

G. L. FULLER.
STONE SAWING MACHINE.
APPLICATION FILED JULY 1, 1907.

925,767.

Patented June 22, 1909.

3 SHEETS—SHEET 1.

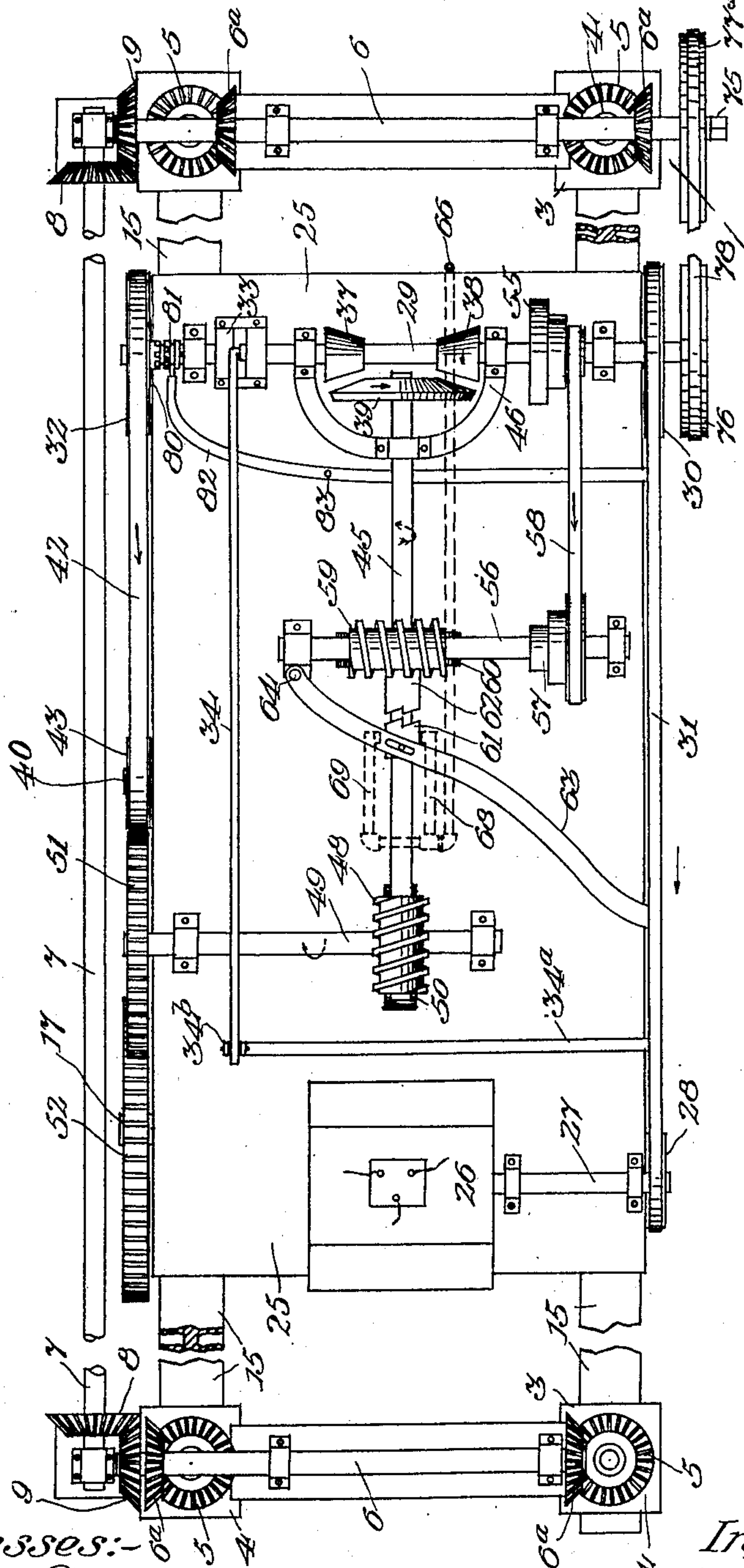


Fig. 1.

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per
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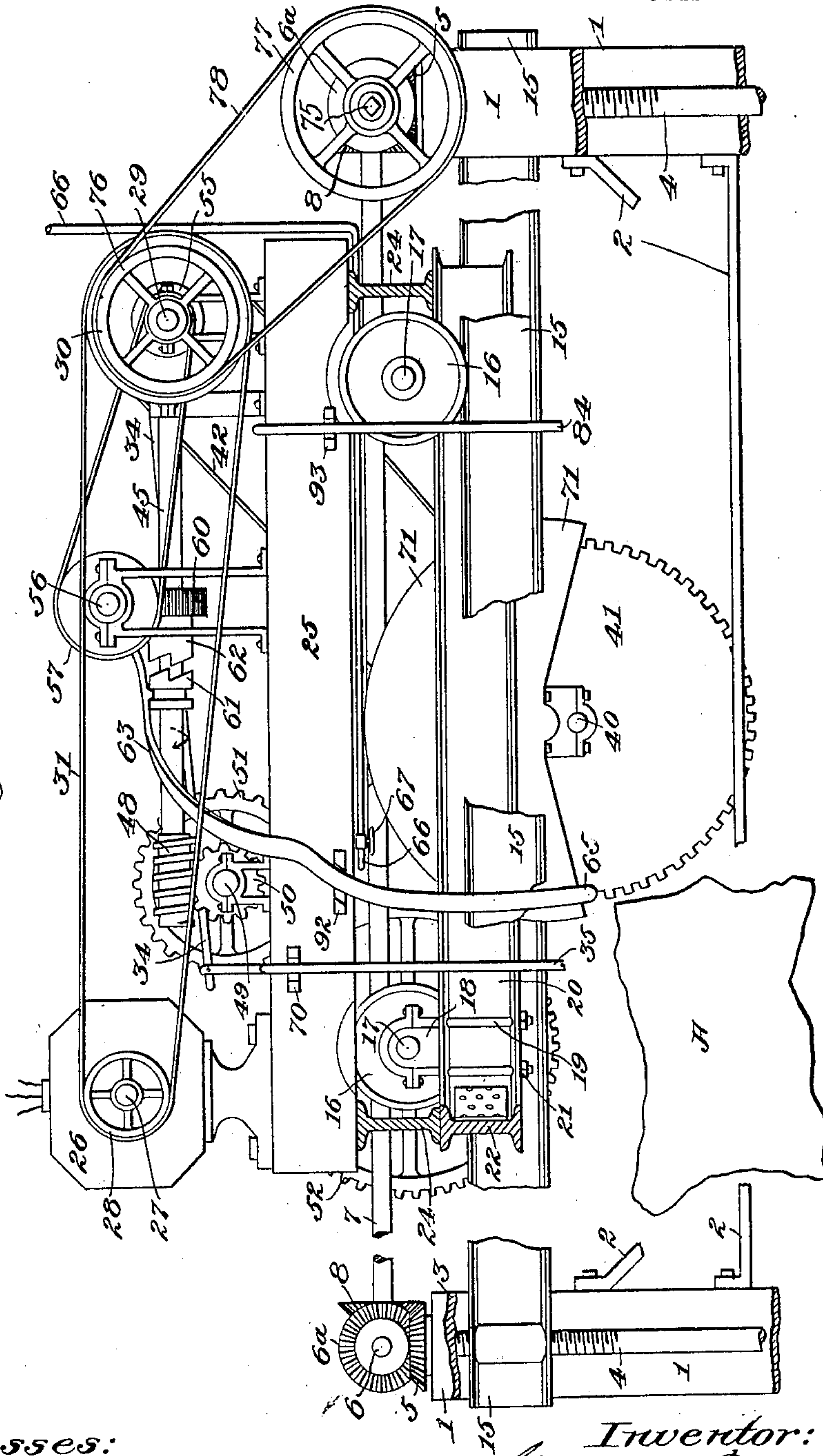
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3 SHEETS—SHEET 2.

Fig. 2.



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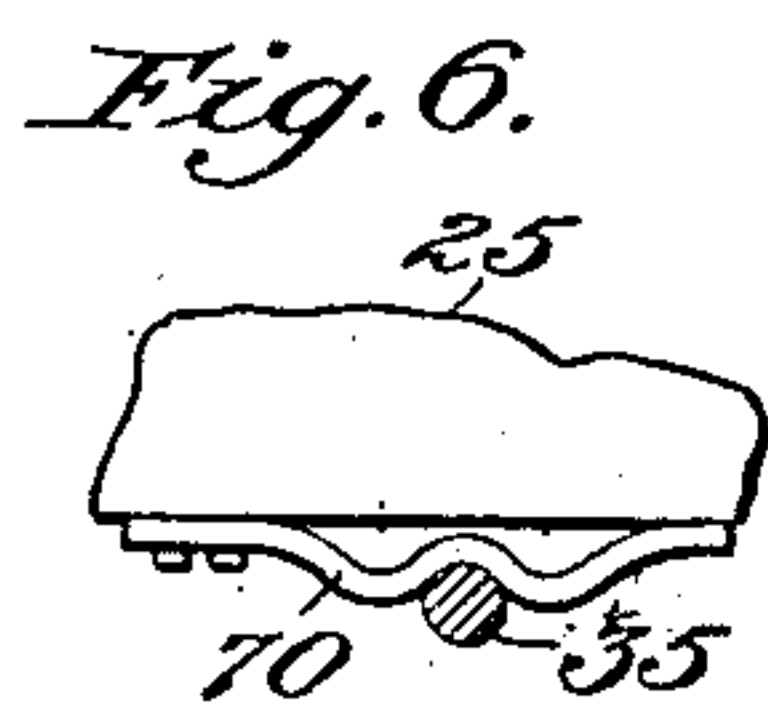
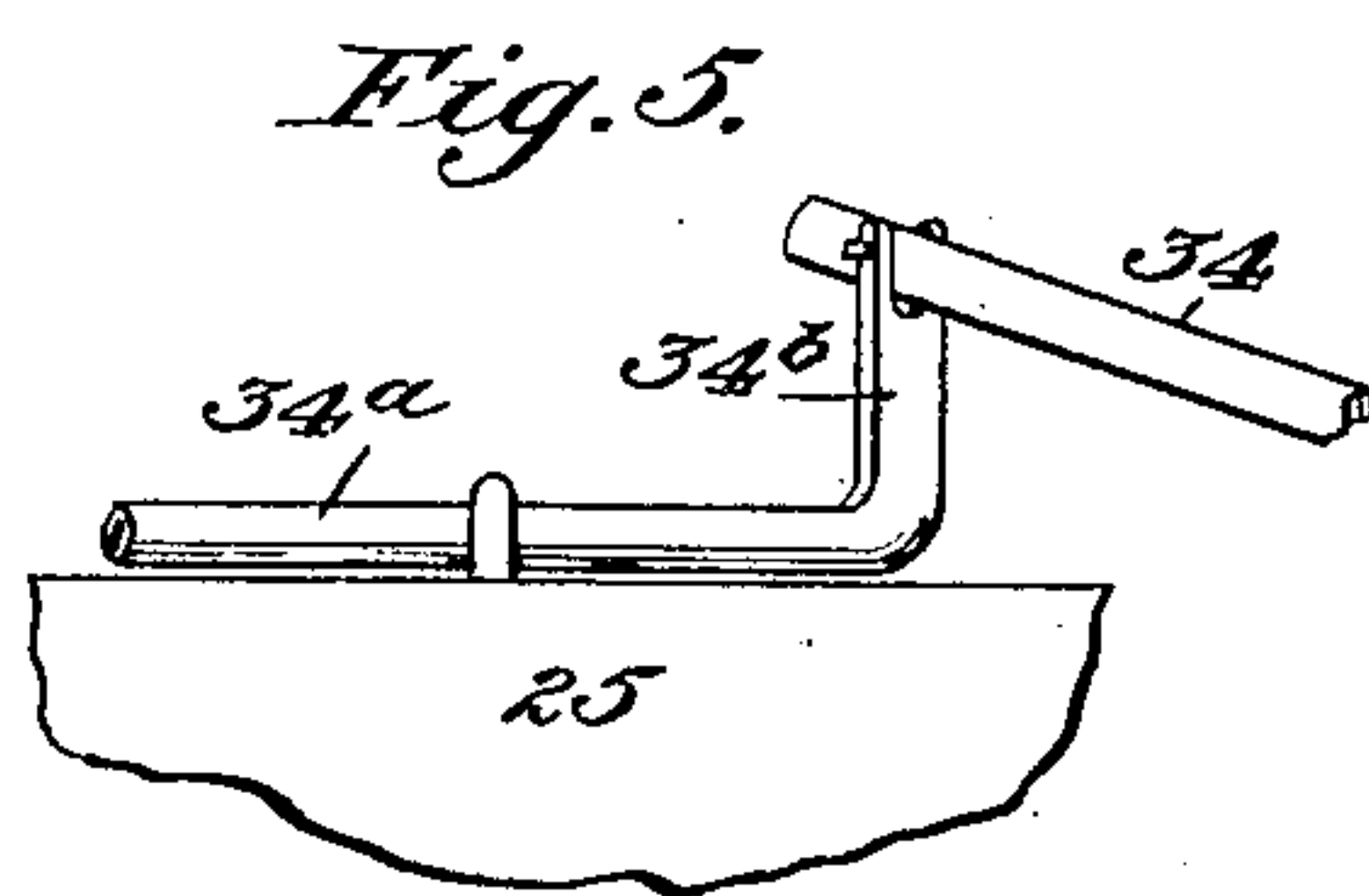
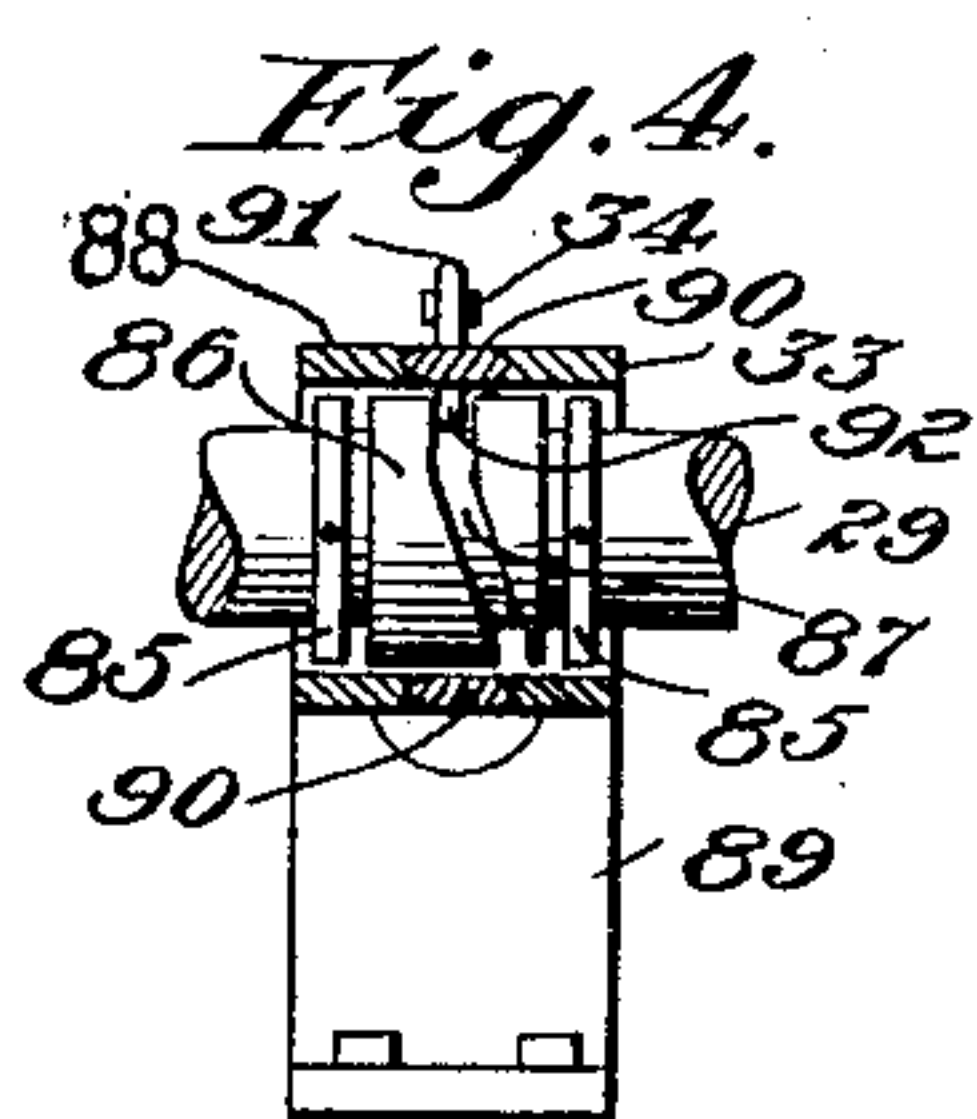
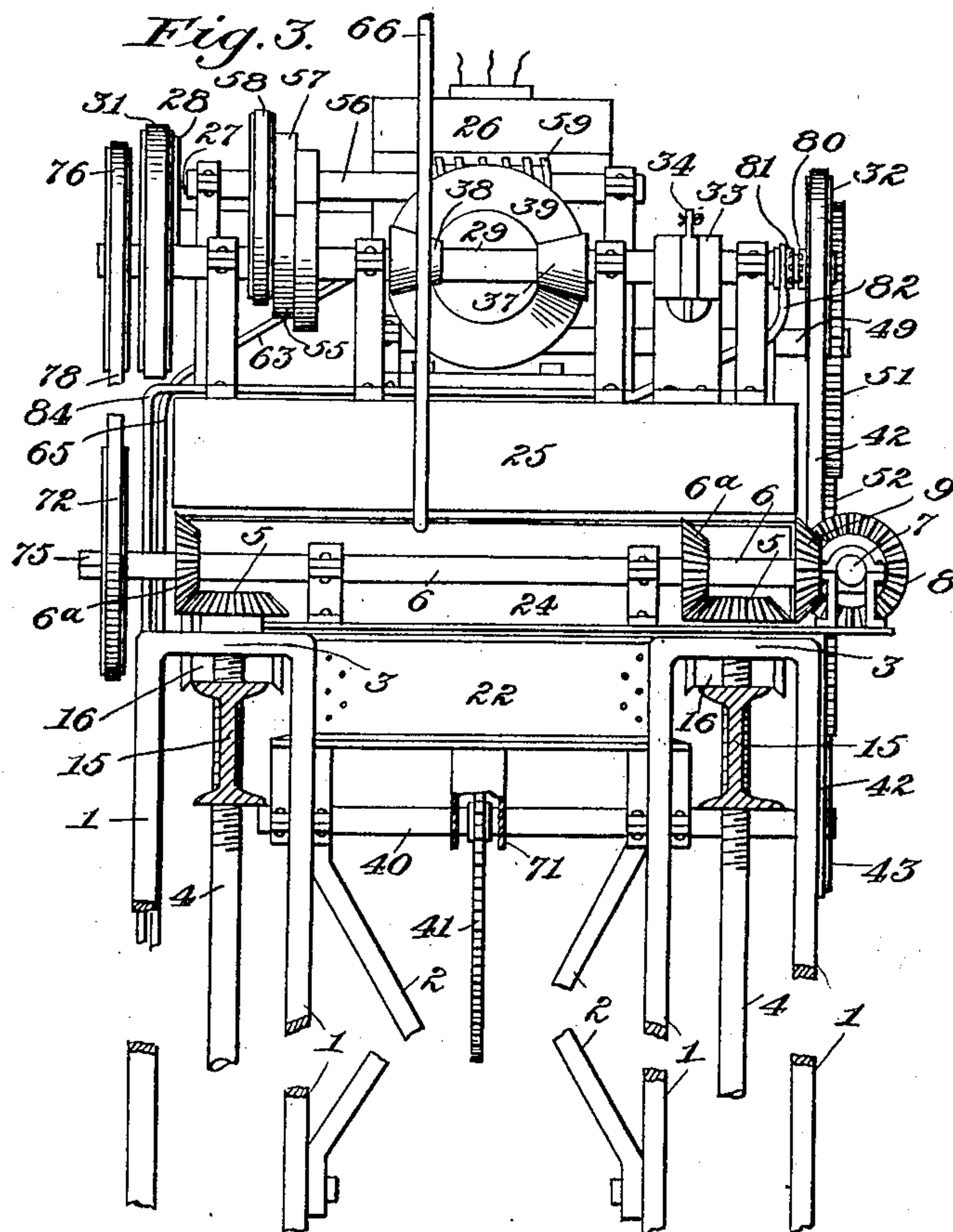
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

GEORGE L. FULLER, OF UTICA, NEW YORK.

STONE-SAWING MACHINE.

No. 925,767.

Specification of Letters Patent.

Patented June 22, 1909.

Application filed July 1, 1907. Serial No. 381,647.

To all whom it may concern:

Be it known that I, GEORGE L. FULLER, a citizen of the United States, residing at Utica, in the county of Oneida and State of New York, have invented certain new and useful Improvements in Stone-Sawing Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to an improved stone sawing machine, and I declare that the following is a full, clear, concise and exact description thereof, sufficient to enable one skilled in the art to make and use the same, reference being had to the accompanying drawings in which like reference characters refer to like parts throughout.

The particulars of the invention will appear from the following description in connection with the drawings, and comprises the combination of the several members and utilities described and set forth and certain features thereof.

In the drawings Figure 1 is a plan view of the device; Fig. 2 is a side view, certain parts being broken away; Fig. 3 is a rear view; Fig. 4 is a detail view of a chuck-box, and Figs. 5 and 6 show details of the machine.

The construction comprises stationary supports on which are adjustably mounted tracks which support in turn a frame-work on which is mounted the movable operating members of the device.

Referring to the drawings in detail, 1 represents the standards or pedestals which are placed one at each corner and which may be braced, for instance by guys or rods 2. These standards may be mounted on concrete or masonry base-piers to give rigidity, and the four standards may be suitably connected to form a rigid mount.

I have provided means for raising and lowering the frame which carries the saw and its operating parts, and illustrate such means in one form.

The standards or pedestals have transverse tops 3 on which are supported screws 4 which pass through the track 15 which is screw-threaded therefor so that the turning of the screws raises or lowers the track. These screws can be operated manually, but I illustrate a means for operating them synchronously. The gears 5, on the screws, at each end of the machine, mesh with gears 6^a

on shaft 6. The shafts at each end of the device are operated and connected by shaft 7, the beveled gears 8 and 9 being provided to transmit motion to the shaft 6. Any other suitable means may be preferred, and I illustrate but a single form. Power may be applied by hand or derived from other suitable source.

The tracks 15 are extended a suitable distance on each side of the working field, where stone A is placed, to permit free movement of the saw-carriage and its operating parts to and fro. The tracks which are supported on the pedestals by the screws 4 are shown as I-beams, the webs of which are cut for the screws to pass through the threads as indicated in Fig. 2. A truck or frame is carried on these tracks by wheels 16 suitably mounted on axles 17. The frame consists of I-beams 20 on the sides to which, at their ends are bolted cross I-beams 22. The axles are provided with suitable boxes, indicated at 18, on which are mounted U-bolts 19 which pass through I-beams 20 secured by nuts 21. The frame supports transverse I-beams 24, one being provided at each end, on which I mount a platform 25 of stone to give weight to the device and to support the operating parts.

On the stone platform 25 is mounted a motor 26 having a shaft 27 and power pulley 28. At the other end of the platform shaft 29 is mounted, on which is pulley 30 to which power is transmitted by belt 31, the direction of the movement being indicated by the arrow, Fig. 1. This shaft extends across the stone or platform 25 and at the other end has clutch-pulley 32, so that the saw need not be revolved at all times when the shaft is rotated. The shaft is mounted for a slight shifting movement endwise through means of an ordinary chuck-box 33 which is operated by rods 34 and 34^a which extend to and terminate in a handle 35 convenient to the operator. The rod 34 has an upturn at 34^b with link connection at that point between parts 34 and 34^a so that the swing of the handle reciprocates rod 34 and operates box 33 to shift the shaft 29 so that one or the other of friction cones 37 and 38 may be brought into contact with friction cone 39, or the shaft may be in a neutral position so that the latter cone is not affected by either of the other cones. On the underside of the

frame beams 20 is suitably mounted the shaft 40 which carries the saw 41 which is operative by means of a belt 42 extended to the pulley 43 on the end of the shaft 40. The revolution of the shaft 29 thus revolves saw 41 at a suitable rate of speed, it being understood that the several gears are properly proportioned for requisite speed.

The frame and supported platform are moved to and fro on the tracks by the application of the power of shaft 29. For instance, the shaft is shifted by means of the lever 34 so that friction cone 37 contacts with cone 39. The latter cone is fixed on the transmission or intermediate shaft 45 supported by journal frame 46 which also supports shaft 29. The revolution of shaft 29 turns cone 39 and shaft 45 in the direction indicated by the arrow on the shaft. On the end of shaft 45 is a worm 48. The shaft 49 is mounted on the platform 25 and carries a gear 50 which meshes with worm 48 whereby shaft 49 is turned in the direction indicated by the arrow shown on that shaft, and gear 51 which is mounted on the end of that shaft turns gear 52 with which it meshes and which is mounted on the end of the wheel axle 17 so that the revolution of the shafts, as stated, propels the platform and frame forward. Conversely, the shifting of shaft 29 and the contact of friction cone 38 with friction cone 39 turns the cone and the shaft in the direction shown by the arrow on the cone and returns the frame and platform, the adjustment of these parts being such as to make prompt movement to bring the platform and saw up to the point of working.

On the shaft 29 is mounted a set of cone pulleys 55. A shaft 56 is suitably mounted on the platform and carries a corresponding set of cone pulleys 57 adapted to receive power from cone pulleys 55 through belt 58. The shaft 56 carries worm 59 and the shaft 45 carries a loosely mounted gear 60 with which the worm meshes. The shaft 45 is provided with a clutch 61 to engage clutch 62 mounted on gear 60. The clutch 61 is operated by lever 63 pivoted at 64 and terminating in a handle 65, the operation of which throws the clutch 61 in or out of engagement with clutch 62 which, when the clutch is out of engagement, revolves freely on the shaft 45. When this engagement is effected, however, the revolution of shaft 56 and gear 60 revolves the shaft 45 (the shaft 29 being in neutral position) so that power is transmitted to revolve shaft 49 and gears 51 and 52 with a slow movement so as to carry the car forward at the right speed for the work of the saw.

At 66 I show a water supply pipe which passes down at one end of the platform and thence forward, Fig. 2, and is provided with a pet-cock 67 beyond which it divides into two portions 68 and 69 which are extended and

directed so as to discharge water on each side of the saw.

71 shows a case mounted to cover the upper portion of the saw to catch water and sand thrown therefrom.

On the side of the frame or platform and at 70, 92 and 93 plates may be provided with a depression intermediate the ends for the respective handles 35, 65 and 84 to rest in and hold the connected parts in given place.

The means for raising and lowering the truck or frame and the platform may be operated, as stated, by hand as by an ordinary crank on the head 75 of shaft, or other like means. If desired, the work may be done by power means, as by belt 78 to transmit power from pulley 76 on shaft 29 to pulley 77 on shaft 6, the belt being straight or crossed according as it is desired to lower or raise the platform.

The pulley 32 has been termed a clutch pulley. On its hub is the collar 80 with notched edge. A similarly notched collar 81 is splined on shaft 29. This collar may be moved by means of lever 82, pivoted at 83, and having handle 84 to bring the collars into engagement to revolve pulley 32 and operate the saw, or they may be separated to allow the saw to remain idle.

The chuck-box 33 to which I have referred is shown in detail in Fig. 4, and is one form of such a device. Collars 85 are fastened to shaft 29. Between them is sliding collar 86, which may be splined to the fixed parts of the box 88 and having an oblique peripheral groove 87. The collars are inclosed by box 88, secured to base 89 and partly made up of a collar 90 which may be rotated by lever 34 which engages pin 91 on the collar. The collar has stud 92 extended into the groove 87 so that the turning of the collar 90 thrusts collar 86 against one or the other of collars 85 and shifts the shaft.

Having described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a stone sawing machine, a track, means supporting the track whereby to raise or lower the same at different points synchronously, a platform wheel-supported on the track, a power means on the platform, a main power shaft mounted on the platform, saw operating means connected with said shaft by disconnectible means, a transmission shaft, means for rotating the said shaft from the main shaft in either direction at a comparatively rapid rate of speed, operative connections between the said shaft and the main shaft independent of the last mentioned means whereby to rotate the said shaft at a comparatively slow rate of speed, and means connecting said transmission shaft and the wheel supports whereby to move the platform to and fro at varying speeds according to the means employed in transmitting power

from the main shaft to the transmission shaft, substantially as described.

2. In a stone sawing machine, the combination of a platform, wheel supports therefor, a main-power-shaft, a shaft intermediate the main shaft and the wheel supports, operative connections between the wheel supports and the intermediate shaft, a plurality of means for operatively connecting the main shaft and the intermediate shaft whereby, through one of said means, to rotate the intermediate shaft in either direction to move the platform at a given speed in either direction and through the other of said means to move it at a lesser speed, the said latter connecting means being automatically disconnectible at the reverse movement of the platform upon connection of the former means with the intermediate shaft, substantially as described.

3. In a stone sawing machine, the combination of a platform, wheel supports therefor, a main-power-shaft, a shaft intermediate the main shaft and the wheel supports, operative connections between the wheel supports and the intermediate shaft, a plurality of means for operatively connecting the main shaft and the intermediate shaft whereby, through one of said means, to rotate the intermediate shaft in either direction to move the platform at a given speed in either direction and through the other of said means to move it at a lesser speed, the said latter connecting means being automatically disconnectible at the reverse movement of the platform upon connection of the former means with the intermediate shaft, and a saw operatively connected to the main shaft by means disconnectible whereby the shaft may be operated without operating the saw, substantially as described.

4. In a stone sawing device, the combination with a single power shaft thereon, of plurality of means severally for operating the sawing mechanism, for disconnecting it from operation, for feeding the sawing mechanism to the material to be cut, for connecting and disconnecting the said latter means from its associated parts, and for moving the said device to and fro, substantially as described.

5. In a stone-sawing machine, the combination of a track, a platform with wheel-supports on the track, a power shaft mounted on the platform and adapted to be shifted endwise, a pulley disconnectibly mounted on the shaft, means connected with said pulley for operating a saw, said saw, a series of members operatively connected with the wheel-supports, means for actuating the said series from the main shaft, in different endwise positions, to move the machine to and fro, independent members between said shaft and said series adapted to operate the said series from the shaft in its intermediate position, and means for making and breaking

the operative connection of such members between the shaft and the said series, substantially as described.

6. In a stone sawing machine, a platform having wheels and mounted on a track, a main shaft on the platform adapted to be shifted lengthwise to different operative positions, means for shifting said shaft, a pulley mounted on the said shaft by severable connection therewith, means connected with said pulley for operating a saw, members adapted to rotate the wheels and move the platform to and fro, a plurality of means for establishing operative connection between the shaft and the said members, the said means being adapted to move the platform to and fro at a given rate by use of one of the said means, or to move it, by use of the other, at a lesser rate of speed, substantially as described.

7. In a stone sawing machine, a track, means supporting the track whereby to raise or lower the same at different points synchronously, a platform wheel-supported on the track, a main power shaft mounted on the platform, saw operating means connected with said shaft by disconnectible means, a transmission shaft, means for rotating the said shaft from the main shaft in either direction, operative connections between the said shaft and the main shaft independent of the last mentioned means whereby to rotate the said shaft, and means connecting said transmission shaft and the wheel-supports whereby to move the platform to and fro at varying speeds according to the means employed in transmitting power from the main shaft to the transmission shaft, substantially as described.

8. In a stone sawing device, the combination with a single power shaft thereon, of plurality of means severally for operating the sawing mechanism, for feeding the sawing mechanism to the material to be cut, for connecting and disconnecting the said latter means from its associated parts, and for moving the said device to and fro, substantially as described.

9. In a device of the character described, a platform and frame mounted on wheels, a power member mounted on the platform and mechanisms connected therewith whereby to revolve the saw and to move the said frame and platform at varying rates of speed according to the means employed in transmitting power from the main shaft to the transmission shaft, and a shifting mechanism with lever connected with the said mechanisms whereby to move the frame to and fro independent of the operation of the saw.

10. In a stone sawing machine, a track, means supporting the track to raise or lower the same, a platform wheel supported on the track, a power means on the platform, a shaft connected with the power means, saw oper-

ating means connected with the shaft, a transmission shaft, means for rotating the latter shaft from the former shaft in either direction, operative connections between the said shaft and the main shaft independent of the last mentioned means whereby to rotate the shaft at a comparatively slow rate of speed, and means for rotating the wheels from the transmission shaft, substantially as described.

11. In a stone sawing machine, the combination of a platform, wheel supports therefor, a power shaft thereon, an intermediate shaft between the wheel supports and the main shaft and connected with the former, a plurality of means for operatively connecting the main shaft and the intermediate shaft whereby the latter may be rotated in either direction at a given rate of speed, a sawing member, and means operatively connecting the same with the main shaft whereby to rotate the same during the movement of the platform, substantially as described.

12. In a stone sawing device, the combination with a power means thereon, of a plurality of means severally for operating the sawing mechanism, for feeding the sawing mechanism to material to be cut, for connecting and disconnecting the said latter means from its associate parts, and for moving the said device to and fro, substantially as described.

13. In a stone sawing machine, the combination with a stationary frame or support having a vertically adjustable track or tram-

way, of a weighted carriage or truck mounted on wheels to run on said track or tramway, a rotary saw mounted on said carriage, a motor also mounted on said carriage, mechanism, operated from said motor, for driving said saw and for causing said carriage or truck to travel to and fro in two opposite directions, a series of connected screws for raising and lowering said track or tramway, and power driven mechanism, operatively connected with said motor, for synchronously operating said screws.

14. In a stone sawing machine, the combination with a stationary frame or support having a vertically adjustable track or tramway, of a carriage or truck mounted on wheels to run on said track or tramway and comprising a stone platform, a rotary saw mounted on said carriage, a motor also mounted on said carriage, mechanism, operated from said motor, for driving said saw and for causing said carriage or truck to travel to and fro in two opposite directions, a series of connected screws for raising and lowering said track or tramway, and power driven mechanism, operatively connected with said motor, for synchronously operating said screws.

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

GEORGE L. FULLER.

Witnesses:

HENRY M. LOVE,
ELEANOR T. DE GIORGI.