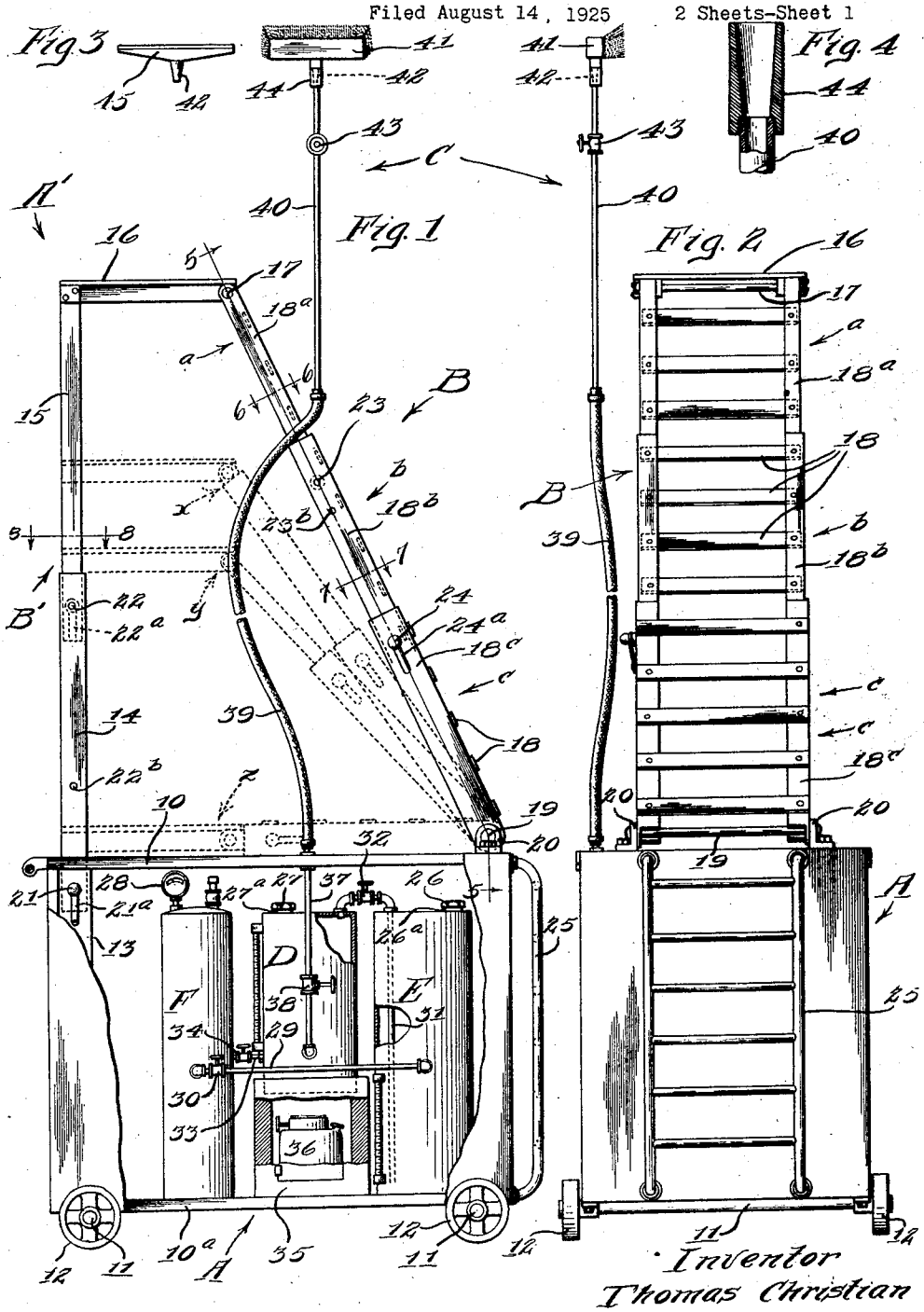
Aug. 10, 1926. 1,595,450

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PORTABLE WINDOW CLEANING APPARATUS

Filed August 14, 1925 2 Sheets-Sheet 1



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Fig. 5

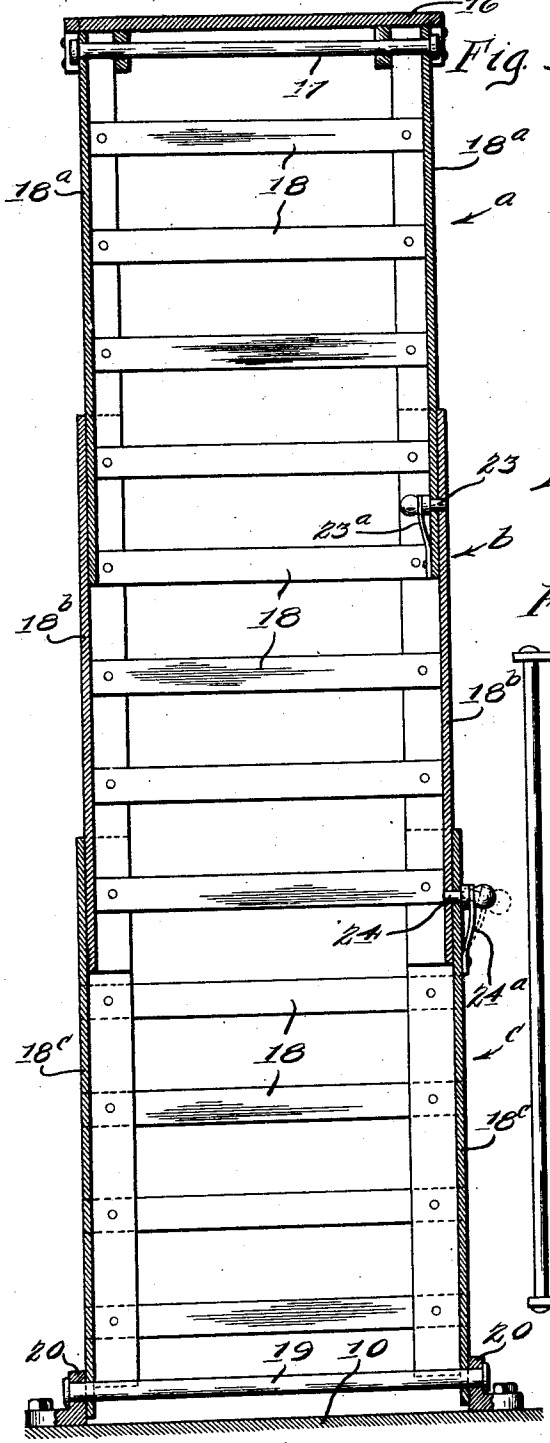


Fig. 6

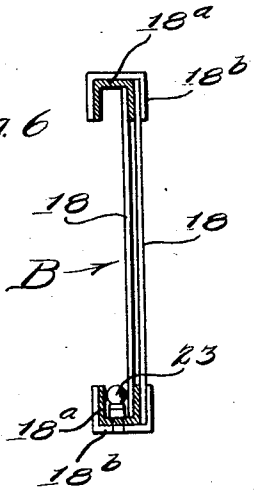


Fig. 8

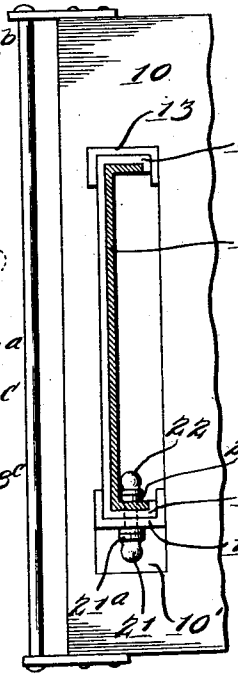
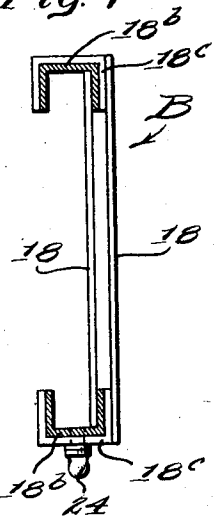


Fig. 7



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UNITED STATES PATENT OFFICE.

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PORTABLE WINDOW-CLEANING APPARATUS.

Application filed August 14, 1925. Serial No. 50,261.

My invention relates to improvements in apparatus for cleaning windows and more especially in portable types of apparatus adapted for use in cleaning large store front windows and the like.

An object of my invention is to provide a portable apparatus of the present nature supplied with simple equipment compactly arranged, the parts of which co-operate to greatly facilitate the cleaning of windows.

More specifically, it is my object to furnish a self-contained, portable scaffold particularly adapted for use in wondow cleaning provided with a fixed platform and a vertically adjustable platform carried thereby, said adjustable platform being supported by an adjustable upright to which it is rigidly secured, and by an extension ladder pivoted at one end to said fixed platform and at its other end to said adjustable platform.

With the foregoing and other objects in view, which will appear in the following description, the invention resides in the novel combination and arrangement of parts and in the details of construction hereinafter described and claimed.

In the drawings, Fig. 1 is a side elevational view of a window cleaning apparatus embodying my invention, the sides of the wheeled cabinet being broken away to disclose that part of the apparatus therein contained; Fig. 2 is an end view of the same; Fig. 3 is an elevational view of a detached squeegee; Fig. 4 is a central sectional view of the female coupling of the tool holder; Fig. 5 is a central, longitudinal sectional view of the telescopic support taken on the line 5—5 of Fig. 1; Fig. 6 is a transverse sectional view of the ladder support taken on the line 6—6 of Fig. 1; Fig. 7 is a similar view taken on the line 7—7 of Fig. 1 and Fig. 8 is a transverse sectional view of extensible support members taken on the line 8—8 of Fig. 1.

Having reference to the drawings, it will be observed that I employ a cabinet A which is supported upon a pair of axles 11 supplied with wheels 12 at the ends thereof. Carried by the cabinet A is a vertically adjustable scaffold A′, which includes an extensible standard B′, an extension ladder B and a platform 16 carried by said standard and ladder. The standard B′ includes a pair of upright channel guides 13 secured at their upper and lower ends to the top 10 and bottom 10^a of the cabinet A. (Figs. 1 and 8.) Telescoped within these guides 13 is a channel member 14. A second channel member 15, telescoped within the channel member 14, is rigidly secured at its upper extremity to one end of the platform 16. The opposite end of said platform 16 is hingedly connected with the upper extremity of a section *a* of the extension ladder B by means of a shaft 17, said section *a* being the innermost of two complementary ladder sections *b*, *c*. These ladder sections *a*, *b*, *c*, comprise paired channel irons 18^a, 18^b, 18^c, and cross bars 18, the outermost section *c* being hingedly mounted at one end upon the top 10 of the cabinet A by means of a shaft 19 reaching through the channel irons 18^c and mounted at its ends in bearings 20.

In Fig. 1, the platform 16 is shown at its highest position and hence the telescopic channel members 14, 15 and also the ladder sections *a*, *b*, occupy their limiting extended positions. It will be seen that the support member 14 is held in its extended position with respect to the guides 13 by means of a releasable lock-pin 21, similar to those numbered 23 and 24 in Fig. 5, reaching through the web of one of said guides and also through one flange of the member 14, said pin being yieldingly maintained in locking relation by means of a leaf spring 21^a, which constitutes a mounting for said pin 21 and is secured to said guide 13. (Figs. 1 and 8). To maintain the channel member 15 in extended position with respect to its companion member 14, I provide a locking device comprising a lock-pin 22 similar to those numbered 23 and 24 in Fig. 5 normally extending through flanges of the members 14, 15 and yieldingly held in such locking relation by means of a spring 22^a secured to the channel member 15. I use spring actuated lock-pins 23, 24 to hold the ladder sections *a*, *b*, in extended, supporting position. The pin 23 reaches through webs of channels 18^a, 18^b, and is yieldingly held in locking relation by means of a leaf spring 23^a secured to the channel 18^a and the pin 24 reaches through webs of channels 18^b, 18^c and is similarly held by means of a spring 24^a secured to the channel 18^c. To lower the platform 16 to the dotted position *x* (Fig. 1) it

is only necessary to release the lock-pin 23 of the ladder B and the lock-pin 22 of the standard B′. The ladder section *a* will then telescope within the ladder section *b* and the channel member 15 will telescope within the channel member 14. In this position, an aperture 22ᵇ, formed in the channel member 14 (Fig. 1) receives the lock-pin 22 on the channel member 15, and the ends of the shaft 17 bear upon the upper ends of channels 18ᵇ. To lower the platform 16 to the dotted position *v* it is only necessary to release the lock-pin 24 of the ladder B and the lock-pin 22 of the standard B′. The ladder section *b* will telescope within the section *c* and the channel member 15 within the channel member 14 with the margins of the platform 16 resting upon the upper extremities of the channel members 14. The lock-pin 23 on the ladder section 18ᵃ will be carried into engagement with an aperture 23ᵇ in the channel 18ᵇ. To completely depress the platform 16 (dotted line position *z*, Fig. 1), the lock-pin 21 of the standard B′ and the lock-pin 24 of ladder B are released, the former pin being accessible through an opening 10′ in the top 10 of the cabinet B. The channel members 14, 15 then become completely sheathed within the guides 13 and the ladder sections *a*, *b* telescoped within the section *c*. The erection of the scaffold A′ requires only a reversal of the operations just described for lowering said scaffold. To facilitate mounting the ladder B I supply a fixed ladder 25 at the end of the cabinet A.

A fountain brush C adapted to be manipulated in the hands of a user on the scaffold B′ is supplied with hot water from equipment housed within the cabinet A. This equipment includes three pressure tanks, namely, a water service tank D, a water storage tank E and an air tank F. A cap 26, normally sealing a filler neck 26ᵃ of the storage tank E is removed to permit of the charging of said tank with water. A similar cap 27, normally closing with a filler neck 27ᵃ of the service tank D also may be removed to permit of the filling of said tank, when it is desired initially to change the apparatus with water in maximum quantity or to charge the service tank D only. The air tank F is supplied with an inlet valve through which air is introduced as by means of a pump or outer source of compressed air supply. An air gauge, 28, fitted to the tank F apprises the user of the pressure of the air therein contained. A pipe 29, provided with a cut-off valve 30 connects the air tank F with the water storage tank E and feeds air to said latter tank, when said valve 30 is open. A pipe 31 rising from a point near the bottom of the water storage tank extends through the top thereof and connects with the service tank D at the top of said tank, a cut-off valve 32 being fitted in said pipe. A pipe 33 connecting the air tank F with service tank D is supplied with a cut-off valve 34. The air tank F and water storage tank E rest upon the floor of the cabinet A. The service tank D rests upon the upper open end of a lamp housing 35 in which a lamp 36 or other suitable heating element is enclosed, said lamp housing and said service tank being close to both of the tanks E, F. Tapped into the lower portion of the service tank D is a pipe 37, the same rising through the top 10 of the cabinet A and fitted with a cut-off valve 38. A long hose 39 connects the upper end of said pipe 37 with a tubular handle 40 of the fountain brush C. This brush C in addition to said tubular handle, includes a brush head 41 having a tapered shank 42 thereon. Fitted medially of the handle 40 is a cut-off valve 43 and at the free end of said handle is a female coupling 44, which complements said shank 42 of said brush head.

Though employed primarily to heat the service tank D directly, the lamp 36 also indirectly heats the air tank F and storage tank E.

In using the apparatus at its capacity, the valve 30 in the air pipe 29 is closed and the valve 32 in the water pipe 31 opened. Having access to the interior of the cabinet through a suitable door (not shown), the user fills the service tank D and the storage tank E, with water, the caps 26, 27 being replaced on the filler necks 26ᵃ, 27ᵃ after said tanks are filled. The air tank F is then charged with air under pressure and the lamp 36 lighted to heat the water in the service tank. Upon opening the valve 30 in the air pipe 29, heated water from the service tank D is forced through the hose 39 to the fountain brush C, the force of air from the tank F set up within the storage tank E and transmitted to the service tank D operating to force all of the water from said two tanks and discharge it through the brush C, under control of the valve 43 in the brush handle 40. Having put into working order the water supplying and heating equipment within the cabinet A, the user wheels the apparatus to the site of his work. After suitably elevating the scaffold A′, the user, carrying the brush C mounts the platform 16 by way of the ladder B. In manipulating the brush C to wash a window, the flow of water from the brush head 41 is controlled, as desired, by means of the valve 43 in the brush handle. After washing a window, and having closed said valve 43, the brush head 41 may be slipped from the coupling 44 and a squeegee tool 45 inserted therein for use in drying the window through the medium of the brush handle 40.

When only a small quantity of water is de-

sired, the service tank D alone is filled, the valves 30, 32 being closed and the valve 34 opened. Under these conditions air is fed directly from the air tank F to the service tank D to set up sufficient pressure in the latter tank to force the water therefrom to the brush C.

Preparatory to moving from one site to another, the scaffold A' may be collapsed upon the top of the cabinet A (dotted lines, Fig. 1), which supplies a platform for the collapsed scaffold and elevated footing for a user.

The advantages resident in my window cleaning apparatus may be readily appreciated in considering how effectively it may be used in cleaning a series of department store plate glass windows. In the usual method of carrying out such work, a water pail is used, the same being required to be continually replenished with hot water from some source within the building and a ladder must be carried from one window to another. These tedious and laborious steps are eliminated by the use of my improved apparatus, which presents a compact, portable device, supplied with all the necessary equipment, making it possible for one workman to quickly and effectively clean a series of the largest types of windows.

Changes in the specific form of my invention, as herein disclosed, may be made within the scope of what is claimed without departing from the spirit of my invention.

Having described my invention, what I claim as new and desire to protect by Letters Patent is:

In an apparatus of the class described, a wheeled structure including a platform, a vertically adjustable scaffold comprising an extensible standard, an extension ladder and a second platform carried by said standard and ladder, said ladder being pivoted at its base to said first platform at one end thereof and at its top to said second platform, said standard being collapsible beneath said first platform at the other end thereof and said second platform and ladder adapted to be lowered into coplaner relation immediately above said first platform.

In testimony whereof, I have signed my name to this specification.

THOMAS CHRISTIAN.