J. SKANDORA.

WEIGHT MOTOR.

APPLICATION FILED JUNE 27, 1916.

1,225,685.

Patented May 8, 1917.

2 SHEETS—SHEET 1.

Fig. 1.

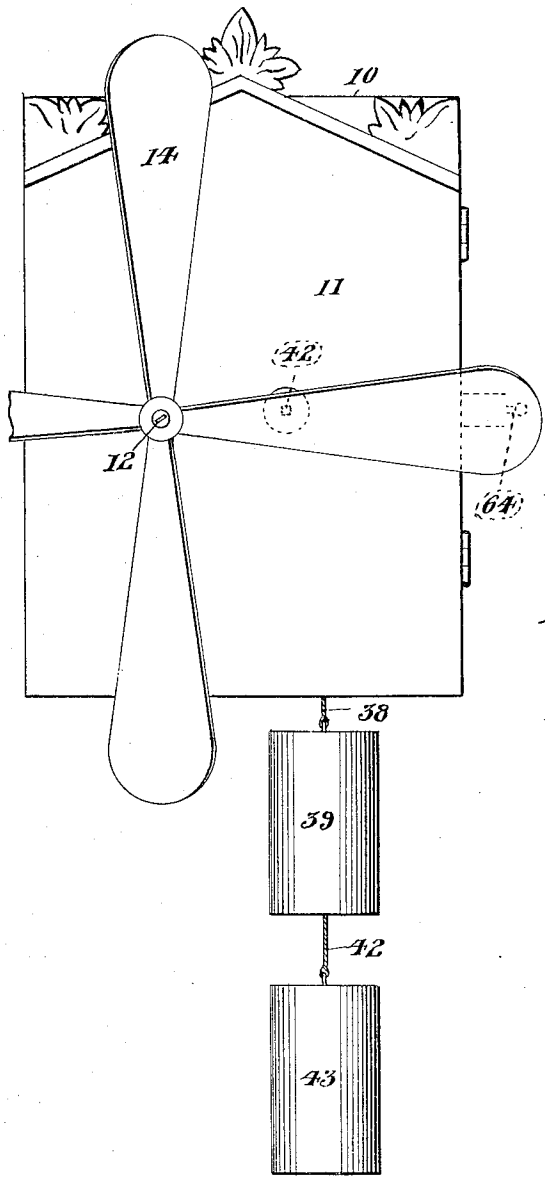
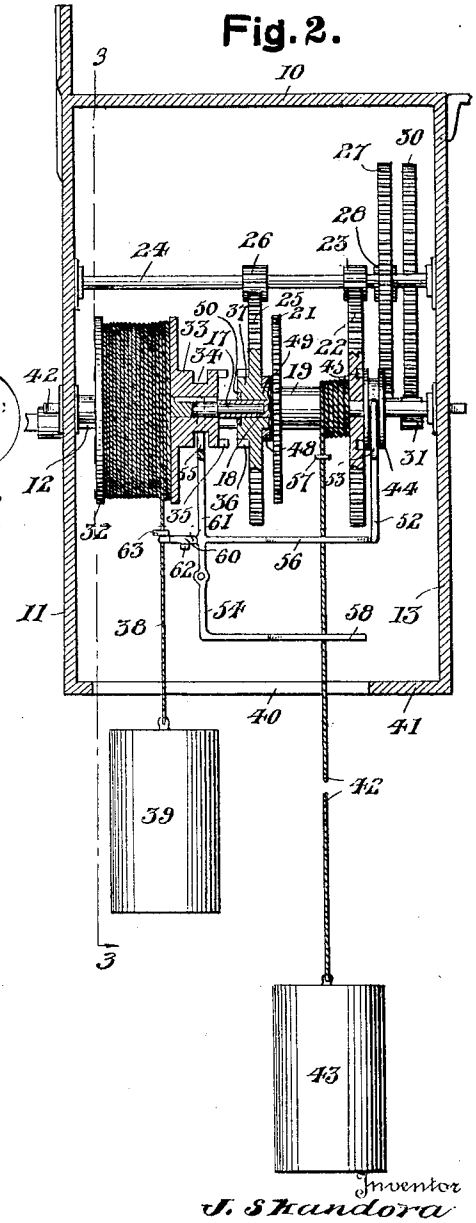


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

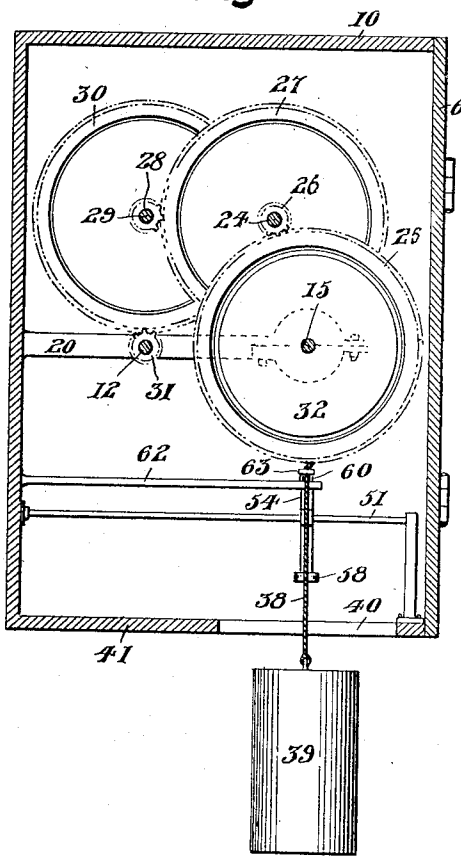


Fig. 4.

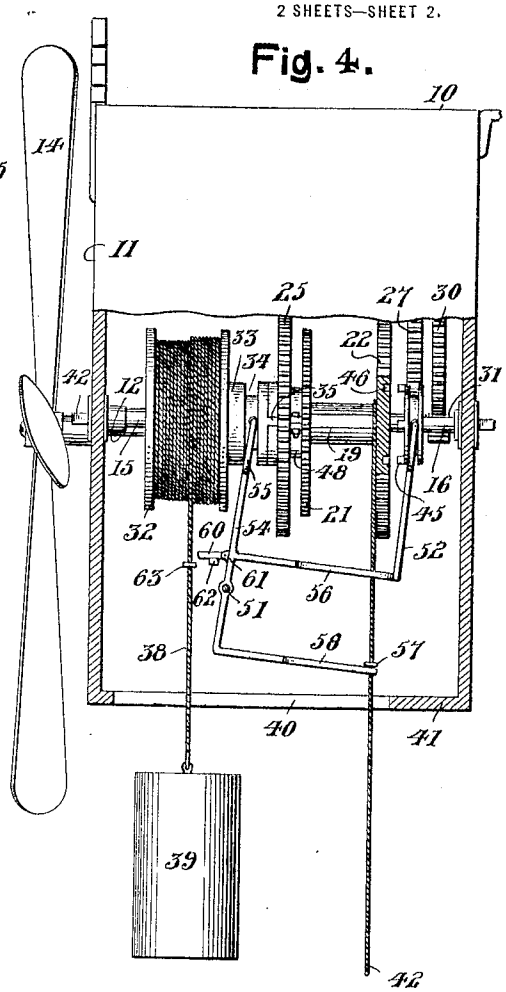


Fig. 5.

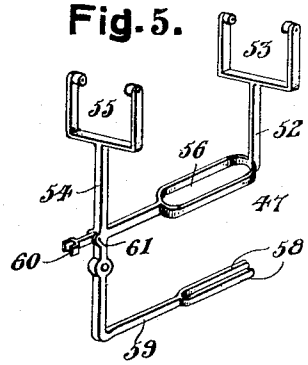
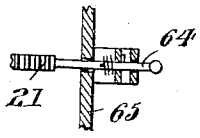


Fig. 6.



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UNITED STATES PATENT OFFICE.

JAKOB SKANDORA, OF RACINE, WISCONSIN.

WEIGHT-MOTOR.

1,225,685. Specification of Letters Patent. Patented May 8, 1917.

Application filed June 27, 1916. Serial No. 106,166.

To all whom it may concern:

Be it known that I, JAKOB SKANDORA, a subject of the King of Hungary, residing at Racine, in the county of Racine and State of Wisconsin, have invented certain new and useful Improvements in Weight-Motors, of which the following is a specification.

This invention relates to certain new and useful improvements in weight-motors.

The primary object of the invention is the provision of a weight motor for operating an air circulating fan, thus rendering the device serviceable without the use of springs or electricity.

A further object of the device is to provide a motor having a plurality of weight operated driving drums automatically connected successively in operative connection with a fan.

A still further object of the device is to provide weight operated driving drums for a driving shaft, the drums being independently wound up and set and arranged with automatic means for disconnecting one drum when its force is exhausted and operatively connecting a new drum.

With these general objects in view and others that will appear as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated in the accompanying drawings, and then claimed.

In the drawings forming a part of this application and in which like designating characters refer to corresponding parts throughout the several views:—

Figure 1 is a front elevation of the device.

Fig. 2 is a vertical side view of the device, partly in section and with the fan shaft broken away, the mechanism being illustrated in its operative position, and the side 65 of the casing being removed.

Fig. 3 is a sectional view of the device taken on line 3—3 of Fig. 2.

Fig. 4 is a view similar to Fig. 2 with the casing partially in side elevation and the mechanism arranged with a second weight operatively positioned.

Fig. 5 is a perspective view of the clutch operating means detached, and,

Fig. 6 is a detail sectional view of the gear retaining catch.

Referring more in detail to the drawings, a casing 10 is provided preferably having an ornamental front side 11 while a fan shaft 12 is journaled transversely therethrough and also through the rear wall 13 of the casing being provided with a circulating fan 14 upon its outwardly projecting end adjacent the said casing front 11.

A drum or driving shaft is also journaled through the casing 10 in parallelism with the fan shaft 12 being formed in two sections 15 and 16 forwardly and rearwardly arranged within the casing 10 in axial alinement with each other, the section 15 having a reduced inner end 17 journaled within an axial socket 18 of the inner end of the section 16, a primary operating drum 19 being keyed to the shaft section 16.

The drum 19 has one side 21 thereof made in the form of a gear while at the opposite side of the drum 19 is the gear 22 journaled on shaft 16 and in constant mesh with a pinion 23 upon a driven shaft 24 journaled in the casing walls 11 and 13. A second gear 25 is journaled upon the shaft section 16 adjacent the gear 21 and in mesh with a pinion 26 upon the said driven shaft 24.

A gear 27 is mounted upon the shaft 24 in mesh with a pinion 28 upon the shaft 29 arranged within the casing 10 at one side of the shaft 24, a gear 30 being mounted upon the shaft 29 in constant mesh with a pinion 31 upon the fan shaft 12.

An auxiliary drum 32 is splined upon the shaft section 15 having a clutch hub 33 arranged with a lever receiving annular groove 34 and with projecting clutch teeth 35, the latter adapted to engage within receiving sockets 36 in the adjacent face of the clutch member 37 constituting a hub of the gear 25. A brace 20 is carried by one side of the casing 10 having a strap journal bearing 48 at its inner end in which the rear portion 49 of the hub 37 of the gear 25 is journaled whereby the said gear 25 is restrained against rearward movement upon the shaft section 16 while the two-part drum shaft is suitably supported thereby. A washer 50 is carried by the shaft section 16 adjacent the forward face of the hub 37 preventing a forward longitudinal movement of the gear 25. The drum 32 is arranged with a cord 38 having one end secured thereto and adapted to be wound thereon, an operating weight 39 being attached to the opposite free end of the said cord which latter extends through an opening 40 in the casing bottom 41. The squared projecting end portion 42 of the shaft sec-

tion 15 is adapted to receive a turn crank (not shown) or other suitable means for turning the drum 32 for winding up the cord 38. The drum 19 is provided with a cord 42 in a similar manner having its free end attached to an operating weight 43 of slightly greater weight than the weight 39 while a clutch sleeve 44 is splined upon the shaft section 16 having clutch teeth 45 adapted to engage within clutch recesses 46 in the adjacent face of the gear 22.

From this description it will be understood that when the clutch sleeve 44 is inwardly positioned in clutching engagement with the drum 19, a turning of the latter revolves the shaft 16 which through the agency of the gear 22 and the pinion 23 revolves the driving shaft 24 and through the gearing hereinbefore described operatively actuates the fan 14, as best illustrated in Fig. 2 of the drawings. It will also be understood that when the clutch hub 33 and the drum 32 are moved rearwardly with the clutch teeth 35 engaging the clutch sockets 36 as best illustrated in Fig. 4 of the drawings, the drum 32 will be operatively connected to the gear 25 for causing the unwinding of the weight cord 38, to turn the drum 32 and through the agency of the gear 25 and the pinion 26 to revolve shaft 24 and operate the fan 14 through the gearing hereinbefore described.

An automatic clutch shifting mechanism 47 is provided for automatically releasing the clutch sleeve 44 from the gear 22 when the cord 42 is unwound and clutching up the drum 32 with the gear 25 for allowing the auxiliary weight 39 to continue the work of revolving the driven shaft 24 and the fan 14. The member 47 is pivoted upon a cross rod 51 within the casing 10 and is arranged with an angular lever arm 52 having a bifurcated clutch operating fork 53 operatively attached to the clutch sleeve 44 while a similar fork is provided upon lever arm 54 of the member 47 as at 55 operatively arranged within the groove 34 of the clutch member 33. A guide loop 56 is provided in the angular lever 52 through which the cord 42 freely extends while a stop 57 is arranged upon the said cord adapted to engage the toes 58 of an angular foot 59 with which the operating member 47 is provided.

A fork 60 is pivoted to the forward end of the operating member 47 as at 61 at all times arranged upon a projecting arm 62 arranged within the casing with the cord 38 extending through the said fork 60 and with a stop 63 upon the cord 38 normally seated upon the fork 60 preventing the weight 39 from lowering until the said fork 60 is released. A spring-pressed latch 64 is carried by the hinged side 65 of the casing 10 adapted for engaging the gear 21 for retaining the drum 19 against turning when in its set position. Upon withdrawing the latch 64 the gear 21 is released to allow the cord 42 to unwind, thus revolving the drum 19 and the gear 22 thereby operating the fan 14. When the cord 42 is substantially all unwound from the drum 19, the stop 57 engages the feet fingers 58 tilting the member 47 upon the pivot rod 51. This movement shifts the two clutch levers 52 and 54 rearwardly, releasing the clutch sleeve 44 and closing the clutch 33 of the drum 32. This tilting movement of the clutch actuator 47 also withdraws the fork 60 from the stop 63 of the cord 38, thereby releasing the lighter weight 39 and allowing the latter to descend, turning the drum 32 and by means of the gear 25 turning the driven shaft 24. The weight 43 is made slightly heavier than the weight 39 to permit the heavier weight to not only tilt the clutch actuator 47 but also to release the fork 60. It will be understood that the pinion 23 is employed to turn the driven shaft 24 through the agency of the drum 19 while the pinion 26 is operated by the drum 32 for turning the said shaft whereby through the agency of the automatic clutch shifting device 47, the drums 19 and 32 act successively and substantially continuously in operating the fan 14 after the device is initially started by releasing the latch 64 for allowing the cord 42 to unwind from the drum 19.

What I claim as new is:—

1. A weight motor including a driving shaft consisting of two independently revoluble sections, a primary weight operated driving drum keyed to one of said sections, a gear journaled on said section, a clutch sleeve for clutching the said gear to said section shiftably splined upon said section, a secondary drum upon the other section, a weight carrying operating cord upon said secondary drum, a gear having a clutching hub member journaled upon one of said shaft sections, a coöperating hub clutch member upon the secondary drum, an automatic means for releasing the clutch sleeve of the first-named gear and simultaneously closing the clutch members of the secondary drum and the second named gear and a driven shaft having pinions secured thereto, each of which mesh with one of said gears.

2. A weight motor including a driving shaft comprising two alined independently revoluble sections, a drum keyed to one of said sections, a gear journaled on said section, means for clutching said gear to said section, a drum shiftably splined to the other shaft section and provided with a clutching hub member, a gear journaled on the first-named shaft section and provided with a clutching hub member adapted to be engaged by the clutching hub member of said drum, a driven shaft having pinions secured thereto, each of which mesh with one of said gears, a weighted cord adapted to be wound

upon each of said drums, and means for automatically unclutching said first-mentioned gear from its shaft section and simultaneously moving the second-mentioned drum to engage its clutching hub member with the clutching hub member of said second-named gear after the unwinding of the cord from the first-named drum.

3. A weight motor comprising a driving shaft consisting of two independently revoluble sections, a primary drum upon one of said sections, a secondary drum upon the other section, a weight carrying cord upon each of said drums, a stop secured to each of said cords, a clutch for each of said drums, a pivotally-mounted lever for shifting said clutches, and a pivoted fork carried by said lever in normal supporting relation with respect to the stop upon the cord of said secondary drum, the said lever being adapted to be moved by the stop upon the cord of the primary drum to release said fork from the stop upon the cord of the secondary drum upon the termination of the operation of the primary drum.

In testimony whereof I affix my signature.

JAKOB SKANDORA.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."