(No Model.)

H. KELLER.

MOTOR.

No. 410,105. Patented Aug. 27 1889.

Fig. 1.

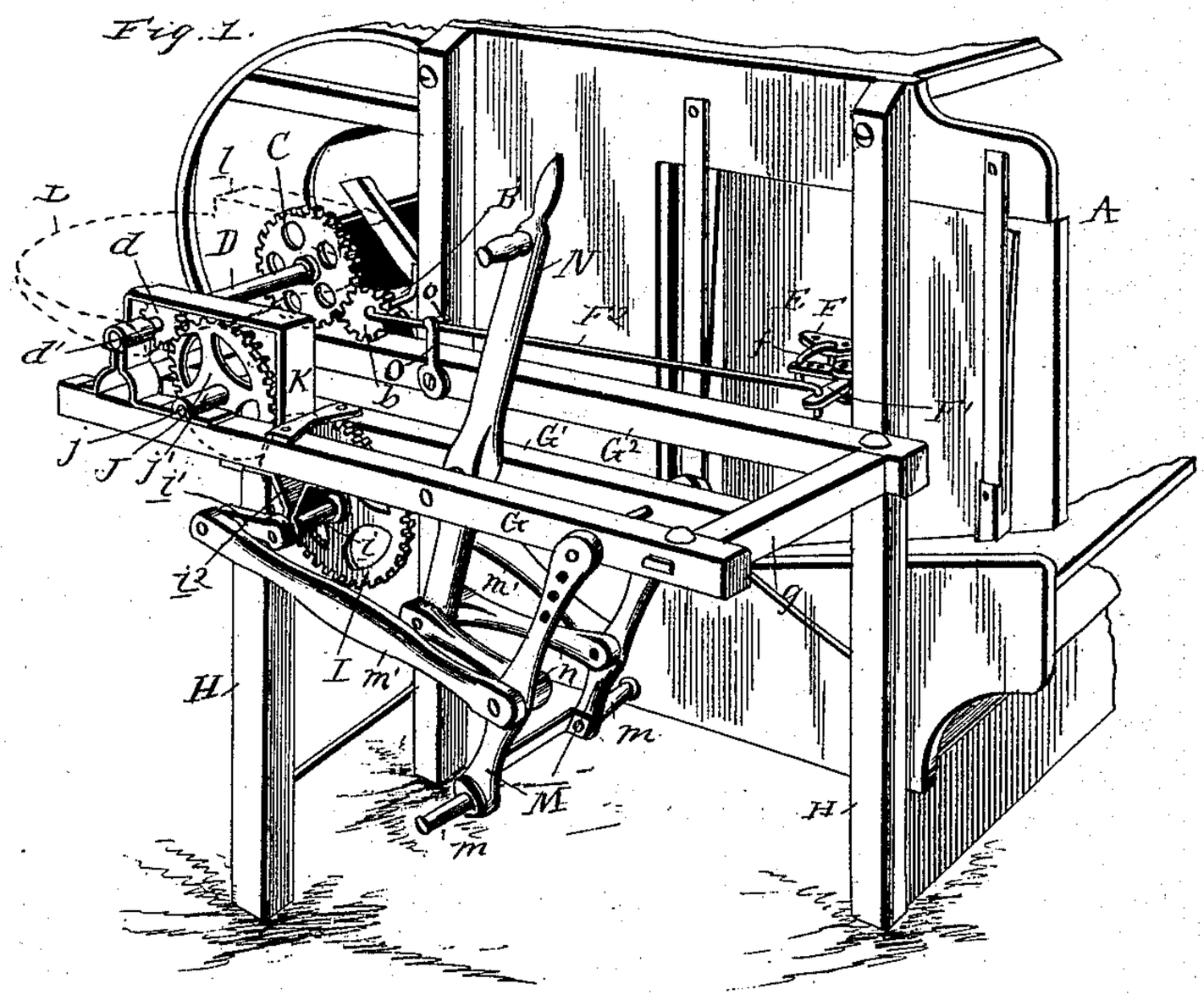


Fig. 2.

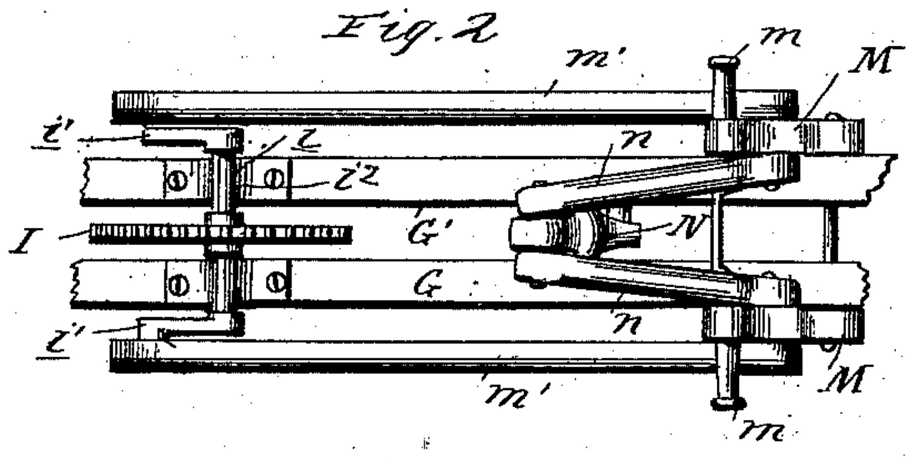


Fig. 3.

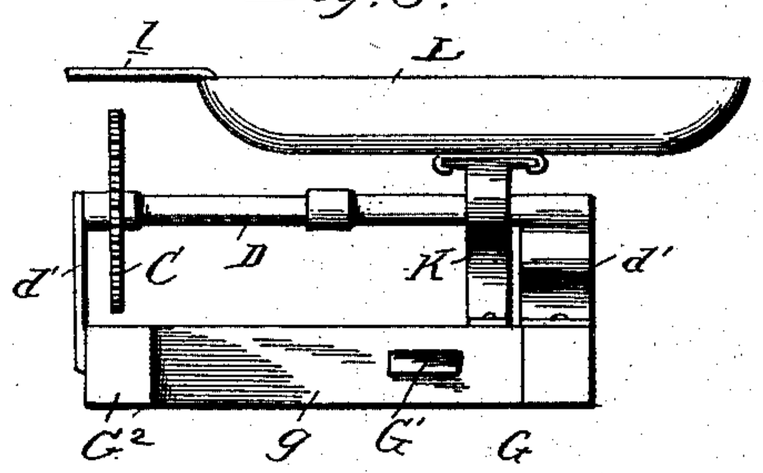
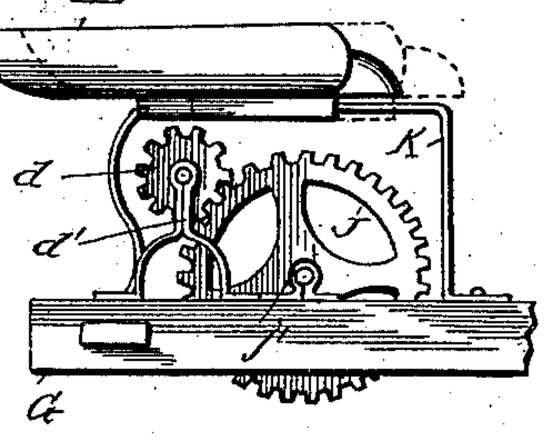


Fig. 4.



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UNITED STATES PATENT OFFICE.

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MOTOR.

SPECIFICATION forming part of Letters Patent No. 410,105, dated August 27, 1889.

Application filed April 26, 1889. Serial No. 308,669. (No model.)

To all whom it may concern:

Be it known that I, HENRY KELLER, a citizen of the United States, residing at Sauk Centre, in the county of Stearns and State of Minnesota, have invented certain new and useful Improvements in Motors; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to motors that are designed to be operated by manual power, and has for its object to provide a power mechanism that can be operated and driven by hand or foot, or by hand and foot combined, thereby producing a steady and even motion, which is a desideratum in fanning-mills; hence the special adaptation of such a motor for fanning-mills, although it is equally well adapted for running machinery of all kinds.

The improvement consists of the novel features which will be hereinafter more fully described and claimed, and which are shown in the annexed drawings, in which—

Figure 1 is a perspective view of a motor of my construction, showing its application to a fanning-mill; Fig. 2, a detail bottom view showing the connections between the treadle-bars and hand-lever and the cranks on the ends of the shaft of the master-wheel. Fig. 3 is a rear detail view showing the seat and an extension of the seat forming a housing for the gearing; Fig. 4, a side detail view showing the adjustability of the seat on its support and the latter forming a guard for the driving mechanism.

The fanning-mill A is of any well-known construction, and is shown simply to illustrate the application of my invention. The fan-shaft B has a pinion *b* on its end which meshes with the gear-wheel C on the shaft D. The shoe E, suspended in any approved manner and having the bracket F, is operated from the pinion *b* by means of the elbow-lever F′ and the rod F², which connects the said elbow-lever with the said pinion *b*. The bracket F and the arms of the elbow-lever each have a series of openings, whereby the attachment of the parts can be adjusted to vary the stroke or shake of the shoe. The ⌐¬-shaped link *f* connects one arm of the elbow-lever F′ with the bracket F, its vertical arms passing through openings in the said bracket and arm.

The frame of the motor is composed of a suitable number of horizontal beams G, G′, and G², which are connected by the cross or end bars *g* and the vertical supports H. The master-wheel I, mounted on the shaft *i*, that is provided at its ends with the cranks *i′* and which is journaled in the brackets *i*², meshes with the gear-wheel J, the latter being in mesh with the pinion *d* on the shaft D and mounted on shaft *j*, which has bearings in the brackets *j′*. The shaft D is journaled in the brackets *d′*. The master-wheel I is below the horizontal bars G, &c., comprising the frame, and the gear-wheels J and C and the pinions *b* and *d* are above the said bars. The gear-wheel J and the pinion *d* are in the same vertical plane, and are protected by the shield K, which extends horizontally over and in the front and rear of the same, and which at the same time forms a support for the seat L, which is adjustable on the said shield or support. The lateral extension *l* of the seat projects over the gear-wheel C and the pinion *b* and forms a guard for same. The treadle-bars M, adjustably connected at their upper ends with the bars G and G′ of the frame, and having the treadles *m* at their lower ends, are connected with the cranks *i′* by the pitmen *m′*. The hand-lever N, pivoted between its ends to the bars G and G′, is connected at its lower end with the treadle-bars M by the links *n*. The vertical arm O is provided with a lateral arm *o*, which extends over the rod F² and prevents accidental disengagement between the bent end of the rod F² and the elbow-lever F′.

It will be observed that the various brackets *i*², *j′*, and *d′* are adjustable to vary the depth of mesh between the gear-wheels and pinions of the train of gearing.

The operation of the motor is manifest from the foregoing detailed description, reference being had to the accompanying drawings.

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

1. In a motor, the herein shown and described hand and foot mechanism, composed of the treadle-bars M, adjustably connected at their upper ends with the frame and having treadles *m* at their lower ends, the pitmen connecting the treadle-bars with the cranks at the ends of the master-wheel shaft *i*, the hand-lever N, and the links *n*, connecting the said treadle-bars M with the hand-lever N, substantially as described, the pitmen and links being placed on opposite sides of the bars M and secured thereto by the same connection, substantially as shown.

2. In a motor of the hereinbefore-specified type to be operated by hand and foot, the combination, with the shafts D and *j*, the gear-wheel C, at the inner end of the shaft D, meshing with the pinion *b*, and the pinion *d* at the outer end of shaft D, meshing with gear-wheel J on the shaft *j*, of the shield K, the seat L, placed on the shield K to protect the gearing *d* and J, and having the lateral extension *l* to extend over and protect the gearing C and *b*, substantially as set forth.

3. In a motor, the herein-described means for connecting the same to the shoe of a fanning-mill, consisting of the bracket F, the elbow-lever F′, the rod F², and the ⌐¬-shaped link *f*, adjustably connecting the lever F′ with the bracket F, substantially as and for the purpose described.

4. The herein shown and described hand and foot power for fanning-mills, comprising the shafts D and *j*, the gearing *d* and J, connecting the two shafts, the pinion *b*, operated by gear-wheel C on shaft D, the bracket F on the shoe E, the elbow-lever adjustably connected with the bracket F and driven from pinion *b* by rod F², the master-wheel I, having cranks *i*′ on the ends of its shaft *i*, the treadle-bars M, adjustably connected with the frame and having treadles *m*, the pitmen *m*′, the hand-lever N, and the links *n*, the latter being placed against the bars M on the side opposite the pitmen and secured thereto by the same means, substantially as shown.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY KELLER.

Witnesses:
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