No. 728,208. PATENTED MAY 19, 1903.

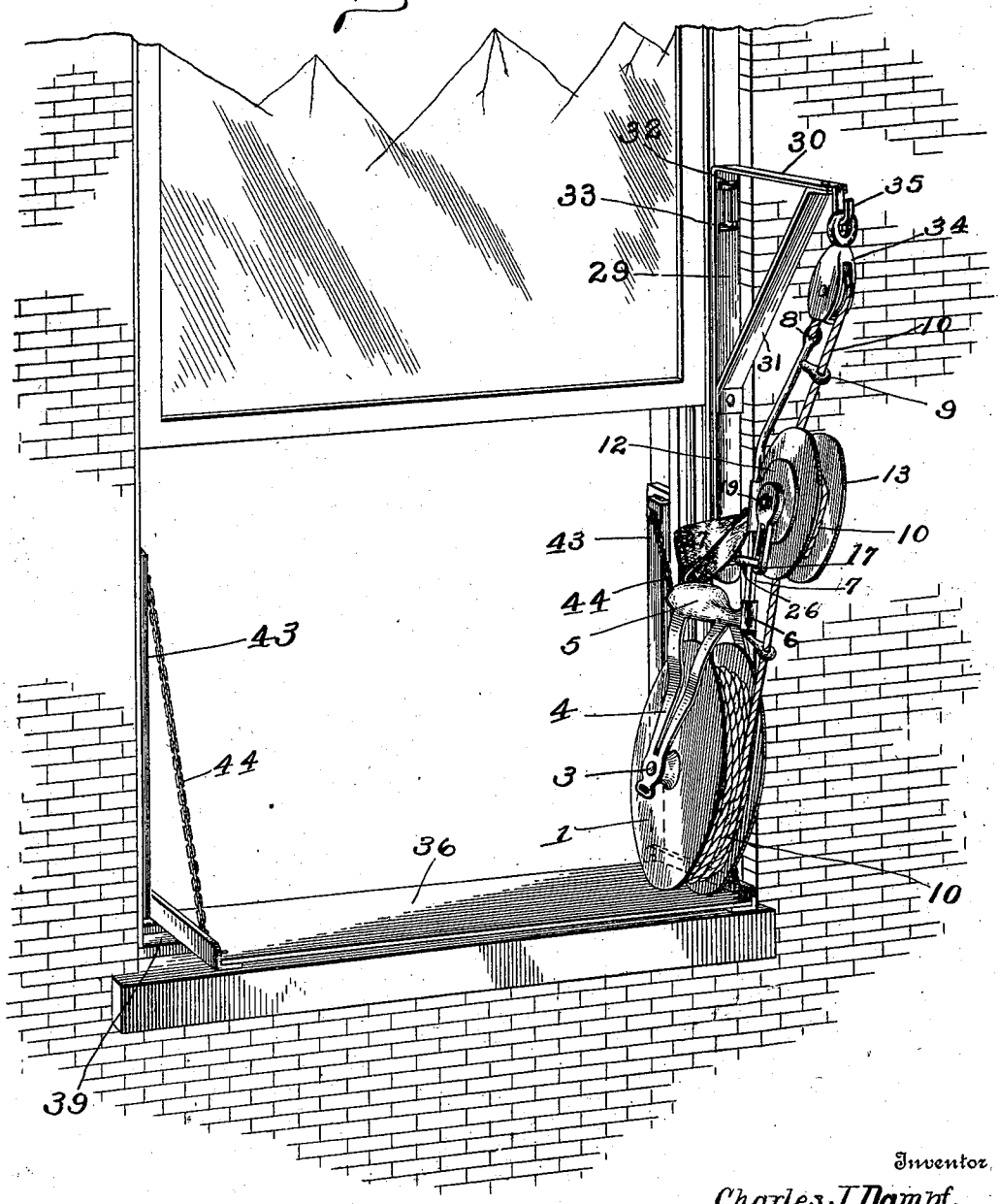
C. J. DAMPF.

LIFE SAVING APPLIANCE.

APPLICATION FILED JULY 18, 1902.

NO MODEL. 4 SHEETS—SHEET 1.

Fig. 1.



Inventor,
Charles J. Dampf,

Witnesses
C. S. Bryt.
A. G. Miller.

By W. J. Fitzgerald & Co.
Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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NO MODEL. 4 SHEETS—SHEET 2.

Fig. 8.

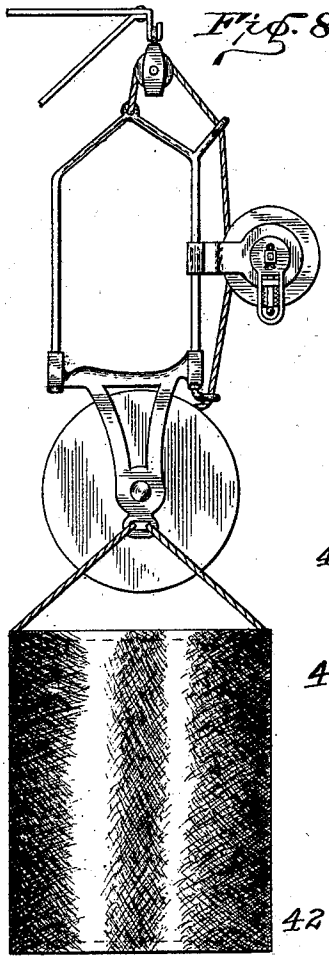


Fig. 2.

Witnesses
C. A. Frye.
A. G. Miller.

Inventor
Charles J. Dampf,
By W. J. Fitzgerald & Co.,
Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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NO MODEL. 4 SHEETS—SHEET 3.

Fig. 3.

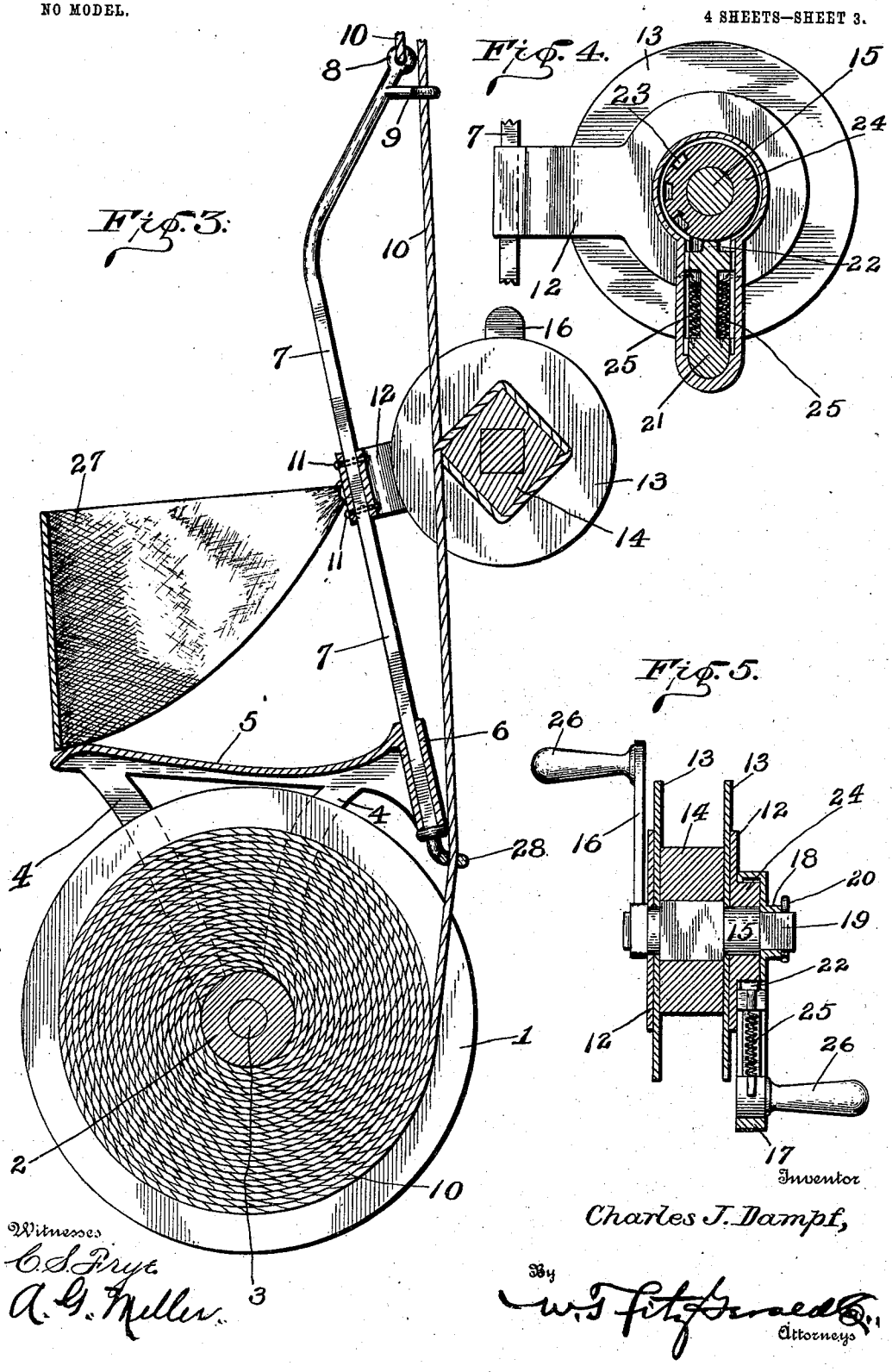


Fig. 4.

Fig. 5.

Witnesses
C. S. Frye
A. G. Miller.

Inventor
Charles J. Dampf,
By W. J. Fitzgerald & Co.
Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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NO MODEL. 4 SHEETS—SHEET 4.

Fig. 6.

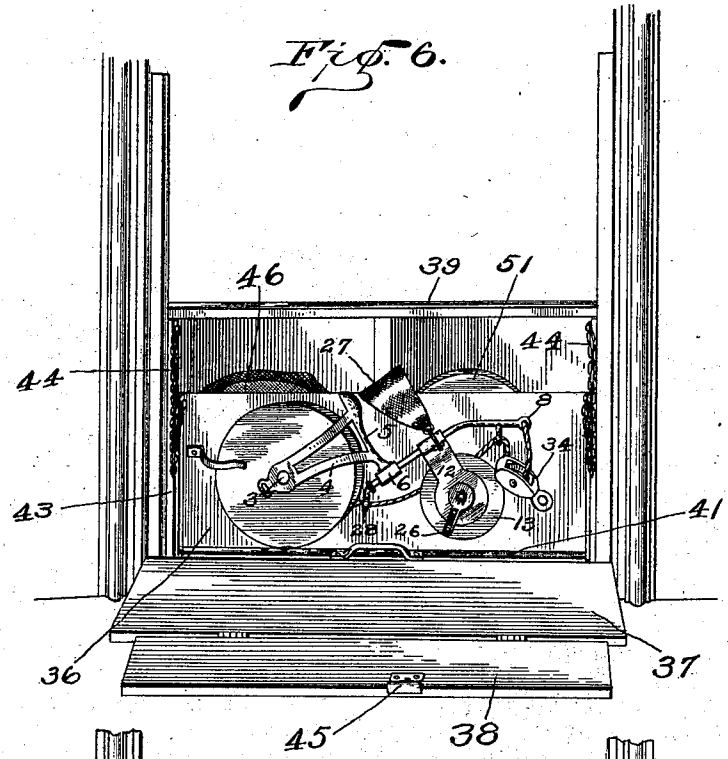
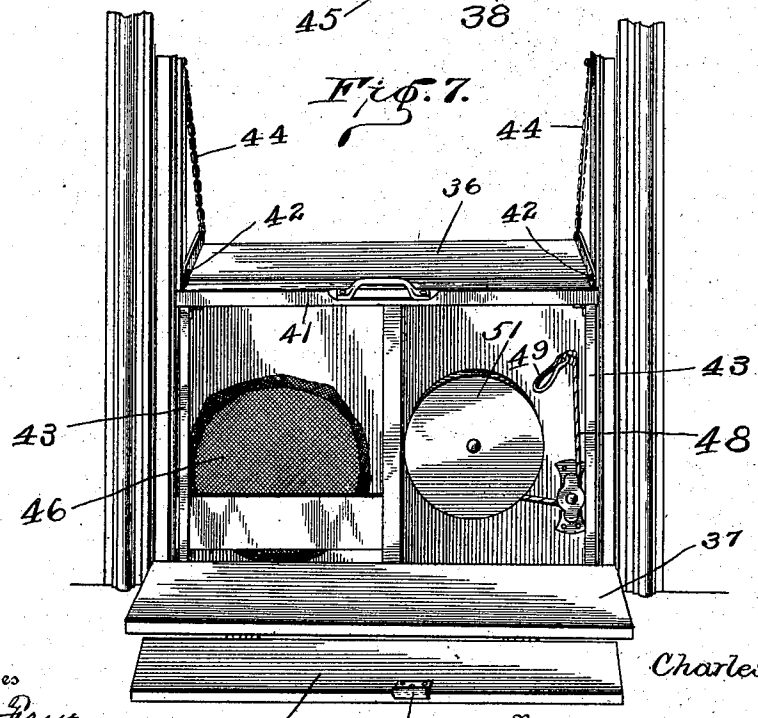


Fig. 7.



Witnesses
C. S. Frye.
A. G. Miller

Inventor
Charles J. Dampf,
By
W. J. Fitzgerald & Co.
Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 728,208. Patented May 19, 1903.

UNITED STATES PATENT OFFICE.

CHARLES J. DAMPF, OF BROOKLYN, NEW YORK.

LIFE-SAVING APPLIANCE.

SPECIFICATION forming part of Letters Patent No. 728,208, dated May 19, 1903.

Application filed July 18, 1902. Serial No. 116,016. (No model.)

To all whom it may concern:

Be it known that I, CHARLES J. DAMPF, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Life-Saving Appliances; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has relation to life-saving apparatus, and more particularly to that variety thereof commonly designated a "fire-escape;" and my invention consists of certain novel features of combination and construction of parts, the preferred form or materialization whereof will be hereinafter specifically set forth, and definitely pointed out in the claims.

The prime object of my invention is to provide an apparatus of the character specified which will meet all possible requirements of every situation, whether upon large or small buildings, and the parts of which may be very expeditiously and cheaply manufactured and readily assembled in their respective operative positions, thus enabling my complete apparatus to be sold at a comparatively low price.

A further object of my invention is to practically make my life-saving apparatus or fire-escape an attachment or permanent part of a building, whereby it will be reliably housed or stored ready for instant use when required.

A further object is to enable my complete life-saving apparatus to be snugly and compactly stored away within a minimum amount of space, so that it will occupy a position within the inner side of the wall preferably immediately under the window-sill, whereby the inclosing framework may be very quickly opened or drawn aside for the instant removal of my life-saving apparatus.

Other objects and advantages will be made clearly apparent in the following specification, considered in connection with the accompanying drawings, which are made a part of this application, and in which—

Figure 1 is a perspective detail view of my invention in position ready for instant use. Fig. 2 is a side elevation of my life-saving apparatus shown in Fig. 1 as the same appears in its operative position. Fig. 3 is a detail view, on a slightly-enlarged scale, of my apparatus complete, showing portions thereof in vertical section. Fig. 4 is a detail view, on a slightly-enlarged scale, of the outer side of the upper wheel and its supporting-bracket, showing a portion thereof in vertical section. Fig. 5 is a central section of the upper wheel, taken on a line longitudinal with the axis of said wheel. Fig. 6 is a detail view showing a portion of the window-casing and illustrating the preferred form of housing adapted to receive my life-saving apparatus when stored away for future use. Fig. 7 is a similar view illustrating the life-saving apparatus shown in Fig. 6 removed and exposing to view certain auxiliary devices designed to coöperate with my life-saving apparatus proper. Fig. 8 shows a modified construction of the part employed to engage and support the seat.

The various details of my invention and coöperating accessories will for convenience be referred to by numerals, the same numeral applying to a similar part throughout the several views.

I am aware that various forms of fire-escapes have already been patented; but so far as I am aware this variety of apparatus is more or less complicated in character, and consequently of expensive construction, and, as above stated, I have materialized my invention with the special object in view of attaining great simplicity and consequent cheapness without in any wise sacrificing absolute safety and reliability.

In carrying out my invention I provide a storage or winding drum, comprising in this instance a pair of complementing disk-sections 1, properly connected to the drum proper, 2, in any preferred way, or said disks may comprise an integral part of said drum, if preferred. The said drum 2 is rotatably mounted upon the shaft or axle 3, which extends entirely through the drum, and has each end thereof securely attached in any preferred way to the lower ends of the brackets or standards 4, the upper ends of which are attached to or integrally formed with any preferred variety of saddle or seat 5, the forward end of said seat being preferably provided

with the extension 6, which has formed therein an angular aperture adapted to receive the lower end of the angular shaft 7, which latter extends upward to a proper height, the extreme end being bifurcated to provide the branches 8 and 9, each of said branches having an eye or aperture adapted to coöperate with the cable 10 in a manner hereinafter made more clearly apparent. I desire also to provide the apertured ear 4^a, forming an extension upon the lower end of the bracket 4, by means of which I am able to suspend a basket-like bag formed of some flexible material properly fireproofed, or it may be formed of wire-netting held open at the top and bottom by suitable rings, the said basket forming a very convenient receptacle, useful for a great variety of purposes, there preferably being one of said receptacles and one of the ears 4^a for each of the brackets 4. Preferably near the middle portion of the shaft or rod 7 I rigidly secure, as by the bolts 11, the bracket 12, which latter extends outward a proper distance to provide bearings for the brake-wheel comprising the disk-sections 13 and the cable-engaging member 14, which latter may be of any preferred angular shape in cross-section, though in this instance I have shown said member as forming a perfect square.

In Fig. 8 I have shown the angular rod 7 as being substantially U-shaped, inasmuch as an extension or branch 7^a is formed upon the upper end thereof and extended backward into engagement with the rear end of the seat 5, thus disposing the branch 72 entirely out of the way of the operator and at the same time affording a support for the person occupying the saddle, the eye or ring 8 being so disposed as to be substantially over the central part of the saddle, whereby the cable 10 may be secured in such a position that my improved life-saving appliance will be truly balanced even when the weight of the operator is disposed thereon, and thereby imparting greater strength and rigidity to the entire appliance.

The brake-wheel is rigidly secured to and therefore turns with the shaft 15, and as a bracket 12 is disposed upon each side thereof said wheel will be securely held in its operative position. It becomes desirable that the rotation of the brake-wheel shall be placed absolutely under the control of the operator, and with this object in view I connect to each end of the shaft 15 the controlling cranks or handles 16 and 17. The crank 16 is rigidly connected to said shaft, while the crank 17, comprising as it does what is substantially a hollow casing, is provided with an angular hub-section 18, adapted to slip over the angular extension 19 of the shaft 15 and be retained thereon in any preferred way, as by the key 20.

Within the inner side of the casing constituting the crank 17 I dispose, as more clearly shown in Figs. 4 and 5, the longitudinally-movable detent 21, which is provided upon its inner end with the pointed terminal or tooth 22, adapted to engage one of the recesses 23, formed in the peripheral face of the hub extension 24, formed upon and carried by a contiguous part of the bracket 12. The detent 21 is held normally inward by suitably-mounted springs 25, which are safely housed and protected and disposed out of the way within the crank-casing 17, as will be clearly apparent by reference to Fig. 5.

The outer end of the detent 21 is properly connected to or integrally formed with the handle proper, 26, which latter extends loosely through a suitable opening formed at this point in the crank-casing 17, and it will therefore be obvious that when the handle 26 is drawn toward the outer end of the casing 17 the tension of the springs 25 will be overcome and the tooth 22 withdrawn from the recess 23, thereby permitting the brake-wheel to be freely turned, as will be necessary when paying off or unwinding the cable or rewinding the same.

It will be further obvious that if the handle 26 is released the force of the springs will direct the detent inward, and thereby lock further rotation of the brake-wheel through the mediation of the tooth 22 and recess 23, inasmuch as said recess remains fixed or stationary by reason of its connection with the bracket 12. The exact and proper location of the notches or recesses 23 will be determined by experiment when the complete safety appliance is manufactured, thereby insuring that said notches will be properly located, so as to be productive of the best results and cause the mechanism to be instantly and reliably responsive to the control of the operator. I wish, therefore, to comprehend the placing of the said recesses and notches 23 in whatever position may be demonstrated by practice to be productive of the best results. This provision for the automatic locking or stopping of the brake-wheel is, it will be readily appreciated, a very valuable and important part of my invention, inasmuch as provision is thus made for instantly checking the descent of the operator should he lose consciousness or for any reason become incapacitated for further operating or controlling the apparatus or in case he desires to stop at any point in his descent for the purpose of rendering assistance to any person upon the window which he may be passing or in order to avoid going downward through the flames which may be coming from any of the lower windows.

For the purposes of this application I have deemed it unnecessary to illustrate in Fig. 5 but one set of notches 23 and a coöperating detent 22. For cheap construction and to meet the requirements of many situations it is thought that the provision of but one set of these coöperating attachments will be found to be amply sufficient, though I reserve the right to provide each controlling handle or crank

with a locking mechanism similar to the showing presented in Fig. 5 and other views or the substantial equivalent thereof, and the showing, therefore, of but one of the cranks so provided with a locking mechanism is only for the purpose of conveniently illustrating the operation of said parts, it being clearly obvious that one or both of the controlling-cranks may be so provided or reinforced as may be found most desirable in practice. If both of the cranks are provided with the clutch mechanism, it will insure that the locking-detents will more promptly respond to the work of checking further rotation of the brake-wheel. It may be stated in this connection that the purpose subserved by the brake-wheel is to enable the operator to slowly or rapidly descend, thus placing my life-saving apparatus absolutely under the perfect control of a person using it. As a desirable accessory I have also provided the girdle 27, adapted to encircle the body preferably around the waist or under the arms and insure that the person operating my apparatus will be securely held in position upon the saddle even though lost to consciousness or otherwise disabled.

The girdle member 27 is preferably made of some suitable flexible material, while each end thereof may be so connected to the shaft 7 or a contiguous part of the bracket 12 that either end thereof may be very readily separated, as by means of a snap-hook or other preferred device, thereby enabling the user to mount the saddle from either side. The lower end of the angular shaft 7 is also provided with an eye-section 28, through which the cable 10 is adapted to loosely extend, and since the shaft 7 extends loosely through the seat 6 said shaft will telescope with said seat, and thereby permit the saddle to be moved upward upon the shaft 7 and make it possible to more compactly dispose the several parts for the purpose of storage or shipment. The shaft 7 being angular in cross-section cannot turn within the seat 6, thereby insuring that the brake-wheel will always be properly disposed directly in front and within reach of the operator.

I have also provided a bracket especially adapted for use in connection with my life-saving apparatus, though it will be understood that any preferred form of bracket may be employed for this purpose. In the present instance the bracket, which I shall describe in detail, is also designed to be easily removed from its operative position and safely stored out of the way within the receptacle designed to receive the life-saving apparatus proper, though, if preferred, any suitable form of bracket may be employed and permanently connected to the wall or window, and thus left in position ready to receive and support my apparatus, as illustrated in Fig. 1 and other views. My preferred form of bracket may be easily provided, as by forming the same from suitable sheet metal so as to comprise the body-section 29 and the integral outward extension 30, said extension being properly reinforced by the bracing-section 31, connected to the body-section 29 at any preferred point and the outer end of said extension.

An anchoring-post 32, having a transversely-disposed head, is permanently secured to the wall of the building or window-frame, while the body portion 29 is also provided with an inverted-T-shaped aperture 33, adapted to receive the anchoring-pin, and it is obvious that by entering the head of the pin 32 through the transverse part of the slotted opening 33 the vertical part of said opening will ride downward upon the reduced part of the pin 32 until the extreme upper end of the slot is reached, when the retaining-head of said pin will prevent the bracket from casually slipping off, though permitting said bracket to be easily disengaged when desired.

Designed to coöperate with the cable 10 is the pulley-block 34, which is adapted to be suspended upon the hook 35, carried by the outer end of the bracket, and when my life-saving apparatus is disposed in the position illustrated in Figs. 1 and 2 it is ready for instant use. The operator will mount the saddle and secure the girdle 27 around him and swing off of the platform 36 after grasping the handles 26, when he will find that he can lower himself at any desired speed by a proper control of said handles. The angular body or member 14 will be found to so act upon the cable as to require but very little exertion on the part of the operator to permit the cable to unwind from the storage-drum 2. It will furthermore be obvious that the member 14 may be of any other angular form in cross-section, as a triangular form or oblong shape may be adopted, and I wish, therefore, to comprehend all possible variations which may be found the equivalent of the showing herein presented. By providing the eye sections or brackets 9 and 28 for the cable 10 all possibility of entanglement of the cable is obviated, thereby avoiding the necessity of exercising great care in assembling or storing the apparatus. Additional eyes 9 and 28 may be employed, if desired.

In Figs. 2 and 6 and other views I have illustrated the preferred way of disposing or storing my apparatus out of the way when not required for use, and with this purpose in view a space may be provided beneath the window, said space being properly inclosed in any suitable manner, as by the hinged door 37, having the coöperating lid-section 38, and when said door is thrown upward in a vertical position said lid 38 will be disposed against the inner edge of the window-sill 39, inasmuch as the platform 36 is adapted to be folded upward into a vertical position, when it may be easily forced downward in the guideways 40, which are so formed as to receive the ends of the cross-bar 41, to which it will be seen that the inner end of said plat-

form is pivotally secured or hinged, as indicated by the numeral 42. The cross-bar 41 is also attached to the vertically-disposed sections or uprights 43, which latter should be supplied with separate running tracks or guideways. The upright sections 43 should also be provided with sash-cord and suitable weights to facilitate their being raised, together with the apparatus carried thereby, even by a person who is physically weak, as by a child or an invalid.

Reinforcing or bracing chains 44 should also be provided and so connected that they will sustain the platform 36 when disposed in a horizontal plane or in its operative position. It will be found that the platform 36, thus or otherwise mounted in its operative position, would be a very desirable and safe vantage point for people to assemble, and thus get out of the way of the smoke and danger of suffocating gases, from which point they could be seen and rescued by persons below if for any reason they fail to use the apparatus. I consider the platform, therefore, a very desirable auxiliary to my life-saving appliance, inasmuch as it is a well-known fact that more people lose their lives through suffocation than from actual contact with fire. If desired, a suitable lock 45 may be provided to hold the casing securely in place. It will also be understood that the upper portion of said lid 38 may be rendered very attractive by upholstering or other desired ways.

It will be clearly obvious that when the actual machine or safety appliance complete is built for service experimental use thereof will determine the best manner of disposing of the various parts into coöperative relationship with each other—as, for instance, experiments have already demonstrated that it is preferable to dispose the cable more than once around the brake-wheel in order to place the appliance under the most perfect control of the operator, requiring him to exercise but a minimum amount of force to lower himself or any load placed upon the saddle or in the receptacle 4^b, so that he will move slowly downward, as he may desire. In many instances it may be desirable to attach the life-saving bag in any suitable manner directly to the machine, so that it will be instantly available for use when the apparatus is brought into position for use, the bag unfolding and opening by its own weight ready for the reception of various articles or for receiving children or an invalid, as hereinbefore clearly set forth.

It is thought that from the foregoing description the manner of using my life-saving appliance, as illustrated in Fig. 1 and other views, will be obviously clear, though it may be stated that the person using it will mount the saddle and secure the girdle 27 around him, so as to extend in positive engagement with a hook carried by the bracket 12, when he will grasp the handles 26 and slightly resist the movement thereof, only a slight resistance being necessary to control the brake-wheel, and thereby enable him to lower himself quickly or slowly, as may be desired. If he should lose consciousness and release his hold upon the handles they will move around until the detent, which is as above stated, directed normally inward by the springs 25, will engage one of the recesses 23, and thus check further movement of the handles and preventing further rotation of the brake-wheel. The same result will also follow if the operator should lose consciousness, and thus release the handle 6, the operation of locking the brake-wheel being entirely automatic, which is a most important and desirable desideratum. After the person has thus lowered himself to a point of safety it is obvious that my life-saving appliance, as illustrated in Fig. 1, may then be utilized by any person—as, for instance, a fireman carrying the nozzle end of a hose may mount the saddle and be bodily lifted upward to any height by his comrades, who will grasp the cable 10 and draw it downward, and thereby elevate the appliance to any window through which it may be desirable to send a stream of water, when the appliance may again be readily lowered.

Inasmuch as the entire apparatus is fireproof in character and also securely attached to the wall of the building, as hereinabove set forth, the appliance will thus remain firm and intact and ready for all uses which may be required of it as long as the wall remains standing, even after the interior of the building shall have been entirely burned out or consumed. By means of this appliance it is obvious that valuable articles easily portable may be very readily recovered and saved, thus largely increasing the amount of salvage from fires.

While I have specifically referred to and described the details involved in the construction of the automatic means provided for locking the brake-wheel when for any reason released by the operator, it will be understood that the same result may be accomplished in a variety of ways and that the means herein described is representative in a broad sense of any suitable mechanism adapted to subserve the same purpose or accomplish the same result—namely, of instantly checking further rotation of the friction-wheel when the operator releases the handles thereof.

By the means specifically set forth in this application it will be observed that as the handle attached to the detent is toward the operator a slight inward pull directed toward himself will insure that the detent will remain out of any of the coöperating recesses and that the tension of the springs 25 will thereby be fully overcome. It will of course be fully understood that when the cranks extend away from the operator he must of course press outward upon the handle, the position of the crank determining the direc-

tion of the pulley disposed upon the handle in order that the detent may be promptly withdrawn from its coöperating recesses.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a life-saving appliance, the combination with a cable and a storage-drum therefor, of a suitable frame adapted to carry said drum, said frame being provided with a seat for the operator and having an upwardly-extended angular arm or member provided at its upper end with rope-engaging terminals, one of said terminals being designed to be permanently connected to the end of the rope while the other terminal loosely receives said cable; a pulley-block disposed in engagement with the loop of the cable between said terminals; a suitable supporting-bracket for said pulley-block and a rotatable brake-wheel comprising circular flanges upon each side and an angular body portion between said flanges, said angular body being designed to be surrounded by a loop of the cable, and suitable means to rotate said brake-wheel as set forth.

2. In a life-saving appliance, the combination with a suitable drum and a cable carried thereby, of a frame adapted to rotatably mount said drum and having a seat and an angular upwardly-extending standard carried by said seat whereby said angular standard will have a movement relative to the seat and permit the extreme length of the appliance to be shortened as desired, as and for the purpose set forth.

3. The herein-described life-saving appliance, comprising a drum and cable disposed upon said drum, a frame adapted to carry said drum; a seat upon said frame; a longitudinally-movable non-rotatable standard carried by said seat, said standard having a bifurcated upper end with cable-engaging terminals; a pulley-block adapted to engage that portion of the cable between said terminals and a brake-wheel adapted to be surrounded by a contiguous part of the cable and means to rotate said brake-wheel and additional means to automatically lock said wheel against rotation when released by the operator, all substantially as specified and for the purpose set forth.

4. A life-saving appliance substantially as described, comprising a suitable frame having a seat and a slidable member coöperating with said seat, in combination with a drum rotatably carried by said frame and a cable disposed on said drum; means to connect the upper end of the frame with the end of said cable and a pulley-block coöperating with the cable and adapted to support the appliance in its operative position combined with suitable means to hold the operator securely upon the seat and additional means to pay off the cable as desired and for the purpose set forth.

5. In a safety appliance, the combination with a drum and cable, of a frame adapted to carry said drum; a seat carried by said frame and a standard connected with said seat, said standard being adapted to be connected to the extreme end of the cable and a pulley adapted to engage the cable and suspend the entire apparatus, and a brake-wheel rotatably mounted in the brackets carried by said standard and means to enable the operator to turn said wheel and additional means to automatically lock the wheel when released by the operator as and for the purpose set forth.

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

CHARLES J. DAMPF.

Witnesses:

WILMOT L. MOREHOUSE,

WALTER S. JOSEPHSON.