

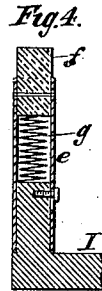
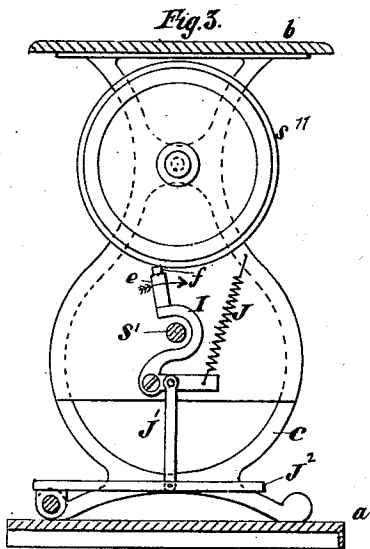
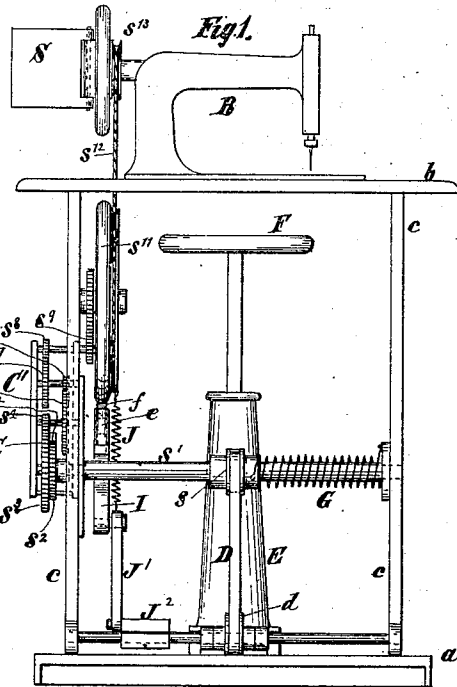
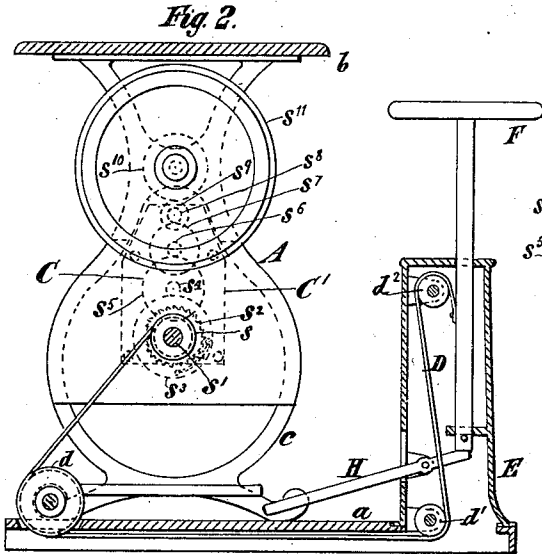
(No Model.)

C. G. SPENGLER.

MEANS FOR OPERATING SEWING MACHINES.

No. 324,044.

Patented Aug. 11, 1885.



Witnesses
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UNITED STATES PATENT OFFICE.

CHRISTIAN G. SPENGLER, OF HOBOKEN, NEW JERSEY, ASSIGNOR TO
GEORGE FUICK, OF NEW YORK, N. Y.

MEANS FOR OPERATING SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 324,044, dated August 11, 1885.

Application filed December 3, 1884. (No model.)

To all whom it may concern:

Be it known that I, CHRISTIAN G. SPENGLER, of Hoboken, in the county of Hudson and State of New Jersey, have invented a certain new and useful Improvement in Means for Operating Sewing-Machines and like Articles, of which the following is a specification.

I will describe in detail an apparatus embodying my improvement, and then point out its various features in claims.

In the accompanying drawings, Figure 1 is a back view of a sewing-machine and operating mechanism embodying my improvement. Fig. 2 is a transverse section of the stand and operating mechanism. Fig. 3 is a transverse section of the stand, showing appurtenances not illustrated in Fig. 2, and Fig. 4 is a sectional view of a starting and stopping device.

Similar letters of reference designate corresponding parts in all the figures.

A designates a stand consisting of a base-piece, *a*, and table *b*, which may be made of wood, and side pieces, *c*, preferably made of iron, erected on the base-piece *a* and supporting the table *b*. These side pieces may be connected to the base-piece and table by screws or other means.

B designates a sewing-machine secured by screws or other means to the table *b*. This sewing-machine may be of any approved style.

C designates a train of wheels supported in a frame, *C*, which is secured to one of the side pieces, *c*. I will describe this train of wheels. A belt pulley or wheel, *s*, is secured to a shaft, *s'*. A ratchet-wheel, *s²*, is also secured to the shaft *s'*. The shaft *s'* has loosely mounted on it at one side of the ratchet-wheel *s²* a gear-wheel, *s³*. The gear-wheel *s³* has arranged upon its side which is the nearer to the ratchet-wheel *s²* a spring-actuated pawl that engages with the ratchet-wheel *s²*. The gear-wheel *s³* engages with a pinion, *s⁴*, on another shaft. On the same shaft with the pinion *s⁴* is a gear-wheel, *s⁵*. The gear-wheel *s⁵* engages with a pinion, *s⁶*. On the same shaft with the pinion *s⁶* is a gear-wheel, *s⁷*. The gear-wheel *s⁷* engages with a gear-wheel, *s⁸*, on another shaft. A gear-wheel, *s⁹*, arranged on the same shaft with the gear-wheel *s⁸*, engages with a gear-wheel, *s¹⁰*, on another shaft. A balance or fly

wheel, *s¹¹*, is arranged on the same shaft as the gear-wheel *s¹⁰*. This balance or fly wheel *s¹¹* is formed so as to constitute a belt-pulley. A belt, *s¹²*, passes around it, and also around a pulley, *s¹³*, affixed to the driving-shaft of the sewing-machine B. A strap, D, at one end is fastened to the pulley or wheel *s*, and passes around the same. Thence it passes around a guide-pulley, *d*, thence around a guide-pulley, *d'*, in a pillar, E, thence around a guide-pulley, *d²*, in the pillar E, and its extreme end extends to the shank of a stool-like seat, F, to which it is securely fastened by screws or analogous means. The shank of the seat F works vertically in guides comprised in the pillar E. A helical spring, G, coiled around the shaft *s'*, is fastened at one end to the belt pulley or wheel *s*, and at the other end to one of the side pieces, *c*.

The operator of the sewing-machine occupies the seat F. The weight thus imposed on the seat causes it to descend. Its descent effects the pulling of the strap D, and thereby rotates the shaft *s'* against the resistance of the spring G. Owing to the employment of the train of wheels C, the descent of the seat for a short distance effects the driving of the sewing-machine B for a considerable time. The descent of the seat to its lowest position will take a long time—say, for instance, a half an hour. After the seat reaches its lowest position the operator rises from it, and then the spring G rotates the shaft *s'* and raises the seat to its highest position. When the spring G thus actuates the shaft *s'*, the latter turns in the reverse direction to that in which it turns when actuated by the seat, and does not impart motion to the gear-wheel *s³* and the gear-wheels deriving motion from the gear-wheel *s³*.

In order to regulate the speed of the sewing-machine when the seat F is occupied by persons of different weights, I provide the pulley *s¹³*, or the shaft of the sewing-machine upon which it is mounted, with a fan, S, capable of being adjusted at different angles to offer more or less resistance to the rotation of the said sewing-machine shaft.

H designates a lever fulcrumed in the pillar E and extending at one end under the shank of the seat F, and at the other end within con-

venient reach of the foot of the operator. By pressing upon this lever, and so transferring a portion of the weight from the seat to the lever, the seat may be raised to its initial or highest position.

I designates a bell-crank lever fulcrumed to one of the side pieces, *c*, and having one of its arms approximately upright and the other approximately horizontal. The upright arm is bent so that it will not come in contact with the shaft *s'* when the lever is vibrated. The horizontally-extending arm has a spring, *J*, connected to it for pulling it upward. It is also connected by a link, *J'*, with a treadle, *J²*. The upright arm of this lever is provided with a tubular section, *e*, which is longitudinally slotted and secured to the lever by a screw, so as to be susceptible of movement. This section is furnished at the outer end with a block of india-rubber or like material, *f*. Within the tubular section *e*, between the block of india-rubber or like material *f* and the end of the lever, a spring, *g*, is arranged. This spring impels the movable section *e* upward. To start the sewing-machine the operator presses down the treadle *J²*, and thereby forces the upright arm of the lever *I* under and past the lower part of the balance or fly wheel *s''* in the direction indicated by the arrow adjacent to the lever. The lever, in passing the balance or fly wheel, will rotate it. The yielding tubular section *e* of the lever *I* is advantageous, for it compensates for the curve of the periphery of the wheel and allows the lever to travel longer in contact with it than otherwise would be possible. The lever is kept in this position so long as the sewing-machine is to be used.

When it is desirable to stop the sewing-machine, the treadle *J²* is released, whereupon the lever *I* is forced against the balance or fly wheel by the spring *J* and returned to the position which it occupies in Fig. 3. The wheel is brought to a state of rest.

My improvement is not alone applicable to operating sewing-machines, but may be applied to the operation of other machines and articles.

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

1. The combination, with a sewing-machine or like article, of a support for an operator adapted to descend under the influence of the weight of the operator, a strap connected at one end to the support and at the other to the end of a shaft, so as to transmit motion to the latter, a train of wheels deriving motion from the shaft, and a connection between the train of wheels and the sewing-machine, substantially as specified.

2. The combination, with a sewing-machine or like article, of a support for an operator adapted to descend under the influence of the weight of the operator and transmit motion to the sewing-machine or like article, and an adjustable fan for regulating the speed of the sewing-machine or other article.

3. The combination, with a sewing-machine or like article, of a support for an operator adapted to descend under the influence of the weight of the operator, a train of wheels serving to transmit motion to the sewing-machine, a connection between the train of wheels and the support, and a lever independent of the connection between the support and the train of wheels, by which the operator may raise the support when desired, substantially as described.

4. The combination, with a sewing-machine or like article, of a support for an operator adapted to descend under the influence of the weight of the operator, and a lever whereby the sewing-machine or like article may be started and stopped.

5. The combination, with the wheel *s''*, of a shaft upon which said wheel is mounted, the lever *I*, treadle *J²*, link *J'*, and spring *J*.

6. The combination, with the wheel *s''*, of a shaft upon which said wheel is mounted, the lever *I*, having a yielding extensible section, the treadle *J²*, and the link *J'*.

7. The combination, with the wheel *s''*, of the shaft upon which said wheel is mounted, the lever *I*, having a spring-actuated extensible section, a spring for operating the lever in one direction, the treadle *J²*, and the link *J'*.

CHRISTIAN G. SPENGLER.

Witnesses:

T. J. KEANE,
WM. G. LIPSEY.

Correction in Letters Patent No. 324,044.

It is hereby certified that in Letters Patent No. 324,044, granted August 11, 1885, upon the application of Christian G. Spengler, of Hoboken, New Jersey, for an improvement in "Means for Operating Sewing Machines," the name of the assignee is written and printed "George Fuick," whereas it should be *George Finck*; that the proper corrections have been made in the files and records pertaining to the case in the Patent Office, and should be read in the Letters Patent to make it conform thereto.

Signed, countersigned, and sealed this 25th day of August, A. D. 1885.

[SEAL.]

G. A. JENKS,
Acting Secretary of the Interior.

Countersigned:

R. B. VANCE,
Acting Commissioner of Patents.