

W. G. SPIEGEL.
 APPARATUS FOR AERIAL SIGNALING AND SIMILAR PURPOSES.
 APPLICATION FILED SEPT. 8, 1911.

1,038,506.

Patented Sept. 10, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

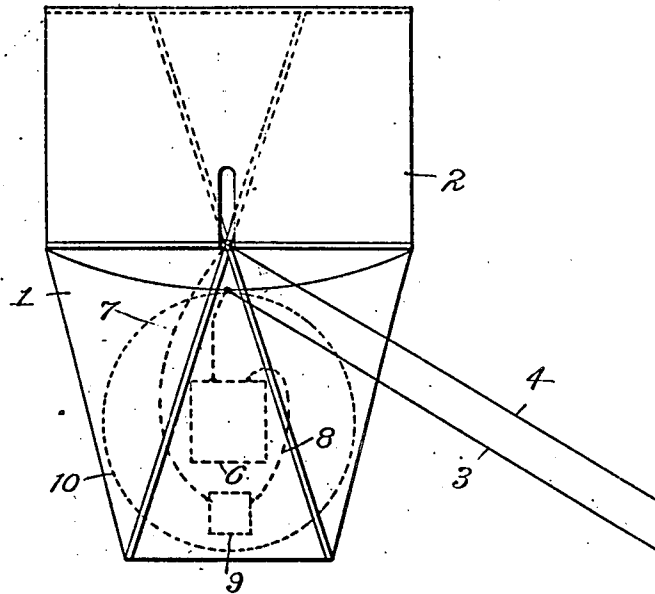
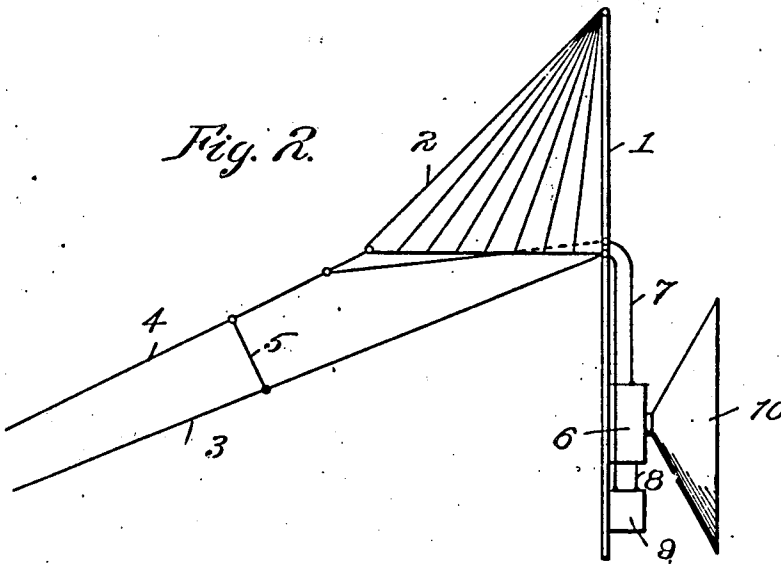


Fig. 2.



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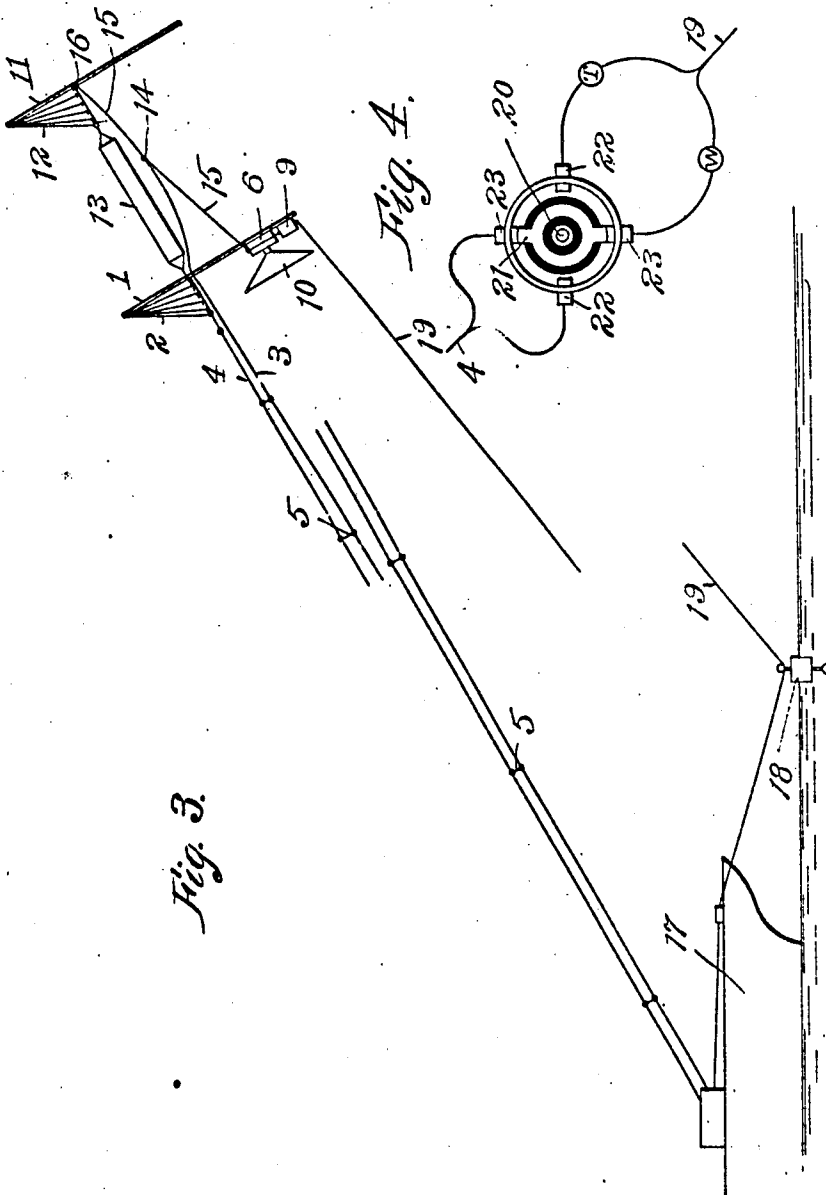
Inventor
William G. Spiegel
 By his Attorney *A. H. Lottner*

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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

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APPARATUS FOR AERIAL SIGNALING AND SIMILAR PURPOSES.

1,038,506.

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To all whom it may concern:

Be it known that I, WILLIAM G. SPIEGEL, a citizen of the United States of America, residing at New York city, borough of Manhattan, county and State of New York, have invented certain new and useful Improvements in Apparatus for Aerial Signaling and Similar Purposes, of which the following is a specification.

My invention relates to signaling devices for use in the upper atmosphere, and means for supporting the same.

It is well understood that with wireless telegraph apparatus the range of action is increased as the height of the antennae is increased, but such height is limited both on land and on shipboard by structural considerations.

My invention comprises a special form of kite for maintaining such antennae at a very high elevation.

In view of the perfection of flying machines and their proposed use in warfare, it becomes important to devise means for obtaining information of the approach of such machines at night time and of destroying the same. As it is well known that sounds travel far in the quiet rarefied regions of the atmosphere, I propose to mount a telephone transmitter on a kite or kites, and connect same with the ship or fortification below, so that the noise of the motor of an approaching aeroplane can be heard at a great distance and its position located and means for destroying it put into operation.

The best form of apparatus at present known to me embodying my invention is illustrated in the accompanying drawing in which,

Figure 1 is a front view of a kite. Fig. 2 is a side view of said kite with telephone attachment. Fig. 3 is a diagram of two kites arranged in tandem with telephone and wireless attachments. Fig. 4 is a detail of an automatic switch controlling the circuit for telephone and wireless apparatus.

Throughout the drawings like reference characters indicate like parts.

1 is a kite of any suitable form having a folding parachute attachment 2 attached to it. The kite is managed by a double cord, one strand 3 of which is connected in any suitable manner to the kite, and the other strand 4 of which is connected to the parachute so that tension on it will unfold or

open the parachute. Preferably, sliding guide loops 5 hold the two strands within a regulated distance one of the other.

The action of the kite so far described is that when tension is applied to the strand 3 of the kite string the kite may be flown and managed in the ordinary way, while if strand 3 is left loose and tension is applied to strand 4 when the kite is in the air, the parachute 2 will open and help to retard the kite in falling in case the wind should decrease in velocity.

To the parachute kite so constructed or to systems of them I propose to apply various devices for sending or receiving signals and other sounds through the upper atmosphere and doing other work. Thus in Fig. 2, 6 represents a telephone transmitter mounted on the kite with its terminal 7 connected to cord 4 which in this case is made a conductor, while its other terminal 8 is connected through a detonating device in the dynamite cartridge 9, to an extension of strand 3, of the kite cord which is also made a conductor. 10 is a horn or sound collector collecting the sound waves from one direction to concentrate them on the telephone diaphragm. With this device the operator on the ground can listen for the sound of a flying machine motor and judge of its distance from the kite. This would be particularly useful at night. When the sound indicates that the machine is near enough to the telephone, a current sent through strands 3 and 4 will detonate the dynamite cartridge and destroy the flying machine.

To the parachute kite may also be attached the antennae of a wireless telegraph apparatus, so obtaining an unusual height of exposure for such antennae. Such an apparatus is illustrated in Fig. 3, where 11 is a second kite having its parachute 12 connected to kite 1, by the antennae 13. The cord 3 of the first kite passes through it and has a button 14 on the other side. From the point 14 the cord 3 continues as a conductor 15 passing through a block or ring 16 on kite 11, back to the parachute 12. The conductor 15 continues to the ground, or ship 17, as shown at 19. If used in connection with a ship 17, it is preferably passed through a float 18 to prevent its fouling the ship's rigging. The telephone transmitter 6 and dynamite cartridge 9 may then be mounted on kite 1 as before and connected to conductor 15--19.

Cord 4 which is connected direct to parachute 2, and through antennae 13 to parachute 12, is made of conducting material.

In operating this apparatus both parachutes are collapsed when the tension is on cord 3, and said parachutes are opened when the tension is on cord 4. When the circuit from the wireless sending apparatus on the ship is put in circuit with conductors 4 and 15, the wireless apparatus can be used. When this circuit is opened and a telephone receiver on the ship is put in circuit with wires 4 and 15 the telephonic circuit is complete.

A convenient mechanism can be employed to periodically cut in the telephone circuit, and cut out the wireless so that when the operator is using the wireless he will be periodically interrupted and the telephone warning on the approach of a flying machine given to him. Such a device is indicated in Fig. 4, where 20 is the shaft, 21 a switch operated thereby over contacts 23, 23, connected to the wires 4 and 19 through a wireless apparatus W, and contacts 22, 22, connected with wires 4 and 19 through a telephone receiver T.

I am aware that kites have heretofore been employed in the wireless telegraph art to support the antennae and do not claim any such arrangement broadly.

Having, therefore, described my invention, I claim:

1. The combination of a kite, a set of antennae for wireless telegraphing suspended therefrom, and conductors extending from each end of the antennae to the earth, said conductors also serving as cords for operating the kite.

2. The combination of two kites arranged in tandem, a set of antennae for wireless telegraphing stretched between the kites, and conductors extending from each end of the antennae to the earth, said conductors also serving as cords for operating the kites.

3. The combination of a kite, a parachute attachment thereto, a set of antennae for wireless telegraphing suspended from the kite, a conductor connected to one end of the antennae and to the kite, and a second conductor connected to the other end of the antennae and to the parachute, whereby the kite and parachute may be operated from the ground, and an electric circuit is established through the antennae to the ground.

4. The combination of two kites arranged in tandem, a set of antennae for wireless telegraphing stretched between the kites, a parachute attachment for each kite, conduc-

tors extending from each end of the antennae to the ground, and also connected to the kites and parachute to serve as means for operating them.

5. The combination of a kite, a parachute attachment thereto, an electric signaling device carried by the kite, a conductor electrically connected to one pole of the signaling device and mechanically connected to the kite, and a second conductor electrically connected to the other pole of the signaling device and mechanically connected to the parachute.

6. The combination of a kite, a telephone transmitter attached thereto, a set of antennae for wireless telegraphing also attached thereto, a conductor electrically connected to one pole of the telephone, and to one end of the antennae, a second conductor electrically connected to the other pole of the telephone and a third conductor electrically connected to the other end of the antennae, certain of the conductors being mechanically connected to the kite and serving as means for operating same.

7. The combination of a kite, a telephone transmitter attached thereto, a set of antennae for wireless telegraphing also attached thereto, a conductor electrically connected to one pole of the telephone, and to one end of the antennae, a second conductor electrically connected to the other pole of the telephone and a third conductor electrically connected to the other end of the antennae, one of the conductors extending to the ground being branched, a telephone receiver included in one branch, a wireless receiving apparatus included in the other branch, and a switch for alternately closing one branch and opening the other.

8. The combination of a kite, a telephone transmitter attached thereto, a set of antennae for wireless telegraphing also attached thereto, a conductor electrically connected to one pole of the telephone, and to one end of the antennae, a second conductor electrically connected to the other pole of the telephone and a third conductor electrically connected to the other end of the antennae, said second and third conductors extending to the earth, a telephone receiver and a wireless receiving apparatus adapted to be placed in circuit with said conductors, and means for cutting out one receiving apparatus whenever the other is connected in circuit.

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