W. DAWES.

Compound Hand or Balance-Wheel for Sewing Machines.

No. 197,344. Patented Nov. 20, 1877.

Fig. 1.

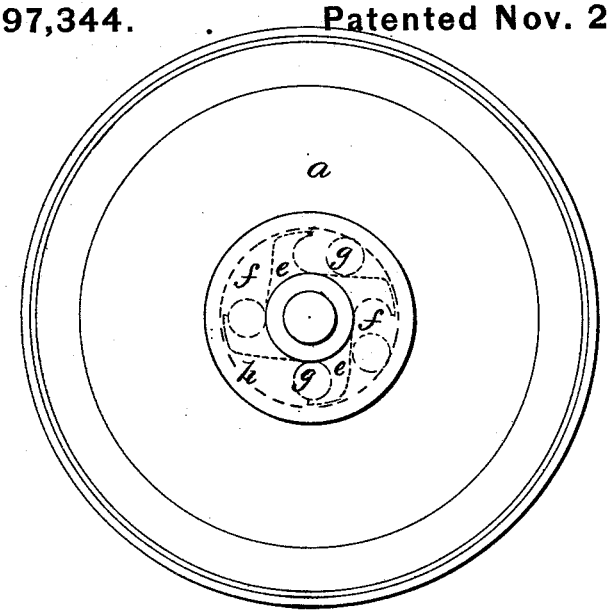
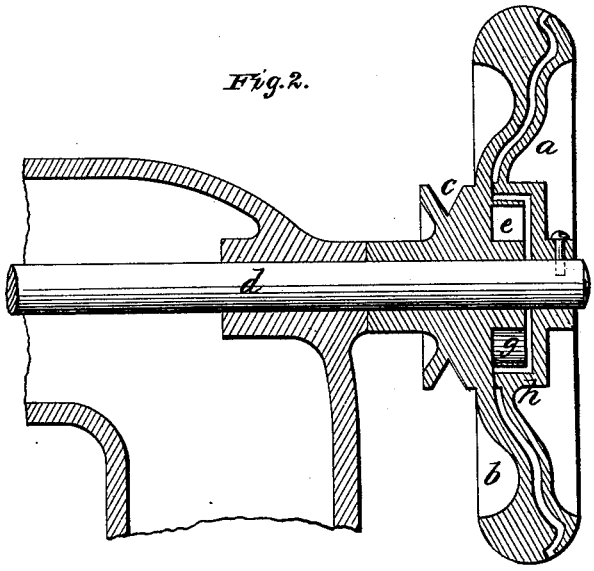


Fig. 2.



WITNESSES

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IMPROVEMENT IN COMPOUND HAND OR BALANCE WHEELS FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. **197,344**, dated November 20, 1877; application filed October 5, 1877; patented in England, July 5, 1877.

To all whom it may concern:

Be it known that I, WILLIAM DAWES, of Kingston Grove, Leeds, in the county of York, England, engineer, have invented a new and useful Improvement in Sewing-Machines, which improvement is fully set forth in and by the following specification, reference being had to the accompanying drawings.

This invention relates to an improved compound balance-wheel for sewing-machines, formed in two parts, one being attached loosely to the driving-shaft of the machine, and the other securely attached thereto, the two parts being so constructed and arranged as to gripe and bind together, so as to carry the shaft on the forward movement of the machine, and to release their gripe upon each other upon the reverse movement, so that one part will slip and the driving-shaft will remain stationary.

The object of my invention is to simplify the construction of the compound balance-wheel, and to provide for the two parts being conveniently grasped by the hand of the operator, for convenience in stopping the machine.

I construct my wheel in two parts, or as a double or compound wheel, one half or part of the wheel being cast with or attached to the V-grooved or small gut-wheel or pulley, in the usual manner, and running loosely with it upon the main shaft, or other equivalent part of the machine, and the other half or part of the wheel being secured to or fixed upon the said shaft or other part, or otherwise coupled to the machine, in such manner that the movement of it and the machine must be simultaneous.

I then cause the loose or free half or part of the wheel, whichever that may be, to propel the fixed or coupled half or part, when turning the forward or working way only; and this I effect by constructing, upon the center of what may be called the inner face of the loose half or part of the hand-wheel, a cheese-like boss or projection having a number of pear or wedge shaped chambers or recesses sunk into it, and into each of these chambers I place, loosely, a cylinder or roller, of lead or other convenient or suitable metal or substance, and of such size or diameter that when in the large end of the said chambers or recesses they shall be caged in and carried by the same, without contact with other parts, and therefore without producing propulsion, but when they are at or near the smaller end of the chambers they shall wedge and gripe against the inner surface of a ring cast upon the inner face of the fixed or coupled half of the wheel; and thus, without cutting or grooving the shaft, and without clicks or springs, or any further fitting or parts than those herein described, a safe, permanent, and convenient automatic fast and loose action is obtained.

In the accompanying drawings, which illustrate my invention, Figure 1 is a vertical elevation, and Fig. 2 a vertical section, of the compound wheel and the gripe or pawl action.

a is the fast or coupled half or part of the hand or balance wheel. *b* is the loose or free half of the same. *c* is the gut-wheel or pulley. *d* is the main shaft of the machine. *e* is the boss or projection upon the loose part of the wheel. *f f* are chambers or recesses in the same. *g g* are rollers, and *h* the ring cast upon the fixed or coupled half or part of the wheel.

The web of the fast half *a* of the balance-wheel is constructed of such shape as to conform to the configuration of the free half *c*, and extends to the periphery of the free half, in order that the two halves can be grasped together when it is desired to stop or start the machine.

I claim as my invention—

1. A compound balance-wheel for a sewing-machine, constructed in two parts, *a b*, having similarly-shaped adjoining webs, in combination with the clutching mechanism secured between the two, the loose half being provided with a band-groove for the band of the fly-wheel, the whole constructed and arranged to operate substantially as set forth.

2. The combination of the loose portion *b*, having band-groove *c* and the annular boss or projection *e*, provided with a series of seats, *f f*, for the reception of the rollers or balls to play in, and the fast portion *a*, having a ring, *h*, for inclosing the boss and rollers or balls, both the fast portion *a* and the hand or balance portion *b* having their webs constructed so as to coincide with each other, substantially as described, whereby the said parts may travel together when moving forward and the loose part caused to slip upon the reverse movement.

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