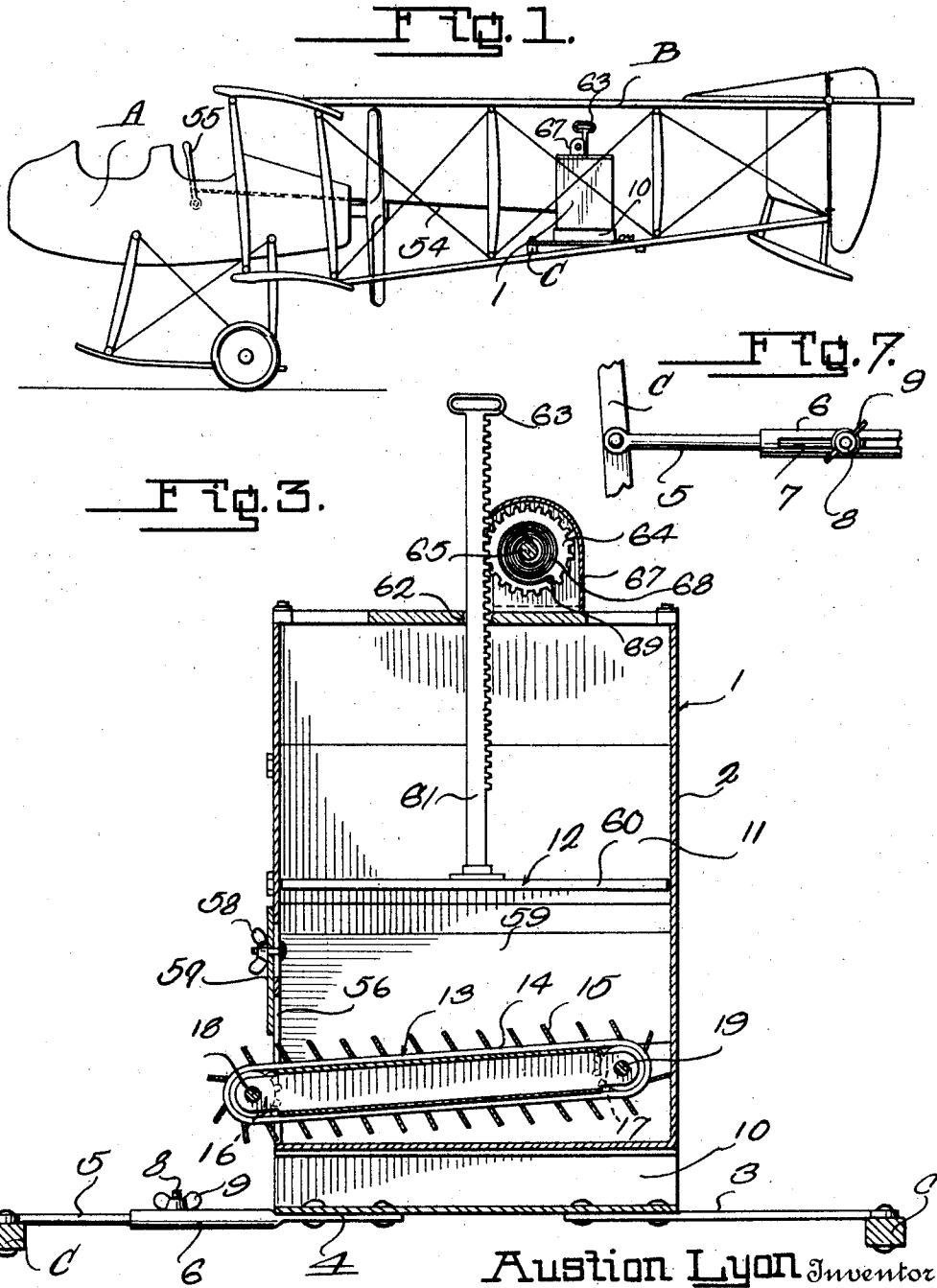


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AERIAL LITERATURE DISTRIBUTER.
APPLICATION FILED NOV. 4, 1918.

1,360,422.

Patented Nov. 30, 1920.

2 SHEETS—SHEET 1.



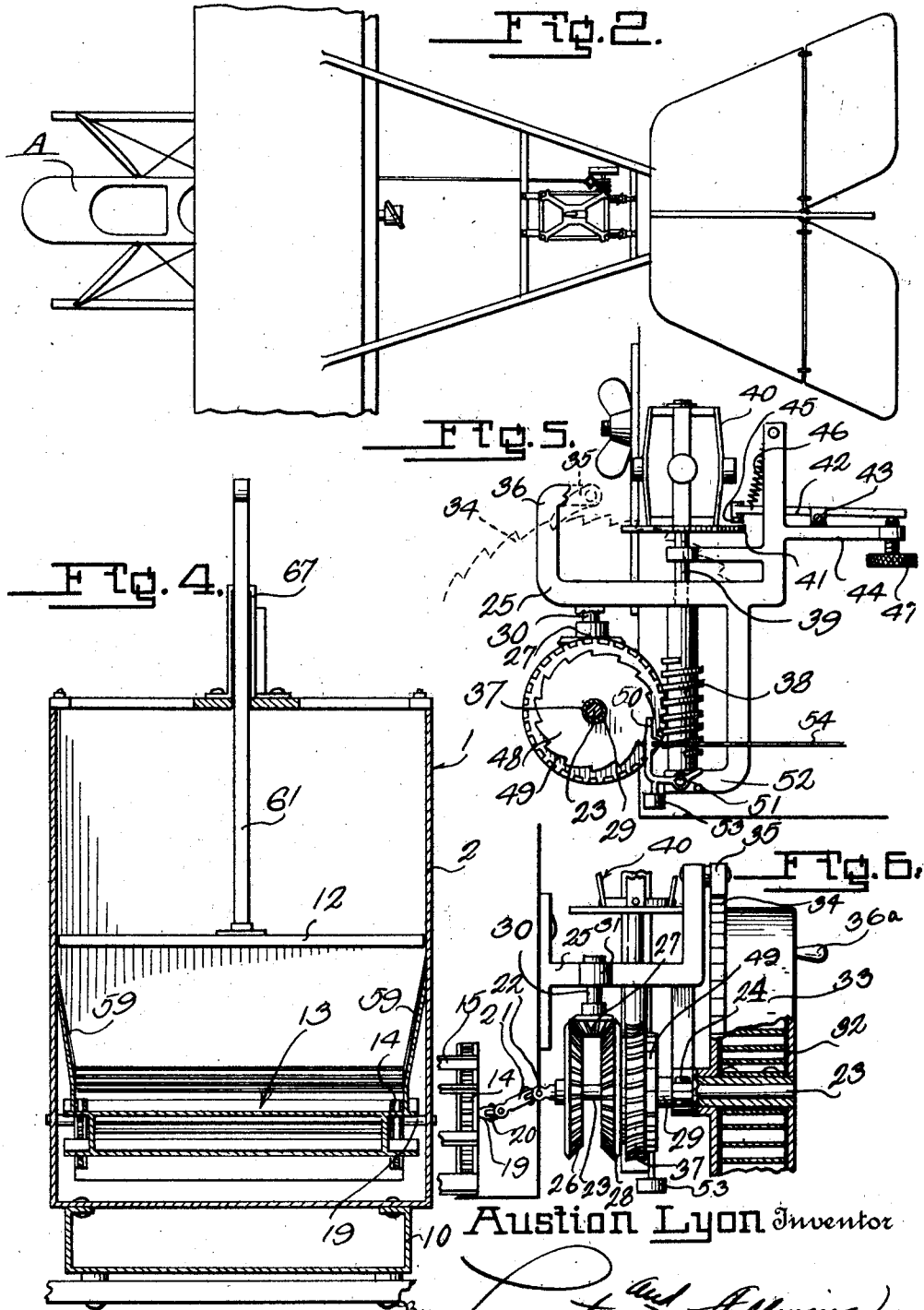
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UNITED STATES PATENT OFFICE.

AUSTION LYON, OF POUGHKEEPSIE, NEW YORK.

AERIAL-LITERATURE DISTRIBUTER.

1,360,422.

Specification of Letters Patent.

Patented Nov. 30, 1920.

Application filed November 4, 1918. Serial No. 261,078.

To all whom it may concern:

Be it known that I, AUSTION LYON, a citizen of the United States, and resident of Poughkeepsie, in the county of Dutchess and State of New York, have invented certain new and useful Improvements in Aerial-Literature Distributers, of which the following is a specification.

This invention relates to a distributor for literature, packages or analogous material, and an object of the invention is to provide a distributor adapted to be carried by an airplane, for distributing literature of any desired type, such as propaganda literature over enemy territory and one which may be operated at the will of the pilot or a passenger of the airplane.

More specifically, the invention comprehends the provision of a retainer, having a follower mounted therein for forcing the literature downwardly upon an endless conveyer structure which carries the literature out one side of the retainer, and drops the same for distribution and also to provide a small spring operated gear for urging the follower into pressing engagement with the literature or material within the receptacle.

Another object of this invention is to provide a spring motor structure, including a governor, for operating the endless conveyer which delivers the literature, and a brake mechanism associated with a part of the gearing of the spring motor for controlling the operation of the distributing conveyer and also to provide brake means co-acting with the governor whereby the speed of operation of the distributing conveyer may be regulated as desired.

Other objects of the invention will appear in the following detailed description, taken in connection with the accompanying drawings, forming a part of this specification, and in which drawings:

Figure 1 is a side elevation of an airplane showing the improved literature distributor applied thereto.

Fig. 2 is a fragmentary top plan of an airplane showing the distributor applied thereto.

Fig. 3 is a vertical section through the distributor.

Fig. 4 is another vertical section through the distributor taken at right angles to the section illustrated in Fig. 3.

Fig. 5 is a detail side elevation of a part of the distributing conveyer operating mechanism illustrating the governor and the means for regulating the speed of operation of the conveyer.

Fig. 6 is a fragmentary view partially in section showing the connection between the spring motor and the distributing conveyer, and Fig. 7 is a detail side elevation of a part of the supporting structure of the distributor.

Referring more particularly to the drawings, the letter A indicates an airplane of the pusher type, but it is to be understood that the improved literature distributor may be applied to any approved type of airplane.

The airplane A, has the usual type of empennage B, commonly found in the pusher type of machine, and this empennage structure supports the distributor which is generically indicated by the numeral 1.

The distributor 1 comprises a receptacle which is substantially rectangular in shape and has a pair of braces or supporting bars 3 attached to the under surface thereof and extending from one side of the receptacle. These braces 3 are adapted for attachment to one of the braces or struts of the airplane structure as indicated at B, and the body or receptacle 1 also has a pair of brace members 4 attached to the under surface thereof and projecting from the edge opposite from which the members 3 project. These members 4 have their outer ends enlarged and provided with bores which telescopically receive the ends of braces or supports 5 which are attached, at their outer ends to braces or beams C of the airplane structure. The enlarged heads 6 of the braces 4 are provided with longitudinally extending slots 7 which receive therethrough threaded studs 8 carried by the bars 5. Wing nuts 9 are mounted upon the studs 8 for clamping engagement against the upper surface of the head 6, to hold the members 4 and 5 in adjustable connected position.

The braces 3 and 4 are connected to the literature retaining receptacle 1 through the medium of a connecting device 10 which is

preferably constructed of sheet metal so as to permit a yieldable connection with the airplane and the literature distributor.

The receptacle 2 is provided with a door 11 in one side of the same near its top, through which the literature or other material may be placed within the receptacle.

The literature, placed within the receptacle is forced downwardly by the follower structure 12 upon the distributing conveyer 13. This conveyer 13 comprises an endless belt 14 having a plurality of flights 15 attached thereto and the endless conveyer or belt 14 is driven by means of sprockets 16 and 17 mounted upon shafts 18 and 19. The shaft 19 is connected by means of a universal coupling 20 to a link 21 which is in turn connected by means of a universal coupling 22 to a shaft 23. The shaft 23 is rotatably supported, by a suitable bearing 24 formed upon a hanger structure 25, and it has a beveled gear 26 keyed thereon. A pinion 27 meshes with the beveled gear 26 and with a beveled gear 28 which is keyed upon a sleeve 29. The sleeve 29 is rotatably supported by a bearing 24 and about the shaft 23, being rotatably mounted upon the said shaft and connected thereto through the medium of the beveled gears 26 and 28 and beveled pinion 27. This latter beveled pinion 27 is carried by a suitable stub shaft 30 which is in turn journaled in a bearing 31 carried upon one arm of the hanger structure 25.

A coil spring 32 is inclosed in a casing 33 and this spring has one end connected to the casing and the other end to the sleeve 29 for rotating the sleeve upon the unwinding action of the coil spring. The casing 33 is rotatably mounted upon the sleeve 29 and has a ratchet 34 carried by its inner side. A pawl 35 is pivotally carried by an upstanding arm 36 of the bracket structure 25 and engages the peripheral teeth of the ratchet 34, for holding the casing 33 against rotary movement in a direction to unwind the coils of the spring 32, causing the unwinding action of the spring to be imparted to the sleeve 29. A handle 36^a is carried by the casing 33 for manually rotating this casing to wind the coil spring 32. A worm gear 37 is keyed upon the sleeve 29 and it meshes with a worm 38 carried by a vertical shaft 39. The vertical shaft 39 has a governor 40 mounted thereon embodying the usual brake disk 41. A brake lever 42 is pivotally supported as shown at 43 by a suitable arm 44. Its inner end which carries the braking or friction head 45 is held out of engagement with the disk 41 by a coil spring 46. A set screw 47 is carried by the arm 44 and engages the outer end of the head 45 with respect to the disk 41, so as to regulate the speed of rotation of

the shaft 39, and consequently the speed of rotation of the sleeve 29.

The worm gear 37 has a brake wheel or disk 48 attached to one surface thereof which is provided with peripheral ratchet teeth 49. The ratchet teeth 49 are provided for receiving the end 50 of a pivotally mounted brake member 51. This brake member 51 is carried by an arm 52 of the bracket structure 25 and it has a weight 53 connected thereto which normally holds the brake member 50 in braking position with the ratchet teeth 49 for arresting rotation of the sleeve 29 by the uncoiling action of the spring 32, also holding this spring against unwinding or uncoiling. A control rod or cable 54 is connected to the brake lever 50 for moving this member out of braking engagement with the disk 48 to permit rotation of the sleeve and the consequent operation of the distributing conveyer structure 13. This control rod or cable 54 extends forwardly along the airplane A to a position where it can be conveniently operated by the pilot or passenger of the airplane, such as by a hand lever 55.

The conveyer 13 passes outwardly through one side of the receptacle 2, through an opening 56 therein, and a plate 57 is adjustably carried by the side of the receptacle provided with the opening 56, to permit regulation of the space above the uppermost portions of the flights 15, through which the literature or other material may pass, so as to prevent the distribution of an excessive quantity of literature at a time. Suitable means, such as a set screw and wing nut indicated at 58 may be provided for holding the door 57 in adjusted position.

The conveyer structure 13 includes the guiding side boards 59, which extend upwardly along each edge of the conveyer structure for properly guiding the literature upon the flights 15.

The follower structure 12, includes the literature engaging head 60 which has a rack bar 61 connected thereto. This rack bar 61 extends upwardly through an opening 62 in the top of the receptacle 2 and has a handle 63 upon its upper end whereby the follower may be manually moved against the under surface of the top of the receptacle during the filling of the receptacle with literature to be distributed. A gear 64 meshes with the teeth of the rack bar 61, and this gear is rotatably mounted upon a stationary shaft 65 carried by a suitable housing 67 which incloses the gear. A coil spring 68 has one end connected to the shaft 65 and the other end connected to the gear as shown at 69, and the uncoiling action of the coils of this spring tends to rotate the gear 64 in the direction to force the follower structure 12 downwardly into engagement with literature within the receptacle, causing a posi-

tive feed of the literature to the distributing conveyer structure 13.

Summing up; the operation of the improved literature distributor is generically as follows: the literature is placed within the receptacle 2, after the follower 12 has been moved upwardly above the upper edge of the door 11, and the action of the coil spring 68 will force the head 60 of the follower downwardly into pressing engagement with the literature, pressing the lowermost sheets thereof against the flights 15 of the endless distributing conveyer structure 13, and when it is desired to distribute the literature, the lever 55 is operated, which in turn operates the cable 54, moving the brake member 50 out of a braking position and allowing the unwinding of the coils of the spring 32. This unwinding action of the coil spring 32 will rotate the sleeve 29, at the desired speed, depending upon the adjustment of the lever 42 and the operation of the governor 40. The rotation of the sleeve 29 will be transmitted in a reversed direction to the shaft 23 through the medium of the gears 26, 27 and 28. The rotation of the shaft 23, will be imparted through the medium of the link 21 and the universal joints 20 and 22 to the shaft 19, for operating the endless distributing conveyer structure. The operation of this endless distributing conveyer will carry the literature, removing the lowermost piece, at a time, from within the receptacle 2, carry it outwardly through the opening 56, and release it so that it may fall from the distributor.

Changes in details may be made without departing from the spirit of the invention; but,

I claim:

1. In a distributor for aerial literature, a retaining receptacle, an endless distributing conveyer within said receptacle, an operating motor for said conveyer, power transmitting means connecting said conveyer and motor, and comprising a beveled gear operatively connected to the motor, a second beveled gear, a universal connection between the second beveled gear and the conveyer and a pinion connecting said beveled gears whereby the conveyer will be operated in a reverse direction to the operation of the motor.
2. In a distributor for aerial literature, a retaining receptacle, an endless distributing conveyer within said receptacle, an operating motor for said conveyer, power transmitting means connecting said conveyer and motor and comprising a beveled gear operatively connected to the motor, a second beveled gear, a universal connection between the second beveled gear and the conveyer and a pinion connecting said beveled gears whereby the conveyer will be operated in a

reverse direction to the operation of the motor, a brake ratchet connected to said first named beveled gear, and a pivotal brake lever normally engaging said ratchet to arrest operation of the motor and conveyer.

3. In a distributor for aerial literature, a retaining receptacle, an endless distributing conveyer, an operating motor for said conveyer, power transmitting means connecting said conveyer and motor and comprising a beveled gear operatively connected to the motor, a second beveled gear, a universal connection between the second beveled gear and the conveyer, a pinion connecting said beveled gears whereby the conveyer will be operated in a reverse direction to the operation of the motor, a brake ratchet connected to said first named beveled gear, a pivoted brake lever, and a pendant weight carried by the brake lever and normally holding it in braking engagement with said ratchet, and an operating rod connected to the brake lever.

4. In a distributor for aerial literature, a retaining receptacle, an endless distributing conveyer, an operating motor for said conveyer, power transmitting means connecting said conveyer and motor and comprising a beveled gear operatively connected to the motor, a second beveled gear, a universal connection between the second beveled gear and the conveyer, a pinion connecting said beveled gears whereby the conveyer will be operated in a reverse direction to the direction of operation of the motor, a governor mechanism for controlling the speed of operation of the conveyer, a worm gear connected to said first named beveled gear, and means operatively connecting said worm gear and governor for operating the governor by rotation of the worm gear.

5. In a distributor for aerial literature, a retaining receptacle, an endless distributing conveyer, an operating motor for said conveyer, power transmitting means connecting said conveyer and motor and comprising a beveled gear operatively connected to the motor, a second beveled gear, a universal connection between the second beveled gear and the conveyer, a pinion connecting said beveled gears whereby the conveyer will be operated in a reverse direction to the direction of operation of the motor, a governor mechanism for controlling the speed of operation of the conveyer, a worm gear connected to said first named beveled gear, means operatively connecting said worm gear and governor for operating the governor by rotation of the worm gear, a brake ratchet carried by said worm gear, a pivoted brake lever, and a pendant weight carried by the brake lever and normally holding it in meshing engagement with said ratchet, and an operating rod connected to said brake lever.

6. In a distributor for aerial literature, the combination of, a retaining receptacle, an endless distributing conveyer carried by said receptacle, means for operating said distributing conveyer, means for regulating the speed of operation of said distributing conveyer, a brake disk, a brake, means normally holding said brake in engagement with said brake disk to retard operation of said distributing conveyer, and means for releasing the brake from engagement with the brake disk to permit operation of the distributing conveyer. 10

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