No. 656,469. Patented Aug. 21, 1900.

W. McHAFFIE.

POWER TRANSMITTER FOR SEWING MACHINES.

(Application filed Feb. 21, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

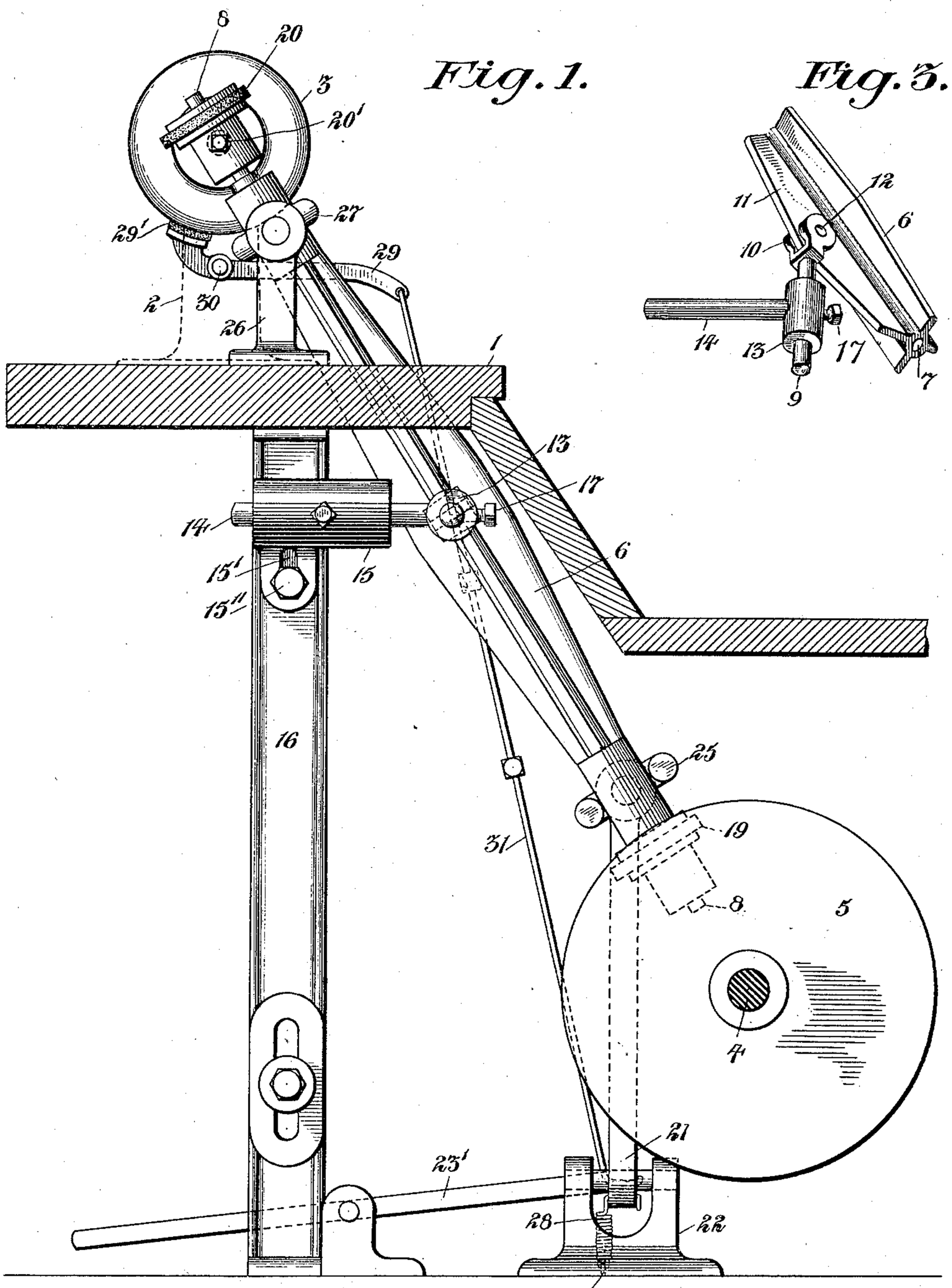

Fig. 3.

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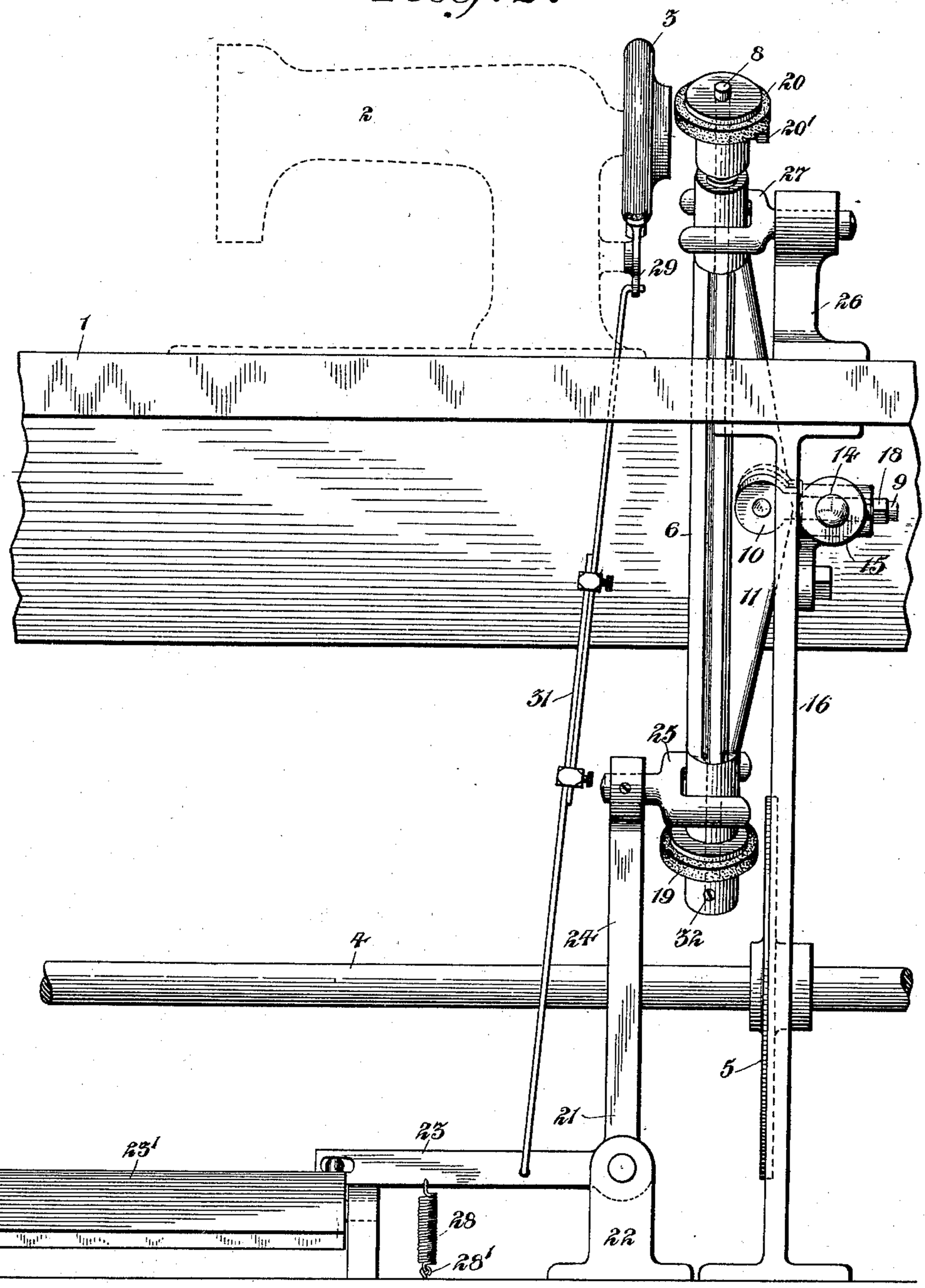
Fig. 2.



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UNITED STATES PATENT OFFICE.

WILLIAM McHAFFIE, OF NEW YORK, N. Y.

POWER-TRANSMITTER FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 656,469, dated August 21, 1900.

Application filed February 21, 1900. Serial No. 6,021. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM McHAFFIE, a citizen of the United States, and a resident of the borough of Manhattan, in the city, county, and State of New York, have invented certain new and useful Improvements in Power-Transmitters for Sewing-Machines, of which the following is a specification, reference being had to the accompanying drawings, forming part thereof.

My invention relates to improvements in mechanism for transmitting power from a main driving-shaft, which is constantly in motion, to sewing or other similar machines, which are adapted to alternately run and stop. The most usual means employed for such purpose is a belt arranged to run either alternately upon fast and loose pulleys or upon a pulley which is movable to and from position for frictional engagement with the hand-wheel of the machine. These belts, however, soon become stretched more or less and require a great deal of care in keeping the same properly adjusted to prevent undue slack in the same, and it has been the object of my present invention to provide a simple and effective power-transmitter by which the use of belts and the attendant trouble will be avoided and which may be readily adjusted to machines of different heights, sizes, and positions and also be capable of quick and convenient adjustment to communicate movement of varying speeds to the machine. This object I secure by means of the novel construction and combination of parts embodying my invention, as hereinafter set forth in detail, and pointed out in the claims.

In the accompanying drawings, Figure 1 represents an end or side view of my improved transmitter mechanism with the table in section. Fig. 2 represents a front elevation of the same with the sewing-machine head in dotted lines and the usual hand-wheel at one end thereof in full lines; and Fig. 3 represents a detail view in perspective, to be hereinafter referred to.

In said drawings, 1 indicates a power-machine table of ordinary construction; 2, a sewing-machine head (in dotted outline) supported upon said table; 3, the usual hand-wheel or disk, which is made fast upon the end of the driving-shaft supported in the upper arm of the machine, and 4 the main power-shaft, supported in suitable bearings beneath the table 1 and provided with a driving disk or wheel 5, which rotates therewith.

According to my invention I provide a frame or bracket 6, having an opening 7 extending longitudinally therethrough, (see Fig. 3,) in which a shaft 8, having friction-disks at opposite ends thereof, is loosely supported to revolve. This frame or bracket 6 is provided at a point between its ends with a pivotally-connected supporting arm or pin 9, which, as herein shown, is provided with a forked end 10, which embraces a flange or web 11 of the bracket and is pivotally connected therewith by means of a pivot-pin 12. The said pin 9 has a sliding adjustable connection with a tubular head or sleeve 13, located on the end of a bracket-arm 14, which latter is supported to slide within a tubular bracket 15, secured upon one of the table-supporting legs 16. The pin 9 is held in a stationary adjusted position relative to the head or sleeve 13 and the arm 14 of the latter in a stationary adjusted position relative to the bracket 15 by means of set-screws 17 and 18, respectively, as shown. The shaft 8 is of greater length than the bracket 6 and extends at each end beyond the ends of the latter. Upon these projecting ends of the shaft 8 are secured friction-disks 19 and 20, the disk 19 at the lower end of the shaft being adapted to engage with the adjacent face or side of the driving-disk 5 on the shaft 4, so as to receive motion therefrom, and the disk 20 at the upper end of the shaft being adapted to engage with the face of the hand-wheel 3 of the sewing-machine and transmit motion thereto.

As a simple means for rocking the bracket 6 upon its pivotal support, so as to throw the disks on the opposite ends of the shaft 8 either into or away from contact with the driving-disk 5 and the hand-wheel 3, whereby the sewing-machine may be either set in motion or stopped at the will of the operator, I have provided a bell-crank lever 21, which is pivotally supported on a floor-bracket 22, with one arm 23 connecting with the forward or toe end of a treadle 23′ and its other arm 24 having a forked arm 25 loosely embracing the bracket 6, adjacent to its lower end. By this arrangement of parts pressure upon the heel

end of the treadle will rock the bell-crank lever 21 in the proper direction to swing the bracket 6 upon its pivot and force the lower friction-disk 19 into contact with the driving-disk 5 and the upper disk 20 into contact with the hand-wheel 3 and so set the machine in motion. When it is desired to stop the machine, pressure is simply removed from the heel of the treadle, thereby permitting the bracket 6 to swing on its pivot and move the friction-disks 19 and 20 from contact with the driving and driven parts. A bracket 26, secured on the upper surface of the table 1, is provided with a forked arm 27, which loosely embraces the pivoted bracket 6, adjacent to its upper end, and serves to support and steady the same at such point.

In order that the bell-crank lever 21 immediately upon removal of pressure from the heel of the treadle may be automatically swung back to its normal position, as shown in Fig. 2, to relieve the friction-disks from contact with the driving and driven parts, I have provided a coiled spring 28, which is attached at one end to a hook or staple 28′ on the floor and at its opposite end to the horizontal arm 23 of the bell-crank lever 21 and acts to yieldingly hold the lever in such normal position.

In order that the machine may be quickly brought to a standstill after the transmitter has been released from operative engagement therewith, I have pivoted a lever 29 upon the arm of the machine at 30, with one end having a piece of leather or other similar material 29′ thereon to serve as a friction-brake for engaging with the periphery of the hand-wheel 3 and its opposite end having connection with the bell-crank lever 21 through the medium of a connecting-rod 31. By this construction and arrangement of parts when pressure is removed from the heel end of the treadle and the bell-crank lever 21 is rocked under the action of the spring 28 to relieve the pivoted bracket 6 from lateral pressure such movement of the lever 21 acts upon the brake-lever 29 through the medium of the rod 31 and forces the brake end of the same into frictional engagement with the hand-wheel, so as to quickly bring the machine to a stop.

It will be understood that the speed of the machine may be varied, as desired, by simply adjusting the position of the friction-disk 19 back and forth on the shaft 8, so as to engage with the driving-disk 5 a greater or less distance from its center, a set-screw 32 in the hub of the disk serving to secure the latter in adjusted position upon its shaft 8. The disk 20 at the upper end of the shaft 8 is adjustable on the latter to engage with the hand-wheel at opposite sides of its center in a manner and for the purpose, as follows: The disk, as shown, of course engages with the hand-wheel at one side of its center, so as to rotate the same and connected driving-shaft in one direction; but in the event of the transmitter being applied to a machine the driving-shaft of which is adapted to be rotated in the opposite direction the disk 20 may then be drawn off the end of the shaft and replaced in a reversed position, so as to engage with the hand-wheel at the opposite side of its center, and consequently cause the same to rotate in the opposite direction, the disk being secured on the shaft in adjusted position by means of the set-screw 20′.

The several adjustments of the frame or bracket 6 with the supported transmitter-shaft 8 and connected friction-disks allowed by the sliding and rocking connection of the pin 9 with the bracket-arm 14, the sliding connection of the latter with the bracket 15 in a direction transverse to the pin 9, and the vertical adjustment of the said bracket 15, allowed by the elongated slot 15′ therein, through which its fastening screw or bolt 15″ extends, all permit the said bracket, with its supported transmitter devices, to be readily and accurately adjusted to machines of different sizes and in different positions, as will be readily understood.

Having thus set forth a practical embodiment of my invention, I do not wish to be understood as confining myself to the particular details of construction and arrangement of parts as illustrated and described, as the same may be more or less materially modified without departure from the spirit of my invention, for

What I claim, and desire to secure by Letters Patent, is—

1. The combination, with driving and driven disks or wheels, of a power-transmitter arranged intermediate of said disks, comprising a pivotally-supported frame or bracket, a shaft supported in bearings in said frame or bracket and provided with a friction-disk at or adjacent to each end, one being adapted to engage with one face of the driving-disk and the other to engage with the opposite face of the driven disk, and means for rocking said frame or bracket to simultaneously move the friction-disks either into, or away from, engagement with the said driving and driven disks, for the purpose set forth.

2. The combination, with driving and driven disks or wheels, of a power-transmitter arranged intermediate of said disks, comprising a pivoted rocking frame or bracket, a revolving shaft supported wholly by said frame or bracket and provided with friction-disks at or adjacent to its opposite ends, and means for shifting said frame or bracket to move the friction-disks either into, or away from, engagement with the said driving and driven disks, for the purpose set forth.

3. The combination, with driving and driven disks or wheels, of a power-transmitter arranged intermediate of said disks, comprising a revolving shaft having friction-disks thereon for engagement with the said driving and driven disks respectively, one of the friction-disks being adjustable on its shaft to

opposite sides of the center of the engaging disk, for the purpose set forth, and means for supporting said shaft.

4. The combination, with driving and driven disks or wheels, of a power-transmitter arranged intermediate of said disks, comprising a pivoted rocking frame or bracket, a shaft carried by said frame or bracket and having friction-disks thereon, means for adjustably supporting said frame or bracket with the parts carried thereby, and means for shifting said frame or bracket to move the friction-disks either into, or away from, engagement with the said driving and driven disks, for the purpose set forth.

5. The combination, with driving and driven disks or wheels, of a power-transmitter arranged intermediate of said disks, comprising a centrally-pivoted frame or bracket, a revolving shaft carried by said frame or bracket and being provided with friction-disks thereon, one of said disks being adjustable on the shaft and in a radial direction relative to the driving-disk, whereby it will transmit different speeds from the latter, and means for rocking said frame or bracket to move the friction-disks either into, or away from, engagement with the said driving and driven disks, for the purpose set forth.

6. The combination, with driving and driven disks or wheels, of a power-transmitter arranged intermediate of said disks, comprising a frame or bracket provided with a supporting arm or pin, a vertically and horizontally adjustable bracket-arm having an opening which receives said arm or pin in adjustable connection therewith, a shaft carried by said frame or bracket and having friction-disks thereon, and means for shifting said frame or bracket to move the friction-disks either into, or away from, engagement with the said driving and driven disks, for the purpose set forth.

7. The combination, with driving and driven disks or wheels, of a power-transmitter arranged intermediate of said disks, comprising a frame or bracket provided with a pivotally-connected arm or pin, a bracket-arm provided with an opening which receives said pivoted arm or pin in adjustable connection therewith, a shaft carried by said frame or bracket and having friction-disks thereon, and means for shifting said frame or bracket to move the friction-disks either into, or away from, engagement with the said driving and driven disks, for the purpose set forth.

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