C. H. FARLEY.

DEVICE FOR HANDLING PLATE GLASS.

APPLICATION FILED AUG. 21, 1911.

**1,025,692.**

Patented May 7, 1912.

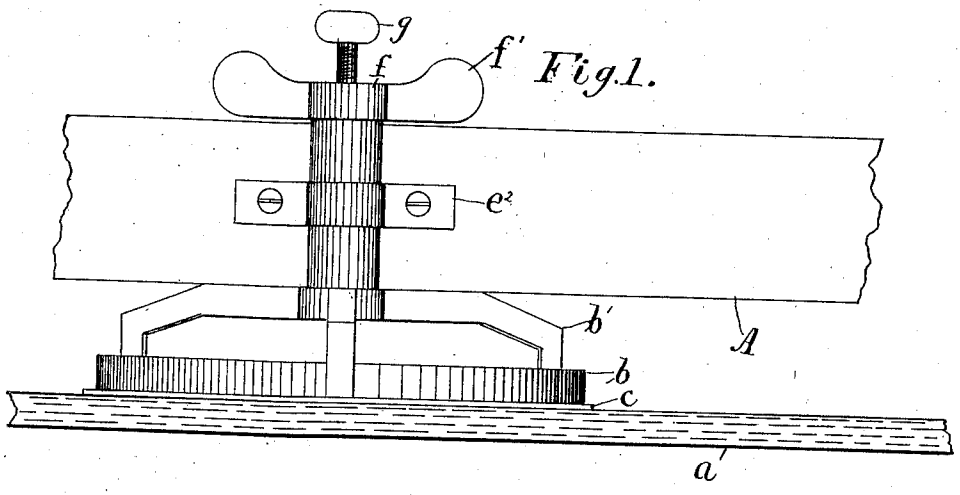


Fig. 1.

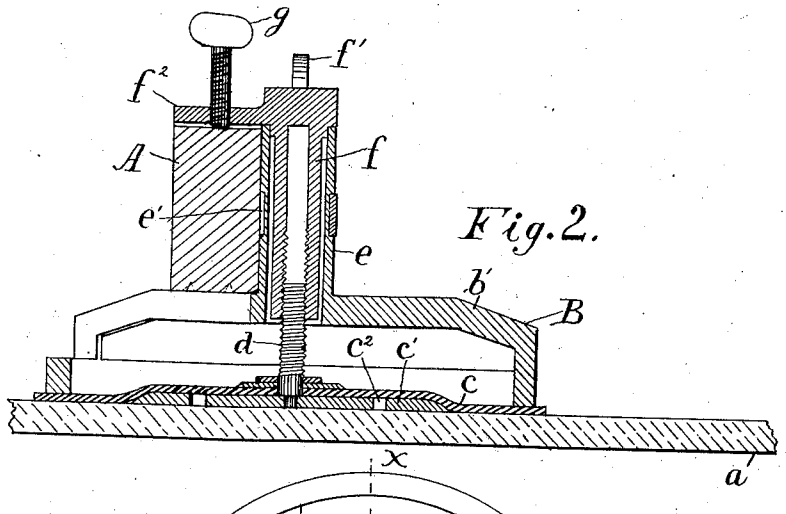


Fig. 2.

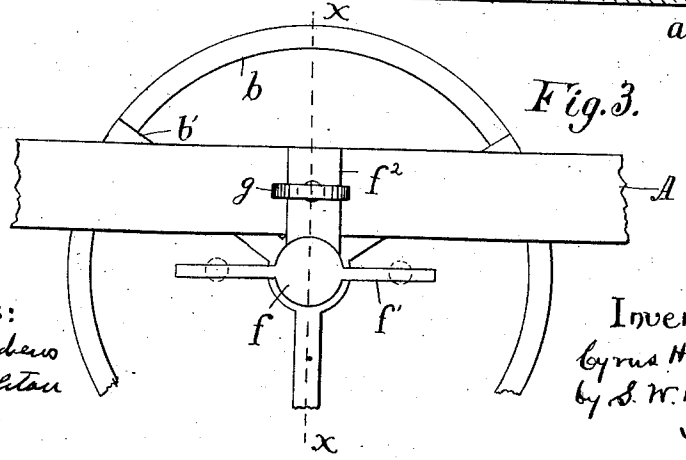


Fig. 3.

Witnesses:
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# UNITED STATES PATENT OFFICE.

CYRUS H. FARLEY, OF PORTLAND, MAINE.

## DEVICE FOR HANDLING PLATE-GLASS.

1,025,692. Specification of Letters Patent. Patented May 7, 1912.

Application filed August 21, 1911. Serial No. 645,166.

*To all whom it may concern:*

Be it known that I, CYRUS H. FARLEY, of Portland, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Devices for Handling Plate-Glass, of which the following is a specification.

My invention relates to a device for handling plate glass and particularly to an improved construction of the apparatus shown in Letters Patent No. 980,084, granted to me December 27, 1910.

In the original patent referred to, I made use of a suction head composed of a ring having on its upper side a spider, forming substantially an inverted cup shaped head with a central hub having an annular groove. A flexible rubber diaphragm made a tight joint between the head and the glass and a vacuum was produced beneath this diaphragm by raising its central portion by means of a supporting plate and screw threaded spindle which extended upward through the hub and was moved vertically by means of a thumb nut. The head was removably secured to a connecting strip by means of a clamp which consisted of a vertical bar having a bifurcated flange on its lower end which embraced the hub and fitted into the annular groove, the upper end of said bar having an offset which was provided with a set screw adapted to impinge on the top of the connecting strip.

The object of my invention is to simplify this construction by eliminating the separate clamp and utilizing the thumb nut as a means of holding the connecting strip.

The invention consists of the features of construction as hereinafter set forth and claimed.

My invention is best illustrated by reference to the accompanying drawing which shows an apparatus for handling plate glass constructed according to my invention.

In the drawing, Figure 1 is a side elevation of one of my vacuum heads secured to the connecting bar. Fig. 2 is a section on the line $x$ $x$ of Fig. 3, and Fig. 3 is a plan view with a portion cut away.

In the drawing, $a$ represents the plate glass which is to be handled, A the connecting strip and B represents generally the suction head, $b$ being the ring and $b'$ the arms of the spider or skeleton connection.

$c$ is the rubber diaphragm, $c'$ is the supporting plate and $d$ is the screw threaded spindle by which the supporting plate is lifted.

The parts so far described are common to my original apparatus and the features covered by my present invention will be now described.

The hub $e$ which forms an upward extension to the center of the spider is preferably elongated so that it is substantially the same height as the width of the connecting bar. It has an annular recess $e'$ on the outside and a cylindrical opening in the inside. Within this cylindrical opening is journaled the thumb nut $f$ which is preferably made long enough to reach the lower end of the hub. The lower end of the thumb nut engages the upper end of the spindle $d$. Ears $f'$ are formed on the thumb nut. The connecting strip is held down onto the spider by means of an offset $f^2$ on the upper end of the thumb nut, a set screw $g$ extending through this offset and being adapted to impinge on the top of the connecting strip. Spurs in the arms of the spider hold the connecting strip from slipping.

In using the device it is sometimes desirable to have the heads permanently secured to the connecting strip, and for this purpose, I provide means on the hub for securing the head to the side of the connecting strip. As here shown, I form in the hub an annular groove $e'$ in which fits a clamp $e^2$, the ends of which are secured to the side of the strip A.

In using the device, as many heads as necessary are secured to the strip either permanently or temporarily so that their position may be readily changed. When the heads are to be temporarily secured to the strip, they are applied to the glass and lined up so that the strip will rest fairly on each one close to the hub. The thumb nut is then turned down raising the plate $c'$ and creating a vacuum and causing the heads to adhere to the glass. In screwing down the thumb nut, it is turned and left so that the offset $f^2$ extends over the top edge of the strip A. The latter is then secured in place by screwing down the set screw $g$.

In practice, it is desirable to know whether there is a vacuum under the diaphragm and if the head is adhering to the glass. In order that this fact may be plainly indicated from the outside, I form two holes $c^2$ in the supporting plate $c'$ into which the rubber of the diaphragm is de-

pressed by the external air pressure. When these depressions are seen it indicates that the head is secured to the glass and that the vacuum is present.

I claim;—

1. In a device for handling plate glass, the combination of a connecting bar, an inverted cup shaped suction head having a vertical hollow hub on its upper side, a flexible diaphragm, a screw threaded spindle connected with said diaphragm and extending upward into said hub, a thumb nut journaled in the upper end of said hub and engaging said spindle, said thumb nut having a horizontal offset and a set screw extending through said offset and adapted to impinge on the top of said bar.

2. In a device for handling plate glass, the combination of a connecting bar, an inverted cup-shaped suction head having a vertical hollow hub on its upper side, a flexible diaphragm, a screw threaded spindle connected with said diaphragm and extending upward into said hub, a thumb nut journaled in the upper end of said hub and engaging said spindle, said thumb nut having a horizontal offset, a set screw extending through said offset and being adapted to impinge on the top of said bar, and means for securing the hub to the face of the connecting bar.

3. In a device for handling plate glass, the combination of an inverted cup-shaped suction head, a flexible diaphragm beneath said suction head and adapted to make a tight joint between the head and the glass, a supporting plate beneath said diaphragm having openings therein, a spindle and means for lifting said plate to create a vacuum beneath said diaphragm.

In testimony whereof I have affixed my signature, in presence of two witnesses.

CYRUS H. FARLEY.

Witnesses:
C. B. CREIGHTON,
S. W. BATES.