

The launching of pilot balloons with long tails often presents difficulties on days of strong winds especially at launching sites surrounded by trees, telegraph wires and other obstacles. To facilitate easy launching it has been the practice to have the tail wound round a light paper drum with a thread which will hold the drum from unrolling. A small piece of lighted fuse attached to the thread cuts off the thread a minute or two after the balloon is released thereby allowing the drum to unroll. The balloon would by then have cleared the surrounding obstacles. The arrangement works fairly satisfactorily except on the few occasions when the fuse is extinguished for some reason or other. The one drawback in this method is that the lighted fuse may not be extinguished before reaching the ground. The simple arrangement described below dispenses with the use of a burning fuse.

The arrangement consists of a light bamboo ring of about 13" diameter, two rectangular pieces of cardboard ABCD 3" x 6" and PQRS 3" x 9", a rubber band and a few pieces of string. (See Fig. 1). The cardboard piece PQRS is attached to ABCD to form a cross by passing through two slots  $S_1$  and  $S_2$  in the latter. The cross is held in the middle of the bamboo ring by two pieces of string each one passing through two of the corner holes in ABCD and the rubber band E.

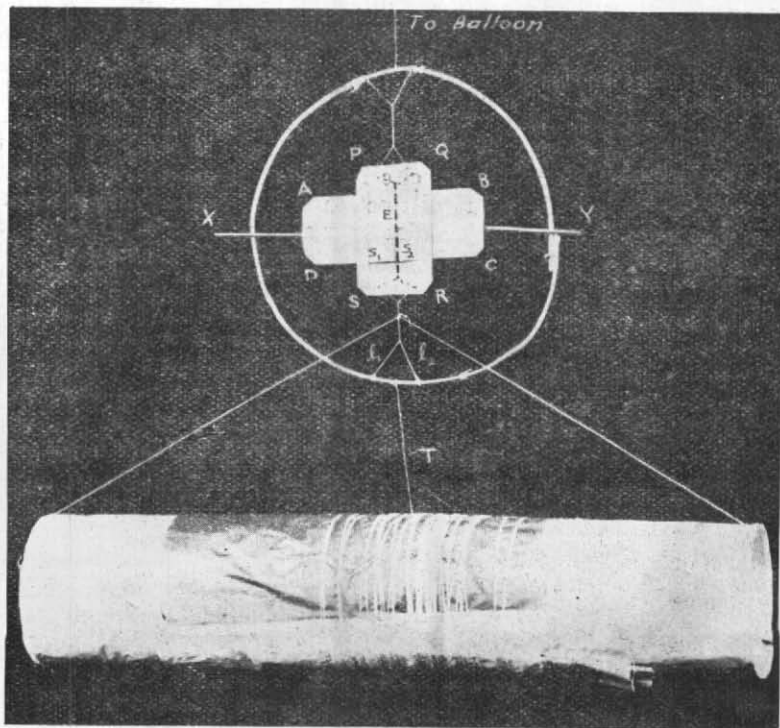


Fig. 1

The outer end of the tail wound round a light paper drum is attached to the bamboo ring at T. A piece of thread of length about  $2\frac{1}{2}$  times the length of the drum is passed through the drum and its two free ends are kept between the portions  $l_1$  and  $l_2$  of the string and  $l_1$  and  $l_2$  twisted together with the free ends in between by rotating the cardboard cross a number of times till the rubber band is stretched to the full extent possible. A light stick XY across the piece PQRS can keep the thread from untwisting and releasing the drum. The whole frame with the drum hanging is attached to the balloon. Just before letting off the stick XY is pulled out allowing the cardboard cross to turn. The twist in  $l_1$  and  $l_2$  is removed, the thread holding the drum from unrolling is released and the drum rolls off. The cardboard piece PQRS acts as a break, delaying the process of untwisting. The time taken for the release to work can be adjusted by changing the dimensions of the piece PQRS and increasing the number of turns to twist.

The above arrangement has been found to work without any failure.

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