

No. 667,848

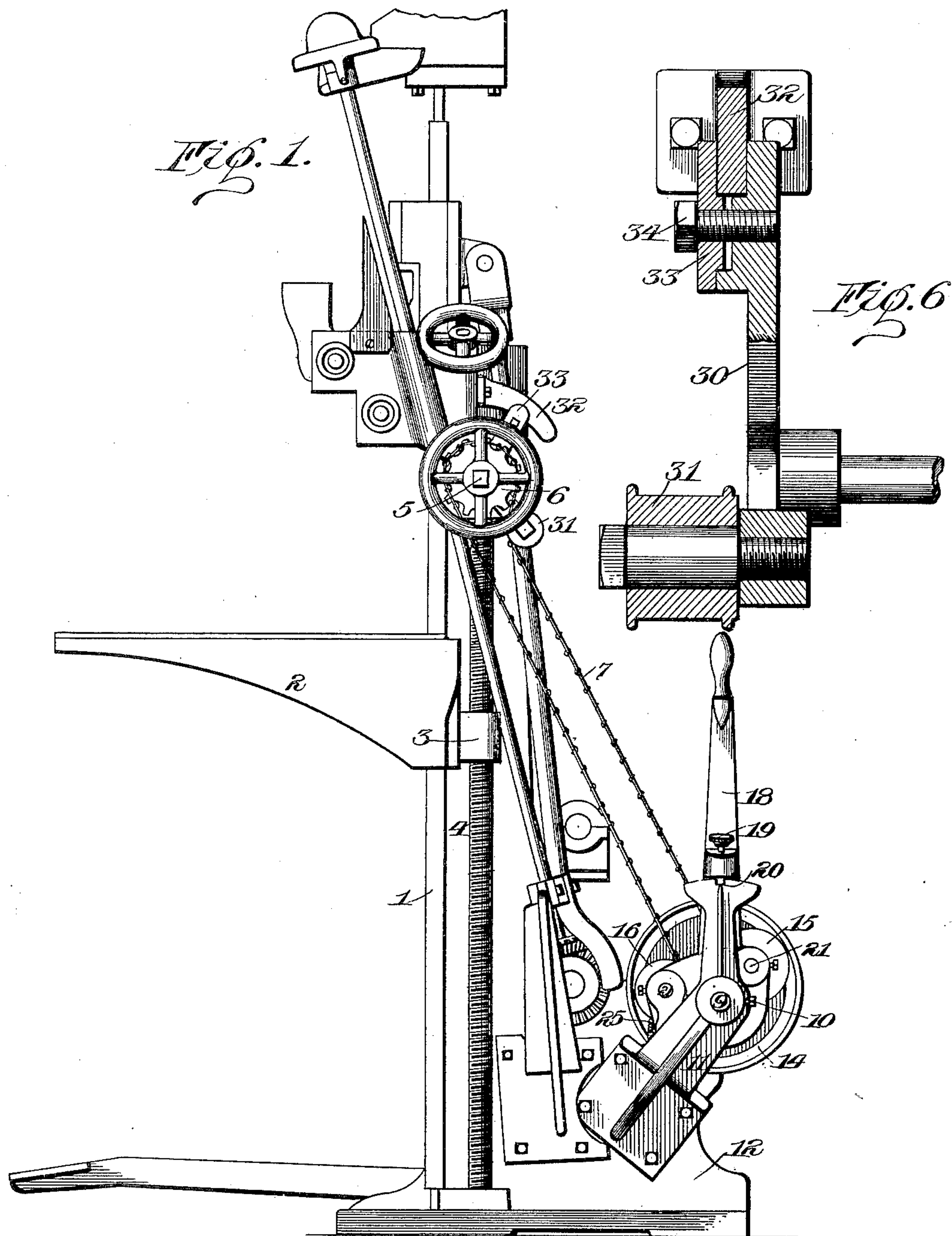
Patented Feb. 12, 1901.

H. W. MORGAN.  
DRIVING MECHANISM.

(Application filed July 3, 1900.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses  
Walter B. Payne.  
Willard Rich

Inventor:  
Henry W. Morgan  
by Charles Church  
his Attorneys.

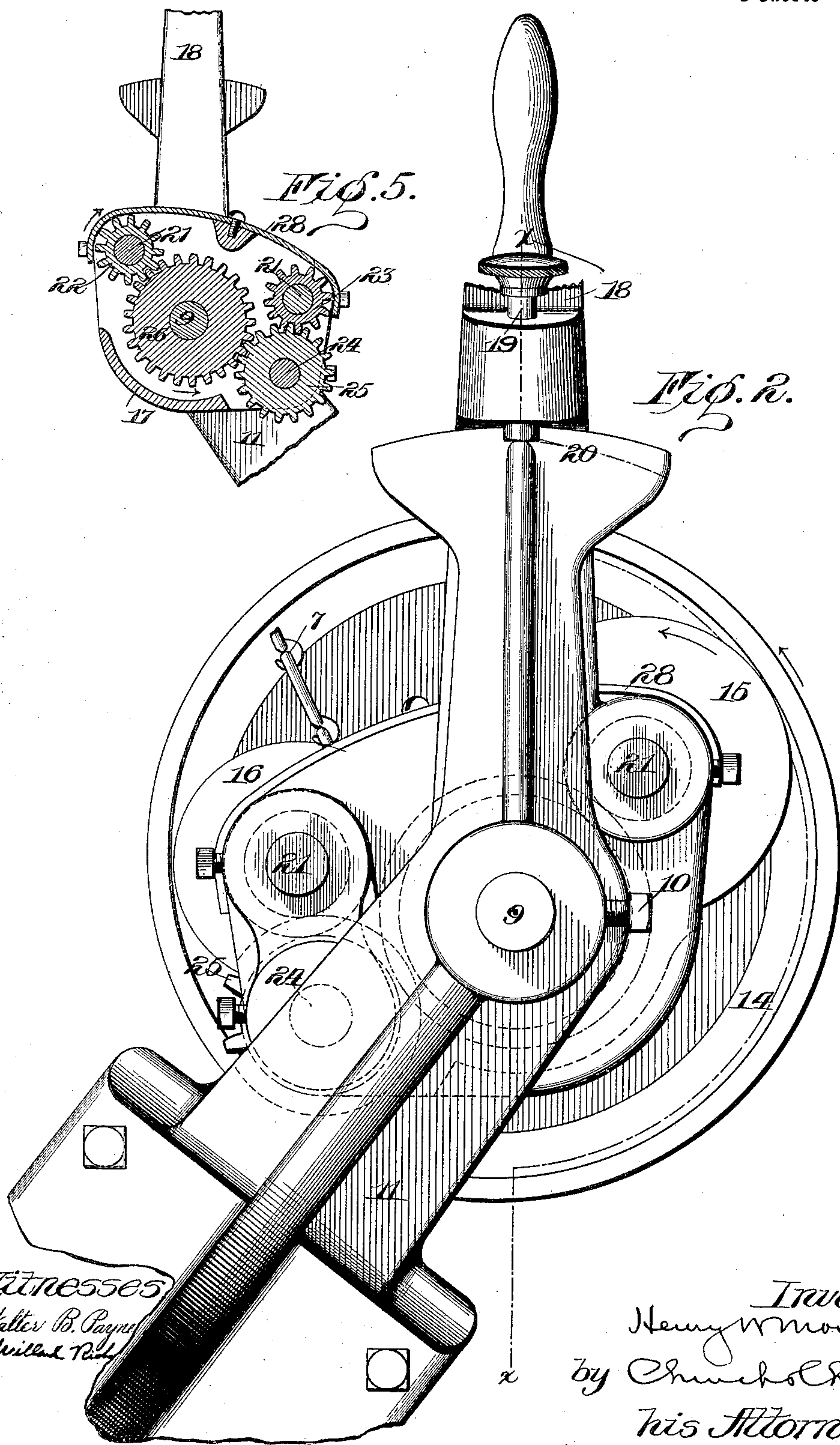
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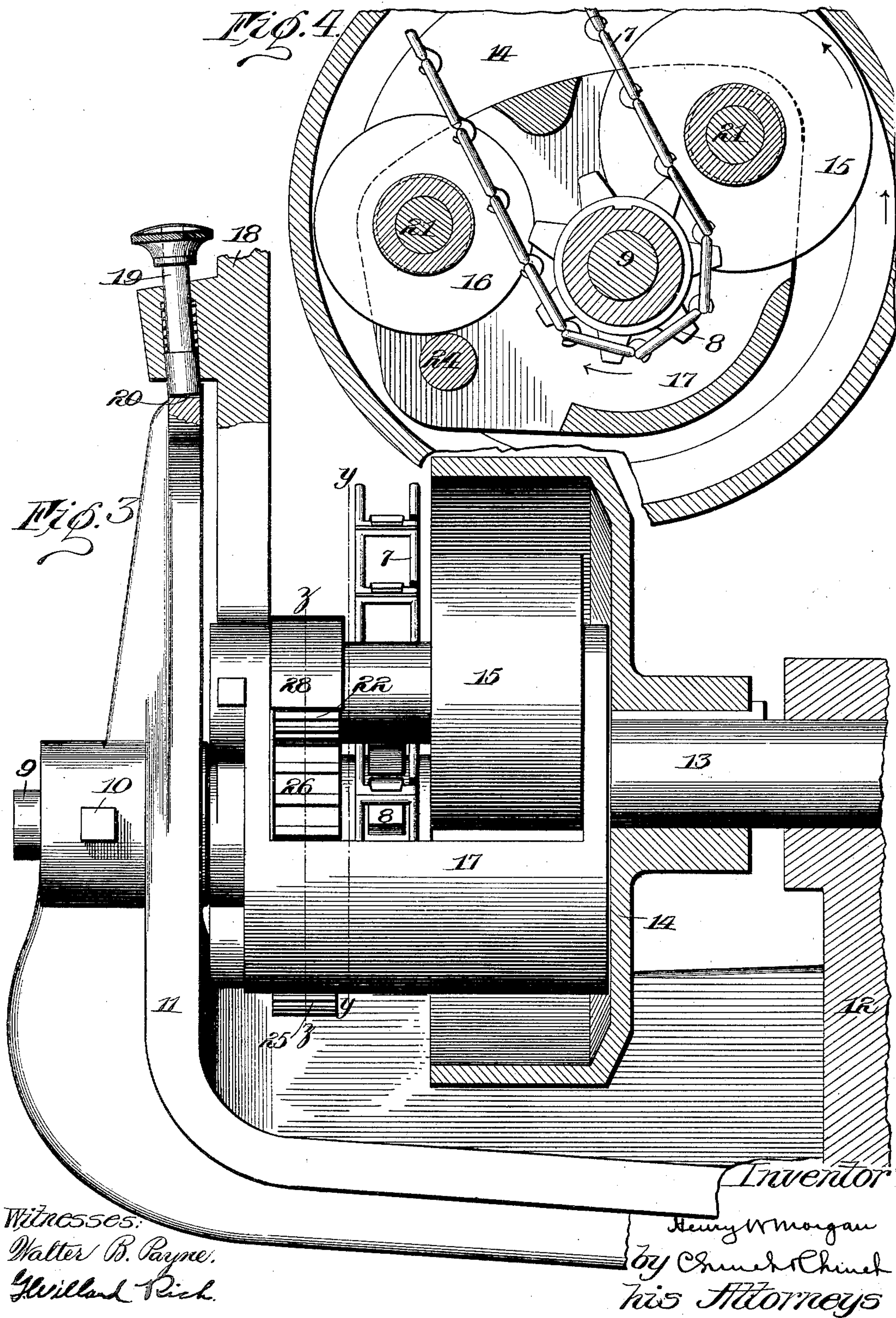
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**3 Sheets—Sheet 3.**





# UNITED STATES PATENT OFFICE.

HENRY W. MORGAN, OF ROCHESTER, NEW YORK.

## DRIVING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 667,848, dated February 12, 1901.

Application filed July 3, 1900. Serial No. 22,417. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY W. MORGAN, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Driving Mechanism; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference-numerals marked thereon.

My present invention has for its object to provide improved driving or friction mechanism particularly adapted for operating the devices for raising and lowering the table or work-support of box-nailing machines—such, for instance, as shown in my Patent No. 587,321, granted August 3, 1897; and it consists in certain improvements and combination of parts, whereby the construction of the device as a whole is simplified and the operator is enabled to operate the driving devices, and thereby cause the raising and lowering of the table expeditiously and with the exercise of very slight force, all as will be hereinafter described, and the novel features pointed out in the claims at the end of the specification.

In the accompanying drawings, Figure 1 is a side elevation of a portion of a nailing-machine such as shown in my before-mentioned patent with my present invention applied thereto; Fig. 2, an enlarged view of the driving mechanism; Fig. 3, a sectional view on the line *xx* of Fig. 2; Fig. 4, a sectional view on the line *yy* of Fig. 3 and looking to the right; Fig. 5, a reduced sectional view on the line *zz* of Fig. 3 looking to the left; Fig. 6, a sectional view of a chain-tightener.

Similar reference-numerals in the several figures indicate similar parts.

The nailing-machine to which the invention is shown applied is substantially the same as that in my former patent, 1 indicating the main frame, provided with the vertically-movable table or work-support 2, operating on suitable guides and having at its lower end a projection or nut 3, through which passes a vertical screw 4, stepped at the lower end in the main frame and provided near its upper end with a worm-wheel operated by a worm on the shaft 5, mounted

on suitable bearings in the main frame. The shaft 5 is also provided with a sprocket-wheel 6, around which extends a chain or other suitable power-transmitting device 7, extending also around a sprocket-wheel 8, loose on the stud or pin 9, secured by a bolt 10 in a bracket or frame 11. This frame 11 is bolted or otherwise preferably removably secured to the foot 12 of the main frame of the machine in its present embodiment and could be made as a separate article and applied to any other machine in relation to a suitable operating part or pulley.

13 indicates a driving-shaft, in the present embodiment of the invention being the constantly-rotating driving-shaft of the nailing-machine; but as far as my present invention is concerned it may be of any suitable description and driven in any suitable manner. At the end of the shaft 13 is a pulley 14, having an overhanging rim, as shown, extending toward and over the stud or pin 9, which latter is arranged eccentrically of the pulley center, the inner surface of this rim being smooth and adapted to coöperate with friction-driven rollers 15 and 16.

17 indicates a rocking or oscillatory frame or casting pivoted upon the stud 9, provided on its upper side with a handle and extension 18 for tilting or turning it on the said shaft, said handle being provided with the spring-operated locking-bolt 19, adapted to coöperate with the notch 20, formed in the upper segmental portion of an extension of the bracket or support 11. Mounted in suitable bearings in the sides of the frame 17 are the journals or stationary arbors 21, upon which are located the friction-rollers 15 and 16, said rollers being provided with gears 22 and 23, respectively, formed upon or secured to them. Also journaled upon a shaft or bearing 24, extending between the sides of the frame 17, is a gear 25, meshing with gear 23 and a gear 26, rotating loosely upon the stud 9 and connected to or formed with the sprocket or chain wheel 8, so as to rotate the latter. The rollers 15 and 16 and a portion of the frame 17 are, as stated, located within the overhanging rim of the pulley 14, and in normal position, with the handle 18 extending vertically, as shown in Figs. 1 and 2, both of the friction-wheels 15 and 16 are out of contact with



the rim of the said pulley 14; but if the operator desires to cause, say, the elevation of the work table or support he operates the handle 18 to the right in Fig. 2, bringing the friction-pulley 15 into contact with the inner side of the rim of the driving-pulley 14, which is rotated in the direction indicated by the arrow in Fig. 2. This frictional engagement of the wheels 14 and 15 will cause the latter to be rotated in the direction indicated by the arrow in Figs. 2 and 5 and through the gears 22 and 26 will cause the sprocket-wheel 8 to rotate in the direction indicated by the arrow in Fig. 4, operating the chain 7 upon the worm-shaft in a direction to move the table or work-support upward. When it is desired to operate the table in the opposite direction, the operator throws the handle 18 to the left, Fig. 2, causing the wheel 16 to engage with the overhanging rim of the driving-pulley 14, from whence motion will be transmitted through the gears 23 and 25 to the gear 26 and the sprocket-wheel connected thereto, so as to move the chain in the opposite direction, as will be understood.

In the reversible driving connection shown the parts are few and simple, and the friction wheels or pulleys being located within the rim of the driving-wheel are protected and concealed and not liable to injure the operator. The upper surfaces of the gears in the oscillatory bracket or frame 17 are further covered or protected by a metal plate 28, secured by bolts or screws or otherwise, as shown particularly in Fig. 5. This form of reversible driving connection can be applied to other forms of machinery or used in other connections, and I do not desire to confine my invention to its application to nailing-machines or to any particular type, although I have found in practice that it is well adapted for the purpose described.

It will of course be understood that the wheel 8 could be used as the driver and the pulley 14 as the driven wheel, if desired, though I prefer to drive in the opposite direction, as shown.

The wheel 14 might be a mere belt-wheel, if desired, connected to the machine to be operated or to a prime mover.

In Fig. 6 I have shown a sectional view of a belt-tightening device embodying an arm or bracket 30, carrying at its outer end a loose tightener wheel or pulley 31 and adjustably secured to a segmental arm 32 on the main frame, the clamping device embodying a movable plate 33, secured by a bolt 34.

I claim as my invention—

1. The combination with the pulley having the single overhanging rim, of the oscillatory frame, two friction-wheels mounted thereon arranged inside the rim and adapted to be brought successively into contact with the interior thereof, a wheel arranged on the axis of the frame and gearing between said wheel and the friction-wheels for rotating them in opposite directions.

2. The combination with the pulley having the single overhanging rim, of a stationary support, the oscillatory frame thereon, two friction-wheels arranged inside the rim and adapted to be brought successively in contact with the inner side thereof, and gearing between said friction-wheels for causing their operation in opposite directions.

3. The combination with the pulley having the single overhanging rim, of the oscillatory frame, two friction-wheels thereon arranged inside the pulley-rim adapted to be brought successively into contact with the inner side thereof, gears connected to the wheels, a gear on the axis of the frame meshing with the gear on one of the friction-wheels, and an intermediate gear between the other friction-wheel gear and the gear on the frame-axis.

4. The combination with the pulley having the overhanging rim, of the stud or support, the oscillatory frame pivoted thereon, having the two sides, the two friction-wheels arranged between the sides of the frame and inside of the pulley-rim and adapted to cooperate successively with the latter, a wheel on the stud or support and connections between it and the friction-pulleys for operating the latter in opposite directions.

5. The combination with the pulley having the overhanging rim, of the bracket having the stud thereon arranged eccentrically of the pulley center, the oscillatory frame on the stud, the two friction-wheels journaled in the frame extending within and adapted to contact successively with the inner side of the rim of the pulley and gearing between the wheels for causing their rotation in opposite directions.

6. The combination with the pulley having the overhanging rim, and the oscillatory frame embodying the two connected side plates and an operating-handle, of two friction-wheels journaled in the frame and arranged within and adapted to contact successively with the inner side of the pulley-rim and gearing between said wheels for causing their rotation in opposite directions.

7. The combination with the bracket and the stud extending from one side of the bracket, of the oscillatory frame mounted on the stud having the operating-handle, the two friction-wheels mounted on the frame and eccentrically of the stud, said wheels being at one end of the frame, a wheel on the stud rotated by or from both the friction-wheels and connections between the friction-wheels for causing their rotation in opposite directions.

8. The combination with the bracket of the oscillatory frame pivoted on one side of the latter, the two friction-wheels mounted in the frame and geared for operation in opposite directions said wheels being located at the outer side of the frame and away from the bracket and a wheel concentric with the pivot of the oscillatory frame and rotated by or from both of the friction-wheels.

9. The combination with the bracket, of the



oscillatory frame pivoted at one side thereof  
having an operating-handle, a gear in the  
frame concentric with the center of oscilla-  
tion, two friction-wheels journaled in the  
5 frame eccentric to the center of oscillation  
and at the outer side of the latter, gears con-  
nected to the friction-wheels one meshing di-  
rectly with the gear in the center of oscilla-  
tion of the frame, and a gear in the frame  
10 meshing with the central gear and that on the  
other wheel.

10. The combination with the bracket, of the  
oscillatory frame journaled at the side there-

of, having the operating-handle and a lock-  
ing device thereon for holding the frame sta- 15  
tionary, the two friction-wheels mounted on  
the frame on the side away from the bracket,  
gearing between said wheels for causing their  
operation in opposite directions, and a power  
transmitting or receiving wheel connected 20  
therewith and mounted on the axis of the  
frame.

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Witnesses:

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THOMAS DURANT.