

(No Model.)

W. R. WHEATON.
SEWING MACHINE.

No. 487,383.

Patented Dec. 6, 1892.

Fig. 1.

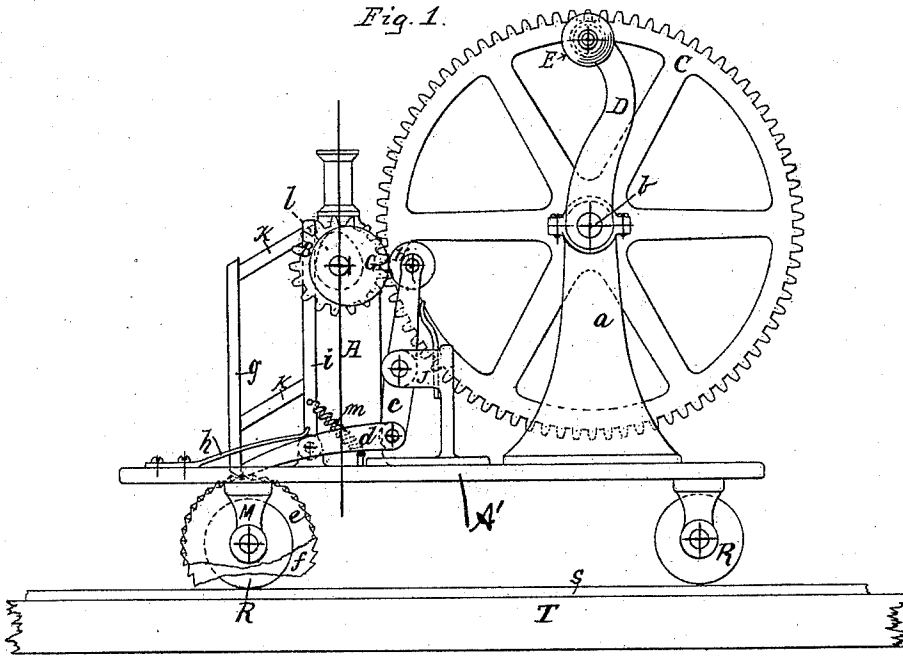
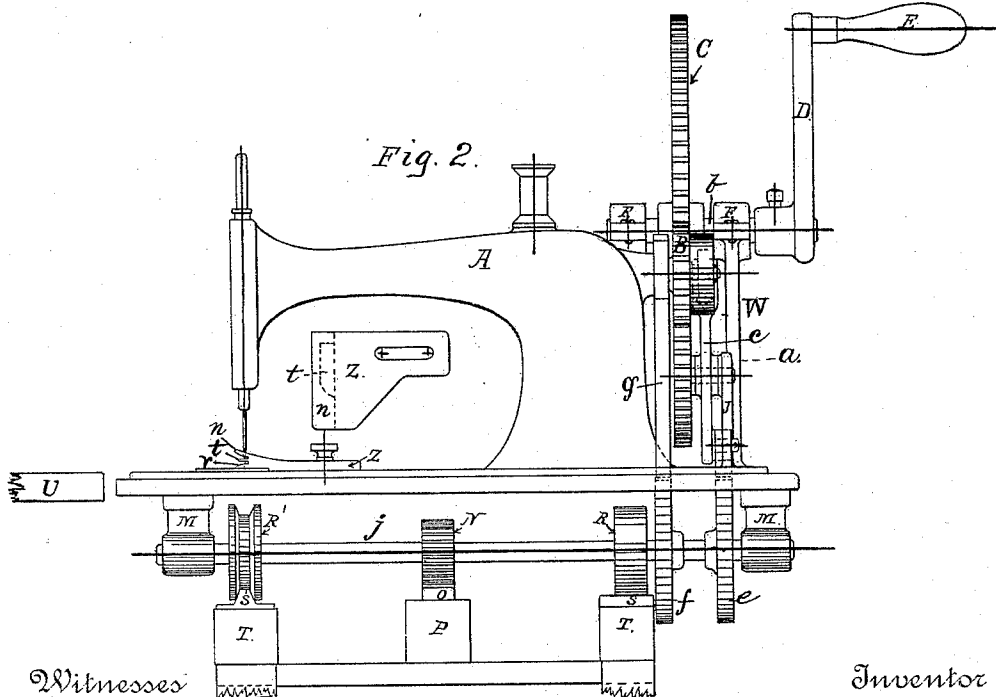


Fig. 2.



Witnesses

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SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 487,383, dated December 6, 1892.

Application filed November 4, 1889. Serial No. 329,247. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM R. WHEATON, a citizen of the United States of America, residing in Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Sewing-Machines, of which the following is a specification, reference being had to the accompanying drawings and letters of reference marked thereon.

My invention relates more particularly to sewing-machines which are adapted to travel while in operation, for the sewing of carpets and other like uses, where the material to be operated upon is bulky and difficult to feed.

In the accompanying drawings, in which like letters of reference indicate like parts, Figure 1 is an end view, and Fig. 2 a side view, of my device.

In detail, A indicates an ordinary sewing-machine arm having the usual parts mounted therein.

A' indicates the machine-bed, having the usual parts attached thereto.

b indicates the crank-shaft.

D indicates a crank-arm.

C indicates a large gear mounted upon the crank-shaft.

B indicates a small gear mounted upon the machine-shaft which operates the needle-bar.

G indicates a cam mounted upon gear B; H, a roller bearing against cam G and mounted upon lever c; d g, pawls; e f, ratchet-wheels; h m, springs; M, supports; R R', rollers mounted upon an axle j, supported therein; T, rail-supports; s s', rails mounted thereon; P, rack-support; o, rack mounted thereon; N, a gear mounted on shaft j and meshing with rack o, and z a guide.

The construction and operation are as follows:

Taking an ordinary sewing-machine, (one of the class known as the "Singer" being employed in the illustration,) the bed is mounted upon four supports M, each being provided with a shaft-receiving opening into which fit shafts j. These shafts are provided with wheels R and R', which traverse tracks s and s', mounted upon suitable track or rail supports T. The forward shaft is provided with a gear N and with ratchet-wheels e and f. A rack O is mounted upon a suitable support P

and arranged to mesh its teeth with the teeth on gear-wheel N, so that the revolution of this shaft will cause the gear N to revolve, and its teeth, meshing with the rack-teeth o, will cause the machine to be moved upon the track in the direction of the revolution of this gear.

In the rear of the heel of machine-arm A is mounted a large gear-wheel C, suitably supported, the shaft of which is provided with a crank-arm and handle D E.

The machine-shaft which drives the needle-bar is projected through the machine-arm A and has mounted upon this projecting end a small gear B, which meshes with the gear C, and attached to the outer face of the gear B is a cam G, which preferably has its circumference in a true circle and is mounted eccentrically upon the gear B or upon the same shaft with this gear.

A lever c is pivotally mounted in a suitable support J and is provided at its upper end with a roll H, the periphery of which bears against the periphery of the cam G, and the lower end is provided with a pawl d, the free end of which engages the teeth upon the ratchet-wheel e, and thus at each revolution of the needle-bar shaft the lever c is moved, and through it and the pawl d an impulse is given the ratchet-wheel e, and the shaft j is caused to revolve, thus carrying the machine forward. The cam G will of course be mounted in such position that the forward impulse of the machine is had while the needle is free from the fabric. A spring h serves to force the point of the pawl d in contact with the teeth on ratchet-wheel e.

To prevent any tendency of the machine to move beyond the limit of the motion of the pawl d, I provide a stop ratchet-wheel f, the teeth of which slant in a direction opposite the teeth on the ratchet-wheel e, and this being fixed to the same shaft serves when its pawl is in engagement with it to limit the forward motion of the machine on its track. The stop-pawl provided by me consists of an upright i, pivotally mounted upon the bed-plate and provided with a pawl-piece g, mounted upon arms k, extending from the upright i. The lower end of the pawl-piece g is adapted to engage the ratchet-teeth upon the ratchet-wheel f, and the upper end of the upright piece i bears against a cam l, (shown

in dotted lines in Fig. 1,) the revolution of which cam causes the pawl *g* to alternately engage and release the ratchet-wheel *f*, the latter of course being released while the pawl *d* is operating to force the machine forward upon its track, and being in engagement when the pawl *d* is on the return. A spring *m* serves to free the pawl *g* from the ratchet-wheel *f* when the cam *l* is in position to allow the same to be moved out of contact.

The material to be operated upon is placed upon a table *U*, with the edges to be joined projecting over sufficiently to come below the needle and rest within the lips of the guide *z*. One of the wheels or rollers *R'* is preferably recessed upon its periphery, and the rail *s'* upon which it runs is shaped to fit the annular recess upon the wheel, thus preventing any side motion of the device. It will now be seen that if the large gear *C* be revolved by the crank *D* *E* the small gear *B* will be revolved, thus operating the sewing-machine, and that the action of the cam *G*, operating upon the ratchet-wheel *e* through the medium of the lever *c* and pawl *d*, will cause this ratchet-wheel to revolve, carrying with it the shaft *j*, to which it is fixed, and thus causing the gear *N*, also fixed on the same shaft, to revolve, and that the action of the teeth of the gear *N* on the rack *o* will cause the whole appliance to move forward with a step-by-step motion, each step being equivalent in length to the length of a stitch; and it will also be seen that the action of the cam *l* upon the ratchet-wheel *f*, through the medium of the pawl *g* and parts attached, will operate, as before described, to hold the machine at rest. The guide *z* consists of a plate having a thumb-screw slot for adjustment and having flaring wings *n* *r* between which the edges of the carpet or other fabric pass. The guide is set just ahead of the needle, and projecting centrally between the two wings is a tongue *t*, having its forward end inclined rearward and tapering from its base, the object of which tongue is to fold in the burlap and projecting edges, thus making a smoother seam.

Having therefore described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of a sewing-machine suitably mounted on wheels, a track for said

wheels to traverse, means to give the machine motion on said track, a ratchet-wheel and gear mounted on a shaft *j*, a rack *o*, arranged with its teeth engaging the teeth on said gear, and a stop pivotally mounted, one end of which engages the teeth on the ratchet-wheel, and thus prevents revolution of the same, and the other end of which engages a cam *l*, and a spring arranged to disengage the pawl from the ratchet-teeth when free to be moved therefrom, substantially as shown.

2. The combination of a sewing-machine mounted upon a table or base, wheels arranged to support said table or base, tracks for said wheels to traverse, a rack mounted below the base, a gear mounted upon the base and arranged to mesh with the teeth on the rack, a ratchet-wheel *e*, mounted upon the same shaft with gear *N*, a pawl *d*, arranged to engage the teeth on ratchet-wheel *e*, a ratchet-wheel *f*, mounted upon the same shaft with ratchet-wheel *e*, a stop-pawl *g*, arranged to engage the teeth on ratchet-wheel *f*, and means, substantially as shown, to operate said pawls, a driving-wheel *C*, a driven wheel *B*, and cams *G* *l*, all arranged and operating substantially as shown.

3. The combination, with a sewing-machine, of a driving-gear *C*, suitably mounted and provided with a crank *D*, a driven gear *B*, mounted upon the needle-bar shaft and arranged with its teeth to mesh with the teeth on driving-wheel *C*, the cams *G* *l*, fixed to mesh with the driven gear *B*, a lever *c*, pivotally mounted and arranged with one end bearing against the cam *G* and having at its opposite end a pawl *d*, the free end of which pawl engages the ratchet-wheel *e*, and a stop device consisting of an upright *i*, pivotally mounted at the base and having its upper portion arranged to bear against the cam *l* and having a pawl *g* mounted thereon, the free end of which pawl engages the ratchet-wheel *f*, the supporting-wheels, gear *N*, mounted upon the same shaft with ratchet-wheels *e* and *f*, and a rack the teeth of which engage the teeth on gear *N*, all in combination substantially as shown.

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Witnesses:

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