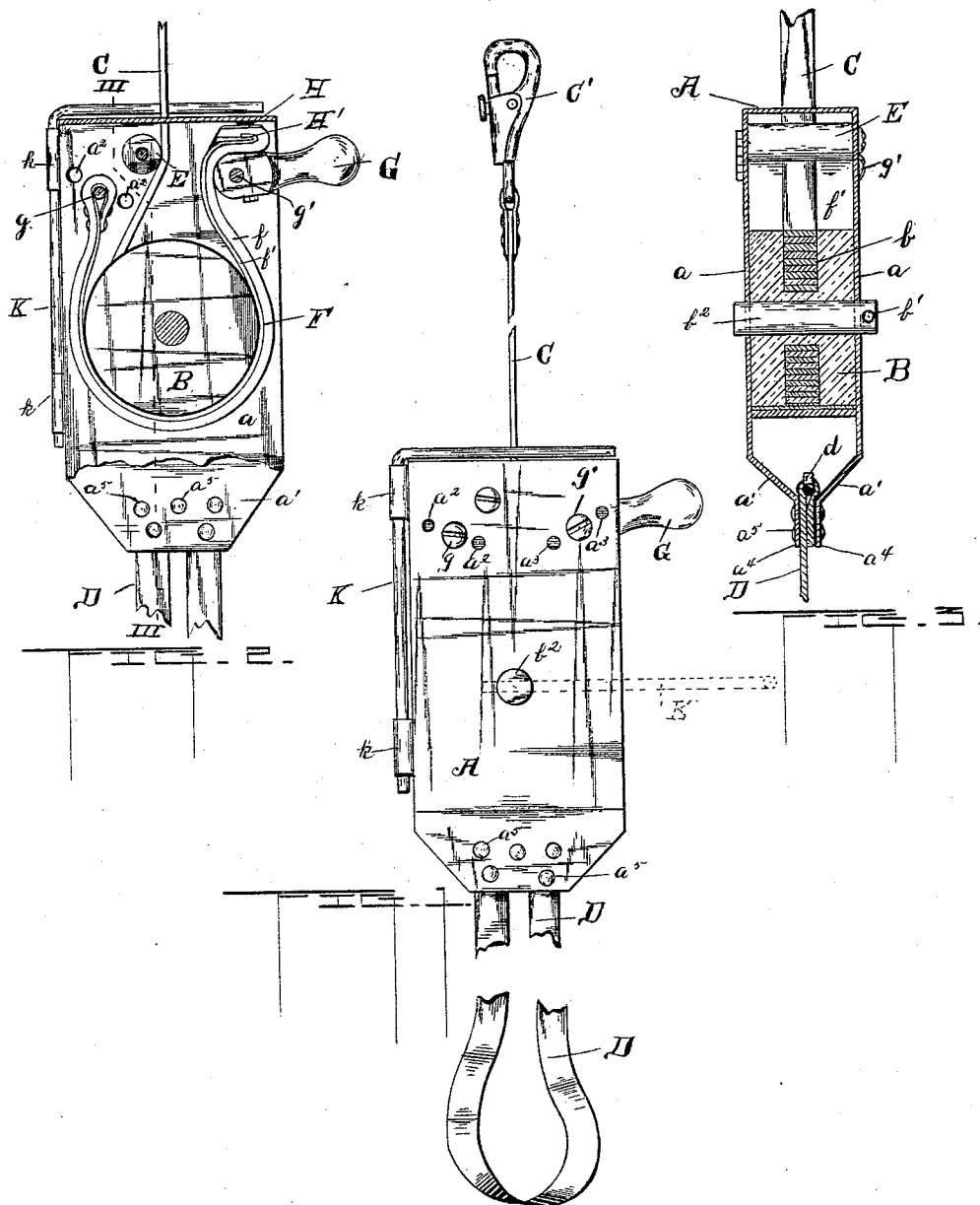


(No Model.)

J. R. COKER.
FIRE ESCAPE.

No. 489,463.

Patented Jan. 10, 1893.



Witnesses
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UNITED STATES PATENT OFFICE.

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FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 489,463, dated January 10, 1893.

Application filed April 20, 1892. Serial No. 429,891. (No model.)

To all whom it may concern:

Be it known that I, JAMES R. COKER, a citizen of the United States, residing at Knoxville, in the county of Knox and State of Tennessee, have invented certain new and useful Improvements in Fire-Escapes; 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 relates to improvements in fire escapes, and the primary object of the invention is to provide a portable fire escape which is adapted to be placed in any convenient position in a room of a hotel or other building, or kept in a valise, trunk, or other suitable place, so as to be accessible for immediate use by the owner or guest at a hotel, tavern, or other building where such devices may be required, so that an individual confined in an upper room of a burning building may easily and safely escape without being dependent upon any person for assistance.

A further object is to provide a device of this character which shall be simple in construction, inexpensive in manufacture, and efficient and reliable in use.

The invention will first be described in connection with the accompanying drawings and then pointed out in the claims at the end of this description.

Referring particularly to the drawings, Figure 1, represents a front elevation of a device embodying my invention; Fig. 2, is a similar view with parts of the device and the front of the casing or frame broken away to show the interior construction; and Fig. 3, is a longitudinal sectional elevation taken on the line III—III, of Fig. 2.

A, in the drawings denotes a metallic casing or frame, within which is journaled a band or brake wheel B, which latter may consist either of a single piece formed with enlarged end portions or disks and a centrally disposed groove or annular recess *b*, or a metallic hub and axle with disks made separate therefrom and rigidly secured together; the annular recess being adapted to receive a rope tape or cable C, which may be wound upon the axle or hub of the wheel. The frame A, preferably consists of a single me-

tallic plate bent centrally twice at right angles so as to form the parallel front and back portions *a, a*, which extend parallel with each other a suitable distance to provide space to receive the brake wheel and other working parts of the device, and terminate in inwardly bent portions *a', a'*, between which are riveted or otherwise secured the ends of a looped strap D.

E is a friction roller which is journaled in the upper part of the frame or casing A, and serves as a guide for the cable C, which is a flat webbing of metal or thin sheet metal strip, C.

F denotes a brake band which may be made of any suitable material, but to render the device safe and efficient in use I preferably provide a compound band which consists of a flexible strip *f*, of leather or other similar material and a corresponding flat metallic strip *f'*, firmly secured together and adapted to partially encircle the brake wheel A, with the metallic strip or facing fitting against the periphery of the wheel, so as to provide a perfectly smooth and hard wearing surface in frictional engagement with the periphery of the wheel on opposite sides of the circumferential recess within which the cable is wound. One end of the brake band F, is secured to the upper portion of the casing A, by means of a transverse pin *g*, which may pass through any one of a series of perforations *a², a²*, and the opposite end of the band is secured to a hand lever G, by means of a transverse pin or through bolt *g'*, which may extend through any one of a series of perforations *a³*. By this means the end portions of the brake band may be adjusted for the purpose of causing the band to bear to a greater or less extent upon the surface of the periphery of the brake wheel so as to adapt the device to be used by heavy or light persons as may be desired. When the transverse bolts are placed in the lowermost perforations the band will engage nearly the entire circumference of the wheel so as to increase the friction between the band and wheel, and when placed in the uppermost perforations it will engage the wheel to a much less extent so as to diminish the friction. In the former position the device is adapted to a heavy person, and in the latter

position to a light person, while in the intermediate position it is adapted to persons of ordinary weight. It will be understood, of course, that a greater or less number of perforations may be provided and the arrangement may be varied to suit different requirements.

The cord, rope tape or cable, C, may be composed of any suitable material, but I preferably use metallic webbing. One end of the strip of webbing forming the cable is rigidly secured to the central part or hub of the wheel B within the recess *b*, so as to be wound thereon between the end portions or disks of the brake wheel and the free end of the cable passes therefrom over the friction roller E out through a suitable opening in the top of the casing or frame A, and has secured to its free end any suitable fastening device, preferably a snap hook C', as indicated in Fig. 1.

The ends of the loop D, are secured between the depending portions *a*¹, *a*², of the frame A, by means of suitable rivets or bolts *a*³, *a*⁴, which pass through these several parts and bind them firmly together. This connection is preferably made by turning down the free ends of the material forming the loop D, so as to embrace a rod or bar *d*, which has its ends bent at right angles to prevent the loop from slipping endwise thereon, and passing the rivets *a*⁵ through the overlapped ends of the material with the rod *d* resting upon the inner walls of the inwardly bent parts *a*¹ of the metallic frame, as indicated in Fig. 3. By this means I secure a rigid and substantial connection which will prevent the loop from slipping or being torn from the rivets.

In order to securely fasten the end of the band F to the brake lever G, I also preferably turn the ends of the straps *f*, *f*', back as shown in Fig. 2, and place the overlapped end of the band between two metallic plates or washers H, H', and bind the several parts together by suitable bolts or rivets extending through the flexible band, the metallic facing strip, the two metallic plates and the end of the brake lever.

K, denotes a crank lever or handle for winding the cable upon the drum after it has been unwound, which may be accomplished by inserting the end of the crank in an opening *b*¹, in the end of the axle or spindle *b*², of the drum or brake wheel, and turning the crank in the usual manner. In order that this device may be at hand for use when needed I secure to the frame or casing A, in any proper manner a pair of eyes or sockets, *k*, *k*, to receive and retain the crank handle in a position from which it may be readily removed when desired for use, experimentally or otherwise.

The operation of my invention will be understood from the foregoing description. Supposing a person desiring to use the device to be confined in the upper room of a hotel or other building, the free end of the cable C may be passed around a bed post or any other

fixture and the hook C' engaged with the cable so as to secure the free end of the cable, and thereupon the user may place the loop A about or around his or her person or seat himself or herself in the loop, and then by taking hold of the lever G and pulling downward thereon the cable will be held taut by the friction band engaging the brake wheel and the user may let himself or herself out of an open window or the like, and gently descend the side of the building by gradually releasing the brake wheel and allowing the cable to be drawn out or spent as slowly or as rapidly as may be desired; the pull upon the brake lever being increased when the descent is too rapid and decreased to permit the cable to unwind.

The device thus described is exceedingly simple in construction and operation, is efficient and reliable in use, and may be manufactured at a small cost, so as to afford a cheap and ready means for escape from fire in buildings or other places where persons are subjected to such dangers. It is peculiarly adapted to be carried about with the person, particularly by traveling agents or others visiting or traveling from place to place and may be placed in the rooms of hotels, boarding houses, or other buildings in a position to be readily accessible when needed, and it affords a safe and reliable means of escape from a building in case of fire without subjecting a person to the dangers incident to such occurrences and without rendering the lives of individuals dependent upon the acts of other persons to whom they must look for assistance.

It will be observed that the broad flexible brake-band extends across the central circumferential recess in the brake-wheel and bears upon the periphery of the wheel at both sides of the recess, so that the flat metallic webbing or cable is snugly confined within the recess without liability to entanglement or displacement in winding the cable or abrasion by contact with the edges of the brake-band when the cable is drawn out; and the connection between the band and brake-wheel is such that a direct pull upon the lever G, by a person sitting in the loop D, has the effect to transfer the weight of the person thus applied from the loop to the brake-wheel so as to easily check the descent in proportion to the weight or pull upon the lever. Moreover, the flat metallic or steel strip forming a lining for the leather backing strip provides a smooth and durable bearing surface adjacent to the brake-wheel which permits the wheel to turn smoothly without the sudden jerks and starts which are incident to the use of leather or rough material in contact with the surface of the wheel, and the leather backing affords a reliable and efficient stay-piece which is light, inexpensive, flexible and not so liable to break as a plain steel band, thus combining in a single band all the advantages of both a steel or metallic band and a leather band, and overcoming the

difficulties incident to the use of each separately.

Having thus fully described my invention what I claim and desire to secure by Letters Patent of the United States, is:—

5 1. A portable fire escape comprising a suitable frame, means for suspending a person therefrom, a circumferentially recessed brake-wheel or drum journaled in said frame, a cable having one end secured to said brake-wheel and adapted to be wound thereon within said recess, and a flexible band partially encircling the brake-wheel and extending across the recess therein so as to make frictional contact with the periphery of the wheel at opposite sides of said recess; said band having one end fixed and the other end secured to an operating lever for tightening the band, substantially as described.

20 2. In a fire escape, the combination with the frame having the looped strap secured thereto, the circumferentially recessed brake-wheel, the cord or cable having one end secured to said brake-wheel and adapted to be wound thereon within said recess, and the flexible brake-band partially encircling the wheel and extending across the recess therein so as to engage the periphery of the wheel on opposite sides of the cable; said brake-band being fixed at one end and having the other end thereof secured to an operating lever, substantially as described.

35 3. In combination with the frame or casing, the brake wheel, the cable, and the brake band having its ends adjustably secured to the casing, for the purpose of increasing or diminishing the extent of frictional contact between the wheel and band, substantially as described.

4. In combination with the frame, the brake wheel, and brake band consisting of a flexible strap and a flat metallic strap or sheet of metal secured together and partially encircling the periphery of the wheel with the metallic face of the band in frictional engagement therewith; the ends of the straps being fixed to the frame and an operating lever, respectively, substantially as described.

5. In combination with the frame having the circumferentially recessed brake wheel or drum journaled therein and provided with a looped strap at the lower end thereof, the brake band spanning said recess having one end fixed to the frame above said wheel and extending thence around the wheel to the opposite side and above the same and secured to an operating lever pivoted to the frame; the friction roll also journaled in said frame above the wheel, and the cable having one end secured to said wheel within said recess and extending therefrom over said roll through the top of the frame and provided with a fastening device at its free end, substantially as described.

6. In a fire escape the frame having the perforations therein to receive the fastening bolts of the brake mechanism, in combination with the brake wheel and the brake band partially encircling the circumference of said wheel and having its ends adjustably secured to the frame by bolts passing through such perforations, substantially as described.

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

JAS. R. COKER.

Witnesses:

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B. H. SPRANKLE.