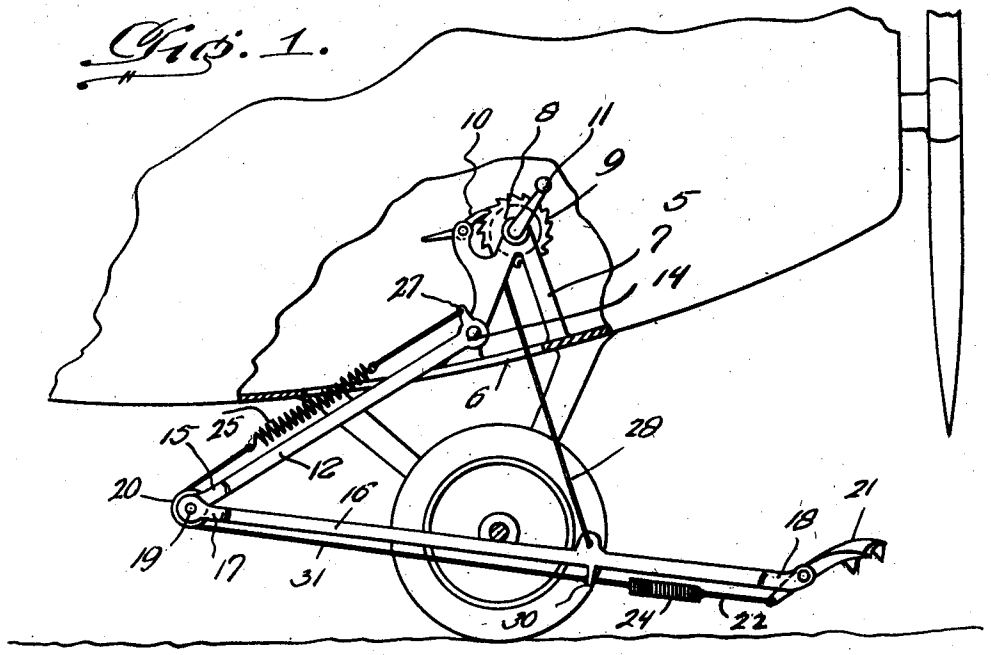
Feb. 19, 1929. 1,702,682

C. D. CAREY

AUTOMATIC GROUND RELEASE FOR AEROPLANES

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Fig. 1.



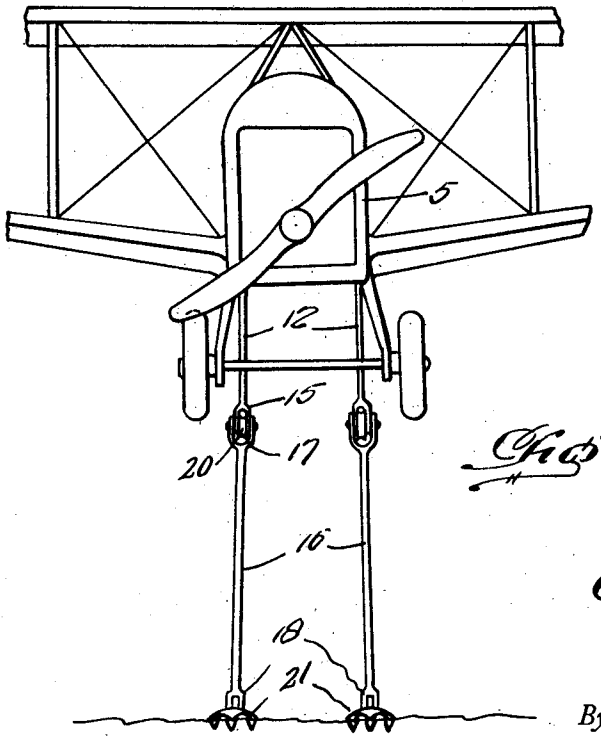
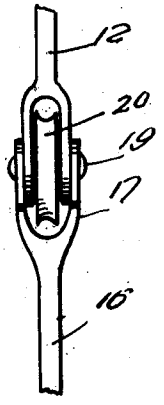


Fig. 2.

Fig. 5.



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Fig. 3.

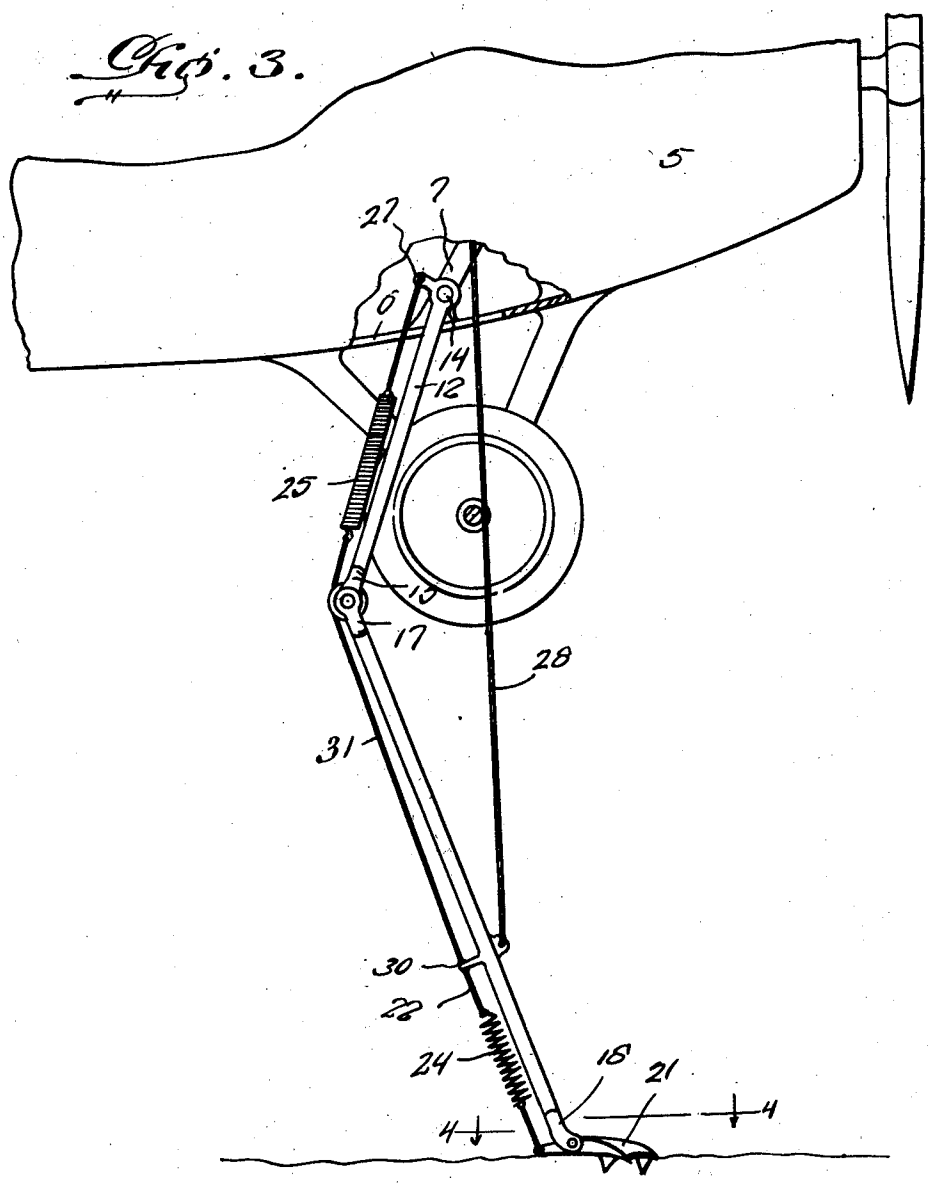
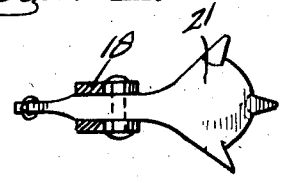


Fig. 4.



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UNITED STATES PATENT OFFICE.

CHARLES D. CAREY, OF CHANNING, MICHIGAN.

AUTOMATIC GROUND RELEASE FOR AEROPLANES.

Application filed March 7, 1928. Serial No. 259,783.

The present invention relates to an automatic ground release for aeroplanes and has for its prime object to provide a structure for lifting an aeroplane upwardly from the ground and urging the same forwardly to permit the same to get off quickly. A further very important object of the invention resides in the provision of an apparatus of this nature which is simple in its construction, inexpensive to manufacture and install, strong and durable, thoroughly efficient and reliable in operation, easy to manipulate, and otherwise well adapted to the purpose for which it is designed.

With the above and numerous other objects in view as will appear as the description proceeds, the invention resides in certain novel features of construction and in the combination and arrangement of parts as will be hereinafter more fully described and claimed.

In the drawing:

Figure 1 is a fragmentary elevation of an aeroplane showing a portion of the fuselage in section, with my improved apparatus incorporated therewith.

Figure 2 is a front elevation thereof, showing the mechanism released.

Figure 3 is a view similar to Figure 1, showing the mechanism released.

Figure 4 is a detail horizontal section taken substantially on the line 4—4 of Figure 3, and

Figure 5 is an enlarged detail elevation of the joint of the two legs of one of the members.

Referring to the drawings in detail, it will be seen that the numeral 5 denotes the forward portion of an aeroplane fuselage which is provided in the present instance, in its bottom, with an elongated opening 6. Suitable bracket structure 7 is mounted in the fuselage adjacent the opening 6 and rotatably supports a reel 8 having a ratchet 9 thereon, engageable by a pawl 10 pivoted on the bracket structure 7 and the reel is rotatable by a crank 11. These features of the example of the invention are not of the essence of the invention and have been illustrated as one practical embodiment. One or more arms 12 are pivoted to the supporting bracket structure 7, as at 14, and extend through the opening 6 and have their outer ends forked, as at 15. Arms 16 have forked ends 17 and 18 respectively. The forked ends 17 are pivotally engaged with the forked ends 15 as is indicated at 19 and this pivot has rotatably mounted thereon a sheave 20. The forked end 16 has pivotally mounted therein claw foot 21, with which is engaged a cable section 22 fixed to lug 30 and provided with a spring 25. The spring 25 is in cable section 31. This cable 31 is trained over the sheave 20 and is anchored to the pivoted end of the arms 12, as at 27 and to the lug 30 and when the arms are in their folded or angular position in relation to each other as shown in Figure 1, the spring is under tension. The arms are held in this folded or angular position by means of cables 28 attached to the arms 16 intermediate their ends and windable on the reel 8.

Obviously, when the parts are in the position shown in Figure 1 and the pawl 10 is released from the ratchet 9, the springs 25 will urge the arms to swing into alignment with each other, thereby causing the claw foot to engage the ground and lift the fuselage upwardly and urge it forwardly causing the parts to take the position substantially as shown in Figure 3, and of course when the propeller is going, the aeroplane will get off in the air quickly and more expeditiously than in the ordinary manner. The springs 24 and cables 22 tend to hold the claw feet 21 in the position shown in Figure 1. The springs 24 are not under tension when the parts are disposed as in Figure 1, but become under tension to a certain extent when the parts reach the position shown in Figure 3, so as to hold the claw feet in an engaging position with respect to the ground.

It is thought that the construction, utility operation and advantages of this invention will now be quite apparent to those skilled in this art, without a more detailed description thereof. The present embodiment of the invention has been disclosed in detail merely by way of example, since in actual practice it attains the features of advantage enumerated as desirable in the statement of the invention and the above description.

It will be apparent that changes in the details of construction and in the combination and arrangement of parts may be resorted to, without departing from the spirit or scope of the invention as hereinafter claimed or sacrificing any of its advantages.

Having thus described my invention, what I claim as new is:

1. In combination with an aeroplane, including a fuselage, of means for launching the aeroplane comprising an arm pivoted to

the fuselage, a second arm pivoted to the first mentioned arm, and means urging the arms from an angular position in relation to each other, to a position in substantial alignment with each other, said means comprising a cable with a spring therein, the cable being anchored to the extremities of the arms and trained over the pivot connection therebetween.

2. In combination with an aeroplane, including a fuselage, of means for launching the aeroplane comprising an arm pivoted to the fuselage, a second arm pivoted to the first mentioned arm, and means urging the arms from an angular position in relation to each other, to a position in substantial alignment with each other, said means comprising a cable with a spring therein, the cable being anchored to the extremities of the arms and trained over the pivot connection therebetween, said pivot connection therebetween having a sheave thereon over which the cable is trained.

3. In combination with an aeroplane, including a fuselage, of means for launching the aeroplane comprising an arm pivoted to the fuselage, a second arm pivoted to the first mentioned arm, and means urging the arms from an angular position in relation to each other, said means comprising a cable with a spring therein, the cable being anchored to the extremities of the arms and trained over the pivot connection therebetween, said pivot connection therebetween having a sheave thereon over which the cable is trained, a claw foot pivoted on the extremity of the second arm.

4. In combination with an aeroplane, including a fuselage, of means for launching the aeroplane comprising an arm pivoted to the fuselage, a second arm pivoted to the first mentioned arm, and means urging the arms from an angular position in relation to each other, said means comprising a cable with a spring therein, the cable being anchored to the extremities of the arms and trained over the pivot connection therebetween, said pivot connection therebetween having a sheave thereon over which the cable is trained, a claw foot pivoted on the extremity of the second arm, said cable being engaged with the end of the second arm through the pivoted foot.

5. In combination with an aeroplane, including a fuselage, of means for launching the aeroplane comprising an arm pivoted to the fuselage, a second arm pivoted to the first mentioned arm, and means urging the arms from an angular position in relation to each other, said means comprising a cable with a spring therein, the cable being anchored to the extremities of the arms and trained over the pivot connection therebetween, said pivot connection therebetween having a sheave thereon over which the cable is trained, a claw foot pivoted on the extremity of the second arm, said cable being engaged with the end of the second arm through the pivoted foot, a reel, means for rotatably mounting the reel, a cable windable on the reel and engaged with the second arm, a ratchet on the reel, and a dog engaged with the ratchet.

In testimony whereof I affix my signature.

CHARLES D. CAREY.