No. 652,645. Patented June 26, 1900.

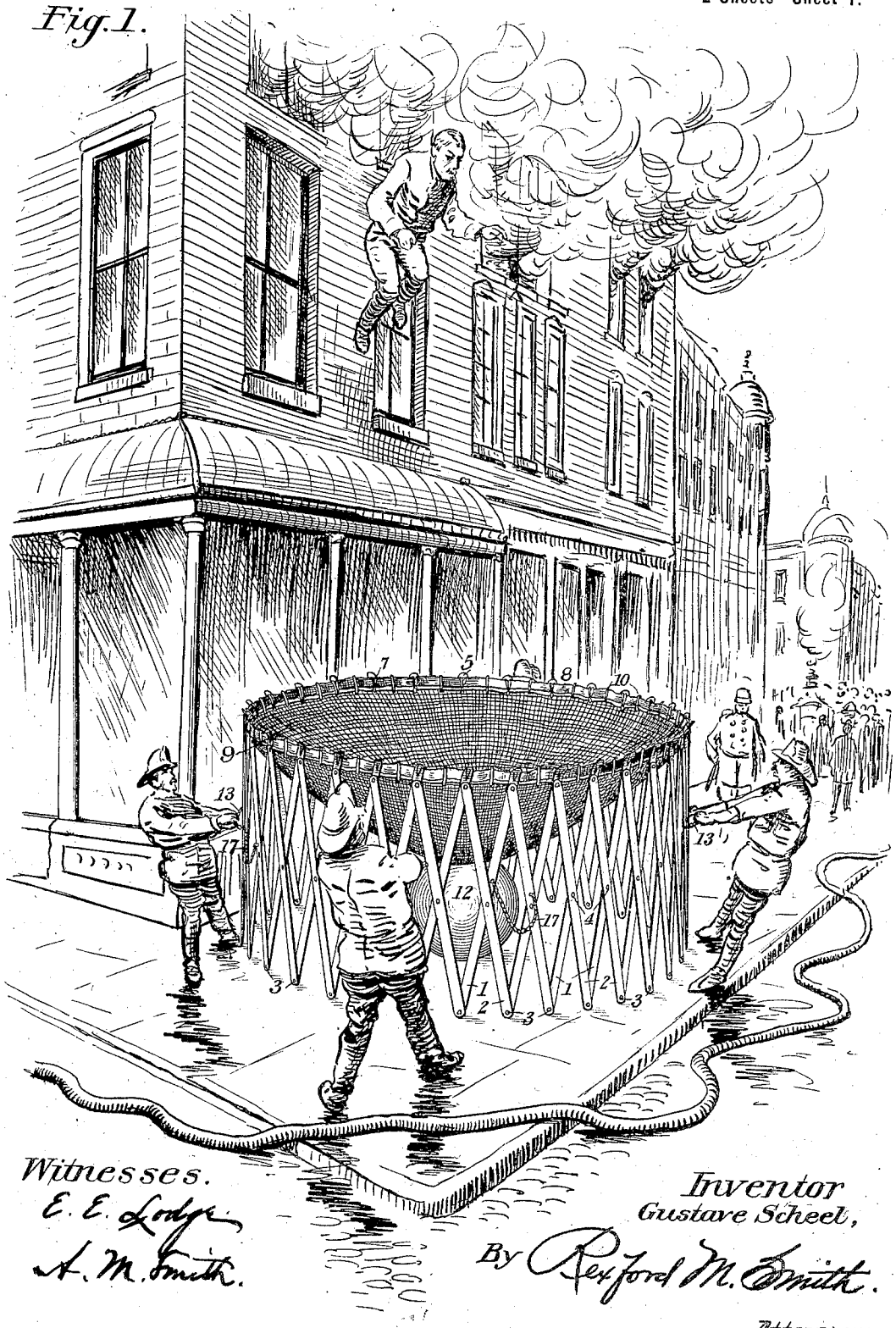
G. SCHEEL.

LIFE SAVING NET.

(Application filed Apr. 10, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.



Witnesses.
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Fig. 2.

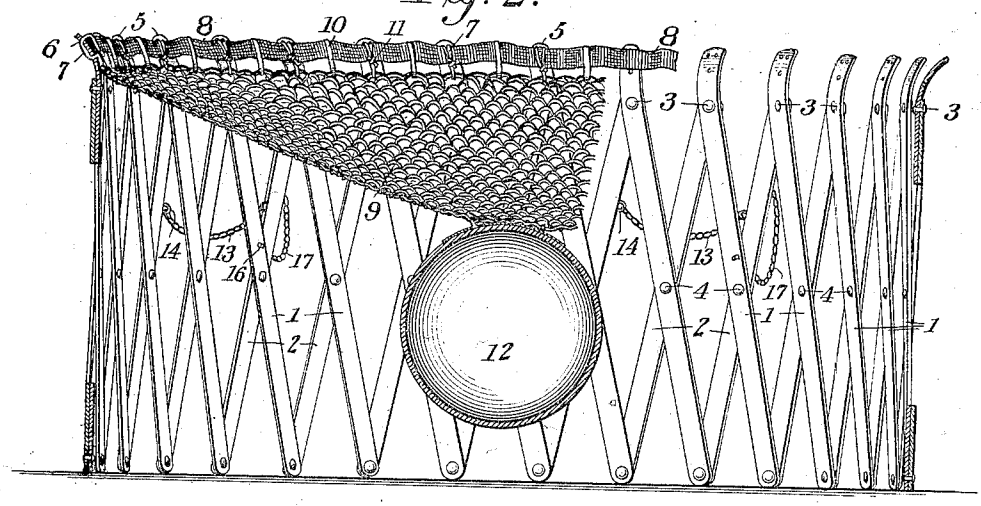


Fig. 3.

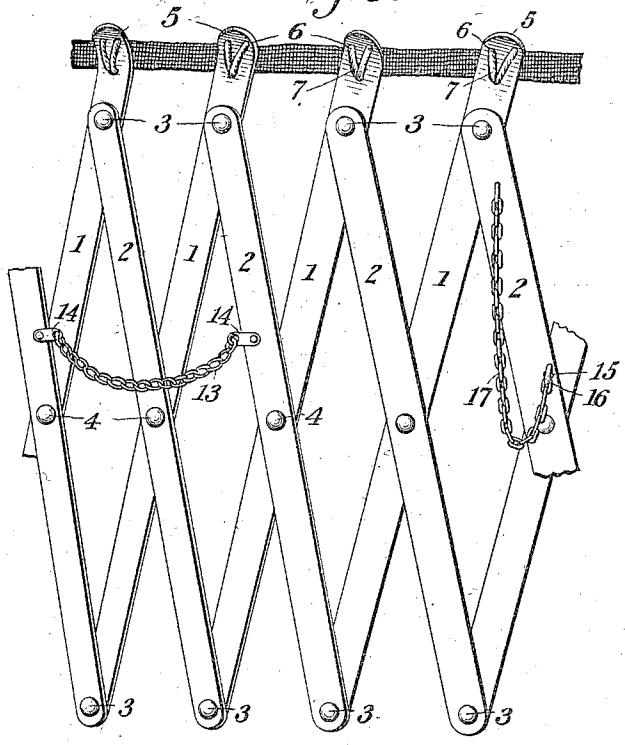
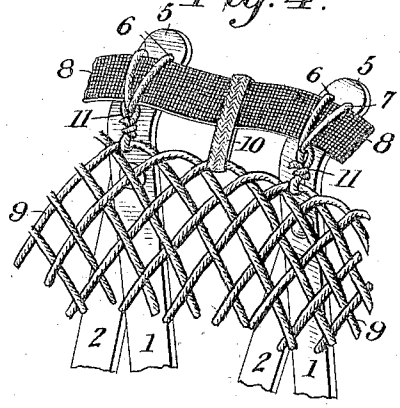


Fig. 4.



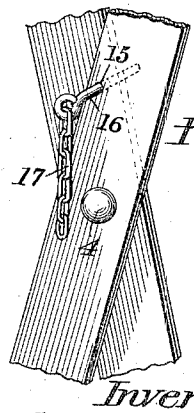


Fig. 5.

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UNITED STATES PATENT OFFICE.

GUSTAVE SCHEEL, OF NEW YORK, N. Y.

LIFE-SAVING NET.

SPECIFICATION forming part of Letters Patent No. 652,645, dated June 26, 1900.

Application filed April 10, 1900. Serial No. 12,303. (No model.)

To all whom it may concern:

Be it known that I, GUSTAVE SCHEEL, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented a certain new and useful Life-Saving Net, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to life-saving nets, and is especially adapted for use at fires for catching persons who are compelled to jump from windows or other high points of the burning or adjacent buildings.

The principal object of the invention is to provide a collapsible frame in which the body-catching net is suspended and which may be instantly distended or opened for operation. The frame in which the net is suspended consists of circularly-arranged lazy-tongs, whereby the frame as a whole may be collapsed into a comparatively-small cylindrical bundle, adapting the entire device to be compactly carried upon or suspended beneath a hook-and-ladder truck or other wheeled apparatus used by fire-companies.

The device as a whole is also equipped with an air-cushion for breaking the fall of a person landing in the net. Means are provided for locking the lazy-tongs, so as to prevent accidental collapsing of the frame when a person lands therein, and flexible hand-grips are attached to the outside of the frame for enabling firemen or bystanders to lift and vary the position of the net according to requirements and to effectively hold the frame open and in condition for use with or without the aid of the means for locking the frame in its open or operative position.

Other objects and advantages of the invention will appear in the course of the ensuing description.

The invention consists in a life-saving net embodying certain novel features and details of construction and arrangement of parts, as hereinafter fully described, illustrated in the drawings, and incorporated in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a life-saving net constructed in accordance with the present invention, showing the device opened, ready to receive a descending body. Fig. 2 is a vertical diametrical section through the same. Fig. 3 is an enlarged detail view of several of the lazy-tongs members, showing the elastic rim, one of the flexible hand-grips, and the locking device for preventing the collapse of the frame. Fig. 4 is a detail perspective view of adjacent lazy-tongs members, showing the formation of the upper ends thereof and the manner of attaching the elastic rim and net thereto. Fig. 5 is a detail perspective view showing the manner in which the lock-pin is associated with the lazy-tongs members.

Similar numerals of reference are employed to indicate corresponding parts in all the views.

The frame in which the net proper is suspended consists of a plurality of lazy-tongs members 1 and 2, pivotally connected at or near their ends, as shown at 3, and also pivotally connected at 4, where they cross each other. The frame composed of these lazy-tongs members is endless and circular in form, as clearly shown in Fig. 1, and when distended, as shown in said Fig. 1, the frame assumes the shape of a large cylinder, while when it is collapsed or closed it takes the shape of a comparatively-small cylinder, relatively of the size of the air-cushion shown in Fig. 2. When collapsed, one or more straps (not shown) may be passed around the device, so as to enable it to be suspended from and carried by any of the ordinary fire-trucks now in use. The lazy-tongs members 1 are extended at their upper ends above the members 2 and are deflected outward, as shown at 5, and further perforated, as shown at 6, to receive flexible loops 7. The upper end of each of the members 1 is provided with one or more such flexible loops, and an elastic rim 8 is strung through all of the loops in the manner illustrated in Figs. 1, 2, and 4.

The net proper (shown at 9) may be of any suitable construction and is of circular form and of slightly-larger diameter than the lazy-tongs frame when distended, so that it will have the requisite amount of sag, as shown in Figs. 1 and 2. The net 9 is connected with the elastic rim 8 by means of flexible connections 10. (Shown, preferably, in the form of endless bands passing around the rim 8 and engaging the meshes of the net.) The net is also attached to the longer lazy-tongs members 1 by means of elastic connections 11,

which are engaged with the flexible loops 7 and the edge of the net, as clearly illustrated in Fig. 4. In this manner the net is supported at intervals from the top of the collapsible frame by means of elastic connections, so that when a heavy body lands in the net it will not bring a sudden breaking strain upon the lazy-tongs members, but serve to cushion the fall of the body. In order to still further cushion the fall of a body, an inflated air-cushion 12 is suspended within the frame and below the net and attached to the bottom of the net, as shown in Fig. 2. This cushion will prevent the body from coming in contact with the ground or pavement or other surface upon which the life-saving net as a whole is placed, and thus a person may jump from a very high point into the net with comparatively little danger.

Flexible hand-grips 13 are arranged upon the outer side of the frame and connected at their ends, as at 14, to the adjacently-located lazy-tongs members, as clearly shown in Fig. 3. These hand-grips are illustrated, preferably, in the form of chains; but it will be understood that ropes or wire cables may be employed in lieu of the chains, or, if desired, the chains may be covered with fabric, leather, or other material, according to the desire of the manufacturer. The hand-grips are located at intervals around the frame, so that several firemen or bystanders may grasp the same and hold the frame of the net distended as a person alights therein. They also enable the frame to be held distended without the necessity of employing locking devices for the same purpose.

In order to provide for locking the frame and preventing its accidental collapse, I form openings 15 in its adjoining members and arrange these openings so that they will register when the frame is opened for use. A lock-pin 16 is removably inserted through the registering openings 15, and this will effectually guard against accidental collapse of the frame as a whole. In order that the pin 16 may always be ready for use, it is attached by a chain or other flexible connection 17 to one of the lazy-tongs members, as shown best in Fig. 3.

From the foregoing description it will be seen that I have provided a simple, efficient, and reliable life-saving net which will safely catch persons who may be compelled to jump from windows or high places about a burning building or structures adjacent thereto. The device as a whole may be opened for operative position by firemen or bystanders and requires no special knowledge on their part of the construction of the same. By means of the hand-grips the frame may be held distended and, further, be lifted and moved from place to place as occasion may require. If there is sufficient time, the lock-pins may be brought into use to insure against the collapse of the frame. It will also be seen that the net proper is flexibly and yieldingly supported by reason of the particular connection between it and the frame, thus relieving the frame from sudden and undue strains and also cushioning the fall of a person alighting therein. It will also be seen that, in addition to the cushioning feature last mentioned, a pneumatic cushion is attached to the bottom of the net and suspended beneath the same, thus preventing the falling object from coming in injurious contact with the ground. When not in use, the device as a whole may be compactly folded into a cylindrical bundle, the net proper and the cushion being housed and closed within the lazy-tongs members in a manner that will be readily understood without further description.

I do not desire to be limited to the exact details of construction hereinabove set forth, but reserve the right to change, modify, or vary the construction within the scope of this invention.

Having thus described the invention, what is claimed as new is—

1. A life-saving net comprising a collapsible circular lazy-tongs frame, and a net proper supported thereby and attached to the upper edge thereof, substantially as specified.

2. A life-saving device comprising a circular lazy-tongs frame adapted to rest on the ground, and a body-catching net supported thereby, substantially as specified.

3. A life-saving device comprising a circular lazy-tongs frame, and a body-catching net having an elastic connection with the frame, substantially as specified.

4. A life-saving net comprising a lazy-tongs frame, an elastic rim therefor, and a net proper attached to the rim, substantially as specified.

5. A life-saving net comprising a lazy-tongs frame, an elastic rim therefor, and a net proper suspended within the frame and connected alternately with the elastic rim and lazy-tongs members, substantially as specified.

6. A life-saving net comprising a lazy-tongs frame having members thereof deflected outward at their ends, and a net proper attached to such deflected ends, substantially as specified.

7. A life-saving net comprising a lazy-tongs frame having members thereof deflected outward at their ends, a net proper suspended within the frame, and elastic connections between the net and said deflected ends, substantially as specified.

8. A life-saving net comprising a lazy-tongs frame, an elastic rim therefor, a net proper suspended within the frame, flexible connections between the net and rim, and elastic connections between the net and frame, substantially as specified.

9. A life-saving net comprising a lazy-tongs frame, an elastic rim therefor, flexible loops on the frame, through which the elastic rim is strung, and a net proper suspended from said rim, substantially as specified.

10. A life-saving net comprising a collapsible circular lazy-tongs frame, a net proper

suspended therein, and means for locking the frame distended.

11. A life-saving net comprising a collapsible circular lazy-tongs frame, a net proper suspended therein, and a locking-pin for engaging the lazy-tongs members and preventing collapse of the frame.

12. A life-saving net comprising a collapsible lazy-tongs frame, adjoining members of which are provided with openings which register when the frame is open, a net proper suspended in the frame, and a locking-pin for engagement with said openings, substantially as specified.

13. A life-saving net comprising a collapsible lazy-tongs frame, a net proper suspended therein, and hand-grips arranged upon the outer side of the frame, substantially as specified.

14. A life-saving net comprising a collapsible lazy-tongs frame, a net proper suspended therein, and flexible hand-grips connected to the lazy-tongs members upon the outer side of the frame, substantially as specified.

15. A life-saving net comprising a collapsible lazy-tongs frame, a net proper suspended therein, and flexible hand-grips having their ends attached to different lazy-tongs members, substantially as specified.

16. A life-saving net comprising a collapsible lazy-tongs frame, a net proper suspended therein, and a cushion suspended below the net, substantially as specified.

17. A life-saving net comprising a collapsible lazy-tongs frame, a net proper suspended therein, and a cushion attached to the lower side of the net, substantially as specified.

18. A life-saving net comprising a collapsible lazy-tongs frame, a net proper suspended therein, and an inflated air-cushion suspended below the net and arranged within the frame, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

GUSTAVE SCHEEL.

Witnesses:

GEORGE LAUTERBACH,

MAX L. WALTERS.