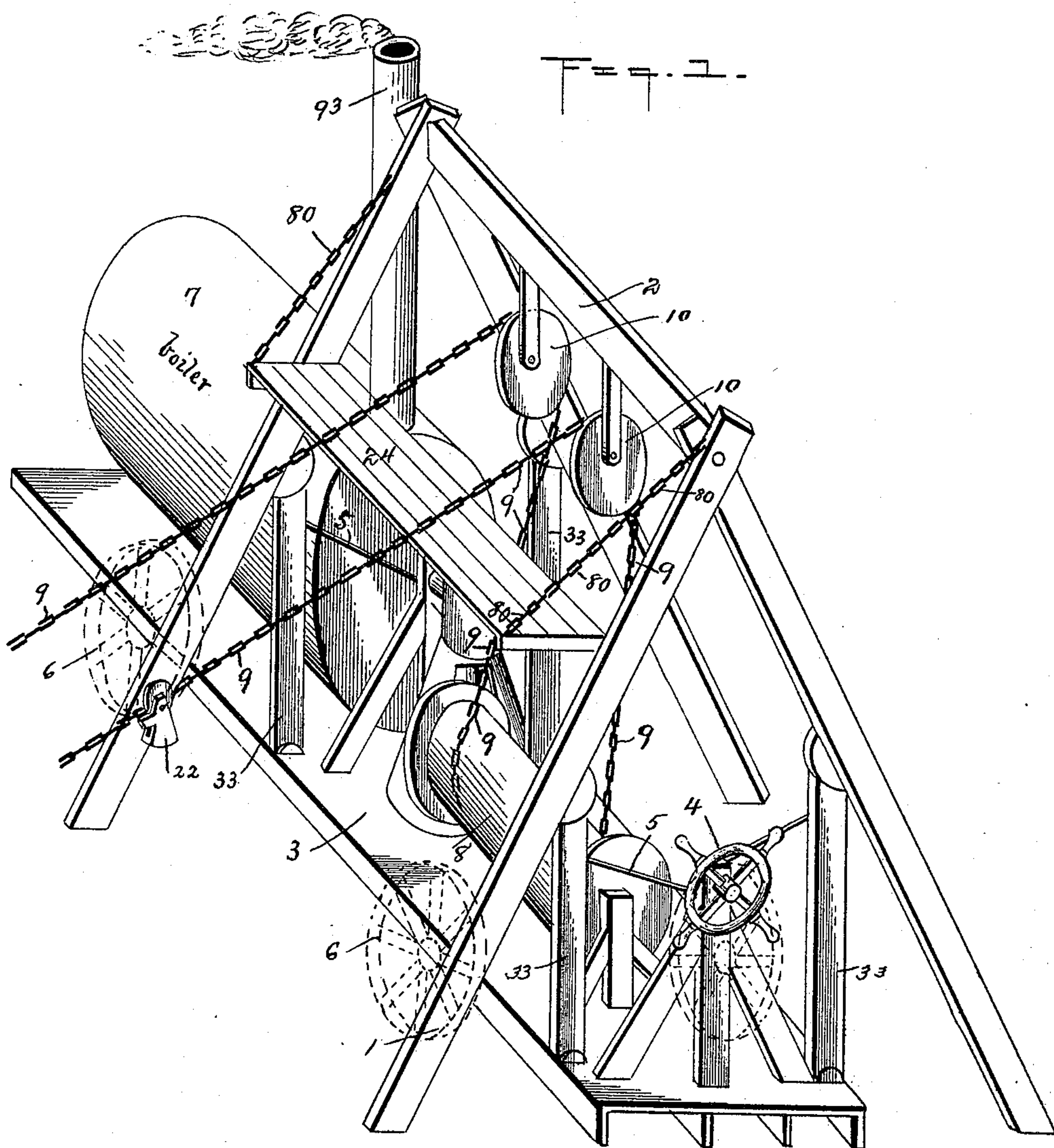
(No Model.)

3 Sheets—Sheet 1.

W. W. LEMMON.  
EXCAVATOR.

No. 464,507.

Patented Dec. 8, 1891.



WITNESSES:

*P. D. Ballant*  
*J. W. Nichol*

INVENTOR

*William W. Lemmon*

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*J. B. Lawyer*

ATTORNEY.

(No Model.)

3 Sheets—Sheet 2.

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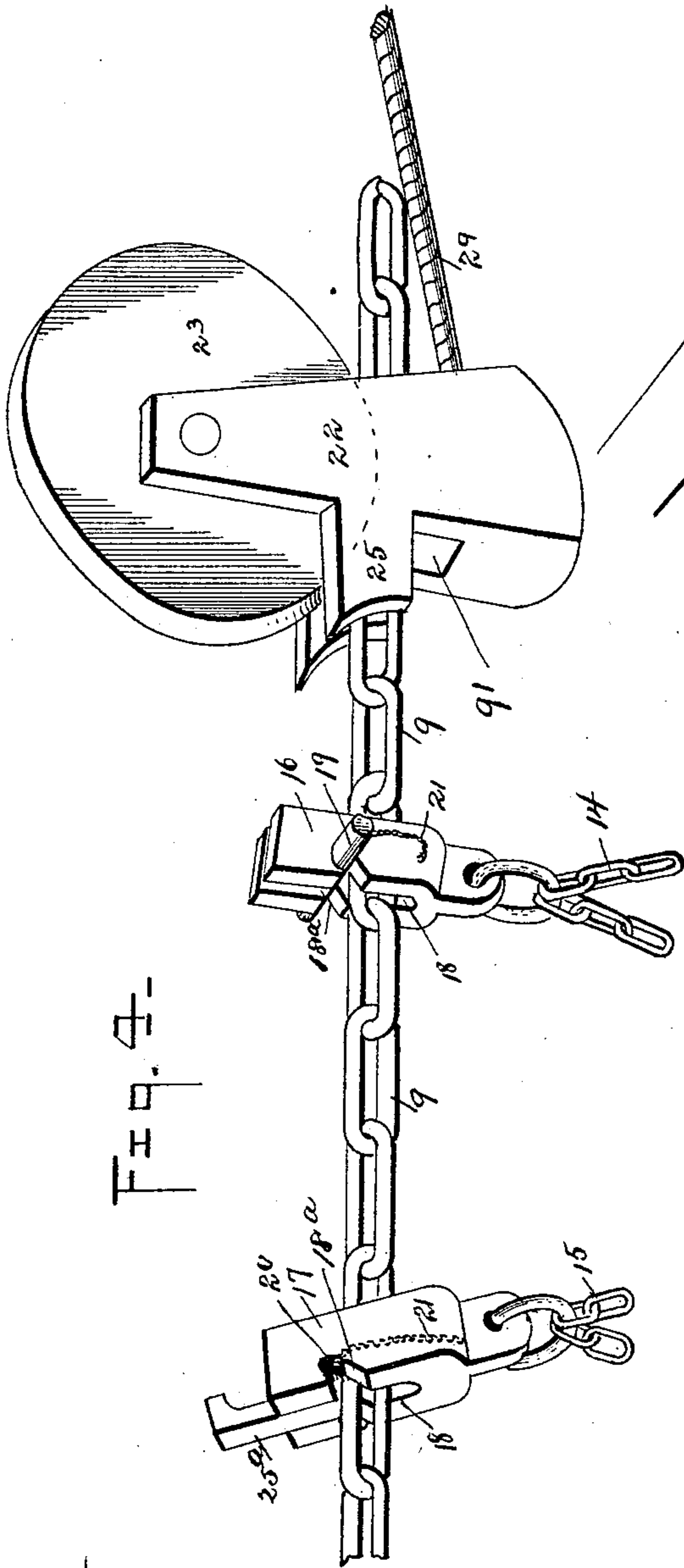


Fig. 1-

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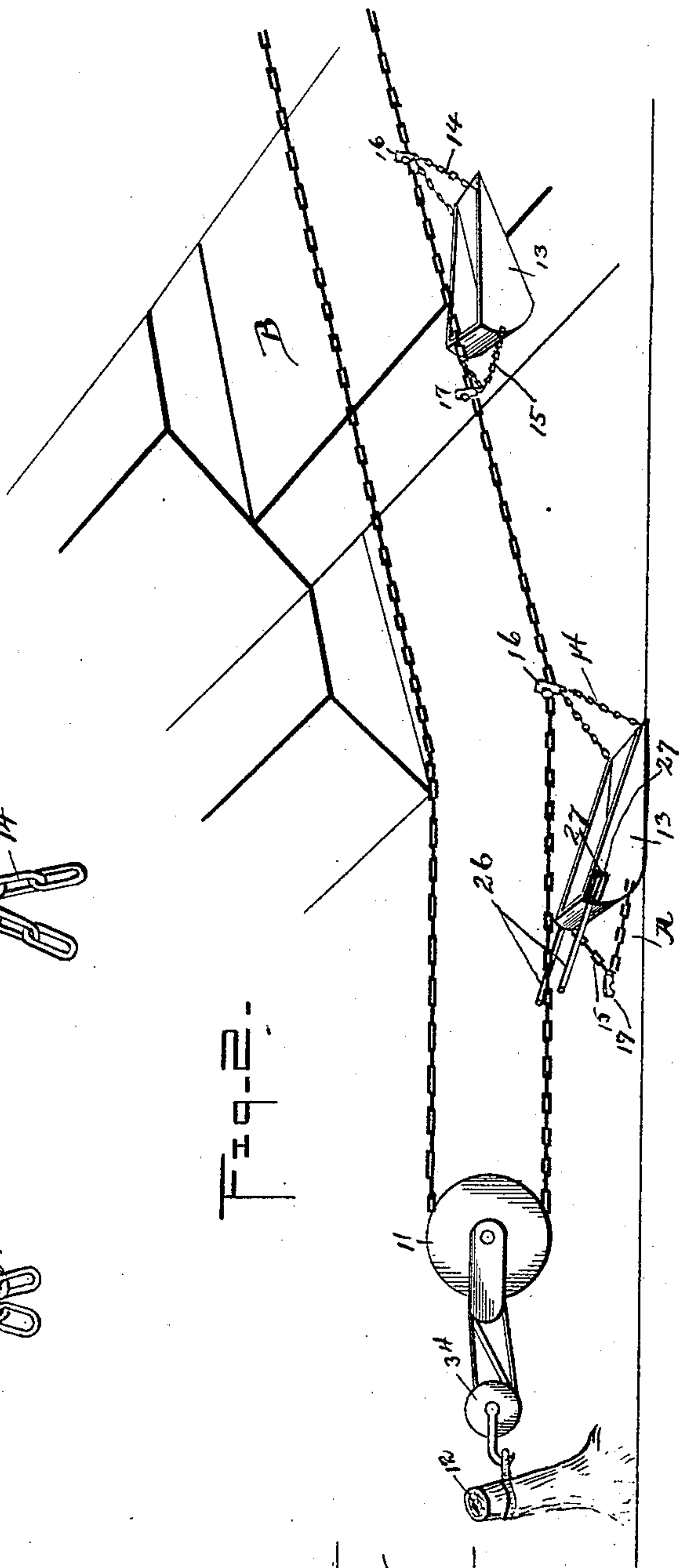


Fig. 2-

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William W. Lemmon  
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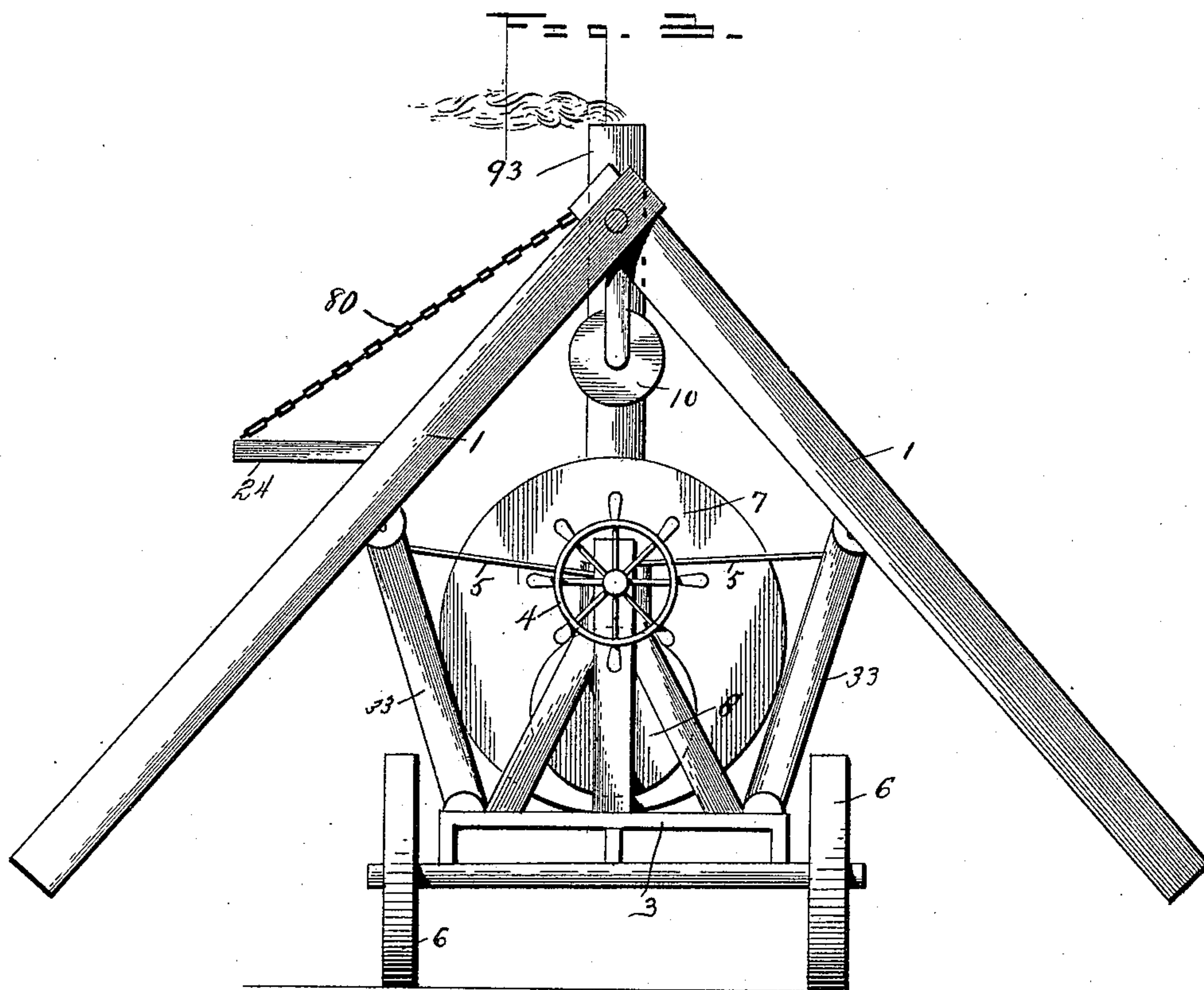
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# UNITED STATES PATENT OFFICE.

WILLIAM WALTER LEMMON, OF ARBROTH, LOUISIANA.

## EXCAVATOR.

SPECIFICATION forming part of Letters Patent No. 464,507, dated December 8, 1891.

Application filed January 9, 1891. Serial No. 377,236. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM WALTER LEMMON, a citizen of the United States, residing at Arbroth, in the parish of West Baton Rouge and State of Louisiana, have invented certain new and useful Improvements in Excavators; and I do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention is an improvement on that class of excavating-machines which are adapted to automatically fill scoops or shovels with earth and to carry them to the dump, where their contents are automatically thrown out; and it consists in the construction, arrangement, and combination of the parts of which it is composed, as will be hereinafter more fully described and claimed.

Referring to the accompanying drawings, in which corresponding parts are designated by similar letters and numerals, Figure 1 is a perspective view of the staging and actuating mechanism carried thereon. Fig. 2 is a perspective view showing the arrangement of the excavator scoops or shovels and of other parts. Fig. 3 is an end view of the staging and mechanism carried thereon, they being shown in a position for being transported. Fig. 4 is a detailed perspective view of the shovel-clamps and the knock-off or striker.

The two sets of legs 1 are pivoted to the longitudinal bar 2 at their upper ends, one of the said sets of legs being at each end thereof, while a platform 3 is hung from the said legs by the hangers 33, having their upper and lower ends pivoted to the said legs and platform, respectively. A suitable hand-windlass 4 is mounted upon each end of the platform between the legs at that end, over which windlasses ropes 5, having their outer ends secured to the said hangers 33, are wound, thus permitting the upper ends of the hangers and thus the legs 1 to be drawn close together or to be released, causing them to as-

sume the positions shown in Figs. 1 and 3, respectively, in the former of which positions the legs serve as braces for the platform when in use, while in the latter the legs are above the ground, thus permitting the mechanism to be moved from place to place upon the wheels 6 under the platform. Upon the platform is the steam-boiler 7 and the steam-actuated windlass 8, around which passes the endless chain or cable 9, the two opposite leads of which run over the pulleys 10 10, suspended from the longitudinal bar 2. The chain also passes around another pulley 11, secured by means of the adjustable tackle 34 to a post or other support 12 upon the opposite side of the place to be excavated, such as A, the slack of the chain being such that the shovels or scrapers 13 will be dragged over the part to be excavated, and the height of the pulleys 10 10 being such that the chain will rise over the dump-pile, such as B, which is between the place to be excavated and the staging.

To the chain 9 are secured the shovels 13 by the front and rear bail-chains 14 and 15, the said bail-chains having their upper ends connected with the vertically-slotted blocks 16 and 17, respectively, through the slots 18 of which the chain 9 passes, it being held therein by the locking-pins 19 and 20, respectively, the said pins passing above the chain. These pins are held in the rearwardly and downwardly directed open slots 18<sup>a</sup> in the blocks, and are connected to the blocks by a flexible connection 21. The ends of the pin 19 of the front block project beyond the sides of the block 16, while the ends of pin 20 are flush with the sides of the block 17.

The striker 22 carries upon its upper end a pulley 23, which runs over the incoming lead of the chain and which by gravity tends to run thereon to the lower portion thereof, but which may be limited in its movement by means of the rope 29, secured to the striker and to the staging. The striker 22 has a vertical slot 91 in its upper end, through which the chain 9 passes, and has upon each side of the said slot a rearwardly-projecting arm 25, having a concaved rear face, which is adapted to dump the scoop or shovel, as will be here-



inafter more fully described, the slot in the said striker being of greater width than the thickness of the blocks 16 and 17. A platform 24 is carried by the legs 1 near their upper ends, and serves as a support for a laborer in transferring the shovels from the incoming to the outgoing lead of the chain.

The operation of my invention is as follows: The staging having been put in place, the legs 1 are lowered to the ground and, the post 12 being driven at the proper place, the chain 9 will be passed around the pulley 11, secured to the post, and be started by means of the windlass 8 on the platform. A shovel or scoop will then be secured near the post 12 to the incoming lead of the chain by means of the blocks 16 and 17, with its scraping-edge toward the staging, and will thus be drawn over the ground to be excavated, and, having become filled, will be carried upward over the dump. Here the pin 19, holding the front block 16 in place on the chain, will strike the ends of the rearwardly-projecting arms 25 of the striker and will be forced out of the slot 18<sup>a</sup>, unlocking the block and permitting the forward end of the scraper to fall, dropping the earth contained therein. The rear block 17 next strikes the striker, and as the pin 20 thereof is not engaged by the rear arms 25 it carries the striker forward to above the platform 24, where the laborer stationed at that point disengages the pin 20 from the slot 18 by means of the handle 25<sup>a</sup> (which passes centrally upward from the said pin within an open slot in the rear of the block) and thus releases the shovel from the incoming lead of the chain. He then catches one of the blocks 16 or 17 on the outgoing lead of the chain, and thus sends the shovel back to the post 12, where it may again be put on the incoming lead by a laborer stationed at that point.

It will be evident that as many shovels may be placed upon the chain as may be desired, and that, as shown in the drawings, I may place sockets 27 upon the sides of the shovels, in which may be inserted removable handles 26 for guiding them while scraping. It is also evident that when the rear block 17 is removed from the chain the striker will, by gravity, run down the chain 9 to an extent limited by the rope 29 to meet the front block 16 of the succeeding shovel, causing it to

drop its load, and it will be seen that by varying the length of the rope 29 the position of the dump may be varied.

Having thus described my invention, what I claim is—

1. The combination, with a windlass, of an endless chain passing therearound, a scraper, a slotted block secured to the forward end of the said scraper and mounted upon the said chain, a pin locking the said block upon the said chain, and a striker running upon the said chain and adapted to disengage the pin from the said block, as described.

2. The combination, with a windlass, of an endless chain passing therearound, a scraper, a forward and a rear slotted block secured to the forward and rear ends of the said scraper, respectively, and having the chain passing through the slots therein, a pin locking the said block in place, and a striker having a pulley upon its upper end running upon the said chain and having rearwardly-extending arms adapted to strike the said pin, as described.

3. The combination, with a windlass, of an endless chain passing therearound, pulleys carrying the said chain and so situated that a portion of the length thereof is slightly above the ground to be elevated and a portion above the dump, scrapers depending from the said chains by bails at their front and rear ends, and means for automatically disengaging the forward of the said bails at a predetermined point and dumping the scraper, as described.

4. The combination, with a windlass, of an endless chain passing therearound, a scraper, a slotted block secured to the forward end of the said scraper and mounted upon the said chain, a pin locking the said block upon the chain, a striker running upon the said chain and adapted to disengage the pin from the said block, and a retaining device adapted to limit the movement of the said striker in one direction, as described.

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

WILLIAM WALTER LEMMON.

Witnesses:

H. G. PARKER,  
FRANK DELANY.