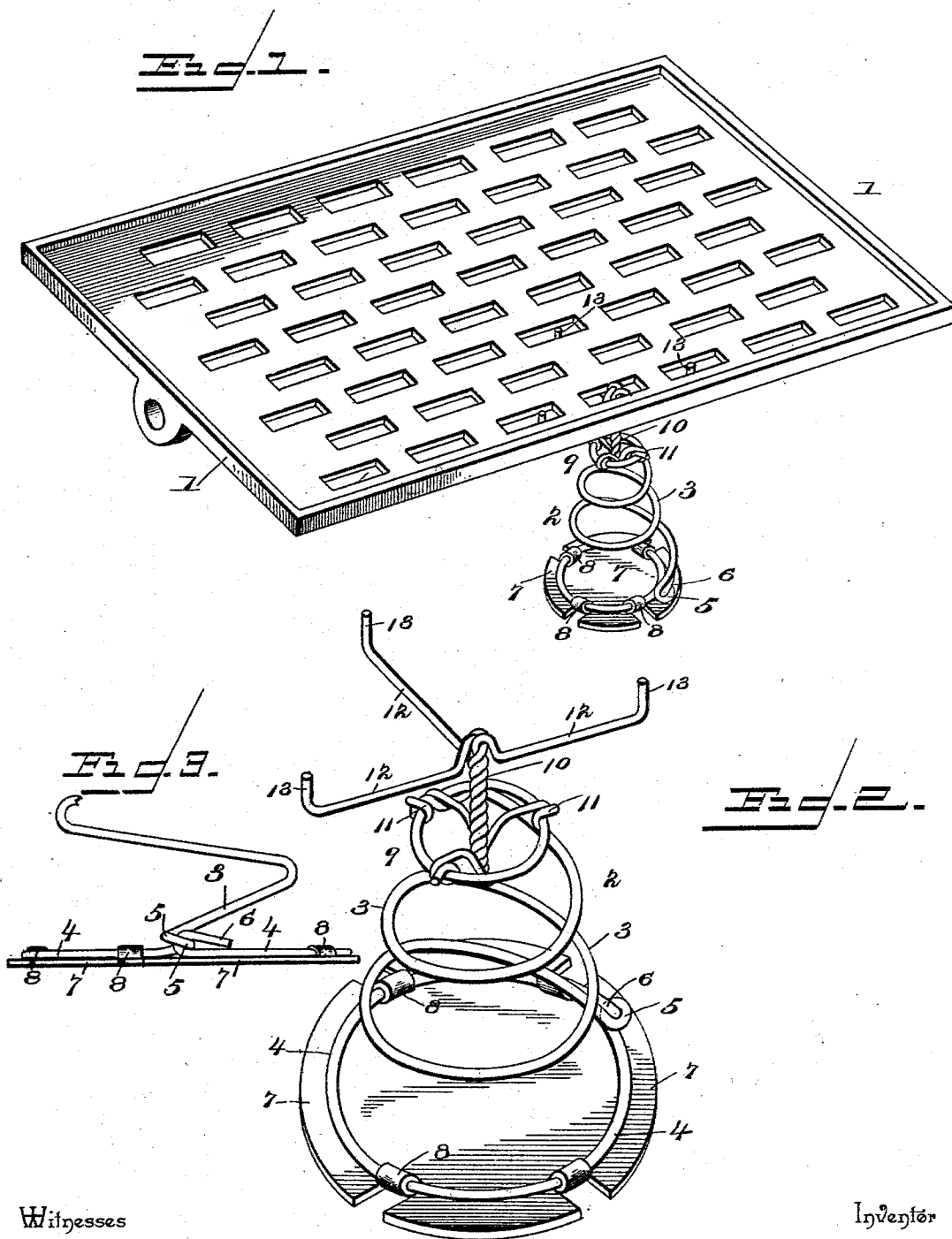


(No Model.)

G. FRANK, Jr.
TREADLE SPRING.

No. 515,760.

Patented Mar. 6, 1894.



Witnesses

E. H. Stewart.

Inventor

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UNITED STATES PATENT OFFICE.

GUSTAV FRANK, JR., OF JEFFERSON, TEXAS.

TREADLE-SPRING.

SPECIFICATION forming part of Letters Patent No. 515,760, dated March 6, 1894.

Application filed May 31, 1893. Serial No. 476,114. (No model.)

To all whom it may concern:

Be it known that I, GUSTAV FRANK, Jr., a citizen of the United States, residing at Jefferson, in the county of Marion and State of Texas, have invented a new and useful Treadle-Spring, of which the following is a specification.

My invention relates to an improved treadle spring for use in connection with the treadles of light machinery, such as sewing-machines, scroll-saws, &c., the objects in view being to provide a simple, inexpensive, and efficient spring capable of attachment to any ordinary treadle and provided with adjustable means for securing it against displacement while in use; and to provide a spring adapted to be arranged under the heel of the treadle in order to give to the latter the forward or more difficult and tiresome impulse. The depression of the rear end or heel of the treadle requires less physical exertion from the fact that the weight of the limb is an assistance, whereas the depression of the front end or toe thereof must be accomplished almost entirely by muscular effort, and hence by arranging the return spring in position to be contracted by the depression of the heel of the treadle it is stored with potential energy during that part of the operation which is, by comparison, easy of accomplishment, and spends its energy during the opposite, or more difficult and exhausting movement.

Further objects and advantages of my invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings: Figure 1 is a perspective view of a spring embodying my invention applied in the operative position to a treadle. Fig. 2 is a perspective view of the device, detached. Fig. 3 is a detail view in perspective of the lower part of the spring, to show the interlocking eye and hook.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates a rocking treadle, fulcrumed at a point intermediate of its extremities, and 2 designates my improved actuating spring disposed under the heel or rear end thereof.

I preferably employ a spiral spring, 3, with its base-coil, 4, provided with an eye, 5, which is engaged by a terminal hook, 6, thus forming a complete ring which serves to support the spring in an upright position. To this base coil or ring is secured a base-plate, 7, of sheet-metal, which is provided with up-struck ears, 8, bent to form keepers which engage the ring or coil at intervals. The upper or reduced end of the spiral is spanned by a spider, 9, having a central vertical stem, 10, which is in alignment with the axis of the spring and may be formed, as shown in the drawings, by the twisting together of the legs, 11, of the spider. Extending radially from the upper end of the stem, 10, are the flexible, angularly-adjustable engaging arms, 12, provided with terminal, up-turned detents, 13, to engage the openings, slots, perforations, or cut-away portions 14, of the treadle, the latter being usually in the form of scrolls or open-work plates. The arms, 12, may be integral, respectively, with the legs, 11, of the spider, as shown in the drawings, and they are capable of adjustment to properly engage the openings in the treadle.

The device being arranged beneath the treadle is out of the way and therefore cannot injure the clothing of the operator or impede his or her movements; and its placement under the heel of the treadle gives the latter the forward impulse which is a most desirable assistance by reason of the greater difficulty of producing movement in that direction.

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

1. A treadle actuating or return spring adapted to rest upon the floor and provided with a supporting base and radially disposed, flexible arms to engage the treadle, substantially as specified.

2. A treadle spring provided with a supporting base whereby it is held in an upright position, a spider spanning the top coil of the spring and having a vertical stem, and radial flexible engaging arms connected to said stem, substantially as specified.

3. In a device of the class described, the combination of a spiral spring having its base-

coil provided with an intermediate eye engaged by a terminal hook, and radially-disposed, flexible arms connected to the upper end of the spring, substantially as specified.

5 4. In a device of the class described, the combination of a spiral spring, a base-plate provided with upstruck ears engaging the bottom or base coil of said spring, and radial flexible arms connected to the upper end of
10 the spring, substantially as specified.

5 5. In a device of the class described, the combination of a vertically supported spring, a spider spanning the top coil of the spring with the inner ends of its legs twisted together to form a vertical stem, and treadle
15 engaging arms integral, respectively, with said legs, and provided with terminal detents

to engage openings in the treadle, substantially as specified.

6. A removable spring attachment for 20 treadles comprising the flat base, the spiral spring mounted on and secured thereto, and radially-disposed flexible arms provided at the upper end of the spring to removably engage the holes formed in the treadle, sub- 25
stantially as specified.

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

GUSTAV FRANK, JR.

Witnesses:

L. B. TODD,

S. W. MOSELEY.