

(No Model.)

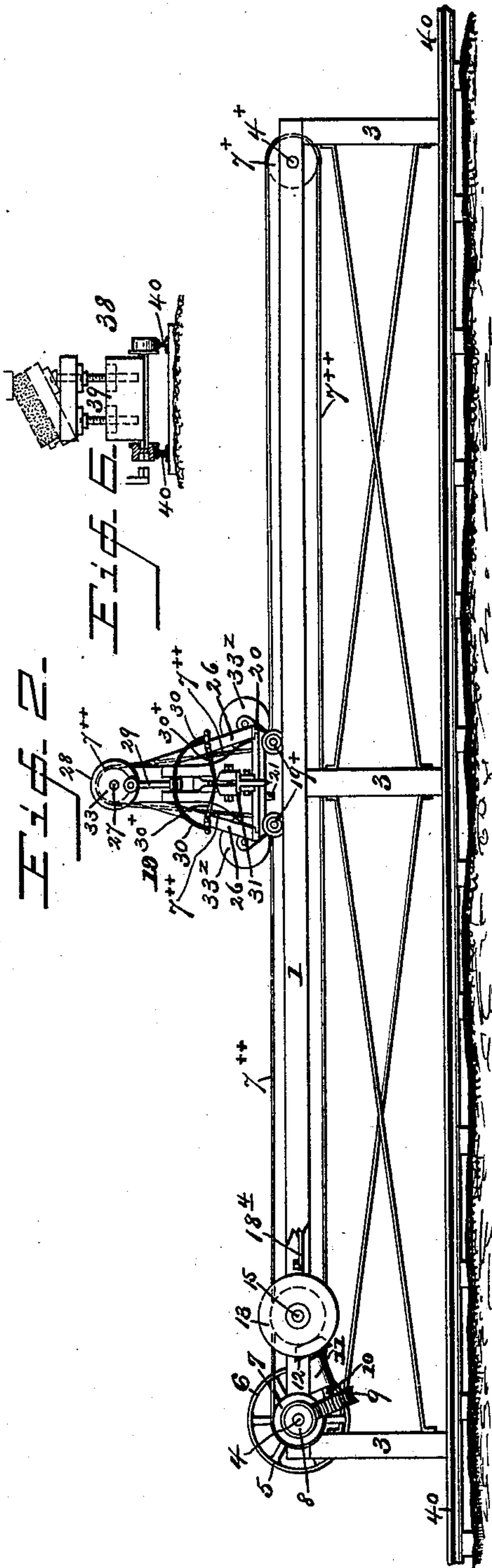
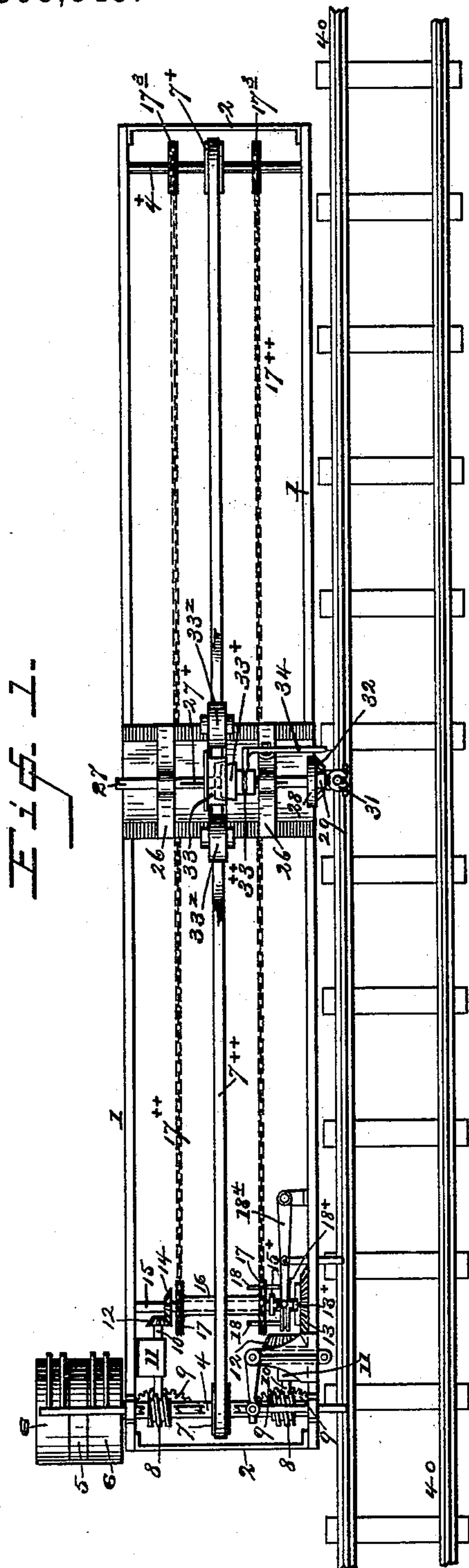
2 Sheets—Sheet 1.

F. MANNING.

MACHINE FOR DRESSING STONE.

No. 395,843.

Patented Jan. 8, 1889.



WITNESSES:

L. Douville,
O. J. Moore.

INVENTOR:

Frank Manning
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(No Model.)

2 Sheets—Sheet 2.

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Fig 3

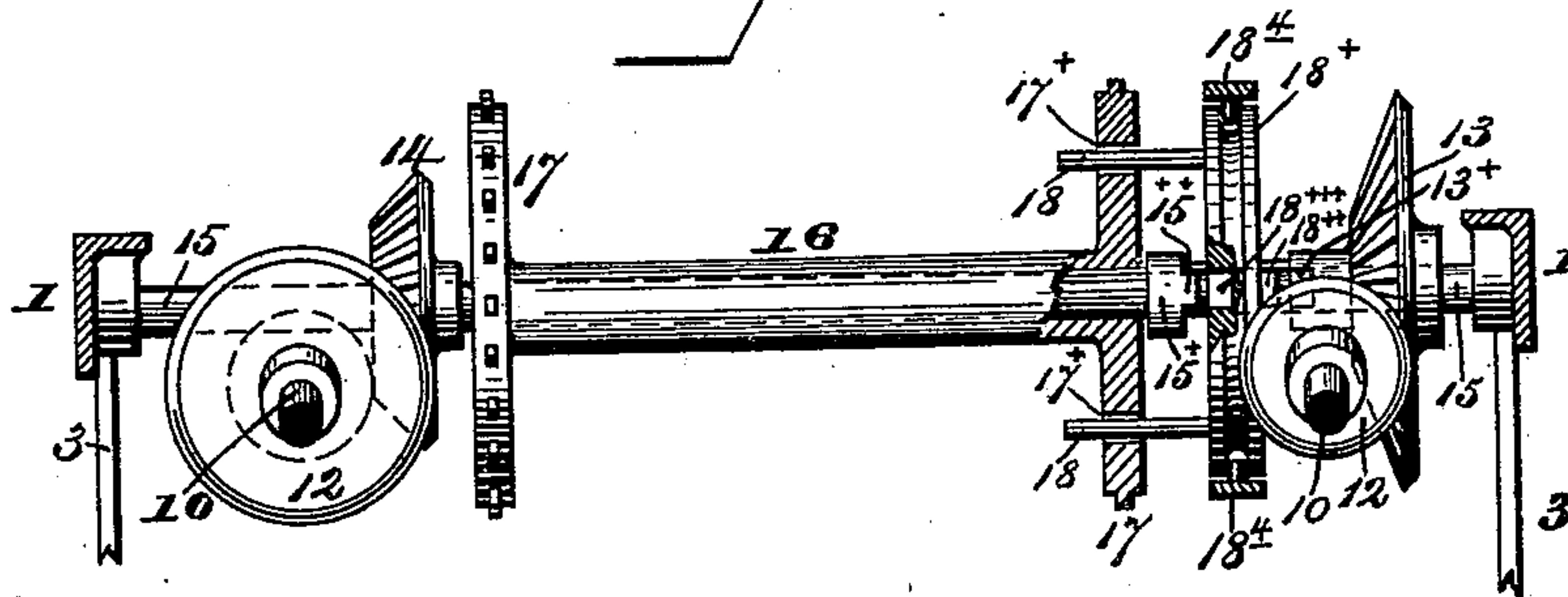


Fig 4

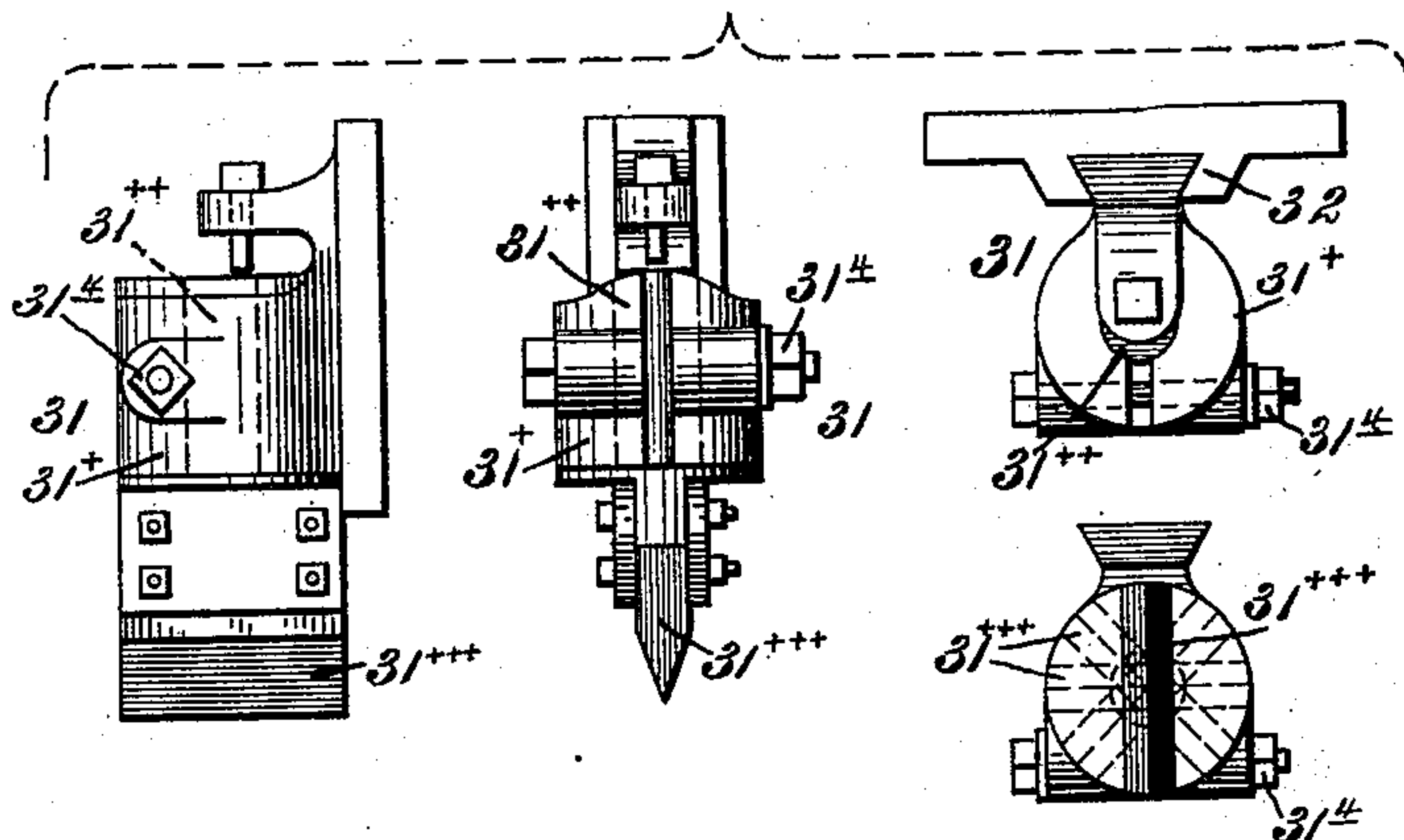
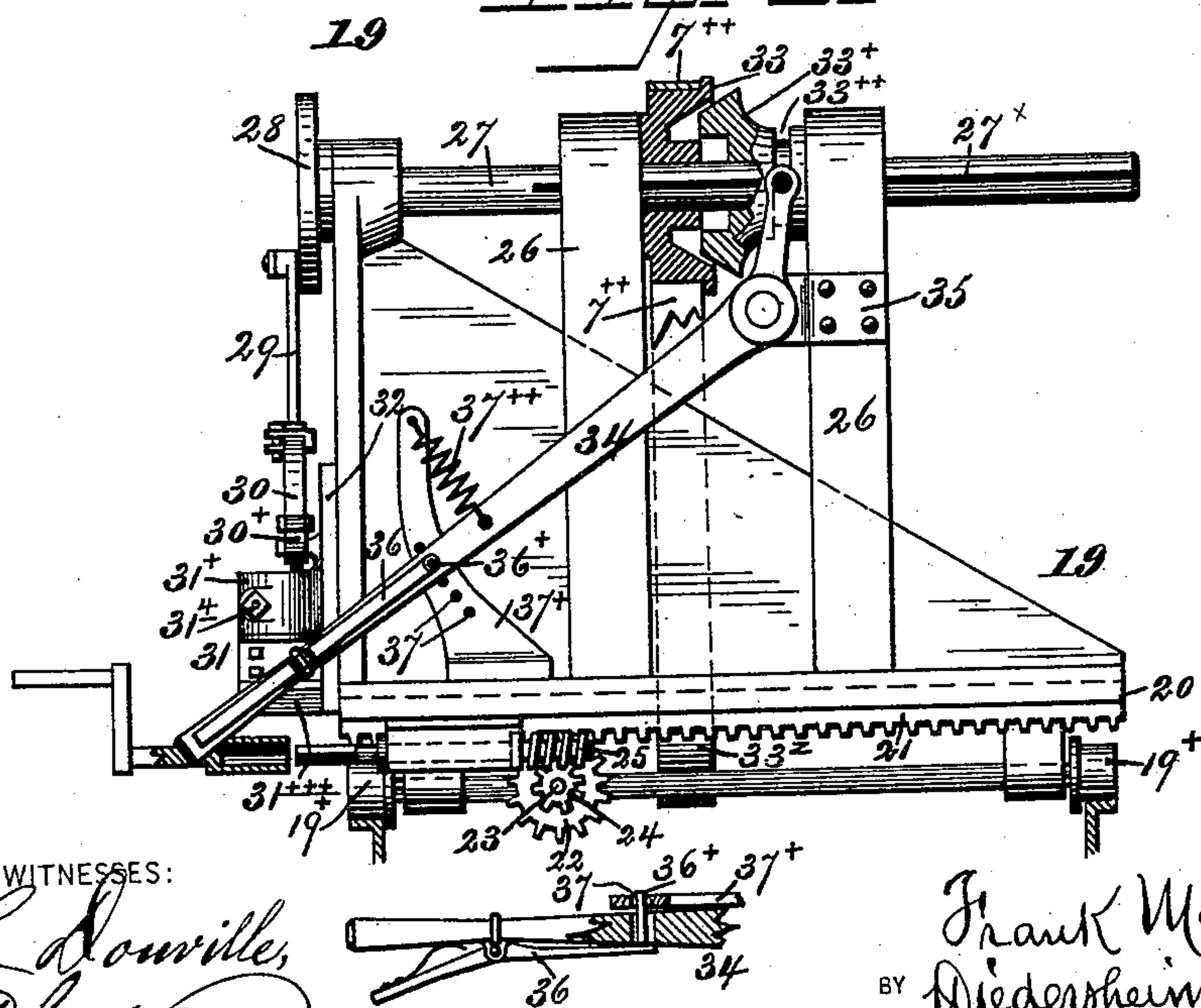


Fig 5



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UNITED STATES PATENT OFFICE.

FRANK MANNING, OF NARBERTH, PENNSYLVANIA, ASSIGNOR TO THE MANNING MACHINE COMPANY, OF NEW JERSEY.

MACHINE FOR DRESSING STONE.

SPECIFICATION forming part of Letters Patent No. 395,843, dated January 8, 1889.

Application filed July 13, 1888. Serial No. 279,855. (No model.)

To all whom it may concern:

Be it known that I, FRANK MANNING, a citizen of the United States, residing at Narberth, in the county of Montgomery, State of Pennsylvania, have invented a new and useful Improvement in Machines for Dressing Stone, which improvement is fully set forth in the following specification and accompanying drawings.

My invention relates to improvements in machines for dressing stone, and the objects of the invention are to provide improved mechanism for causing the carriage to travel longitudinally and transversely, or at a right angle to said longitudinal or horizontal travel; further, to provide an improved construction of carriage and mechanism for operating the hammer or cutter, and also mechanism for throwing the hammer-operating mechanism into or out of operation, as desired; further, to provide an improved construction of cutter or hammer; and, further, to provide an improved construction of stone-carrying trucks.

The invention consists of the novel construction and combination of parts hereinafter described, and specifically claimed.

Figure 1 represents a top plan view of a machine for dressing stone embodying my invention. Fig. 2 represents a side elevation thereof. Fig. 3 represents an end view of a detached portion on an enlarged scale. Fig. 4 represents views of the hammer or cutter. Fig. 5 represents an end view of the carriage. Fig. 6 represents an end view of the stone-carrying truck.

Similar numerals of reference indicate corresponding parts in the several figures.

Referring to the drawings, the frame of the machine comprises the parallel bars 1, the connecting-bars 2, and the supports or legs 3. In one end of the frame is journaled the driving-shaft 4, carrying the pulley 5 and loose pulleys 6. On said shaft 4 is mounted a pulley, 7, and worm-wheels 8. The worm-wheels 8 mesh with worm-gears 9 in inclined shafts 10, having their bearings in boxes 11. The shafts 10 carry bevel gear-wheels 12, which mesh with bevel gear-wheels 13 and 14 mounted on a shaft, 15. The bevel gear-wheel 13 is loose on said shaft, and is cut out at 13^x, the purpose of which will be explained,

and the bevel gear-wheel 14 is secured fast to the shaft 15 and revolves therewith. Connected with the shaft 15 is a collar or flange, 15^x, provided with a projection, 15^{xx}, the purpose of which will appear.

16 represents a sleeve surrounding the shaft 15, and adapted to revolve therewith. This sleeve carries the sprocket-wheels 17, one of which is provided with openings 17^x, adapted to receive the arms or pins 18 on the clutch 18^x. The clutch 18^x is provided with an extension, projection, or lug, 18^{xx}, adapted to enter the cut-out portion or notch 13^x, and a cut-out portion or notch, 18^{xxx}, adapted to receive the extension or lug 15^{xx}, and is provided on its periphery with an annular groove adapted to be engaged by the shifting-lever 18⁴, for the purpose well known.

In the other end of the frame is fixed a shaft, 4^x, and running loose on said shaft are the sprocket-wheels 17³ and the belt-pulley 7^x. Over the pulleys 7 and 7^x travels the belt 7^{xx}, hereinafter more fully referred to, and over the sprocket-wheels 17 and 17³ travel belts, bands, or chains 17^{xx}. From this construction it will be seen that the driving-shaft is revolved by means of the driving-pulley imparting motion to the sprocket-wheels and causing the belt 7^{xx} to travel and also the chains 17^{xx}. It will also be seen that when the clutch 18^x is caused to have the lug engage the cut-out portion 13^x of the gear-wheel 13 the sleeve and chains are then caused to revolve at the same speed as the said gear-wheel 13, and that by causing the collar 15^x to have its lug 15^{xx} engage the cut-out portion or notch 18^{xxx} of the clutch 18^x the sleeve 16 will be revolved at the same rate as the shaft 15 upon which it is mounted; and also the gear-wheel 14, as will be readily understood.

19 represents the carriage mounted on wheels 19^x, adapted to run on the parallel bars of the frame.

20 represents the carriage-frame provided with the rack 21 on the under side, adapted to be engaged by the pinion 22 on a shaft, 23, carrying a worm, 24, operated by the worm-shaft 25. The worm-shaft which operates the worm is preferably revolved by means of a wrench adapted to fit in the end of the said

shaft. From this construction it will be seen that by turning the worm-shaft motion is imparted to the rack on the carriage, moving the same transversely.

26 represents standards or uprights rising from the carriage-frame, and in the upper ends of said uprights is journaled the transverse shaft 27, having a keyway, 27^x. On the forward end of said shaft 27 is situated the crank-wheel 28, to the wrist-pin of which is connected the rod 29, carrying the spring 30, having the belt 30^x attached to its ends. This belt 30^x is connected with the hammer 31, which is provided with the beveled portion adapted to slide in dovetailed ways 32 on the carriage-frame. The hammer is of peculiar construction, and consists of the clamping-jaws 31^x, having their contact-faces curved and adapted to receive the curved or cylindrical arm or post 31^{xx} of the cutter 31^{xxx}. By thus constructing the jaws and cutter it is evident that the cutter can be turned to any angle desired, and retained in the clamping-jaws by means of the screw-bolt and jam-nut 31¹, and thus made to dress the stone to suit convenience.

33 represents a belt-pulley loose on the shaft 27, and this pulley is cupped to receive the clutch 33^x, which is connected with the shaft by means of a key engaging the keyway 27^x of the shaft, and is adapted to revolve said shaft. The clutch is provided with an annular groove, 33^{xx}, and in said groove is received the upper end of the shifting-lever 34. The shifting-lever is fulcrumed to an arm or extension, 35, on one of the uprights 26. In order to retain the lever in the position to which it has been shifted, I provide the lever 36, which is fulcrumed to the shifting-lever and carries a lug or stud, 36^x, which passes through openings in the shifting-lever, and is adapted to engage any one of the series of openings 37 in the plate 37^x, secured to the carriage-frame, and to hold the clutch out of contact with the driving-pulley I attach a spring, 37^{xx}, to the plate and shifting-lever. From this construction it will be noticed that the lever can be shifted to cause the clutch to engage the pulley, and thus cause said pulley to drive the shaft, or can be shifted to throw the pulley out of operation; also, that the amount of clutching-power between the pulley and clutch can be adjusted by means of the shifting-lever and adjusting devices.

The operation is as follows: The stone in its rough state is placed on the trucks and adjusted by means of the screws to the proper height. The carriage is also adjusted to bring the cutters in proper position for acting upon the stone. The chains 17^{xx} pass over the sprocket-wheels, as shown, and are connected with the carriage. The driving-belt passes around the pulleys in the frame and under and over the pulleys on the carriage-frame, as shown. The shifting-lever is operated to throw the clutch into engagement with the pulley 33. By the action of the chains 17^{xx} the carriage is

caused to travel horizontally, and the driving-belt revolves the crank-wheel which operates the mechanism connected with the cutters, causing the same to cut the stone as the carriage travels along. The carriage is then returned, the worm-shaft operated to cause the carriage to move transversely, ready to dress a new surface on the stone. The carriage travels horizontally, as before, and the cutters operate upon the stone in the manner described until the entire surface has been dressed, as will be readily understood.

From the peculiar construction of the stone-support of the trucks having the depressions or recesses, with the heads of the adjusting-screws arranged therein, it will be seen that either side of the support may be elevated to present either edge of the stone to the action of the cutter, and that the stone may be raised in a horizontal or inclined plane, as desired, and thus permit the entire surface of said stone to be operated upon, or the edges thereof, and this is a great advantage.

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

1. In a stone-dressing machine, the combination, with the bevel gear-wheels on the inclined shafts, of the transverse shaft-carrying gear-wheels meshing therewith, one of said gear-wheels being loose on said shaft, and having a cut-out portion or notch, a sleeve enveloping the shaft and carrying sprocket-wheels, and a clutch-collar connected with one of the wheels and having a lug or projection for engaging the cut-out portion or notch in the bevel gear-wheel, substantially as and for the purpose described.

2. In a stone-dressing machine, the combination, with the shaft having the collar or flange provided with a lug, and carrying the gear-wheels, one of which is loose and is provided with a notch, of the sleeve encircling said shaft and carrying the sprocket-wheels, the clutch or coupling collar having arms which pass through one of the sprocket-wheels and provided with a lug for engaging the notch in the bevel gear-wheel, and a notch to receive the lug on the collar or flange of the shaft, all arranged and adapted to serve substantially as and for the purpose described.

3. In a stone-dressing machine, the combination, with the frame, the shaft journaled therein, the loose cupped driving-pulley and clutch on said shaft, the crank-wheel, rod, spring, and hammer carrying the cutter, of the lever fulcrumed to the frame, having one end engaging the clutch for shifting the same, and devices carried by the lever for engaging means to retain said lever in the position to which it is shifted, substantially as described.

4. In a stone-dressing machine, the combination of a frame, shafts mounted in the frame carrying sprocket-wheels, sprocket-chains passing over said wheels, a carriage connected with said chains and traveling on the frame, and mechanism for imparting dif-

ferent speeds to the chains to cause the carriage to travel at different speeds, substantially in the manner and for the purpose set forth.

5 5. In a stone-dressing machine, the combination of a frame, shafts carrying sprocket-wheels mounted thereon, chains passing over said wheels, a carriage mounted on the frame and connected with the chains, the driving-
10 shaft mounted in the frame and carrying worm-wheels, worm-gears meshing with said worm-wheels, bevel gear-wheels operated by the worm-gears, and bevel gear-wheels on one of the shafts carrying the sprocket-wheels
15 meshing with said bevel-gears, whereby motion is transmitted to the sprocket-chains for moving the carriage on the frame, substantially in the manner and for the purpose described.

20 6. In a stone-dressing machine, the combination of a frame, the driving-shaft mounted therein carrying a pulley, shafts mounted in the frame carrying sprocket-wheels, a pulley on one of said shafts, a carriage mounted on
25 the frame carrying pulleys, a band passing over the pulleys on the carriage and shafts, sprocket-chains passing over the sprocket-wheels on the shaft and connected to the carriage, and mechanism for imparting motion
30 from the driving-shaft to the sprocket-wheels and pulleys, whereby the chains and band are caused to travel, substantially in the manner and for the purpose described.

35 7. In a stone-dressing machine, the combination of the sprocket-wheels, the chains passing over said sprocket-wheels, the carriage connected with said chains, the transverse rack carried by the carriage, the pinion engaging said rack, and the worm-wheel for operating the pinion, all operating as described,
40 whereby the carriage is caused to travel longitudinally and transversely, substantially in the manner and for the purpose described.

45 8. In a stone-dressing machine, the hammer-head having the clamping-jaws, the cut-

ter having an arm or extension adapted to be clamped in said jaws, and means in the hammer-head for causing the jaws thereof to clamp the arm of the cutter, substantially in the manner and for the purpose described. 50

9. In a stone-dressing machine, the hammer-head consisting of two spring clamping-jaws and a screw passing through said jaws for causing them to clamp the cutter in any desired position in said jaw, substantially in
55 the manner and for the purpose described.

10. In a stone-dressing machine, the stone-carrying trucks having the depressions or recesses on the support thereof, and the screws having heads fitting in said depressions and
60 capable of vertical adjustment in the frame of the truck, whereby the support of said truck can be adjusted to present the surface of the stone horizontally, or incline the stone to either side to present the edges thereof, on
65 both sides of the stone, to the action of the cutter, substantially as described.

11. In a stone-dressing machine, the combination of the carriage, the cutting mechanism, the shaft mounted in the carriage for operating said mechanism, the loose pulley on
70 said shaft, the clutch for making said pulley fast, devices for shifting said clutch into and out of contact with the loose pulley, and devices for retaining the shifting mechanism in
75 the desired position, substantially in the manner described.

12. In a stone-dressing machine, the combination of the carriage, the shaft mounted therein, the loose pulley on said shaft, the
80 guiding-pulleys on the carriage, the driving-belt passing over all of said pulleys, the clutch for making the loose pulley on the shaft fast, so as to rotate said shaft, and means for throwing the clutch into and out of operation,
85 substantially in the manner described.

FRANK MANNING.

Witnesses:

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A. P. McDOWELL..