

No. 804,812.

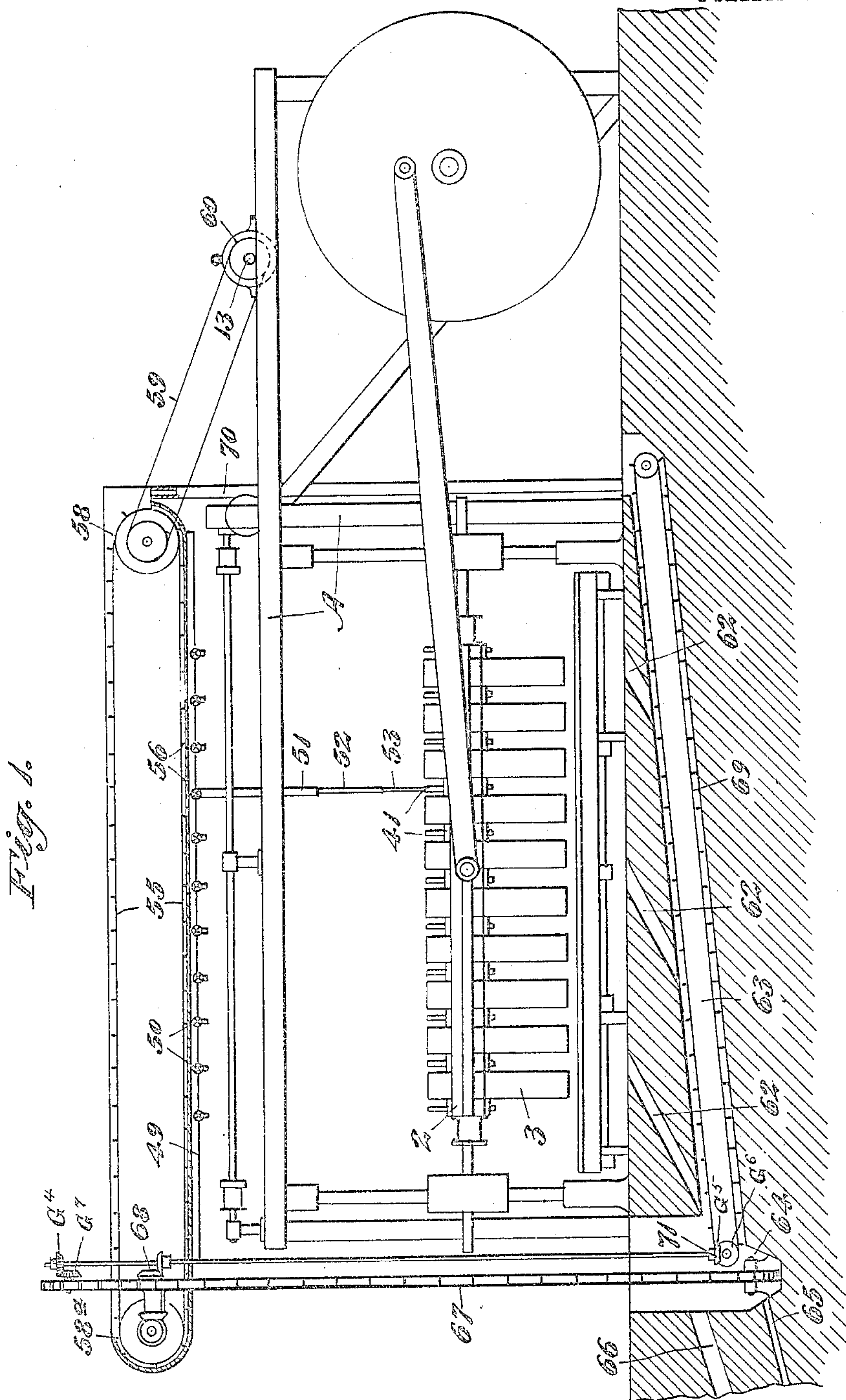
PATENTED NOV. 14, 1905.

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STONE SAWING MACHINE.

APPLICATION FILED APR. 11, 1905.

2 SHEETS—SHEET 1.



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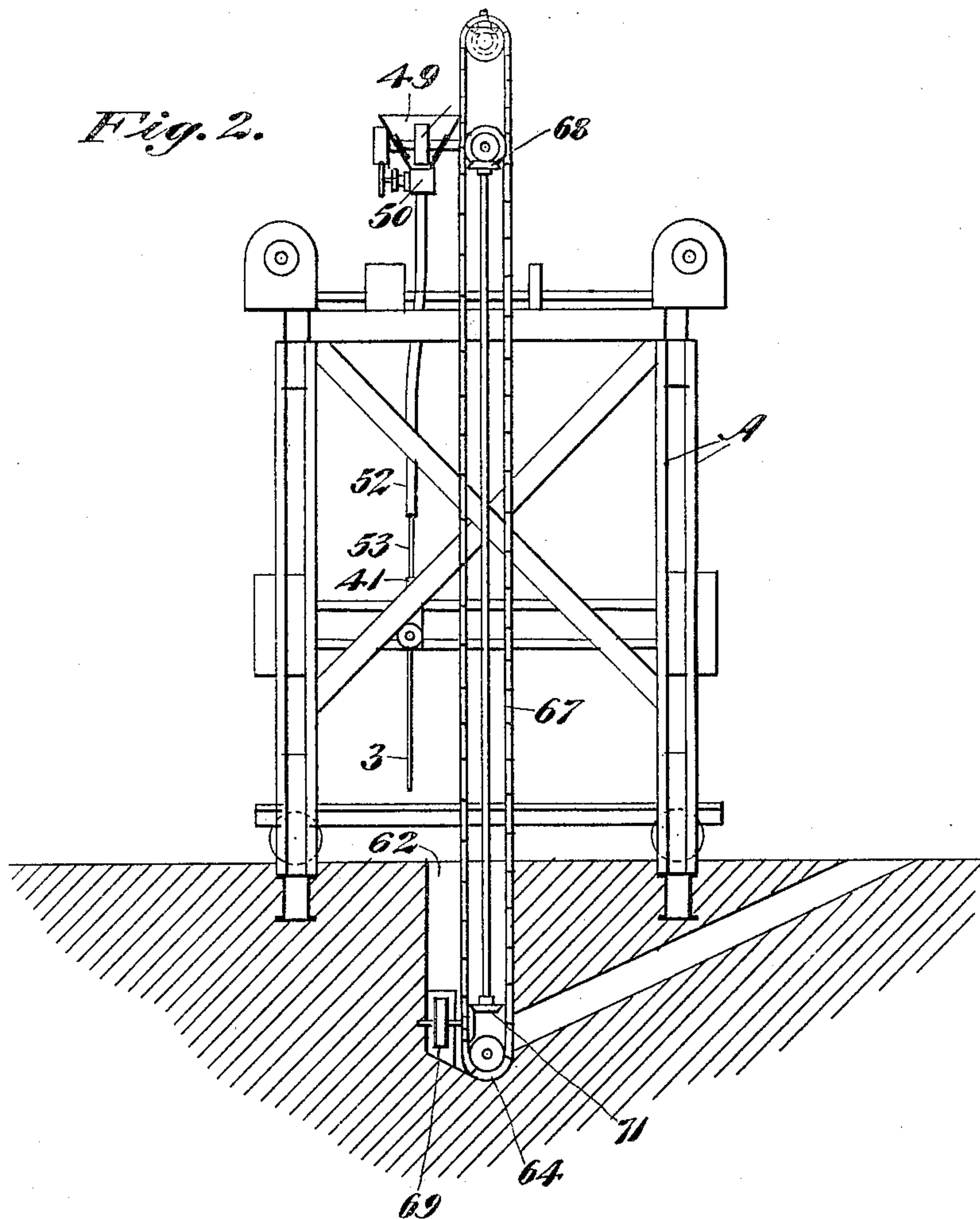
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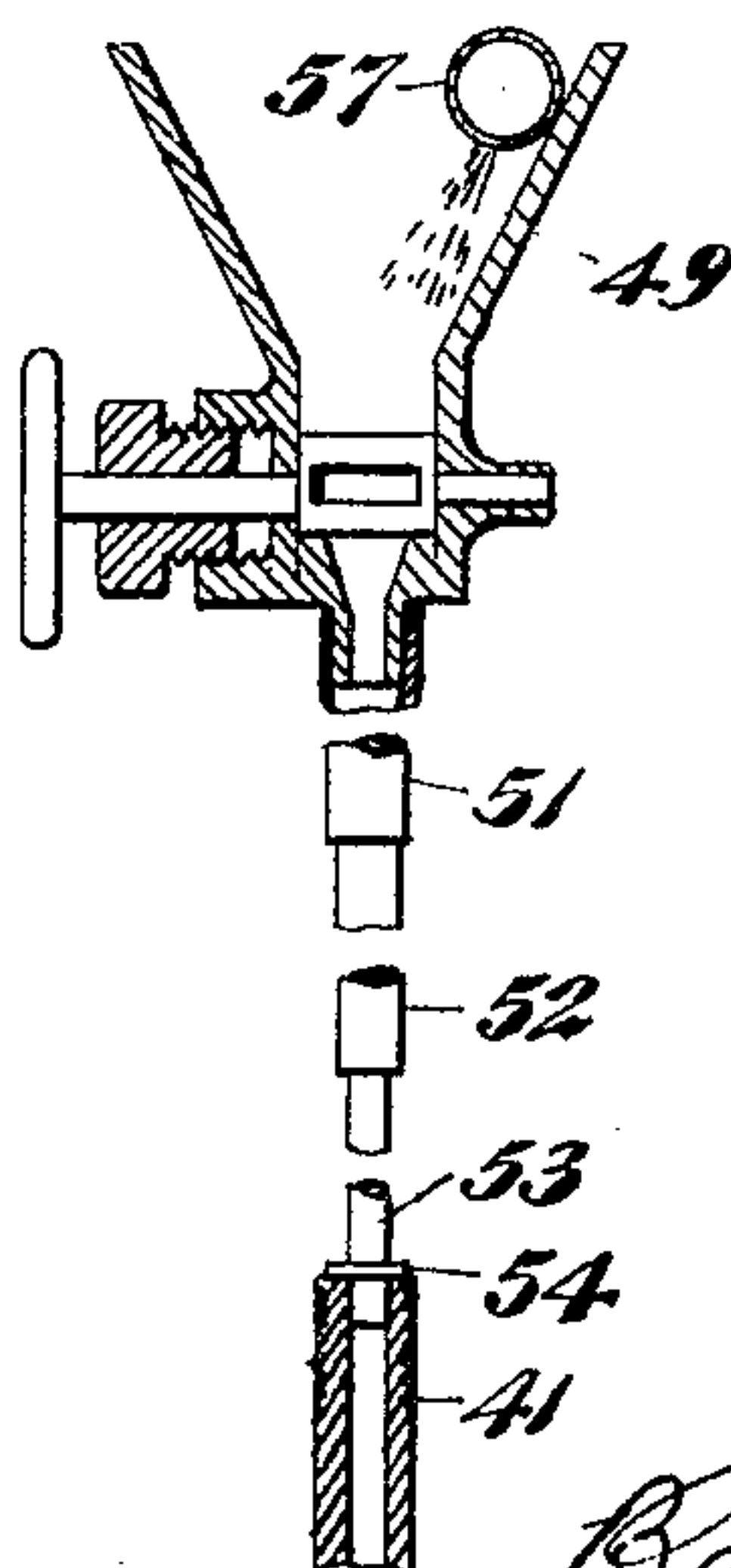
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2 SHEETS—SHEET 2.

*Fig. 2.*



*Fig. 3.*



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# UNITED STATES PATENT OFFICE.

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## STONE-SAWING MACHINE.

No. 804,812.

Specification of Letters Patent.

Patented Nov. 14, 1905.

Original application filed September 26, 1904, Serial No. 225,919. Divided and this application filed April 11, 1905. Serial No. 254,986.

*To all whom it may concern:*

Be it known that we, JOHN ADAMS HALL and  
BARTLETT B. CHANDLER, citizens of the United  
States, residing at Sacramento, in the county  
5 of Sacramento and State of California, have  
invented new and useful Improvements in  
Stone-Sawing Machines, of which the follow-  
ing is a specification, the same being a divi-  
sion of our original application, Serial No.  
10 225,919, filed September 26, 1904.

Our invention relates to stone-sawing ma-  
chines, and especially to machines employing  
chilled shot as an abrading medium.

The object of the present invention is par-  
15 ticularly to provide suitable means for auto-  
matically feeding the shot to the saws, for col-  
lecting the shot, washing it, and conveying it  
once more into position ready for refeeding.

The invention consists of the parts and the  
20 construction and combination of parts, as here-  
inafter more fully described and claimed, hav-  
ing reference to the accompanying drawings,  
in which—

Figure 1 is a side elevation of our saw, show-  
25 ing the side of the trough 49 and the perfo-  
rated pipe 57 removed to disclose the con-  
veyer. Fig. 2 is an end elevation of the same.  
Fig. 3 is an enlarged sectional view of trough  
and valve.

30 A represents a suitable framework support-  
ing the various parts of the apparatus. Suit-  
ably supported in this framework for recipro-  
cating movement is the saw, consisting of the  
bar 2 and the blades 3. The blades are of  
35 usual rectangular plate construction, and the  
cutting of the stone is done by feeding fine  
chilled shot along with a sufficient supply of  
water into the path of the blades during the  
reciprocation of the saw, the action of the  
40 blades rubbing upon the shot and bearing  
upon it continually to wear away the stone.  
Our invention comprehends the automatic  
feed of the shot, the gathering of it up, wash-  
ing it, and returning it to a convenient point,  
45 whence it may pass again to the saws. For  
this purpose we show an overhead trough 49  
running lengthwise of the saw-frame and hav-  
ing a number of outlets in its bottom corre-  
sponding to the number of saw-blades to  
50 which the shot is to be fed. A suitable valve,  
as the plug 50, is disposed in each outlet to  
regulate the amount of shot and water that  
may pass to any blade. Connected with each

outlet is a depending flexible tube or hose 51.  
A rigid tube 52 is slipped into the lower end 55  
of this hose, and a smaller rigid tube 53 tele-  
scopes with tube 52. The tube 53 slips into  
the upper end of a hollow bolt or connection  
41, which is just between the saw-blades, so  
that the shot and water from trough 49 may 60  
be fed directly into the path of and between  
the individual saw-blades. If desired, the  
end of tube 53 may have a flange 54 to limit  
its movement into the bolt 41. The flexible  
hose connection 51 and the telescoping tubes 65  
52 53 allow the shot and water to be fed con-  
tinuously irrespective of the reciprocations  
of the saw. The shot is distributed the length  
of trough 49 by suitable carrier means, as the  
conveyer 55, having the scrapers 56. Water 70  
is fed into the trough at convenient space in-  
tervals from the perforated pipe 57. The con-  
veyer 55 passes over sprockets or drums 58  
and 58<sup>a</sup>, and motion is transmitted thereto by  
any convenient means. As shown, the shaft 75  
of drum 58 carries a pulley around which  
passes a belt 59 to a pulley 60 on drive-shaft  
13'. The shot which is driven out of the cut  
or otherwise may fall on the floor, passes  
down through screen-covered openings 62 80  
into channels 63 in the concrete, and washed  
into the sump-hole or reservoir 64. Here an  
agitation is maintained by means of a jet of  
water entering through a nozzle 65, which  
acts to cleanse the shot of their accumulations 85  
of mud, the waste dirty water flowing off  
through an outlet, as 66. A suitable elevator  
67 conveys the accumulated shot in the sump  
to the top of the machine and redeposits it in  
the conveyer-trough 49. The elevator 67 is 90  
here shown as of the endless-belt variety and  
may be driven in unison with the conveyer  
55 and from the same source of power by  
suitable interconnections 68, as shown.

The means for returning to the trough 49 95  
the shot which has been thrown off from the  
saw as the work progresses is shown in Figs.  
1 and 2, wherein the belt conveyer 55 drives  
the miter-gears G' and G<sup>2</sup>, which in turn drive  
the vertical shaft and miter-gears G<sup>4</sup> at the 100  
top of the shaft and G<sup>5</sup> at the bottom of the  
shaft. These gears in turn drive the miter-  
gears G<sup>7</sup> at the top of the shaft and G<sup>6</sup> at the  
lower end of the shaft, the gear G<sup>7</sup> driving  
the conveyer 67 and belt conveyer 69. Power 105  
to operate these parts is furnished through a



motor 60 and is transmitted to the conveyer 55 through the belt 59 and pulley 58. The belt conveyer drives the miter-gear G' and conveys shot from the elevator 67 along the bottom of the trough to be fed through the valves 50 and telescopic tubes 51 52 53 and the hollow bolts 41. The surplus shot that passes the last valve 50 is conveyed to the end of the conveyer-trough 49 and being carried up the curved end wall thereof is dropped down the vertical tube 70 into the lower conveyer 69 and carried to the sump.

It is manifest that the foregoing construction is capable of various changes and modifications without necessarily departing from the principle of the invention, and we do not wish to be understood as limiting ourselves to the construction here shown and described.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. A stone-sawing machine having in combination a reciprocable saw-bar having passages opening below the bar between the saw-blades, a source of shot-supply, and flexible connections between said source of supply and said passages in the saw-bar said connections having their lower ends fitted to and movable with the bar whereby the shot is delivered into the path of the blades.

2. A stone-sawing machine having in combination a reciprocable saw-bar having passages opening below the bar between the saw-blades, a source of shot-supply, flexible connections between the source of supply and said passages in the saw-bar, said connections having their lower ends fitted to and movable with the bar, valves in said connections, and means for returning the used shot to the source of supply.

3. In a stone-sawing machine, the combination of a reciprocable saw-bar having passages opening below the bar between the saw-blades and saw-blades carried by said bar, means for delivering shot to the said blades, said means including an overhead conveyer extending parallel with the saw-support, valved connections between the conveyer and the passages in the saw-bar and discharging into the path of and between the saw-blades, a reservoir subjacent to the saw arranged to receive the shot discharged by the saw and means for automatically returning the shot from said reservoir to said overhead conveyer.

4. In a stone-sawing machine, the combination of a reciprocable saw-bar having passages opening below the bar between the saw-blades, saw-blades carried by said bar, means for delivering shot into the path of the saw-blades, said means including an overhead trough, said trough having valved outlets in its bottom, flexible connections between said outlets and the passages in the saw-bar, said connections discharging into the path of and between the

saw-blades, a shot-carrier in said trough, a reservoir subjacent to the saw-bar and arranged to collect the shot discharged by the saw-blades, and means for returning the shot from the reservoir to said trough.

5. In a stone-sawing machine, the combination of a reciprocable saw-bar having passages opening below the bar between the saw-blades, saw-blades carried by said bar, means for delivering shot into the path of and between the saw-blades, said means including an overhead trough, said trough having valved outlets in its bottom, flexible connections between said outlets and the saw-bar, said connections discharging through said passages in the saw-bar into the path of the saw-blades, a shot-carrier in said trough a reservoir subjacent to the saw and arranged to collect the shot discharged by the saw-blades, means for delivering water with the shot from the trough to the saw, means for washing the shot in the reservoir, and means for returning the shot from the reservoir to the trough.

6. In a stone-sawing machine, the combination of a reciprocable saw-bar, saw-blades carried by said bar, means for delivering shot to the saw-blades, said means including an overhead trough, a conveyer therein, valved connections between the trough and the bar discharging into the path of and between the saw-blades, means for delivering water along with the shot to the saw-blades, a reservoir subjacent to the saw to collect the shot discharged by the saw, means for washing the shot in the reservoir, a shot-elevator communicating between the reservoir and said trough, means for operating the elevator and the conveyer in said trough in unison, and means for discharging the surplus shot in the trough again into the reservoir.

7. A stone-sawing machine having in combination a reciprocable saw-bar, saw-blades carried by the bar, said bar having passages opening below the bar between the saw-blades a source of shot-supply, and means having one end connected to the shot-supply and the other end fitted to move with the saw-bar, for delivering the shot into said passages in the saw-bar.

8. In a stone-sawing machine, the combination with a reciprocable saw-bar and saw-blades carried thereby, said bar having passages opening below between the saw-blades, of a source of shot-supply and flexible shot-conveying means between said source of supply and the passages in said saw-bar, connected directly therewith and discharging into the path of and between the individual saw-blades.

9. In a stone-sawing machine, the combination with a suitably-supported saw, of a shot-conveyer trough above the saw, a shot-reservoir below the saw, means of delivering the shot from the trough to the saw and means for returning the shot from the reservoir to the trough, and means for discharging back into



the reservoir the shot in the trough in excess of that being fed to the saw.

10. In a stone-sawing machine, the combination with a suitably-supported saw, of an  
5 overhead trough to contain shot, a shot-reservoir beneath the saw, valve-controlled means for delivering shot to the saw, means for conveying shot from the reservoir to the trough, a conveyer in the latter, and connections between  
10 the trough and conveyer for the return of surplus shot over and above the amount fed

to the saw, said conveyer operating to discharge said surplus into said connections.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses. 15

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BARTLETT B. CHANDLER.

Witnesses:

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C. J. GRIFFIN.