

917,506.

Fig. 2.

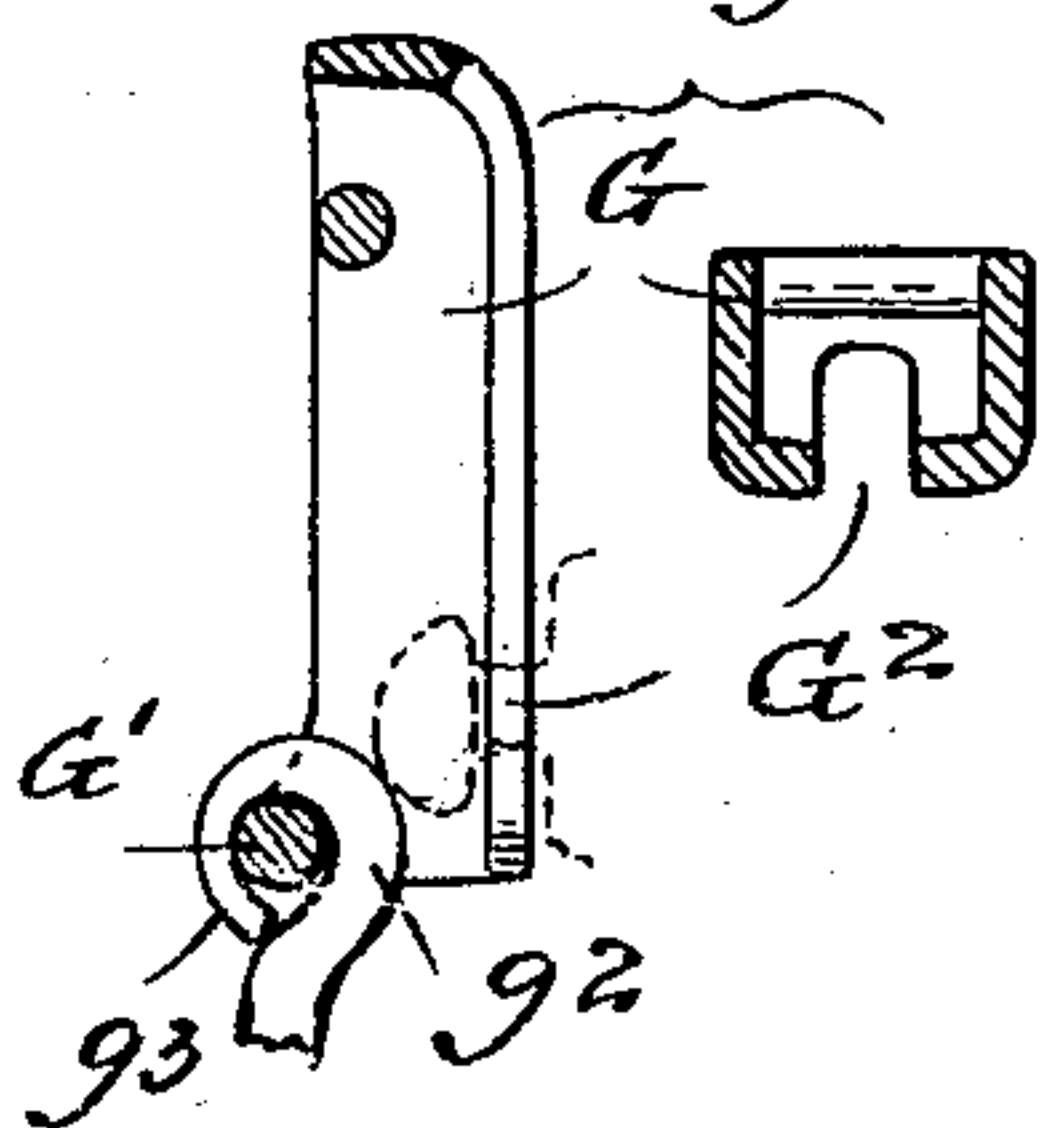


Fig. 3.

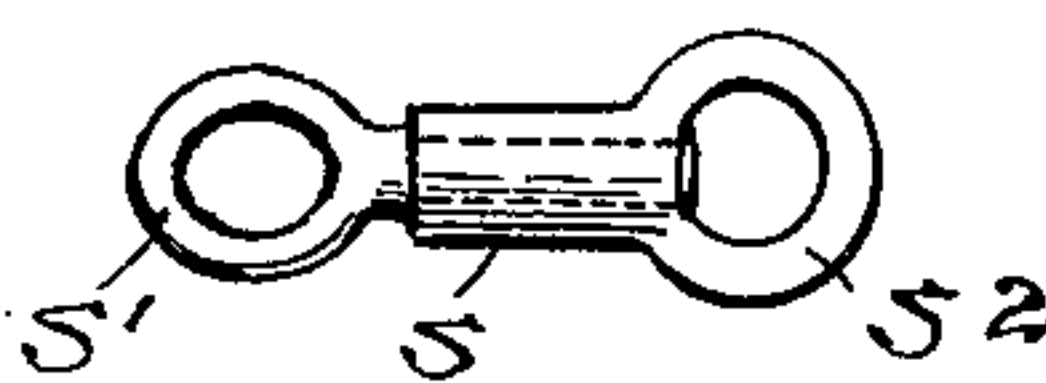


Fig. 4.

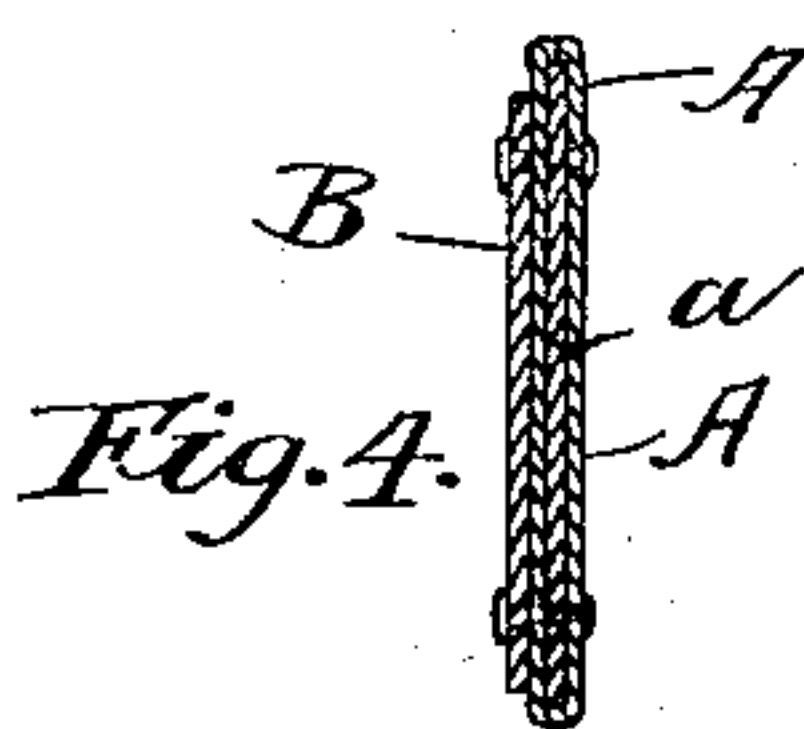


Fig. 6.

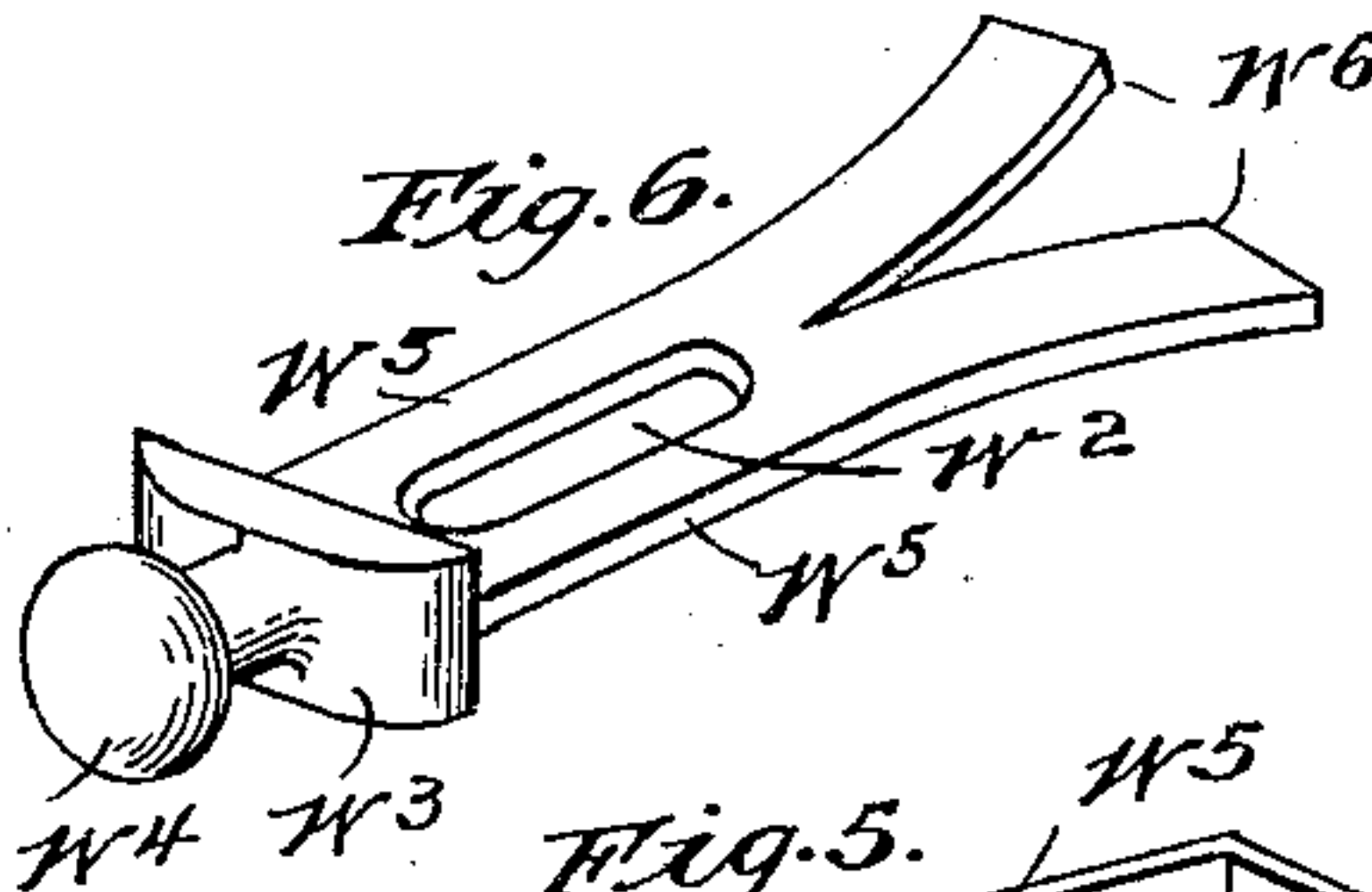
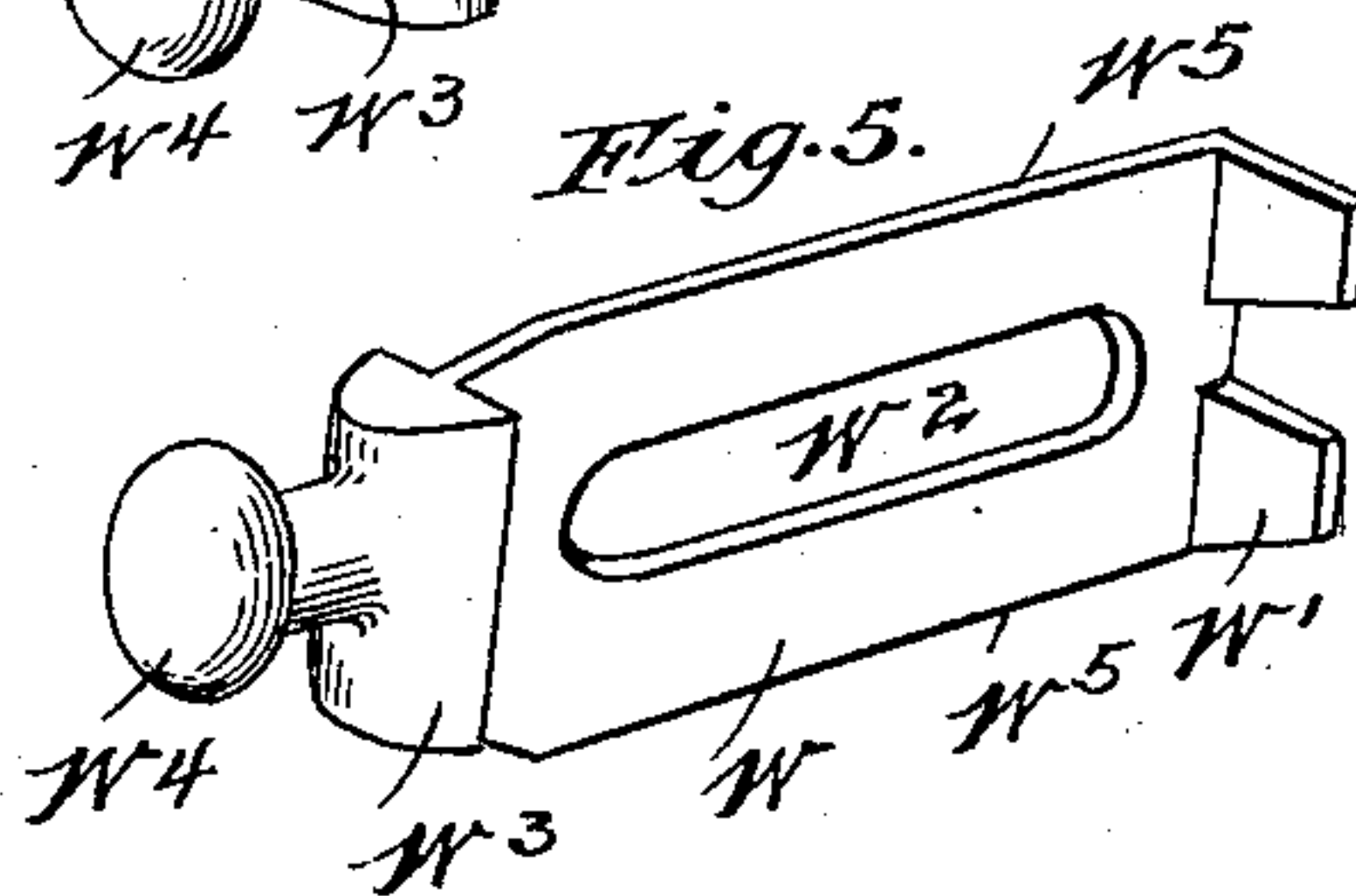


Fig. 5.



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UNITED STATES PATENT OFFICE.

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SAFETY-SUPPORT FOR WINDOW-CLEANERS.

No. 917,506.

Specification of Letters Patent.

Patented April 6, 1909.

Application filed February 20, 1907. Serial No. 358,525.

To all whom it may concern:

Be it known that I, HIRAM K. WHITNER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Safety-Supports for Window-Cleaners; and I do 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 safety supports for window cleaners.

Heretofore in a reduction to practice I have preferably placed two lag screws upon each jamb of a window frame in buildings. With said permanent fixtures slotted plates, the so-called terminals to said safety supports, were made to engage as shown in patent issued to me June 28, 1898, No. 606,400.

The object of my present invention is to improve said safety support in directions the necessity of which manifested itself in an extensive reduction to practice. And furthermore, as hereinafter shown, I make improvements in conformity with the reissues to me dated August 11, 1903, Nos. 12,145 and 12,146.

My invention consists in an improved safety belt having members assembled integrally and adapted to be worn upon the person of a window cleaner, and in connection therewith a method of installing a solid headed permanent anchorage in the masonry constituting a window jamb, the one being correlated to the other in said safety support, said safety belt having no function apart from an anchor and said anchor, as hereinafter shown, will have no function apart from a safety belt constructed on lines hereinafter shown and described, like letters of reference indicating like parts.

Figure 1 shows my improved safety belt assembled integrally. Fig. 2 shows one of said integral parts, a slotted terminal detached in order to show its toe formation in detail. Fig. 3 shows another integral part of said assembled belt, a swivel detached in order to show its formation in detail. Fig. 4 shows a cross section of the body proper of Fig. 1. Fig. 5 shows a solid headed anchor adapted to engage with said slotted terminal. Fig. 6 shows a solid headed anchor of another form.

A is the foundation body of a safety belt preferably consisting of three folds of stout

canvas and a belt webbing core *a*, said combination making a substantial insert for gromets *a'* whereby said belt may be laced about the body of a window cleaner. B is a leather fender to said belt, preferably having slant ends B' and B'. However, I may extend said member B the full length of said body A and insert a duplication of gromets *a'* whereby said belt may have a duplication of the lacing member A². C is a stay adapted to take the strain and wear in the work to which said belt is put.

D is a guard preferably an unbroken continuation of stay C, as hereinafter shown. E and F are well known double eyes, the subject of my former invention, whereby said stay C and guard D may be held in relative position in said safety belt. G is an improved terminal preferably placed upon the right side of said belt in view of eye *g*.

G' is a bridge.

G² is a bolt way more clearly defined in Fig. 2.

H is a like terminal preferably placed upon the left side in view of hitch *h*.

H' is a cross bar.

H² is a bolt way of like formation as G².

*g*² and *h*² are hook formations tapered to tips *g*³ and *h*³, said respective hooks when closed about the respective bridges G' and H' form a cam lock obstruction at the outlet of said respective bolt ways in said respective terminals, said outlet being a direct longitudinal continuation of said respective bolt ways.

K is an improved carrier having the way K' whereby said carrier may be supported upon stay C, another way K² is adapted to hold swivel S suspended together with the ends of said stay and said guard by means of eyes S' and S².

In safety belts, as heretofore constructed, the leather fenders have had their ends parallel to the threads of the woven fabric. Such an arrangement caused said ends to act as a paper cutter upon the said fabric, hence the slant ends B' and B'.

It will be observed that in an actual reduction to practice with said slotted terminal in engagement with any solid headed permanent fixtures, the tendency is to keep the respective members *g* and *h* in alinement with the bolt way G² and H²; such alinement will keep the outlet of said bolt ways obstructed and when it is desired to disengage said slotted terminals from a solid headed anchor it will be

necessary to bring the respective tapered tips g^3 and h^3 into the outlet of said respective bolt ways. This situation may be brought about by doubling the said respective members g and h upon the respective terminals G and H, whereby the cam action thereby induced will free the outlet of said bolt way sufficiently to permit the removal of said terminal from said anchor head.

10 I have shown a rounded head in my improved anchor, a square head bolt will be equally operative at the curved termination, Fig. 2, the end of said slot in the toe of said terminal.

15 In an extensive reduction to practice it has been found desirable that guard D have an indirect connection with hitch h , hence to eliminate the kinks in a hard twisted rope that may be encountered when the heretofore free ends of the stay C and guard D are connected I provide the swivel S.

20 Having thus fully described my invention, I will now in claims point out what is new and novel and what I wish to secure by Letters Patent.

25 1. In a safety support for window-cleaners, a slotted terminal having a bolt way extending from the curved toe end of said terminal to an outlet, said outlet being a direct longitudinal continuation of said bolt way, a bridge over said outlet and a cam lock in hooked engagement with said bridge.

30 2. In a terminal to a safety belt, a bolt

way curved at the toe end of said terminal and extending to an outlet, said outlet being a 35 direct longitudinal continuation of said bolt way, a bridge over said outlet, a cam lock in hooked engagement with said bridge, said cam lock being provided with an eye, a means whereby said terminal may be assembled 40 integrally in said safety belt.

3. In a safety belt, a stay and a guard and means whereby said stay and said guard may be secured to a terminal adapted to engage with the permanent fixtures in the jamb of 45 a window, a swivel adapted to connect the end of said stay and said guard whereby said stay and said guard may have any twist taken out, the one independent of the other.

4. In a safety belt, a terminal, a stay and 50 a guard and means whereby said stay and said guard may be secured to said terminal, a swivel in engagement with the respective ends of said stay and said guard, a carrier in engagement with said swivel and said stay, 55 as and for the purpose set forth.

5. In a safety belt, a body constructed of a fold of a woven fabric, and a leather fender secured to the outside of said fabric, said leather fender having slant ends, said ends 60 being held in position diagonally to the woof and the warp of said fabric.

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Witnesses:

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