936,680.

J. A. STEINMETZ.

BALLOON.

APPLICATION FILED DEC. 3, 1908.

Patented Oct. 12, 1909

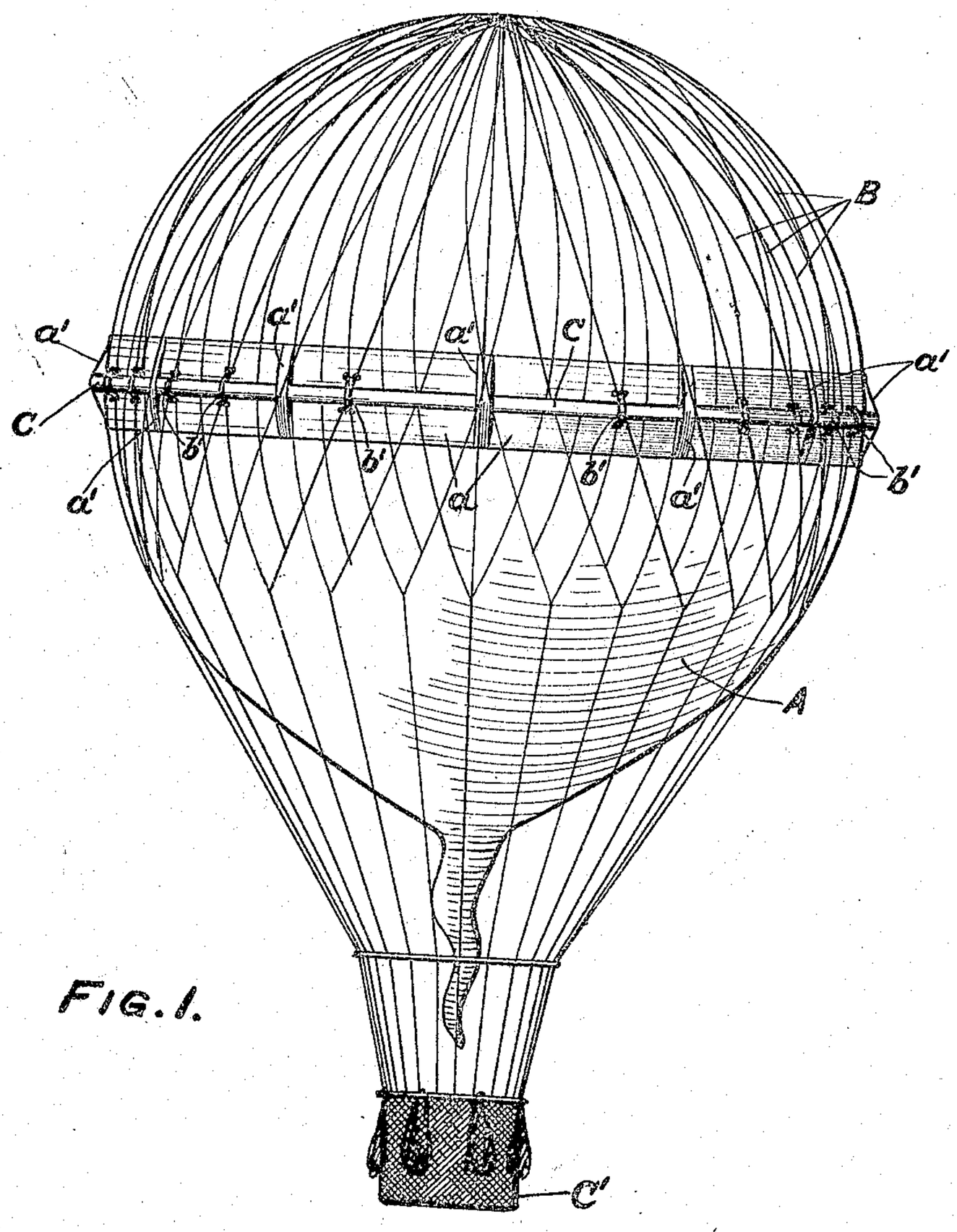

FIG. 1.

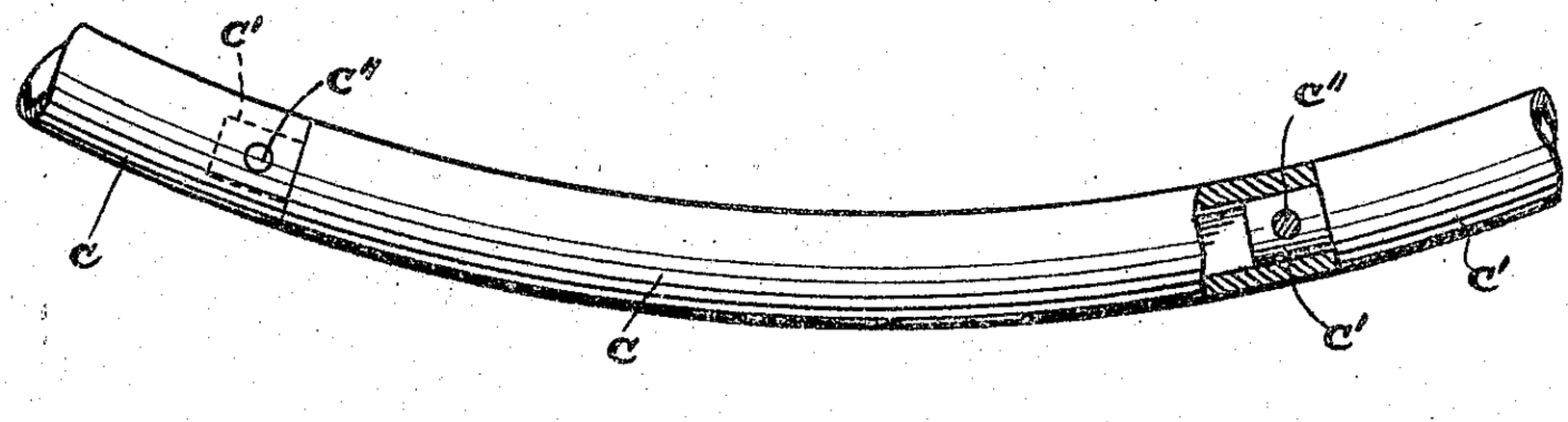

FIG. 2.

WITNESSES:

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JOSEPH A. STEINMETZ, OF PHILADELPHIA, PENNSYLVANIA.

BALLOON.

936,680. Specification of Letters Patent. Patented Oct. 12, 1909.

Application filed December 3, 1908. Serial No. 465,765.

To all whom it may concern:

Be it known that I, JOSEPH A. STEINMETZ, a citizen of the United States, residing in the city of Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented Improvements in Balloons, of which the following is a specification.

My invention relates to improvements in balloons, providing means for preventing a too rapid descent, upon the collapse of a gas bag or the escape of gas through injury to the comparatively frail and collapsible containers thereof, by transforming the balloon into a parachute.

I provide, in the preferred embodiment of the invention, a rigid ring, consisting of sections of metal tubing, which is secured to the balloon netting in the region of the horizontal axial plane of the gas bag contained therein, the bag having means whereby it is connected with the ring so as to play relatively thereto with avoidance of such rigidity of union as to induce rupture, while maintaining the fabric of the bag and net expanded over the area of the ring upon the escape of the gas.

In the accompanying drawings, Figure 1 is an elevation of a balloon having my improvements applied thereto, and Fig. 2 is a plan of a broken section of the ring used therein.

The balloon comprises the bag A, the netting B within which the bag is contained and the car or basket C′ suspended from the netting. A comparatively broad band *a* extends around the bag in the region of its horizontal axial plane, the band being secured to the bag in any suitable manner as by stitching, and straps or keepers *a′* are secured to the band at intervals around the bag.

Surrounding the band, within the straps and secured to the netting as by the keepers *b′*, is the metal ring C which consists of the tubular sections *c* having their abutting ends connected by coupling pins *c′* and rivets *c″*.

It will be understood that when for any reason the gas escapes from the bag the latter, as also the netting, will be held expanded by the ring and on the descent of the balloon an expanded pocket will be formed within the expanded netting, above the ring, which will catch the air, provide the necessary opposition to too rapid descent, and oppose the tendency to lateral or eccentric movement. The ring, being made of metal, is rigid and indestructible by fire and maintains its rigidity so as to provide a parachute under conditions which would render impracticable support by means of gas inflations.

Having described my invention, I claim:

1. A balloon having a netting, within said netting a gas bag and connecting said netting and bag a rigid ring.

2. A balloon having a bag, a metal ring surrounding said bag in the region of the horizontal axial plane thereof, means for connecting said ring and bag, a car, and means for connecting said car and ring.

3. A balloon having a bag, a hollow metal ring surrounding said bag, means for attaching said ring and bag together so as to permit the play of each relative to the other, and a netting surrounding said bag and secured to said ring.

4. A balloon having a bag with a band fixed thereto, a sectional ring of tubular material surrounding said bag in the region of said band, keepers engaging said band and ring together, and a netting surrounding said bag and connected to said ring.

In testimony whereof I have hereunto set my name this 1st day of December A. D. 1908, in the presence of the subscribing witnesses

JOSEPH A. STEINMETZ.

Witnesses:
ROBERT JAMES EARLEY,
JOS. G. DENNY, JR.