

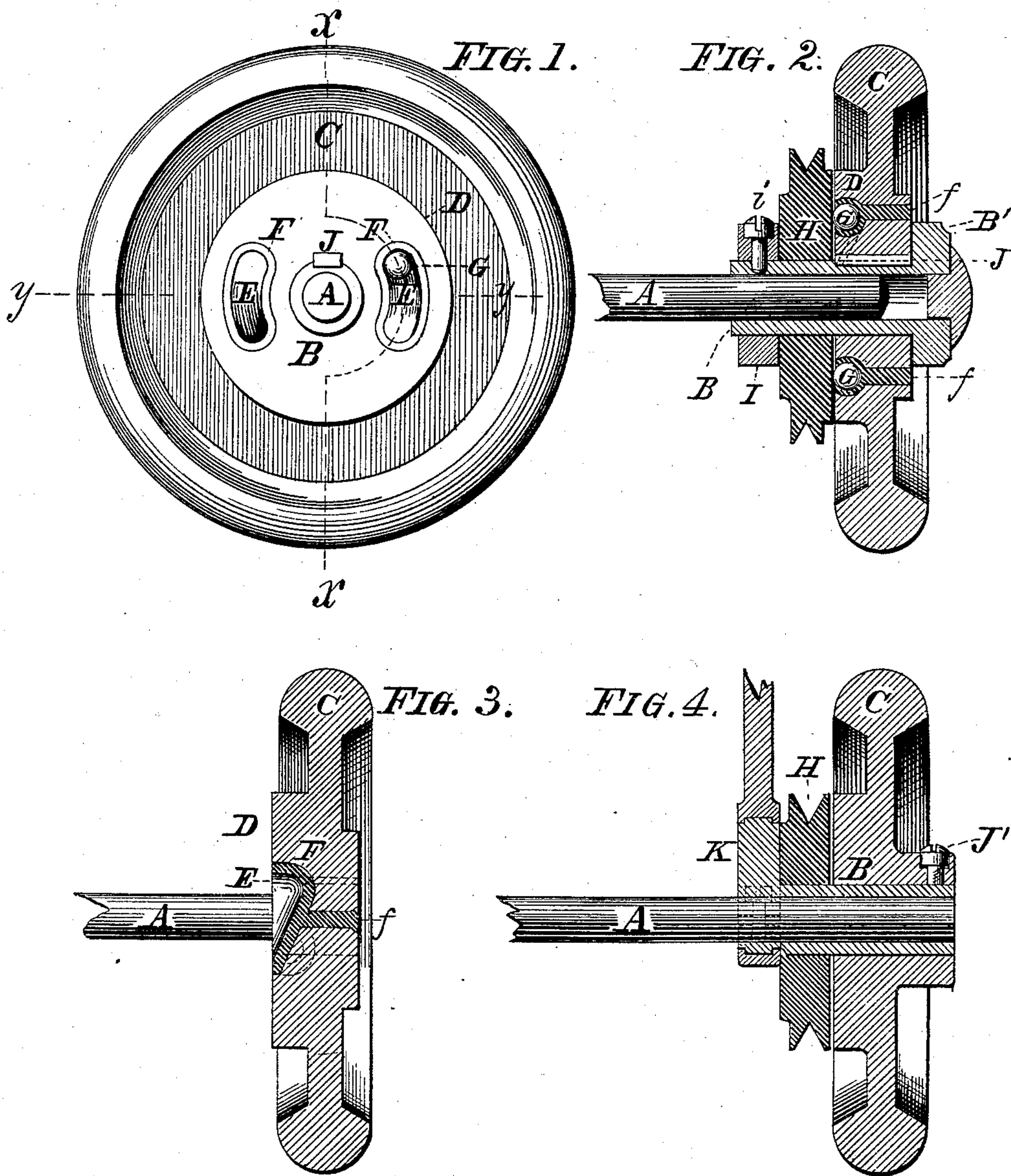
(No Model.)

S. F. LEWIS.

MECHANISM FOR OPERATING SEWING MACHINES.

No. 279,959.

Patented June 26, 1883.



Witnesses:

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UNITED STATES PATENT OFFICE.

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MECHANISM FOR OPERATING SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 279,959, dated June 26, 1883.

Application filed April 2, 1883. (No model.)

To all whom it may concern:

Be it known that I, SETH F. LEWIS, of Buffalo, in the county of Erie and State of New York, have invented certain new and useful
5 Improvements on Mechanical Movements for Operating the Main Shaft of Sewing-Machines; and I do hereby declare that the following description of my said invention, taken in connection with the accompanying sheet of
10 drawings, forms a full, clear, and exact specification, which will enable others skilled in the art to which it appertains to make and use the same.

My present invention has general reference
15 to improvements on mechanism for operating the main shaft of sewing-machines; and its object is the production of an efficient, simple, and inexpensive device which will prevent a sewing-machine from being run in the wrong
20 direction, and at the same time enable the bobbin-winder being actuated without running the sewing-machine mechanism.

My invention consists, essentially, in the new and peculiar combination of parts and novel
25 details of construction, as hereinafter first fully set forth and described, and then pointed out in the claims.

In the drawings already mentioned, which serve to illustrate my said invention more
30 fully, Figure 1 is a plan view of the balance-wheel of my improved mechanism for actuating sewing-machines. Fig. 2 is a sectional elevation in line *yy* of Fig. 1. Fig. 3 is a similar view in line *xx* of said Fig. 1. Fig. 4 is a
35 similar view, illustrating a slightly-modified form of my invention.

Like parts are designated by corresponding letters of reference in all the figures.

A in these drawings represents the main
40 shaft of a sewing-machine, it being that one to which rotating motion is usually applied. Upon this shaft I place loosely a driving-pulley, H, it being either a flat-faced or a grooved one, according to the style of belt employed to
45 drive the machine. Upon the said shaft is furthermore placed a balance-wheel, C, having a hub, D, the face of which has two concentrically-arranged inclined recesses, E E, into which are placed balls or spheres G, as clearly
50 shown in the drawings. The hub D of this balance-wheel is placed opposite the driving-

pulley H, so that when motion is given to the said driving-pulley it will be communicated to the balance-wheel only when said motion is in the direction from the deep toward the shallow
55 part of the recesses E, which will cause the balls G to move up the inclines, and thereby to bind the pulley and balance-wheels together, while as soon as the motion of said driving-pulley is in the opposite direction the bal-
60 ance-wheel will be stopped for obvious reasons.

In order to cheaply produce the proper contour of the recesses E in the hub D, I prefer to cast these recesses larger than necessary to take the ball G. I then place a pattern of the
65 proper contour of said recesses into the latter, and then fill the same with Babbitt or similar metal, F F, of low melting-point and anti-friction quality, using the part *f* as a gate or sprue to fill the said recess. By thus proceeding I
70 can produce the inclined recesses in the balance-wheel very cheaply, and am at the same time enabled to reproduce the same, when worn, at a trifling expense.

In sewing-machines the main shaft A is usu-
75 ally not of the proper length to accommodate the additional wheel, for the reason that on many machines the balance-wheel acts as a driving-wheel, it being provided with the V-shaped groove for the reception of the driving-
80 belt. Whenever said shaft is too short I place upon the same a sleeve, B, having a collar, B', and a second collar, I. Upon this sleeve B, I fasten the balance-wheel C by means of a feather and groove, J, as shown in Figs. 1 and
85 2, or a set-screw, J', as indicated in Fig. 4, and place the driving-wheel H loosely, putting the collar I in front of said driving-pulley H to prevent its being displaced.

It will now be readily observed that when the
90 sleeve B is fixed to the shaft A by the set-screw *i*, or any other suitable means, and the mechanism described placed upon said sleeve, the latter will form a part of said shaft, to enable its being revolved in precisely the same manner
95 as if the driving-wheel H and pulley C were placed upon said shaft A direct.

In certain styles of sewing-machines (the Wheeler & Wilson, for instance) there is an
100 eccentric, K, or similar mechanical device placed close to the driving-wheel to transmit motion to the needle-bar, &c. In these styles

of machines I construct such eccentric K in one piece with the sleeve B, as shown in Fig. 4, and then arrange the driving-wheel H and balance-wheel C upon said sleeve B in the manner already described.

It will now be further observed that, since the shaft A can only be revolved when the wheel H moves in one direction, it is impossible to run the sewing-machine of which said shaft A forms a part in the wrong direction. If advantage is taken of this peculiarity of the device described, by locating the bobbin-winder of such sewing-machines so that it can be driven with the same belt which gives motion to the pulley H, (the belt is not shown in the drawings, nor the said bobbin-winder,) such bobbin-winder may be revolved without revolving the shaft A, and with it the sewing-machine mechanism.

Having thus fully described my invention, I claim as new and desire to secure to me by Letters Patent of the United States, is—

1. In mechanism for communicating motion to the main shaft of sewing-machines in one direction only, the combination, with the shaft A, of the sleeve B, having the collars B' and I, the loose pulley H, and the balance-wheel

C, having the hub D, provided with a series of inclined recesses, E, fitted with spheres or balls G, the whole being constructed and combined substantially in the manner as and for the purpose indicated.

2. In mechanism for communicating motion to the main shaft of sewing-machines in one direction only, the combination, with the main shaft A, of the eccentric K, having the long hub B, fixed to said shaft, the pulley H, loosely arranged upon said hub B, and the balance-wheel C, fixed to said hub B, said balance-wheel having the hub D, provided with a series of curved recesses, E, provided with inclined bases concentrically disposed around the center of said hub, and constructed to operate in conjunction with balls G, substantially in the manner as and for the object stated.

In testimony that I claim the foregoing as my invention I have hereto set my hand in the presence of two subscribing witnesses.

SETH F. LEWIS.

Witnesses:

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WILLIE O. STARK.