

No. 713,823.

Patented Nov. 18, 1902.

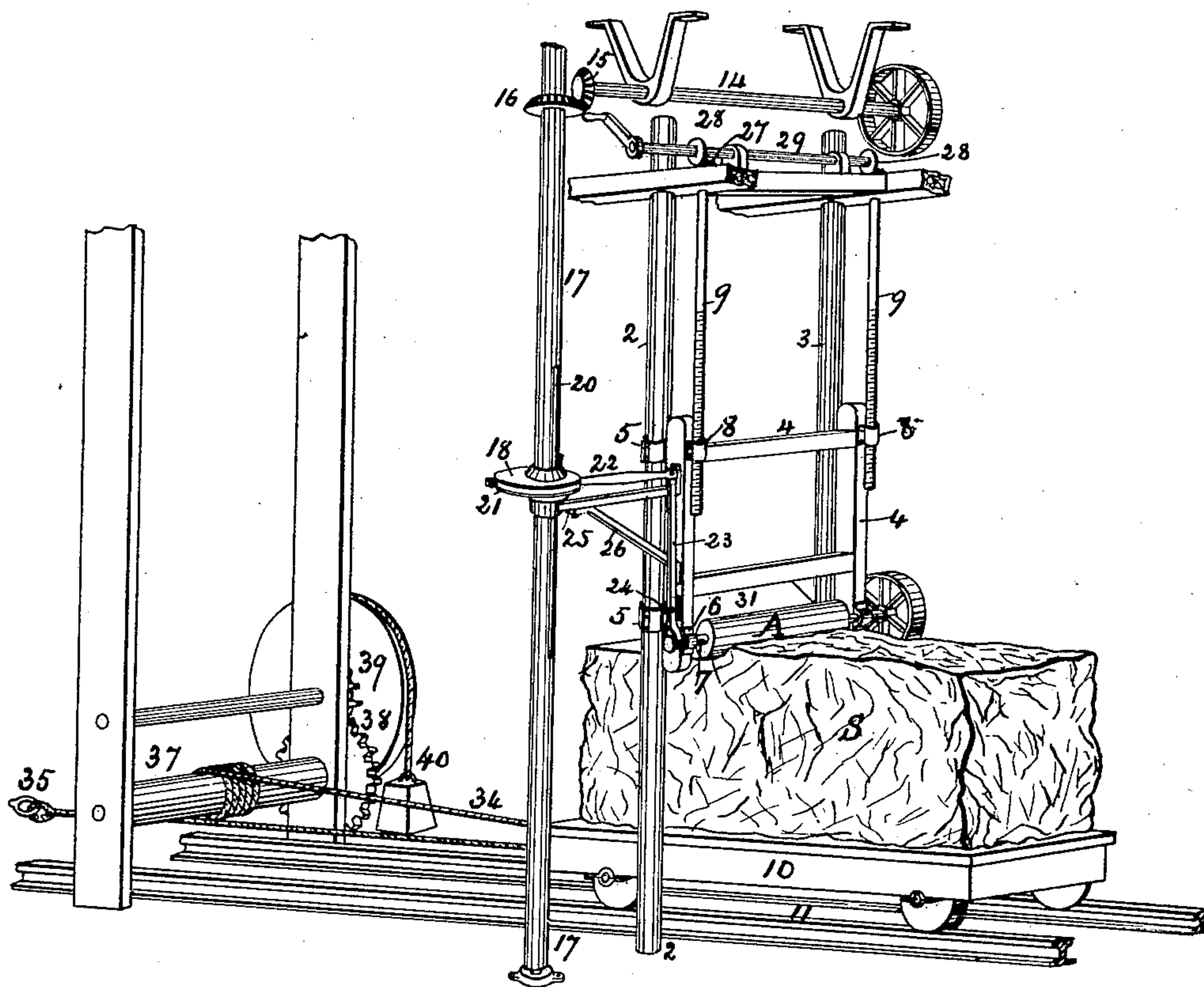
H. H. WETMORE.
STONE CUTTING MACHINE.

(Application filed Mar. 20, 1902.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



Inventor

Henry Harrison Wetmore

By

E. E. Masson

Attorney

Witnesses

R. H. Storm

J. J. Masson

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Fig. 3.

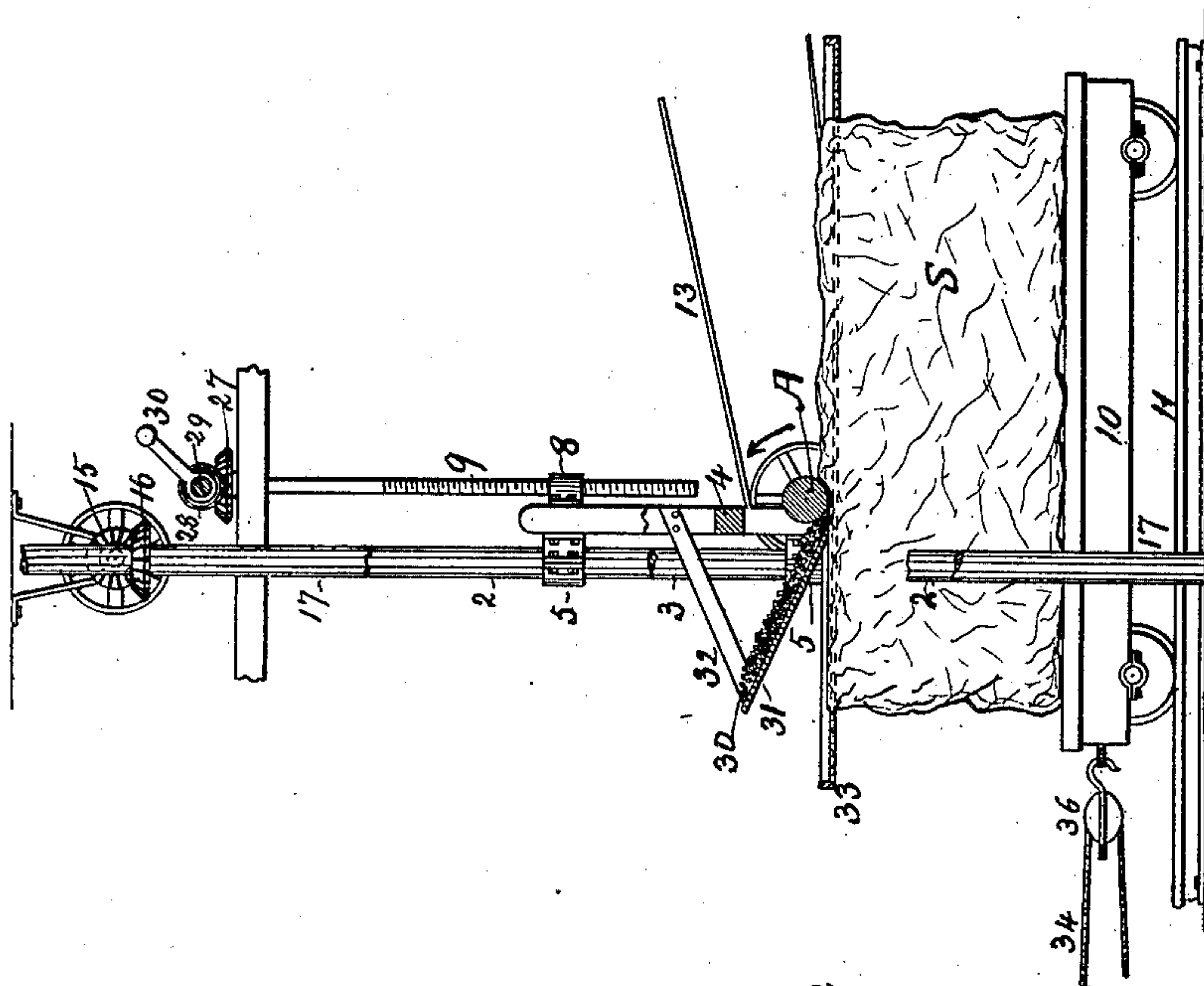
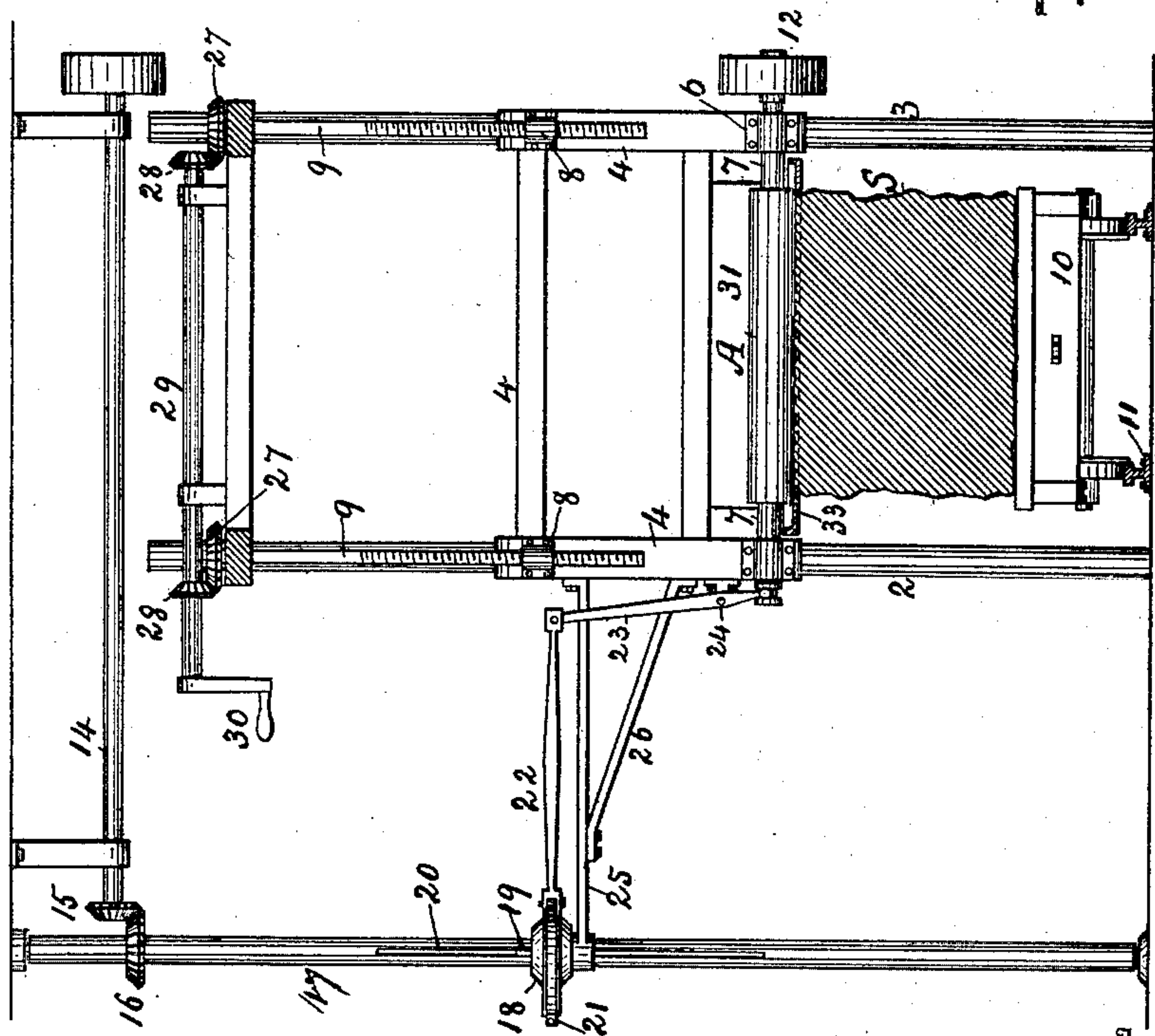


Fig. 2.



Inventor

Witnesses

R. F. Stum.

I. J. Masson

Henry Harrison Wetmore

By

E. E. Masson

Attorney

UNITED STATES PATENT OFFICE.

HENRY HARRISON WETMORE, OF ST. PAUL, MINNESOTA, ASSIGNOR OF
ONE-HALF TO WALTER ARNOLD, OF ST. CLOUD, MINNESOTA.

STONE-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 713,823, dated November 18, 1902.

Application filed March 20, 1902. Serial No. 99,086. (No model.)

To all whom it may concern:

Be it known that I, HENRY HARRISON WETMORE, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Stone-Cutting Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

10 The objects of my invention are to produce a simple and inexpensive machine adapted to cut and surface stone by means of a revolving horizontal roll, either plain or corrugated, with abrading material—such as iron shot, pieces of chilled iron, crushed steel, and other hard substances—directed under said roller for cutting or surfacing granite blocks or other stone. I attain these objects by the construction illustrated in the accompanying
20 drawings, in which—

Figure 1 is a perspective view of a stone-cutting machine constructed in accordance with my invention. Fig. 2 is a rear view of the same, partly in section. Fig. 3 is a
25 side view of the same, partly in section, having its vertical shaft and one of the standards of the frame partly broken away.

In said drawings numerals 2 and 3 represent two upright columns, which may be secured to the floor and ceiling of a room. To
30 said columns is slidably secured a rectangular frame 4 by means of collar-boxes 5, which are secured to the uprights of the frame 4 and embrace the columns 2 and 3. To the lower portion of the uprights of said frame are secured bearing-boxes 6 for the shaft 7 of the horizontal cylinder A. Said cylinder is made of iron, and its surface is either plain or corrugated and is capable of receiving
40 both a rotary and an endless reciprocating motion and is capable of being lifted bodily by the frame 4. To lift said frame, each one of its uprights has a nut 8 on its rear edge, through which passes a long screw 9, so that
45 the height of the roller A can be adjusted according to the height of the stone S, the top of which it is intended to cut level or to surface it. Said stone rests upon a car 10, the wheels of which are adapted to travel upon
50 rails 11, located between the columns 2 and 3.

A rotary motion is given to the cylinder A and to its shaft 7 by means of a pulley 12, mounted upon one end of said shaft, and a belt 13 passing around said pulley.

To give a longitudinal reciprocating motion to the roller, so that the abrading material will cut shallow grooves in the top of the stone diagonally to its line of advance first in one direction and then in another, there is overhead a power-shaft 14, suitably supported, which carries on one end a bevel-pinion 15, which meshes with a pinion 16, mounted upon a vertical shaft 17. Said shaft has suitable bearings and mounted thereon there is an eccentric 18, which is connected with said
60 shaft by a spline 19, fitting in a groove 20 lengthwise of said shaft. Around the eccentric 18 there is a metal strap 21, which is secured to one end of a connecting-rod 22. The opposite end of said rod is hinged to the upper end of a lever 23, which is pivoted at 24
70 to a bracket secured to the vertically-movable frame 4. The lower end of the lever 23 is forked and is received in a groove formed around the shaft 7 of the roller A, so that the
75 latter is reciprocated by the eccentric 18.

To elevate the eccentric 18 at the same time with the frame 4, there is secured to the side of said frame a bracket-arm 25, which is additionally supported by a brace 26 and has
80 its outer end made in the form of a collar to loosely embrace the vertical shaft 17. To rotate together the screws 9, each one has mounted on its upper end a bevel-pinion 27, which meshes with a bevel-pinion 28 on a
85 horizontal crank-shaft 29, the crank 30 of which can be rotated by the operator to adjust the height of the frame 4.

The cylinder A is made to revolve toward the rough portion of the top of the stone in the direction indicated by the arrow in Fig. 3. The abrading material, consisting mainly of granulated chilled iron, iron shot, or crushed steel, (shown at 30 in Fig. 3,) is distributed on a metal tray 31, which is held at the desired
95 angle by the side braces 32, which have their upper ends secured to the vertically-movable frame 4. The lower end of the tray 31 is immediately in the rear of the cylinder A. A larger tray-frame 33 is temporarily secured
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to the periphery of the stone adjacent to its top to keep the abrading material from falling off the top of the stone.

The car 10 and the stone S thereon are advanced automatically toward and under the cylinder A by means of the rope 34, having one end secured to a stationary object or ring 35, said rope passing around a pulley 36, hooked to the car, and back around a spool 37, operated by gearing 38 in connection with a drum-wheel 39 and a weight 40, but other means could be used to advance the car.

In operation the revolving motion of the cylinder A, in connection with its longitudinal reciprocating motion, will draw the abrading material 30 from the tray 31 down and under the cylinder A and force it out against the advancing stone, cutting and grinding away the rough part of the stone, leaving its surface smooth and true.

Having now fully described my invention, I claim—

1. A stone cutting and dressing machine, consisting of two uprights, a vertical frame 4 slidingly secured to said uprights, a cylinder and its shaft carried by said frame and adapted to receive a rotary and a longitudinal reciprocating motion, an inclined tray and braces therefor secured to said frame with its front edge close to the cylinder, and abrad-

ing material upon said tray substantially as described.

2. In a stone-cutting machine, the combination of two uprights, a vertical frame slidingly secured to said uprights a horizontal cylinder and its shaft carried by said frame, an inclined tray and braces therefor secured to said frame, abrading material upon said tray, and a car adapted to travel between the uprights and to carry a stone under the cylinder and abrading material, substantially as described.

3. The combination of two uprights, a vertical frame slidingly secured to said uprights, a horizontal cylinder and its shaft carried by said frame, an inclined tray and braces therefor, a vertical shaft alongside of the uprights, an eccentric upon said shaft provided with a groove and spline, a strap and connecting-rod for said eccentric and a pivoted lever having one end hinged to the connecting-rod and the other end embracing the grooved neck of the shaft of the horizontal cylinder, substantially as described.

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

HENRY HARRISON WETMORE.

Witnesses:

J. MACKEY,

E. S. CHITTENDEN.