G. BERTOLINI & T. CAPPELLETTI.

WINDOW WASHING DEVICE.

APPLICATION FILED OCT. 27, 1916.

1,259,479.

Patented Mar. 19, 1918.

2 SHEETS—SHEET 1.

Fig. 1.

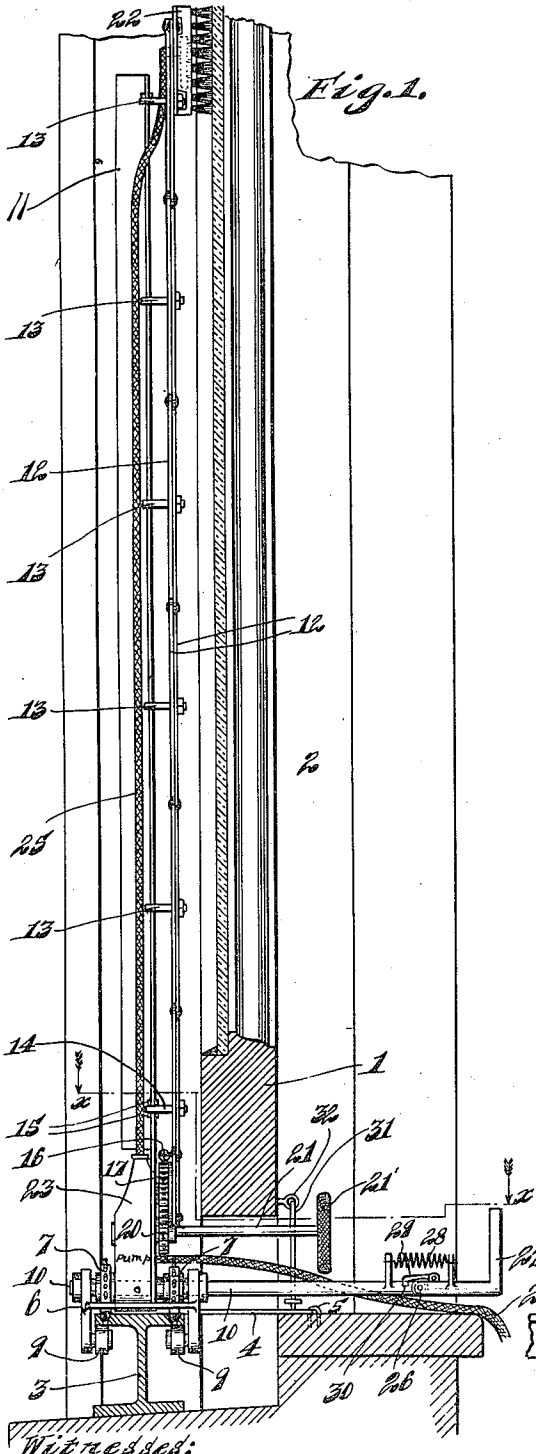
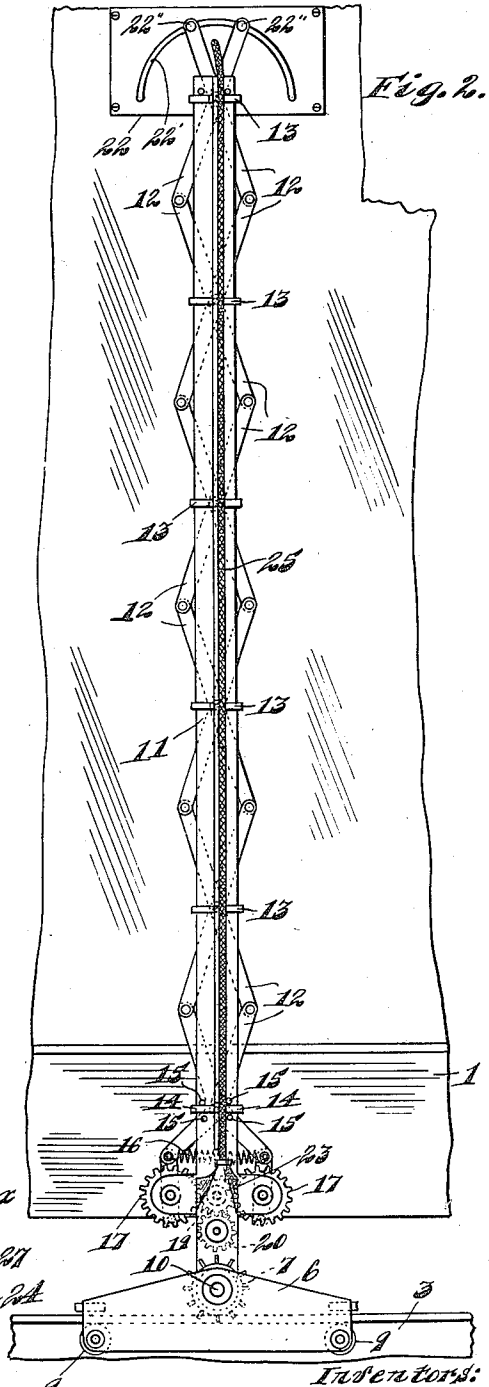


Fig. 2.



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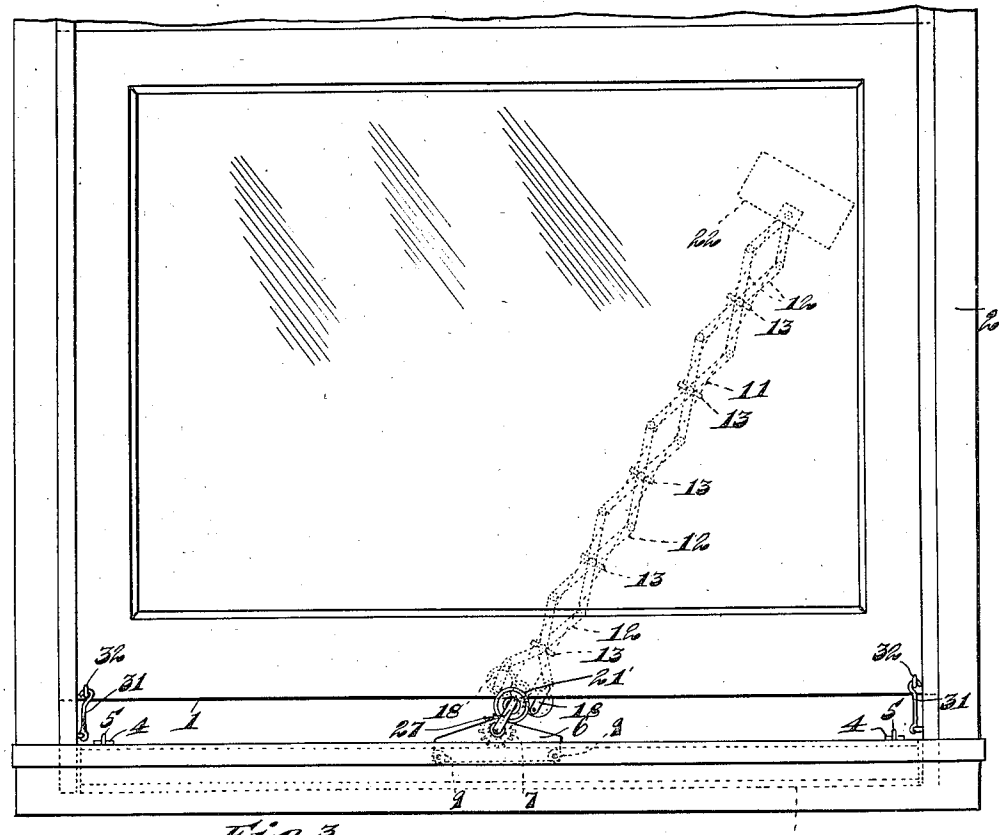


Fig. 3.

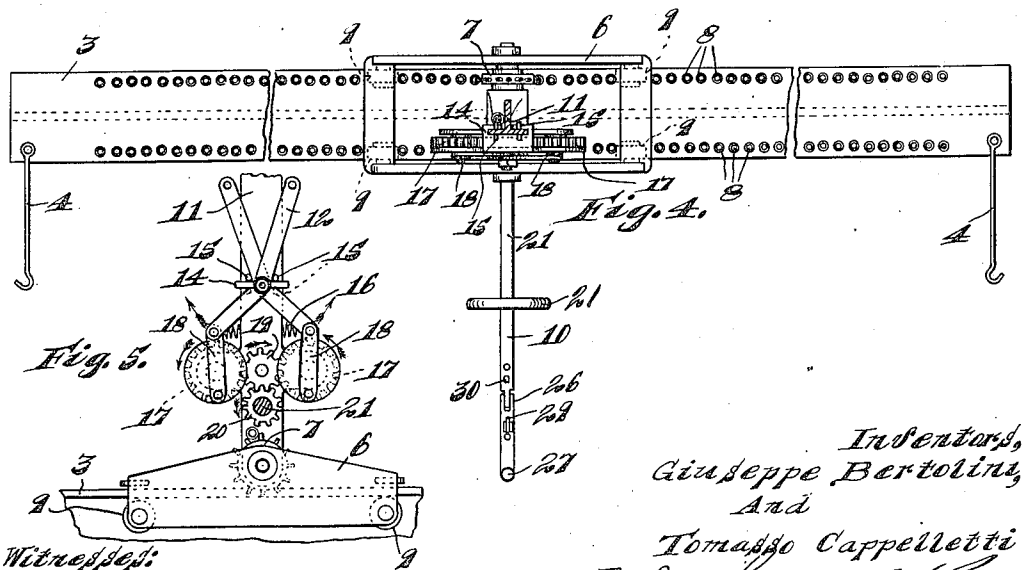


Fig. 4.

Fig. 5.

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UNITED STATES PATENT OFFICE.

GIUSEPPE BERTOLINI AND TOMASSO CAPPELLETTI, OF CHICAGO, ILLINOIS, ASSIGNORS OF ONE-EIGHTH TO FRANCESCO DE LUCA, ONE-EIGHTH TO PASQUALE MANNA, ONE-EIGHTH TO GIACINTO MANNA, ONE-EIGHTH TO ROMOLO CAPOCCI, ONE-EIGHTH TO VITO POTUTO, AND ONE-EIGHTH TO CESARE IPPOLITO, ALL OF CHICAGO, ILLINOIS.

WINDOW-WASHING DEVICE.

1,259,479. Specification of Letters Patent. Patented Mar. 19, 1918.

Application filed October 27, 1916. Serial No. 128,127.

To all whom it may concern:

Be it known that we, GIUSEPPE BERTOLINI and TOMASSO CAPPELLETTI, subjects of the King of Italy, and residents of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Window-Washing Devices, of which the following is a specification.

Our invention relates to improvements in window washing devices and has for its object the production of a device of this character through the medium of which the outer side of a window may be readily and easily washed without the necessity of the operator or washer passing through the window to the outer side thereof, the construction being such as to permit of the washing of the outer side of a window by an operator positioned at the inner side of the window. A further object is the production of a device, as mentioned, which will be of durable and economical construction and efficient in use. Other objects will appear hereinafter.

The invention consists in the combinations and arrangements of parts hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings forming a part of this specification, and in which,

Figure 1 is a vertical section through a window in conjunction with which is arranged a window washing mechanism, embodying the invention,

Fig. 2 is an elevation of the construction shown in Fig. 1, viewed from the outer side of the window,

Fig. 3 is an elevation viewing the window and washing mechanism from the inner side of the window,

Fig. 4 is a section taken on substantially line *x*—*x* of Fig. 1, and

Fig. 5 is a detail section illustrating the method of actuation of the lazy tong device included in the construction.

The preferred form of construction as illustrated in the drawings is designed for use in connection with a conventional window sash 1 which is slidably mounted in a window frame 2. The mechanism comprises a guide rail 3 in the form of a T iron which is adapted to rest upon the outer sill of the window adjacent the lower edge of the window sash, the latter being raised slightly to permit of insertion or application of the mechanism. The rail 3 is held in proper position by means of hooks 4 carried thereby which are adapted for engagement with eyes or loops 5 provided upon the inner sill of the window.

Mounted for travel upon the rail 3 is a carriage 6 at the upper side of which are provided two spaced wheels 7 adapted for engagement with the upper side of said rail 3. To insure travel of the wheels 7 along the rail, said wheels are provided at their peripheries with spaced radial pins which are adapted for engagement with spaced perforations 8 formed in the rail, as seen. Also provided in the carriage at the under side thereof are four wheels 9 which are adapted to engage with the under side of the upper flange of the rail to hold the carriage securely in the travel of the same along the rail.

The wheels 7 are loosely mounted upon a shaft 10 which is rockingly mounted in the carriage 6, the inner end of said shaft being adapted to project through the opening below the window sash, as clearly shown in Fig. 1.

Coöperating with the outer end portion of the shaft 10 is a lazy tong device comprising an elongated guide arm 11 in the form of a T iron which is secured rigidly to said shaft. Coöperating with guide arm 11 is a lazy tong member 12 having angularly formed engaging fingers 13 which are adapted to slidably engage with said arm, as clearly shown in the several views. The lower fingers 14 of the lazy tong member are held fast to the arm 11 by means of pins 15, as clearly shown in Fig. 2. The arrangement is such that said lazy tong member may be extended and contracted by simply oscillating the lower diverging ends of the lowermost links of said lazy tong member. A helical tension spring 16 interposed between and connecting said lower ends of said lowermost links serves normally, to hold the lazy tong member in extended condition. Contraction of said lazy tong member is effected by means of two spaced gears 17

which are rotatably mounted upon the inner side of arm 11 adjacent the lower end thereof. Links 18 serve to connect the gears 17 with the lower ends of said lower links, as clearly shown in Fig. 5. The gears 17 mesh with an idler gear 19 which, in turn, meshes with a gear 20 which is fixed to a shaft 21 rotatably mounted in bearings provided in the lower end portion of arm 11. The arrangement is such that, through rotation of shaft 21, the divergently disposed lower ends of the lower links of the lazy tong member may be rocked upwardly in order to contract said lazy tong member. With this arrangement then it will be seen that expansion and contraction of the lazy tong member may be effected with ease and rapidity by simply rotating the shaft 21, since, when this is done, the links 18 will effect contraction of said member and the spring 16 expansion of the same. A hand wheel 21′ is provided at the inner end of shaft 21 for manual engagement.

Carried at the upper end of the lazy tong member 12 is a brush 22 which is adapted, upon actuation of said lazy tong device, to engage with the outer side of the window pane, as clearly shown in Fig. 1. The back of said brush is formed with a semi-circular slot 22′ with which slidably engage headed pins 22″ which are provided at the upper ends of the uppermost links of the lazy tong member.

Cleansing liquid is supplied to the brush 22 through the medium of a pump 23 which is mounted upon the lower end of guide arm 11, said pump being operated upon rotation or oscillation of the shaft 21. A supply pipe or hose 24 communicates with the lower end of said pump, said pipe or hose being connected with any suitable source of supply, a pipe or hose 25 extending from the upper end of said pump to the brush 22, as seen.

Pivotally connected at 26 with the inner end of shaft 10 is an angular handle 27 which is normally held in elevated position by means of a helical tension spring 28, a pawl or dog 29 pivotally connected with said handle and which is adapted to engage at its outer end with a recess 30 provided in said shaft, serving to lock said handle in operative position.

With the construction set forth it will be seen that in the washing of a window, the sash is first slightly elevated and the rail 3 arranged upon the window sill, being locked in position by hooks 4. Similar hooks 31 are preferably provided for engagement with eyes 32 provided upon the sash for locking the latter in the desired elevated position. The device having been arranged, as shown, and the water supplied through the pipe 24 to the pump 23, it is only necessary to actuate the handles 21′ and 27 in order to effect actuation of the lazy tong member, both in the way of extending and contracting the same, oscillating said member laterally and moving the same bodily along the rail in order to effect moving of the brush 22 to engagement with all parts of the window in the cleansing operation. The brush is automatically supplied with water during the actuation of the same, so that a thorough cleansing of the window is effected.

While we have illustrated and described the preferred form of construction for carrying our invention into effect, this is capable of variation and modification without departing from the spirit of the invention. We, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail ourselves of such variations and modifications as come within the scope of the appended claims.

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

1. A window washing mechanism comprising a carriage; a lazy tong device connected at its lower end with and upwardly projecting from said carriage; a brush carried by said lazy tong device; means for operating said lazy tong device to extend and contract the same in order to move said brush, said means comprising terminal links at the lower end of said lazy tong device having outwardly projecting free ends adapted, when moved vertically, to actuate said device; a pair of rotary elements operatively connected with said terminal links; and means for operating said rotary elements, substantially as described.

2. A window washing mechanism comprising a carriage; a lazy tong device connected at its lower end with and upwardly projecting from said carriage; a brush carried by said lazy tong device; means for operating said lazy tong device to extend and contract the same in order to move said brush, said means comprising terminal links at the lower end of said lazy tong device having outwardly projecting free ends adapted, when moved vertically, to actuate said device; a pair of gears operatively connected with said terminal links; and a third gear meshing with said first mentioned gears for operating the same, substantially as described.

3. A window washing mechanism comprising a carriage; a lazy tong device connected at its lower end with and upwardly projecting from said carriage; a brush carried by said lazy tong device; means for operating said lazy tong device to extend and contract the same in order to move said brush, said means comprising terminal links at the lower end of said lazy tong device having outwardly projecting free ends

adapted, when moved vertically, to actuate said device; a manually operable rotary shaft mounted in said carriage; a pair of gears in operative connection with said shaft; and links operatively connecting said gears with said free ends of said terminal links, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

GIUSEPPE BERTOLINI.
TOMASSO CAPPELLETTI.

Witnesses:
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