

M. WALLNER & M. OWENS.  
STONE SAWING MACHINE.  
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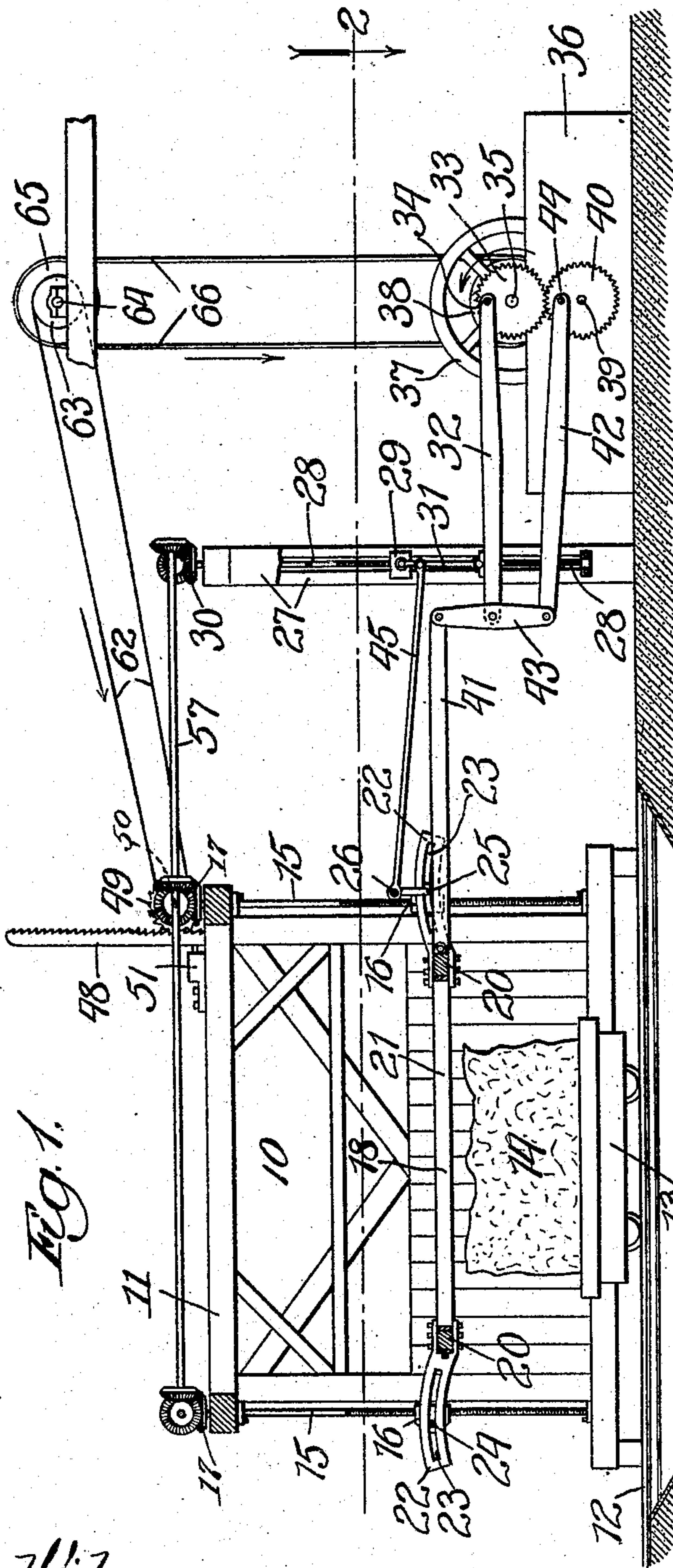
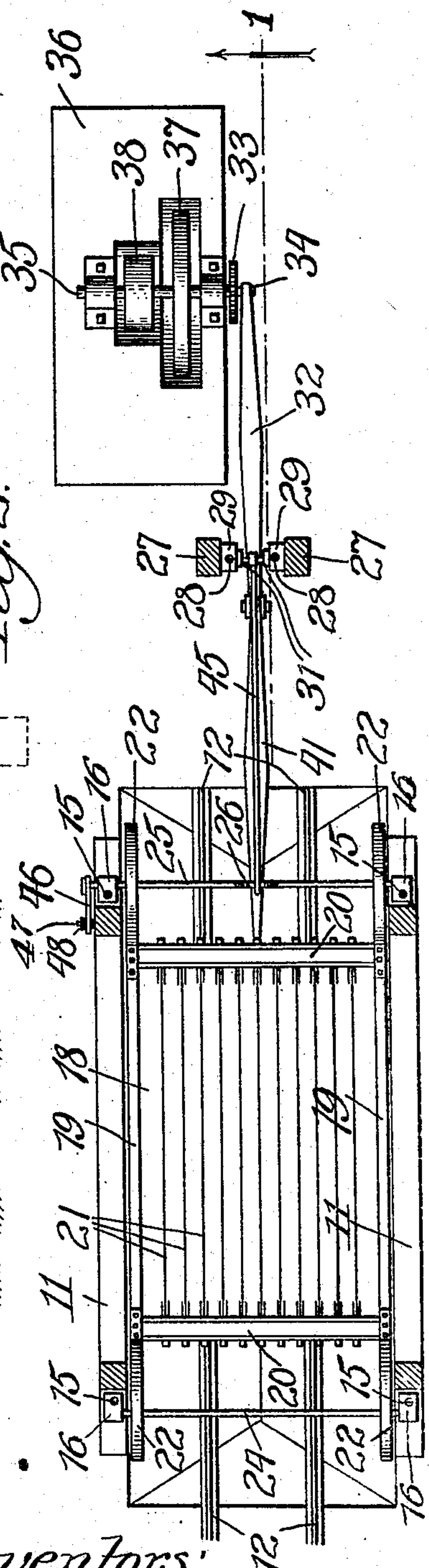


Fig. 2.



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# UNITED STATES PATENT OFFICE.

MICHAEL WALLNER AND MACK OWENS, OF BEDFORD, INDIANA.

## STONE-SAWING MACHINE.

936,748.

Specification of Letters Patent.

Patented Oct. 12, 1909.

Application filed October 29, 1908. Serial No. 460,088.

*To all whom it may concern:*

Be it known that we, MICHAEL WALLNER and MACK OWENS, citizens of the United States, residing at Bedford, in the county of Lawrence and State of Indiana, have invented a new and useful Improvement in Stone-Sawing Machines, of which the following is a specification.

This invention relates to an improvement in stone-sawing machines, or saw-gangs, used for sawing blocks of stone into slabs or the like.

Our object is to provide a driving connection of improved construction, between the power-shaft and saw-gang, which will reciprocate the latter in a manner to avoid jar and give thereto a long sweep in each direction.

It is also our object to provide other improvements in the construction and operation of machines of this class, all as herein-after set forth.

Our invention is illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal sectional elevation taken at the line 1 on Fig. 2, and Fig. 2, a plan sectional view taken at the line 2 on Fig. 1.

A main frame 10 is formed of similar sides 11 connected at the top. Beneath the frame is a track 12 upon which runs a truck 13 carrying the stone 14 to be sawed. Adjacent to each corner post of the main frame is a vertically disposed feed-screw 15, held in suitable bearings. Traveling blocks 16 engage the threads of the screws, and above the frame each screw is equipped with a bevel-gear 17.

The gang 18 may be similar to those now in use, being rectangular in form and comprising side-rails 19 between which, at opposite ends, extend cross-pieces or heads 20 to which the saw-blades 21 are secured. To the ends of the side-rails in the preferred construction are secured arc-shaped cam-arms 22 forming extensions thereof and provided with segmental slots 23 to receive shafts 24 and 25 which latter support the gang horizontally in the main-frame. The shaft 24 extends across the machine with its ends journaled in the blocks 16 at the rear end of the machine, while the shaft 25 extends across the machine with its ends journaled in the blocks 16 at the forward end of the frame. The shaft 25 is arched inter-

mediate the side-frames to form a crank 26, for the purpose hereinafter described.

A short distance in advance of the forward end of the main frame is another frame formed with posts 27 and a top cross-piece. Adjacent to the inner or opposing faces of the posts 27 are feed-screws 28, similar to the feed-screws 15, held in suitable bearings and carrying traveling blocks 29. Above the cross-member each screw 28 is equipped with a bevel-gear 30. To each block 29 is pivoted a depending link 31, the links being pivotally secured to a bar 32 eccentrically connected to the gear 33 by a wrist-pin 34. The bar 32 forms one member of a compound gang-reciprocating pitman. The gear 33 is secured to a shaft 35 confined in suitable bearings on a block 36, and is provided with a fly-wheel 37 and pulley 38. Below the shaft 35 is a stud 39 on which is mounted a gear 40 of the same diameter as the gear 33 with which it meshes. The gears 33 and 40 form drive-wheels for the compound pitman. Also forming part of the compound pitman are bars 41 and 42 and a connecting link 43, the connecting-link being fulcrumed at its center to the end of the bar 32. The bar 42 is connected by a wrist-pin 44 to the gear 40. The bar 41 is connected to the gang as shown in Fig. 1, and is disposed in an approximately horizontal plane. One important feature of our construction is the arrangement of the compound pitman whereby the rod 41 thereof occupies an approximately horizontal plane throughout its reciprocations, and the gang is given increased travel without increasing the throw of the wrist-pin over that usual in machines of this type. As the shaft 35 is rotated to turn the drive-wheels, the bars 32, 42 are reciprocated in opposite directions and thereby produce bodily movement as well as pivotal movement of the link 43, thereby greatly increasing the throw or movement of the bar 41 and saw-gang over that of the bars 32, 42.

In the swinging of the links 31 and 43 the bar 41 is reciprocated in an approximately horizontal plane to effect direct thrust and pull upon the gang. As the latter reciprocates it is caused to rise and fall slightly by engagement of the segmental arms with the supporting shafts 24 and 25 on which they slide. This permits sand and water supplied in the usual way to lodge in the kerfs beneath the saw-blades. For convenience the



usual sink and drain are provided beneath the main frame to carry off the waste as it is produced.

For gradually feeding the gang through-  
out its cutting action and to maintain the  
member 41 of the pitman in the same rela-  
tive position thereto, the feed-screws 15  
and 28 are caused to be rotated intermit-  
tently and simultaneously by suitable gear-  
ing connecting them, which gearing is ac-  
tuated by the pitman in the following man-  
ner. A rod or link 45 is pivotally attached  
at one end to the links 31 and at its other  
end is connected with the crank 26 of the  
shaft 25. Upon one end of the shaft 25 (see  
Fig. 2), is a crank-arm 46, slotted at its  
free end where it is adjustably connected by  
a bolt 47 with the lower end of a ratchet-bar  
48. The ratchet-bar is normally held by a  
spring-pressed plunger 51 in engagement  
with a ratchet-wheel 49, loosely mounted on  
a shaft 50. On the shaft 50 may be mounted  
tight and loose pulleys (not shown), and a  
belt 62 connects them with a pulley 63 on a  
drive-shaft 64 suitably located. Upon the  
shaft 64 is a second pulley 65 connected by a  
belt 66 (see Fig. 1) with the pulley 38 on  
the shaft 35.

When the gang has completed its cut it is

desirable to return it to its raised position  
as quickly as possible, this may be accom-  
plished through the medium of the belt 62  
and its connections.

What we claim as new and desire to secure  
by Letters Patent is—

1. In a stone-sawing machine, the combi-  
nation with the saw, of a pair of drive-  
wheels, a compound pitman operatively con-  
nected at one end to said saw and at its op-  
posite end to both of said wheels, and means  
for feeding the saw, for the purpose set  
forth.

2. In a stone-sawing machine, the combi-  
nation with the reciprocal saw-supporting  
frame, of a pair of drive-wheels, a compound  
pitman operatively connected at one end to  
said frame and at its opposite end to both  
of said wheels, saw-lowering feeding-means  
connected with said frame and means co-  
operating with said feeding means and con-  
nected with the pitman, intermediate the  
ends thereof, to lower the pitman as the saw  
is fed, for the purpose set forth.

MICHAEL WALLNER.

MACK OWENS.

In presence of:

JAMES O'CONNELL,  
MIKE O'BRIEN.