A. R. BERGER, H. REYMOND & F. P. A. HORN.

LIFE NET.

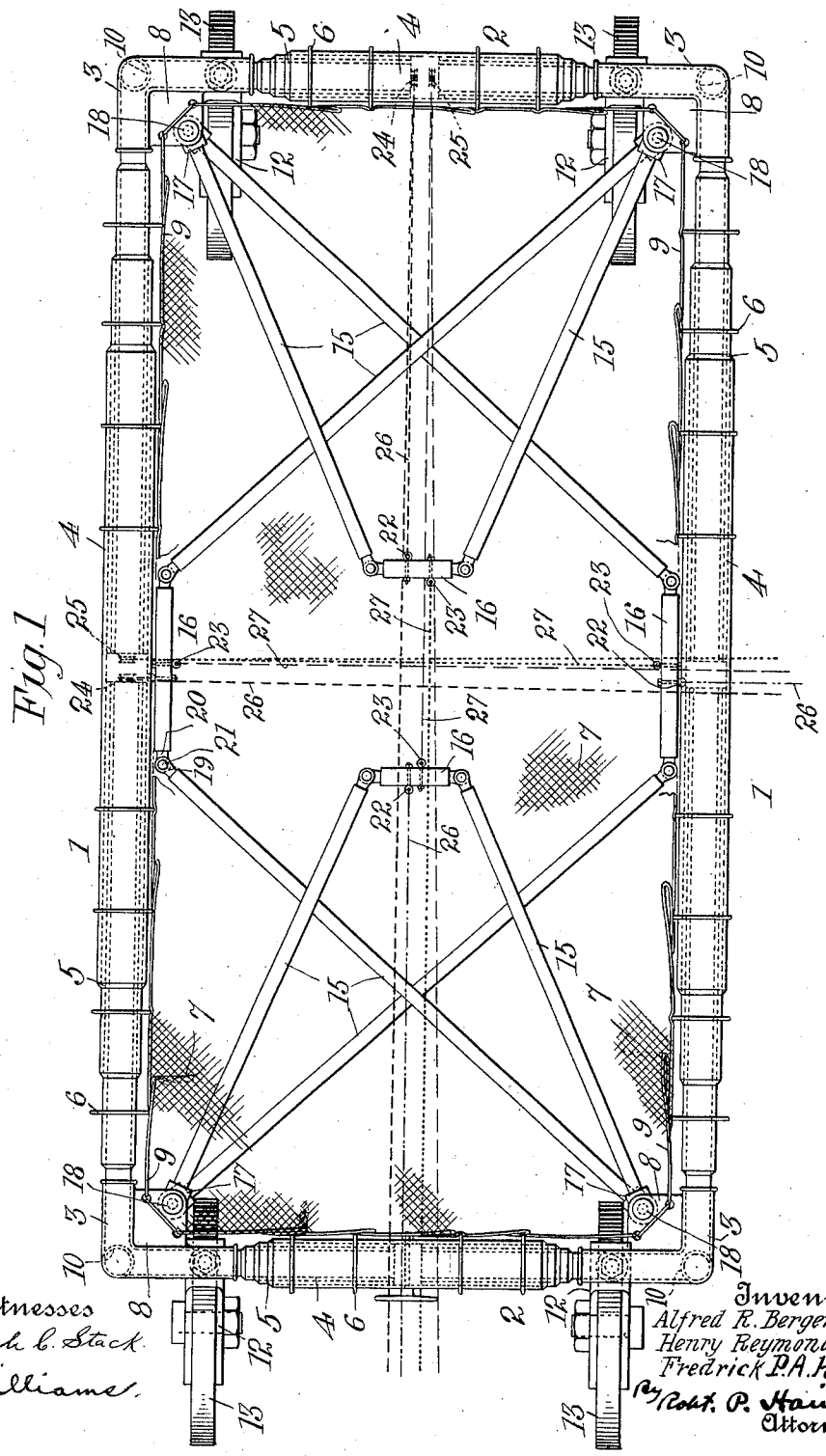
APPLICATION FILED NOV. 6, 1911.

1,038,717.

Patented Sept. 17, 1912.

2 SHEETS—SHEET 1.

Fig. 1



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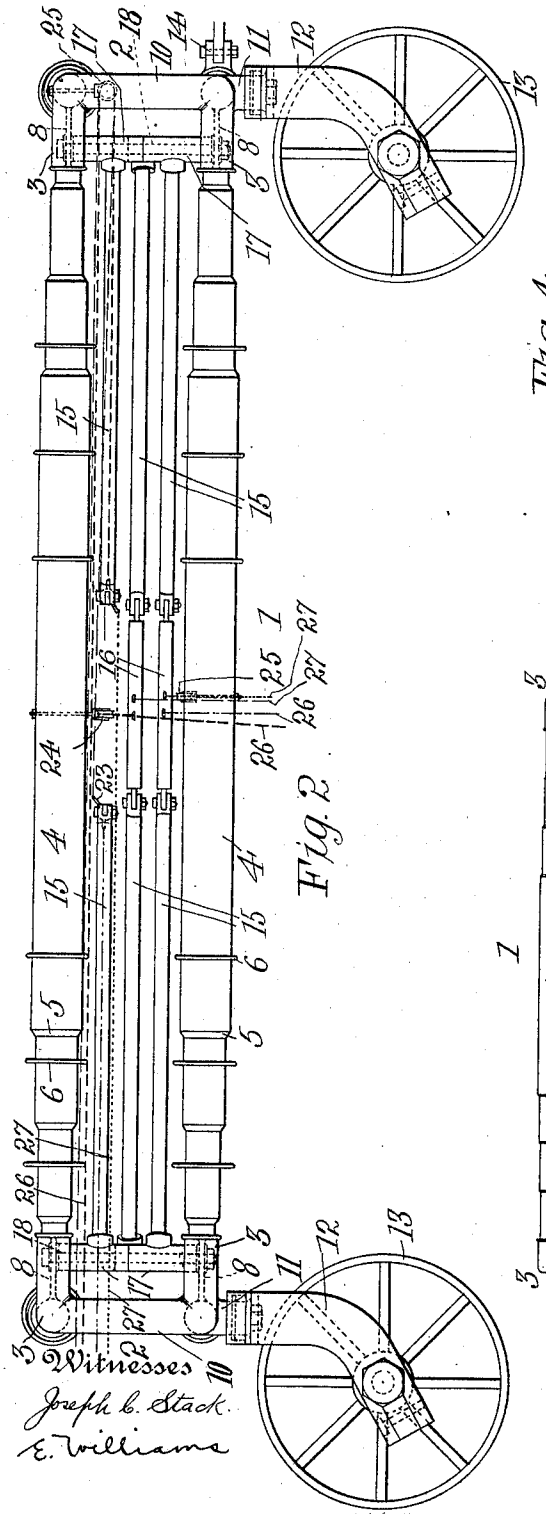

Fig. 2

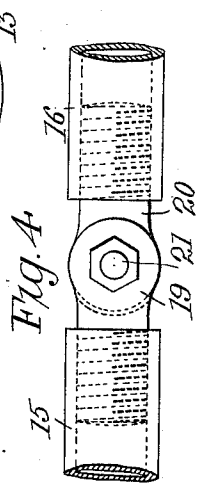

Fig. 4

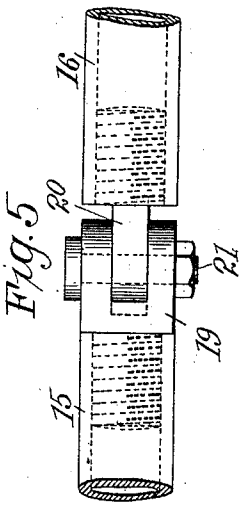

Fig. 5

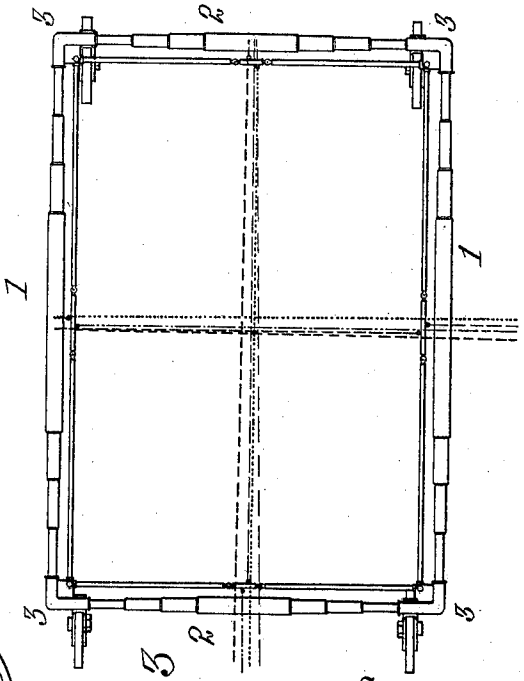

Fig. 3

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UNITED STATES PATENT OFFICE.

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LIFE-NET.

1,038,717. Specification of Letters Patent. Patented Sept. 17, 1912.

Application filed November 6, 1911. Serial No. 658,895.

To all whom it may concern:

Be it known that we, ALFRED R. BERGER, a citizen of the United States, and HENRY REYMOND and FREDRICK P. A. HORN, subjects of Switzerland and Germany, respectively, residing at Springfield, county of Hampden, and State of Massachusetts, have invented a new and useful Improvement in Life-Nets, of which the following is a specification.

This invention relates to life nets onto which persons may jump from a burning building and its object is to provide a device for the stated purpose which may be readily brought to a small compass when not in use and quickly distended to a relatively large area when needed for service. This stated object and other incidental objects which will appear as the description of the invention proceeds are attained in such an apparatus as is illustrated in the accompanying drawings and the invention resides in certain novel features which are pointed out in the claims at the end of the following description.

In the annexed drawings, which show the preferred embodiment of the invention, Figure 1 is a plan view of the apparatus in its collapsed condition; Fig. 2 is a side elevation of the same; Fig. 3 is a plan view on a reduced scale showing the relative arrangement of the parts when the net is distended; Figs. 4 and 5 are detail views in plan and side elevation, respectively, of the joint by which the members of the spreaders are connected.

In carrying out our invention, we employ a supporting frame composed of telescopic sides 1 and ends 2 which are rigidly secured to corner brackets 3, these several parts being preferably of tubular formation. Each side and end consists of tubes of graduated diameters and the number of tubes may be varied according to the dimensions of the net employed. The smallest tubes are secured to the corner brackets and extend into the several outer tubes to support the same while the outermost tubes 4 extend in both directions from the center point of the side or end and fit over the intermediate tubes, the diameters of the several tubes being so graduated that they may slide easily and smoothly upon one another while, at the same time, providing a firm support for the net. The ends of all the tubes are beveled or tapered, as shown at 5, whereby they may readily enter and pass through the rings 6 secured to the edges of the net, indicated at 7, and thereby support the net in both its extended and folded positions. The corner brackets 3 are preferably right angular in form and are provided with inwardly projecting shelves or attaching plates 8 to which the binding cords or ropes 9, forming the edges of the net are firmly secured. As clearly shown in Fig. 2, the telescopic sides and ends with the corner brackets are duplicated in upper and lower sets, the upper and lower corner brackets being rigidly connected by posts 10 so that great strength will be imparted to the frame. The lower brackets are provided with depending studs 11 on their under sides upon which are swiveled yokes 12 having carrying wheels 13 journaled in their lower ends, the said studs, yokes and wheels being preferably located inward from the sides of the frame to conform to the usual traffic gage of vehicles. Draft devices 14 may be attached to the brackets at either end of the apparatus to facilitate the hauling of the same to the point of use.

It will be readily understood that the apparatus is drawn to the scene of the fire and may be quickly placed at any advantageous position to furnish a landing for persons who may jump from the building inasmuch as the swiveled mounting of the wheels will permit them to caster freely and swinging of the net around a fixed point will not be necessary. The net having been brought to the desired position, the frame is drawn out so as to distend the net and present a large landing surface.

The frame may be drawn out and collapsed by hand but we prefer to use mechanical spreaders by which the work may be more easily and rapidly performed and which may also be utilized to maintain the apparatus in its adjustment. In the illustrated arrangement the spreaders each consist of levers 15 having their outer ends pivoted to the corners of the frame and their inner ends pivoted to links or pushers 16, it being understood that a spreader is provided for each side and for each end of the frame. The outer end of each lever 15 is provided or formed with an eye 17 fitting around a fixed fulcrum or hinge pin 18 secured in and extending between the upper

and lower shelves 8 whereby the inner end of the lever is pivotally mounted. It will be readily seen and appreciated that if the links 16 be drawn inward or toward the center of the net, the levers 15 connected thereto will be swung out of alinement and their outer ends caused to approach, as shown in Fig. 1, thereby collapsing the frame and folding the net whereas if the links be moved outward, the outer ends of the levers will be moved apart thereby extending the frame and spreading the net, as shown in Fig. 3. It will also be readily understood on reference to Fig. 3, that when the link is pushed outward to the limit of its movement, it will be in alinement with the levers so that a brace will be provided to prevent causal collapsing of the frame.

The links and levers are preferably of tubular form with internally threaded ends engaged by threaded stems of coupling members 19, 20 which are joined by a pivot or hinge pin 21 whereby the links and levers are pivotally connected. Each link is provided with eyes or loops 22 and 23 on its opposite sides and on the central tubes 4 at one side and one end of the frame are mounted pulleys 24 and 25. A rope 26 is secured to the eye 22 on the outer side of each link and passes beyond the frame, one of said ropes passing around the pulley 24 and then across the frame so that both ropes may be operated from one side or end of the apparatus to draw the links outward and spread the net. Ropes 27 are connected to the eyes or loops 23 and similarly arranged, one of them passing over the pulley 25, so that by pulling on said ropes the net may be folded.

From the foregoing description, taken in connection with the accompanying drawings, it will be seen that we have provided a simple, strong, durable and easily operated apparatus which will be found highly efficient for the purposes for which it is designed.

Having thus fully described our invention what we claim as new and desire to secure by Letters Patent is:—

1. The combination with a life net and an extensible supporting frame therefor, of spreaders attached to the frame at their outer ends and to each other at their inner ends whereby the frame may be extended and collapsed.

2. The combination with a life net, and an extensible supporting frame therefor, of spreaders consisting of levers having their outer ends pivoted to the corners of the frame, and links pivoted to and connecting the inner ends of the levers.

3. The combination of corner brackets, telescoping members extending between and carried by said brackets, shelves on the inner sides of the brackets, a net connected to said shelves and telescoping members, levers having their outer ends pivotally mounted on the shelves, and links pivoted to and connecting the inner ends of the levers.

4. The combination of upper and lower corner brackets, telescoping members extending between and carried by said brackets, shelves on the inner sides of the brackets, a net connected to said shelves and telescoping member, rigid pins extending between the upper and lower shelves, levers provided at their outer ends with eyes encircling said pins, and links pivoted to and connecting the inner ends of the levers.

5. The combination with a life net, and an extensible supporting frame therefor, of tubular levers having their outer ends pivoted to the corners of the frame, tubular links between the inner ends of the levers, and hinge couplings having members threaded into the adjacent inner ends of the links and the levers.

6. The combination with a life net, and an extensible supporting frame therefor, of spreaders consisting of levers having their outer ends pivoted to the corners of the frame, links pivoted to and connecting the inner ends of the levers, and operating ropes attached to said links and extending beyond the frame and arranged to draw the links toward and from the frame.

In testimony whereof we hereunto set our hands this fourteenth day of October, 1911, in the presence of two attesting witnesses.

ALFRED R. BERGER.
HENRY REYMOND.
FREDRICK P. A. HORN.

Witnesses:
MAX WACHUME,
GEORGE WEILDON.