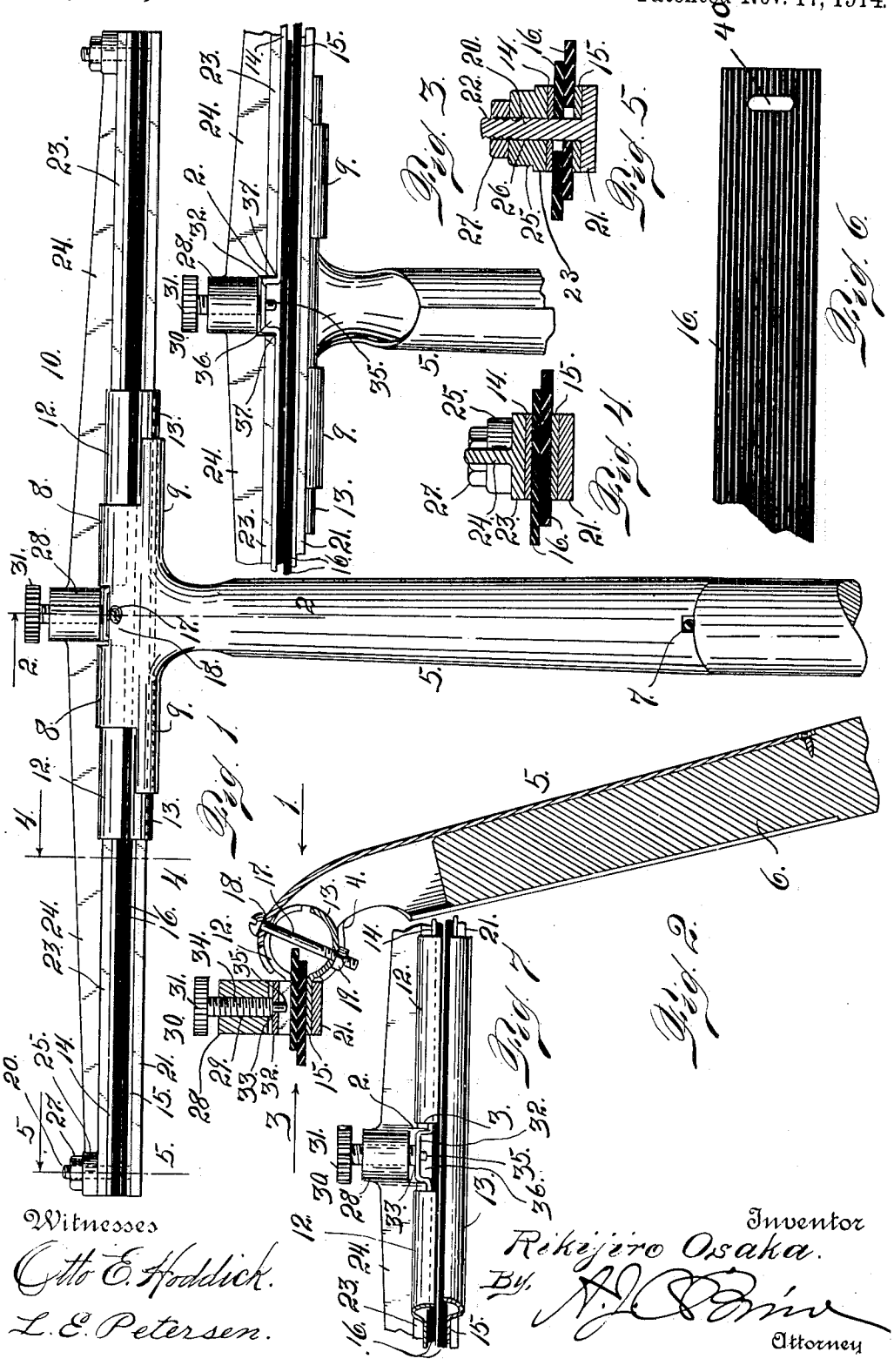
R. OSAKA.

WINDOW CLEANER.

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1,117,895.

Patented Nov. 17, 1914.



Witnesses

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RIKIJIRO OSAKA, OF DENVER, COLORADO.

WINDOW-CLEANER.

1,117,895. Specification of Letters Patent. Patented Nov. 17, 1914.

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To all whom it may concern:

Be it known that I, RIKIJIRO OSAKA, a subject of the Emperor of Japan, residing in the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in window cleaners of the type in which a rubber strip or strips clamped between metal parts are employed.

My improvement consists of a novel construction of a device of this character, whereby all of its parts are readily detachable from one another, thus making it practicable to renew any part when it becomes worn or broken at exceedingly small cost as compared to the cost of repairing instruments of this class as heretofore constructed, at least so far as I am aware.

In my improvement four longitudinally disposed relatively narrow metal plates are employed. Two of these plates are adjacent and in contact with the strips, two of the latter being illustrated in the drawing. The metal members which are in contact with the rubber strips are respectively provided with upper and lower curved parts which project rearwardly from the body of the device, the two curved parts together forming an approximately circular structure, to which a handle is secured, the handle being provided with coöperating similarly curved members engaging the said members of the clamping strips exteriorly, a screw bolt or other suitable fastening device being employed to connect the engaging coöperating parts of the handle and the head of the device.

Having briefly outlined my improved construction, I will proceed to describe the same in detail, reference being made to the accompanying drawing in which is illustrated an embodiment thereof.

In this drawing—Figure 1 is a rear elevation, of the device. Fig. 2 is a section taken on the line 2—2, Fig. 1. Fig. 3 is a fragmentary front view of the device looking in the direction of arrow 3, Fig. 2. Figs. 4 and 5 are sections taken on the lines 4—4, and 5—5, of Fig. 1. Fig. 6 is a fragmentary detail view of one of the rubber strips employed. Fig. 7 is a fragmentary view in elevation of the center part of the head with the handle removed, the view being taken from the rear.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate the hollow metal handle member of the structure which when desired, is used in connection with a wood member 6 whose upper extremity is inserted and secured therein by means of a suitable fastening device 7. The upper extremity of the hollow metal member 5, merges into upper and lower curved sheet metal parts 8 and 9, there being two parts 8, one arranged on each side of the center of the handle. These parts are convexly curved exteriorly. There are also two parts 9, one arranged on each side of the handle member and extending longitudinally of the head 10 of the device. These parts 9 are also convexly curved exteriorly and form with the parts 8 an approximately cylindrical tubular structure adapted to grasp exteriorly correspondingly curved parts 12 and 13 which extend rearwardly from the plates 14 and 15 respectively, the last named plates extending the entire length of the head of the device and being indirect contact with the rubber strips 16. The handle member is connected with the head by means of a bolt 17 which is passed through registering openings formed in the engaging part of the handle and the adjacent part 13 of the plate 15.

As illustrated in the drawing, the center and lower part of the upper extremity of the handle is cut away as shown at 4 and it is into this opening or space formed by so cutting away the handle that the protruding extremity of the screw bolt 17 enters when the parts are connected. This bolt is held in place by a nut 19 which is secured on the protruding extremity of the bolt and should be so adjusted as to clamp the engaging parts of the handle and head securely together. These engaging parts have considerable yielding capacity, thus making it practicable to clamp them securely together by the adjustment of the nut. The two parts 14 and 15 are further tightly secured in contact with the rubber strips by means of upwardly extending shanks 20

formed integral with the lowermost metal member 21, the upper extremities of these shanks being threaded as shown at 22. The shanks 20 passs through openings formed in the plate 15, the rubber strips 16, the plate 14, and the uppermost plate 23, the latter being equipped with a longitudinally disposed upwardly projecting web 24 which is reinforced at its extremities to form circular bosses 25 which are perforated as shown at 26 to receive the said shanks. The threaded parts of these shanks extend above the bosses 25 and nuts 27 are applied thereto for securing the parts of the head tightly together in the assembled relation.

The web 24 increases slightly in width from the bosses 25 toward the center of the head where it merges into a relatively heavy boss 28 which has a perforation 29 interiorly threaded to receive the shank of a screw 30 having a relatively large milled head 31 to facilitate adjustment. Immediately below this boss 28, the clamping plate 14 is bent upwardly to form an inverted U-shaped member 32 whose upper surface is engaged by a shoulder 33 formed on the lower portion of the shank 34 of the screw 30. The part 32 of the plate is perforated to receive a reduced extension 35 of the screw shank, this extension as well as the perforation which it engages, being devoid of screw threads. This part 32 is arranged adjacent a space 36 which the part 32 in conjunction with the adjacent part of one of the rubber strips 16 incloses, the said space however, being open at the front and rear of the head. By virtue of this construction, the adjustment of the screw 30 when turned in the direction to tighten the screw, engages the upper portion of the part 32 with sufficient force to cause the plate 14 to tightly clamp the adjacent rubber strip at the angles or bends 37 where the part 32 merges into the body portions of the metal plate. By virtue of this construction, the rubber strips are tightly clamped when assembled and arranged in coöperative relation with the other parts of the head. The part 12 of the plate 14 is centrally cut away as shown at 3 directly in the rear of the part 32 of this plate. Furthermore, the plate 23 is cut out as shown at 2 to make room for the struck-up part 32 of the plate 14.

In my improved construction, I prefer to employ two flexible cleaning strips 16. These strips are preferably composed of rubber or similar material. Each strip is provided at its opposite extremities with openings 40 transversely elongated to permit lateral adjustment. By assembling these parts as illustrated in Figs. 4 and 5, one may project forwardly ahead of the other, whereby it is subjected to a greater part of the wear when the device is in use. After this part becomes worn, the positions of the two devices may be quickly reversed by simply loosening the screw 30 and the nuts 27. Attention is called to the fact that these cleaning strips when worn out, may be readily removed and new strips substituted. By virtue of this construction, the wear of the device is practically limited to the cleaning strips themselves, as the other parts are virtually indestructible.

Having thus described my invention, what I claim is:

1. The combination of cleaning strips, clamping plates applied thereto from opposite sides, stiffening plates applied exteriorly to the clamping plates, one of the stiffening plates having a longitudinally disposed webb equipped at its ends with bosses, and fastening devices passed through openings formed in the ends of the flexible strips and clamping plates, and the end bosses of the webbed stiffening plate.

2. A cleaning device, composed of flexible strips, clamping plates applied to the said strips from opposite sides, stiffening plates applied exteriorly to the clamping plates, one of the stiffening plates having center and end bosses, fastening devices passed through registering openings formed in the flexible strips and the clamping plates, and the end bosses of one of the stiffening plates, the center boss having a threaded perforation and a screw inserted therein, and provided with a shoulder which engages the adjacent clamping plate, the latter having its central part offset where it is engaged by the said screw to facilitate the performance of the clamping function.

3. The combination of cleaning strips, clamping plates applied thereto from opposite sides, a stiffening plate applied exteriorly to one of said clamping plates, said stiffening plate having a longitudinally disposed web thereon, and means mounted upon said web for securing the cleaning strips between the clamping plates, substantially as described.

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

RIKIJIRO OSAKA.

Witnesses:
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