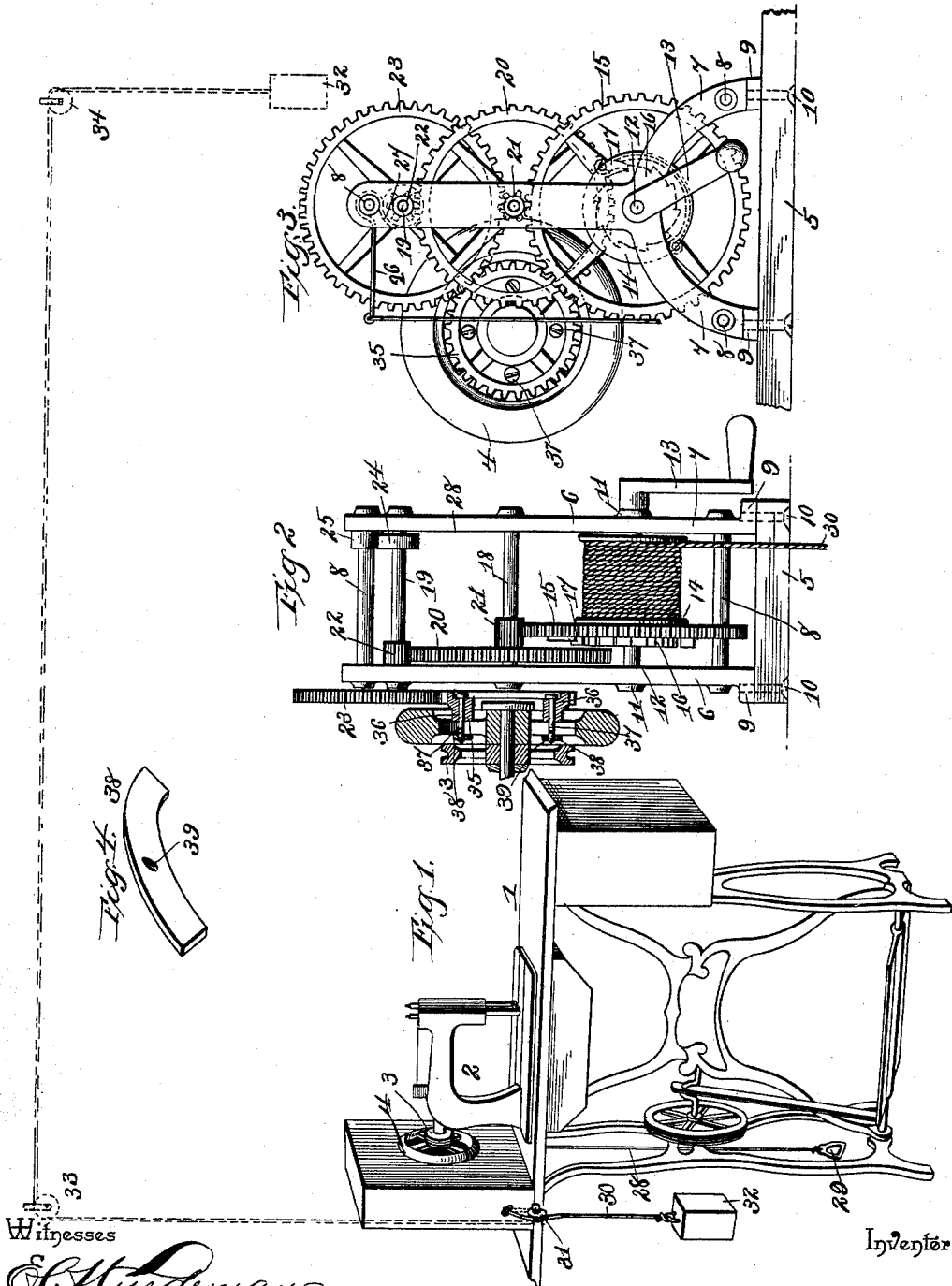


(No Model.)

J. C. DREW.
MOTOR FOR SEWING MACHINES.

No. 489,121.

Patented Jan. 3, 1893.



Witnesses

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UNITED STATES PATENT OFFICE.

JAMES CLOYD DREW, OF ARCADIA, LOUISIANA.

MOTOR FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 489,121, dated January 3, 1893.

Application filed June 20, 1892. Serial No. 437,283. (No model.)

To all whom it may concern:

Be it known that I, JAMES CLOYD DREW, a citizen of the United States, residing at Arcadia, in the parish of Bienville and State of Louisiana, have invented a new and useful Sewing-Machine Motor, of which the following is a specification.

My invention relates to motors and particularly to those employed for running light sewing-machines.

The objects in view are to provide a cheap and simple motor adapted to be mounted and secured upon the machine-table, and to be operatively connected with the fly wheel of the machine, through which motion is conveyed to the shaft thereof.

Other objects and advantages of the invention, together with the novel features thereof will hereinafter appear and be particularly pointed out in the claims.

Referring to the drawings—Figure 1 is a perspective view of a sewing machine provided with a motor constructed in accordance with my invention. Fig. 2 is a transverse vertical section of the motor the brake lever being removed to show the band wheel. Fig. 3 is a front elevation of the motor. Fig. 4 is a detail of one of the clips employed for connecting the fly-wheel of the machine with the motor.

Like numerals of reference indicate like parts in all the figures of the drawings.

1 designates the sewing-machine table, upon which is mounted the machine-head 2, comprising as is usual the grooved belt pulley 3 and the fly-wheel 4, the two being mounted upon the same shaft, as is usual, and located at one end of the head.

5 designates an oblong base, from the center of the opposite sides of which rise standards 6, the standard's lower ends terminating in diverging legs 7. These standards are connected at their upper and lower ends by suitable tie-bolts 8. The legs are outwardly bent and perforated to form feet 9, and through the same and base, screws 10 are passed. At the intersection of the legs and standards, in bearings 11, is mounted the transverse main shaft 12, one end of which is extended beyond one of its bearings and there provided with a crank handle 13, adapted to be conveniently operated by the operator of the machine.

Upon this shaft, between the bearings there is mounted a drum 14, a master-gear 15, and a ratchet wheel 16, a spring-pressed pawl 17, being pivotally mounted upon the master-gear 15 and adapted to engage with the said ratchet wheel. The ratchet wheel is fast upon the shaft while the gear and drum are loose, and hence the gear and drum will be carried by the shaft when said shaft rotates in one direction only. Above the shaft 12 is a pair of transverse shafts 18 and 19, the latter being located near the upper end of the machine, and the former between the shaft 19 and the lower shaft 12. The shaft 18 has mounted thereon a large gear 20 and a small pinion 21, the teeth of the latter being engaged with and operated by those of the master gear 15. Upon the upper shaft 19 a pinion 22 is mounted and adapted to rotate therewith, said pinion having its teeth engaged by those of the large gear 20 of the shaft 18 immediately below. The inner end of the shaft 19 is extended beyond its bearing and carries a large gear 23 for a purpose hereinafter apparent.

A band wheel 24 is mounted on the opposite end of the shaft 19, and a spring lever is coiled partially around the upper tie-bolt 8, as indicated at 25, and at one end terminates in a handle or lever portion 26, and at its opposite end in a brake-shoe 27. This brake lever is located immediately above the band wheel 24, and, as will be obvious, may be drawn down to tightly clamp upon the same, and thus regulate the speed or arrest the movement of the motor. If desired, and I prefer the same, a cord 28 may be suspended from the free end of the lever portion 26 and provided with a foot-rest 29 at its lower end, into which the foot of the operator may be introduced for the purpose of regulating the speed of the machine.

For the purposes of economy I prefer to operate the machine through the medium of a weight and cord suspended over a pulley or pulleys, though, as will be obvious, I may employ the well-known mechanical equivalent for the same, namely, a spring. In the present instance 30 designates the cord mounted upon the drum, and the same passes rearward over a small pulley or guide wheel 31 mounted upon the rear edge of the motor-base, from which the end of the cord depends, and has

connected to it an operating weight 32. If desired, and as I have indicated by dotted lines, the cord may pass under the guide wheel or pulley 31 up to the ceiling at about the center of the room, thence over a guide pulley 33 to a point near the wall, over a third guide-pulley 34, and depend from the latter, being there provided with a weight, which is thus given a much longer distance to travel, and consequently the motor will require rewinding at longer intervals.

35 designates a toothed gear, which is provided with a central hub or counter-sunk portion, which at intervals is provided with bolt holes 36. Bolts 37 are passed through the holes and between the spokes or arms of the fly-wheel 4, the said gear being located at the outer side or end of said wheel.

38 designates transverse clip-plates which are provided with centrally threaded perforations 39. These clip-plates are located at the inner side of the fly-wheel, and each spans a pair of adjacent spokes of said wheel and between its ends and the spokes spanned receives the threaded end of a bolt 37, whereby the latter is prevented from becoming withdrawn, and the gear wheel 35 becomes tightly clamped against the outer side of the wheel, so that the latter is practically converted into a gear wheel. With the gear wheel 35 meshes the teeth of the gear wheel 23, and it is through the medium of these gears that motion is conveyed from the motor to the fly-wheel and main shaft of the machine.

The operation of the invention will be readily understood from the foregoing description, and may be briefly stated as follows:—By revolving the crank 13 the shaft 12 is rotated and the cord wound upon the drum 14, inasmuch as the drum is loose upon the shaft and revolves with it through the medium of the pawl and ratchet wheel 16. During this operation the master-gear 15 remains idle, the free end of the spring-pressed pawl riding lightly over the teeth of the ratchet wheel 16. When the cord has been wound upon the drum and the weight elevated the machine is ready for operation. To operate the machine it is simply necessary to elevate or release the spring-brake, lifting the shoe from the per-

iphery of the brake or band wheel. The weight then actuating the shaft 12 rotates it in a reverse direction to that in which it was rotated during the winding of the weight, and the teeth of the ratchet-wheel engaging the pawl serve to operate the master-gear 15. Through the train of gearing described the speed is multiplied and is increased to such an extent that a slow paying out of the weight rope will cause a very rapid rotation of the fly-wheel and its shaft. Through the medium of the brake lever the speed of the machine may be regulated, or its movement entirely arrested.

From the foregoing description, in connection with the accompanying drawings, it will be seen that I have provided a machine of great simplicity and cheapness, that is readily applicable to all sewing-machines without any change whatever as to the mechanism of the sewing-machine, or any injury thereto.

Having described my invention, what I claim is:—

1. A weight-operated motor, comprising a casing, weight-operated gearing mounted therein, one of the gear-shafts projecting at one side of the casing and provided with a gear engaging the weight-operated gearing and provided with a series of perforations, bolts passed through the perforations, and a series of centrally perforated and threaded clip-plates or yokes adapted to span adjacent spokes of the fly-wheel of a sewing-machine at that side thereof opposite which the motor is located, substantially as specified.

2. A motor, comprising a frame-work having, tie-bolts, a brake-wheel, and a spring brake bent to form an eye and loosely mounted on one of the bolts one terminal of the brake having a brake-shoe adapted to bear upon the brake-wheel and at the other terminal extending forward to form a lever or handle, and provided with a pull-cord, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JAMES CLOYD DREW.

Witnesses:

B. CAPERS,
W. W. ARMISTEAD.