

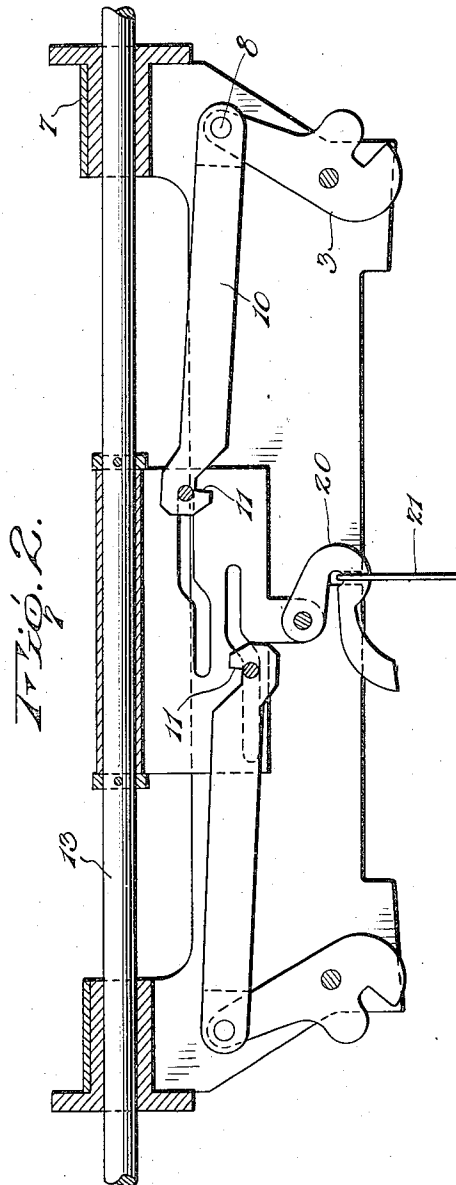
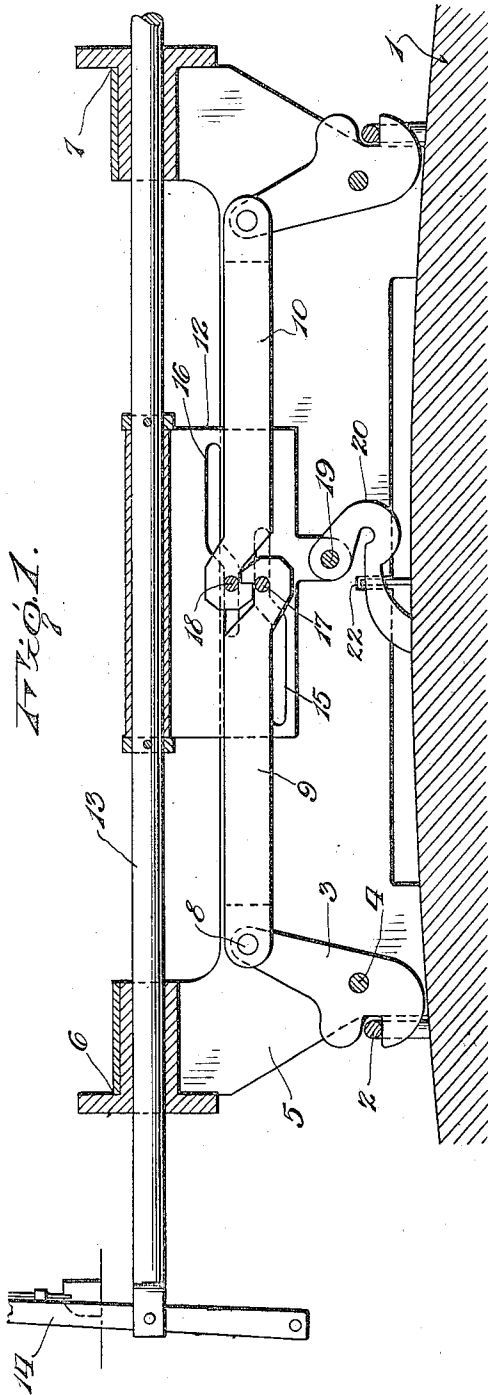
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E. Z. LESH

BOMB SHACKLE

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INVENTOR
Edwin Z. Lesh
BY *Robert H. Young*
ATTORNEY

UNITED STATES PATENT OFFICE.

EDWIN Z. LESH, OF DAYTON, OHIO.

BOMB SHACKLE.

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To all whom it may concern:

Be it known that I, EDWIN Z. LESH, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Bomb Shackles, of which the following is a specification.

This invention relates to a shackle or release device particularly adapted for use as a bomb release for airplanes and the main object of the invention is to provide a shackle which will be easily operated to instantaneously release the load suspended therefrom.

In the case of heavy bombs, for example, it is desirable that the same shall be suspended at two points for better stabilization of the load and also to divide the stresses between two carrier lugs rather than subject one lug to the total strain of the load. It is therefore a further object of this invention to provide a device in which, in case of failure of one of the lugs, or any part of the shackle, the other lug shall instantaneously be released to prevent the possible stresses and torsions which would possibly wreck the carrier.

Further objects will be more particularly set forth in the attached specification and claims.

In the drawings—

Fig. 1 is a longitudinal section of the shackle showing the bomb supported therefrom.

Fig. 2 is a corresponding section showing the shackle in its released position.

The drawings show an adaptation of my invention as applied to a bomb carrying device in which 1 represents the bomb which is provided with supporting lugs 2 held by hook shaped members 3 which are pivotally mounted at 4, one near each end of a support or housing consisting of two parallel plates 5 suitably mounted on the airplane or other carrier at 6 and 7. The upper ends of hooks 3 are each attached by a pivot 8 to links designated 9 and 10 which are provided with projections 11 in such a manner that the projections may be engaged with each other and the two hooks coupled together to resist the force of the weight of the bomb acting on the hooks.

A plate 12 vertically mounted between the plates 5 is slidably mounted in the support or housing by a sliding rod 13, which is adapted to be moved by a hand lever 14 lo-

cated at a suitable point accessible to the operator. The plate 12 is provided with two cam slots 15 and 16, within which pins 17 and 18 on the links 9 and 10 respectively, are adapted to move. These cam slots are so designed that as the rod 13 and plate 12 are moved to the right or left from the position as shown in Fig. 1, the engaging projections 11, 11 on links 9 and 10 will be cammed apart by the pins 17, 18 and the restraining force on the hooks 3 liberated, allowing the bomb to fall.

Freely pivoted on the plate 12 at 19 is a hook shaped device 20. A cord 21 extending from the bomb is provided with a loop at its free end and this loop is held in slot 22 in the plate 5 with the end of the hook 20 inserted in the loop as shown in Fig. 1. This cord is a safety cable, which, when pulled releases a pin or other retaining means in the bomb to prevent the fuses from acting, or when withdrawn from the bomb fuse through which it may be threaded, permits them to explode the bomb. The loop on the cord is normally between the pivot 19 of the hook 20 and the free end of the same which rests on the bomb as shown in Fig. 1. In this position if some part of the structure should fail and the bomb fall, the cord would merely slip off of the hook and fall with the bomb and the bomb would fall "safe". If the sliding member 12 is moved to the left to the position shown in Fig. 2 to release the bomb the end of the hook 20 would travel through the loop so that the pivot or point of suspension of the hook would be between the loop and the free end of the hook and when the bomb falls, the cord would be retained and the bomb would fall "armed". The hand lever 14 is adapted to be moved forward or rearward so as to release the bomb "armed" or "safe".

It will be evident that failure of the shackle at any point or of a lug fixed to the load will remove all resistance to the free movement of opposite carrier hook thus instantaneously and completely releasing the load suspended, the slots in the plate 12 being long enough to permit the necessary travel of the links. The link members are mechanically maintained in their locked relation and are positively opened to remove all resistance to the release of the load.

I claim:

1. In a load release device, a plurality of hooks for supporting a load, a plurality of

members connected to said hooks and adapted to be engaged with each other to resist operation of said hooks due to the weight of the load, and means for positively disengaging said members.

2. In a load release device, a plurality of hooks for supporting a load, supporting means pivotally mounting said hooks, a link connected to each hook and provided with means for engaging the other link to resist operation of said hooks due to the weight of the load, and operable means slidably mounted on said support for positively disengaging said links to release the load.

3. In a bomb carrying gear, a plurality of hooks for supporting a bomb, supporting means pivotally mounting said hooks, a link connected to each hook and provided with means for engaging the other link, a member mounted on said support for maintaining the links in engagement and means for operating said member to positively disengage said links.

4. In a bomb carrying gear, hook means for supporting a bomb, a safety member adapted to engage a safety cord on the bomb to normally offer no resistance to the withdrawal of the cord, and means for releasing said hooks, which means is adapted to simultaneously move said member to a position offering resistance to the withdrawal of the cord.

5. In a bomb carrying gear, a plurality

of hooks for supporting a bomb, supporting means pivotally mounting said hooks, a link connected to each hook, a catch on each link for engaging the catch on the other link, a member slidably mounted on said support for normally maintaining the links in engagement and operable to positively disengage said links, a safety hook carried by said member adapted to engage a safety cord on the bomb to normally offer no resistance to the withdrawal of the cord, said slidably member when operated, to disengage the links being also adapted to simultaneously move the safety hook to a position offering resistance to the withdrawal of the safety cord.

6. In a bomb carrying gear, a plurality of hooks for supporting a bomb, means interconnecting said hooks for maintaining them in predetermined positions, a safety member adapted to engage a safety cord on the bomb to normally offer no resistance to the withdrawal of the cord, and releasing means operable in one direction to release said hooks and simultaneously move said member to a position offering resistance to the withdrawal of the cord, and operable in another direction to release the hooks and permit the withdrawal of the cord without resistance.

In testimony whereof I affix my signature.

EDWIN Z. LESH.