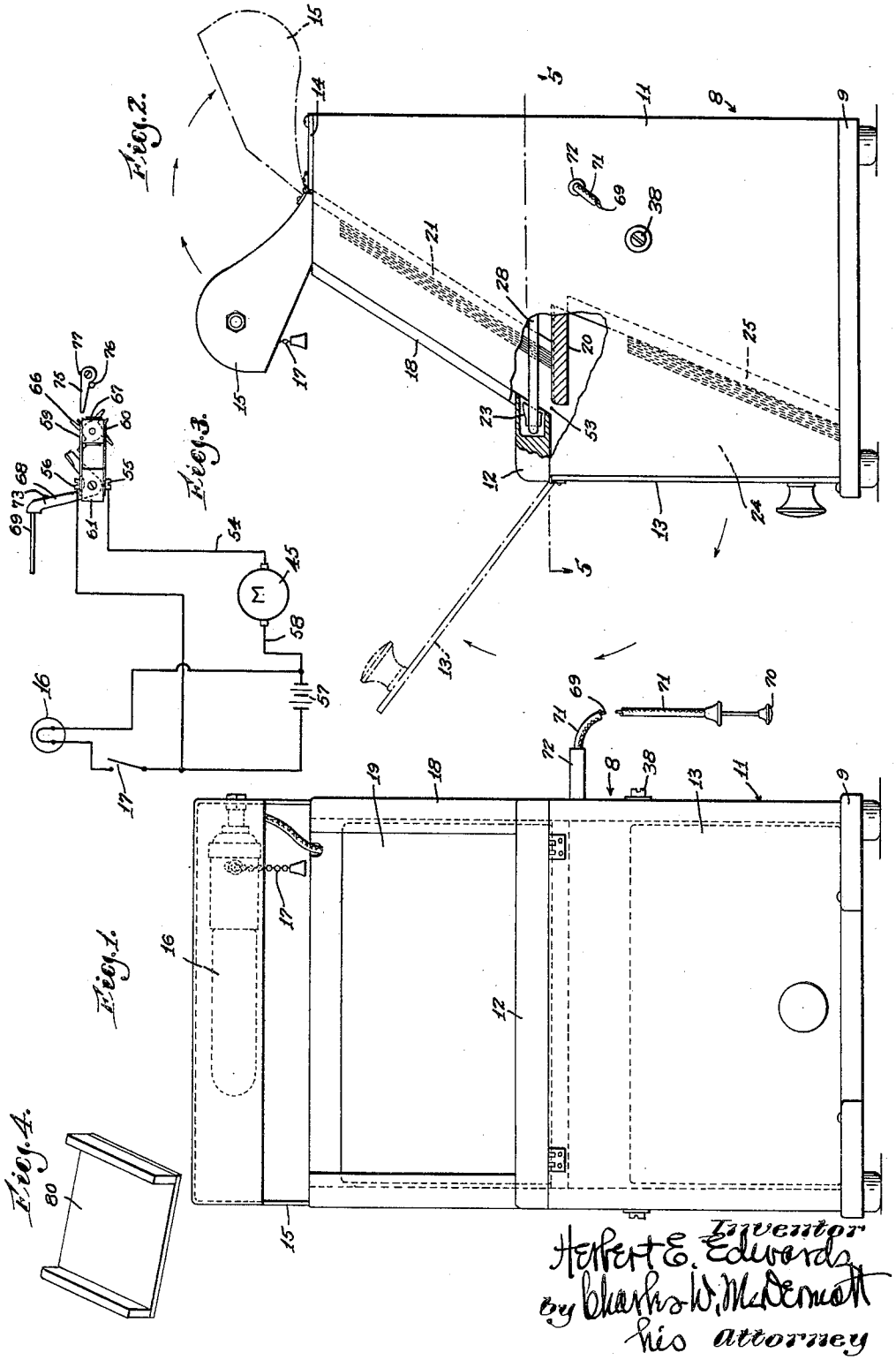
April 25, 1933. H. E. EDWARDS 1,905,962

EXHIBITOR

Filed Oct. 8, 1932 2 Sheets-Sheet 1



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EXHIBITOR

Filed Oct. 8, 1932 2 Sheets-Sheet 2

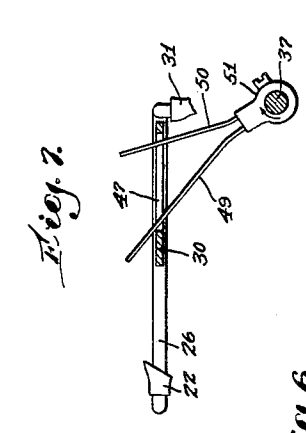


Fig. 7.

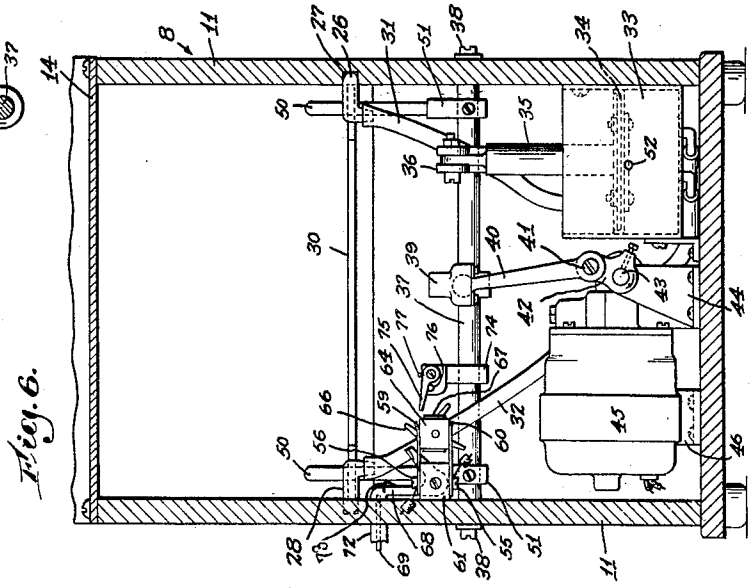


Fig. 6.

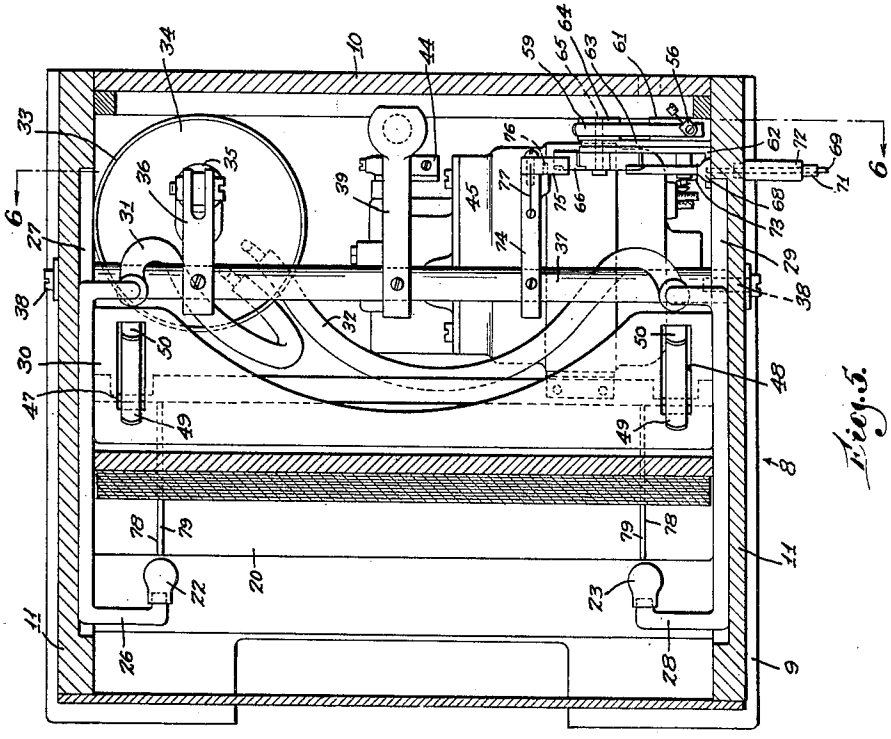


Fig. 5.

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UNITED STATES PATENT OFFICE

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EXHIBITOR

Application filed October 8, 1932. Serial No. 636,875.

The present invention relates to exhibitors.

In the shoe industry there are a number of commercial pattern concerns which function to design a shoe and then, if the design is sold to a shoe manufacturer, make the patterns which are used in the commercial manufacture of the designed shoe. The designs, large in number, are submitted to the manufacturer usually in the show room of the designer, in the form of sketches, carefully and artistically executed, illustrating the designer's idea of what the proposed shoes will look like when finished. These sketches are handed to the shoe manufacturer who paws them over in an attempt to find some that appeal to him aesthetically or some that he believes would appeal to the customers with whom he deals. This constant handling soon renders the sketches unfit for use. Moreover, this method of handling a large number of loose sketches is apt to force the shoe manufacturer to depend on snap judgment for his selection, sometimes with disastrous results. Often the sketches are viewed by a committee so that the danger of selecting an unpopular design may be minimized. Because of the large number of sketches to be handled it is difficult for the shoe manufacturer, or his committee, to concentrate properly on the features of any one design.

The principal object of the present invention is to produce an exhibitor which will handle automatically a large number of sketches or other exhibits and display them successively in a manner allowing the observer to concentrate his attention on the exhibit being displayed.

To the accomplishment of this object, and such others as may appear hereinafter, the various features of the present invention reside in certain devices, combinations and arrangements of parts hereinafter described and then set forth broadly and in detail in the appended claims which possess advantages readily apparent to those skilled in the art.

The various features of the present invention will be readily understood from an inspection of the accompanying drawings, illustrating the best form of the invention at present known to the inventor, in which,

Figure 1 is a view in front elevation;

Fig. 2 is a view in right side elevation, partly broken away to show interior construction;

Fig. 3 is a diagrammatic view of the wiring circuit;

Fig. 4 is a view in perspective of a holder for narrow exhibits;

Fig. 5 is a view in sectional plan on the line 5—5, Fig. 2;

Fig. 6 is a view in sectional elevation on the line 6—6, Fig. 5, and

Fig. 7 is a detail view in right side elevation, partly in section, showing the connections between one of the suction mouths and the driving shaft therefor.

Described in general terms the exhibitor comprises an attractive cabinet which is placed in the show room of the designer directly in front of a shoe manufacturer, or his committee, who look, through a window in the cabinet, into the interior thereof and observe the sketch forming the outermost one of a plurality of sketches which are stacked, upended, in a pile on a support within the cabinet. The outermost sketch in the pile is illuminated by an electric lamp carried by the cabinet which is provided with an electric circuit adapted to be connected, by a plug in a customary manner, with the designer's lighting circuit.

While the manufacturer observes the outermost sketch in the pile he holds in his hands a motor starting device, which he operates, when the outermost sketch has been observed for any period of time the manufacturer desires, to start an electric motor which reciprocates a plurality of suction mouths into engagement with the outermost sketch in the pile. After the suction mouths engage the outermost sketch in the pile, the mouths are connected to an air-exhausting system with the result that when the mouths are returned to their original position they withdraw the sketch, with which they are engaged, from the pile. When the mouths return to their original position, the motor is stopped automatically, the suction is broken,

and the sketch withdrawn from the pile drops, under the influence of gravity, into a compartment in the bottom of the cabinet. The succeeding outermost sketch in the pile may then be observed. If it is one that does not appeal to the manufacturer for any reason the motor starting device may be operated and the sketch whisked out of sight by the suction mouths. If the succeeding outermost sketch in the pile is one that appeals to the manufacturer he may observe it as long as he cares to before operating the motor starting device. When the manufacturer finds a design he wishes to study minutely before making a decision on its purchase, the hood may be swung backwardly and the coveted design withdrawn manually from the pile.

Usually the exhibits in the stack illustrate a number of different styles, each comprising a number of different designs. For instance, the shoe designer may offer for sale designs for a one-strap shoe, designs for a pump, and designs for an oxford. It is highly desirable that all the designs for one style be inspected before the designs for another style are inspected. In using the illustrated embodiment of the present invention the designs are stacked originally in a sequence so that the various styles may be inspected successively. As each design is inspected and rejected it is withdrawn from the pile and transferred to a compartment from which the rejected designs may be removed for purposes of reexhibition, thus insuring the maintenance reversed, of the sequence of the styles.

In the embodiment of the invention illustrated in the drawings the exhibits are mounted within a hollow cabinet 8 (Figs. 1 and 2) having a bottom 9, a removable back 10 (Fig. 5), and two sides 11. The front ends of the sides 11 extend downwardly and forwardly, then horizontally, and then vertically downward, forming a horizontal ledge 12 extending centrally across the front of the cabinet. The lower portion of the cabinet 8 at its front is closed normally by a door 13 which is hinged at its uppermost longitudinal edge to the bottom of the ledge 12. The top edges of the sides 11 carry a flat plate 14 to the front edge of which is hinged a reflector hood 15 for an electric lamp 16 the switch for which is operated by a chain 17 in a common manner. The front edges of the sides 11, above the ledge 12, carry a frame 18 apertured to form a window 19.

The exhibits are stacked upended in a pile, on a horizontal platform 20 extending between the sides 11. The innermost exhibit in the pile rests against a partition 21 extending laterally between the sides 11 and forwardly and downwardly between the plate 14 and the platform 20. With this construction the picture or design on the exposed face of the outermost exhibit in the pile may be viewed through the window 19 through which it is illuminated from the lamp 16.

In order to withdraw the outermost exhibit from the pile and thus expose to view another picture or design on the next exhibit in the pile, the cabinet is provided with suction mouths 22 and 23 (Fig. 5) which may be reciprocated at the will of the exhibitor into engagement with the outermost exhibit, placed under the influence of an air exhausting system, and then reciprocated in a direction to withdraw the outermost exhibit from the pile and position it in suspension clear of the platform 20 so that when the air exhausting system is restored to the influence of atmospheric air the mouths will release the withdrawn exhibit and allow it to drop under the influence of gravity into a compartment 24 from which it may be removed by opening the door 13. Usually, however, the exhibits, dropped into the compartment 24, become stacked upended in a pile the lower edge of which engages the bottom 9 with the innermost exhibit in the pile resting against a partition 25 extending downwardly and forwardly, between the sides 11, from the rear edge of the platform 20 to the bottom 9.

The left hand mouth 22 (Fig. 5) is carried by the open end of a bent pipe 26, a straight run of which is mounted to slide in a groove 27 formed in the left hand side 11. The other mouth 23 is carried similarly by a bent pipe 28 having a straight run mounted to slide in a groove 29 in the other side 11. The straight runs of the pipes 26 and 28 are connected by a flat plate 30. The rear ends of the pipes 26 and 28 are connected by flexible tubes 31 and 32, respectively, to the bottom of an open-topped cylinder 33 secured to the bottom 9 and one side 11.

Mounted to reciprocate in the cylinder 33 is a plunger 34 carried from the bottom of a rod 35. The upper end of the rod 35 is pivoted between the yoked end of an arm 36 secured to and projecting rearwardly from a horizontal shaft 37 journaled at its opposite ends on studs 38 secured to the sides 11. Projecting rearwardly from the shaft 37 is an arm 39 which is connected through a ball and socket joint to one end of a rod 40 the other end of which is pivoted on a crank pin 41 carried by a crank 42. The crank 42 is secured to one end of a shaft 43. The shaft 43 is rotated, in a pedestal bearing 44, through a common form of reduction gearing (not shown), by the armature shaft of an electric motor 45 supported by a bracket 46 from the bottom of the cabinet 8.

In order to reciprocate the plate 30 and thus move the mouths 22 and 23 into engagement with the outermost exhibit in the pile the plate 30 is provided with two slots 47 and 48 (Figs. 5 and 7). The ends of each of these slots are engaged, respectively, by two leaf

springs 49 and 50 projecting from a collar 51 secured to the shaft 37.

In the illustrated embodiment of the present invention the suction mouths 22 and 23 are normally held stationary in an inoperative position (Fig. 5). At this time the cylinder 33, below the plunger 34, is open to the atmosphere through a vent 52, (Fig. 6). When the motor 45 is started, in a manner presently to be described, the shaft 43 is rotated in a clock-wise direction, viewing Fig. 6, and the shaft 37 is oscillated in a direction to move the suction mouths backwardly into engagement with the outermost exhibit in the pile. When this occurs the springs 50 yield in order that the suction mouths may engage properly the outermost exhibit in the pile, notwithstanding its thickness. During the backward movement of the suction mouths the plunger 34 is moving downwardly in the cylinder 33, closing the vent 52 and expelling the air in the cylinder 33 below the plunger, out through the suction mouths.

When the shaft 37 is oscillated in a direction to elevate the plunger 34 in the cylinder 33 it produces a condition of unbalanced pressure therein with the result that atmospheric air presses the outermost exhibit in the pile firmly into engagement with the suction mouths which now commence to move forwardly towards the position of Fig. 5 removing the outermost exhibit bodily from the pile. At the time the suction mouths return to the position of Fig. 5 the vent 52 is uncovered and the suction is broken. As soon as the suction is broken the exhibit drops away from the suction mouths and falls through an opening 53 (Fig. 2), between the back edge of the ledge 12 and the front edge of the platform 20, down into the compartment 24.

For some exhibits it may be better to operate the motor 45 continuously so that the cycle of operations for the suction mouths may be repeated automatically. For many exhibits, particularly those having elaborate pictures or designs, it is preferred to confine the movement of the suction mouths to a single cycle so that the exhibitor may expose to view the outermost exhibit on the pile as long a period as he may desire before restarting the motor to remove the observed exhibit from the pile.

In order to start the motor 45 one of its terminal wires 54 (Fig. 3) is connected to a switch terminal 55. The other switch terminal 56 is connected through a suitable source of electricity 57 to the other motor terminal wire 58. As shown in Figs. 5 and 6 the switch terminals 55 and 56 contact electrically, respectively, with leaf springs 59 and 60 carried upon opposite sides of an insulated block 61. The block 61 is secured to a bracket 62 (Fig. 5) carried by the right side 11, there being an insulated plate 63 interposed between the block 61 and the bracket 62. The free ends of the leaf springs 59 and 60 embrace the opposite faces of an insulated block 64 secured on one end of a stub-shaft 65 journaled in the bracket 62. The other end of the stub-shaft 65 carries a four-armed star-wheel 66.

Passing through the block 64 is a metal plug 67. When the block 64 is rotated through an angle of ninety degrees the free ends of the leaf springs 59 and 60 embrace the opposite ends of the plug 67 thus connecting the motor 45 to its source of power. To rotate the block 64 and thus start the motor 45, the bracket 62 carries a bell-crank lever 68 having an arm positioned to engage one of the arms on the star-wheel 66 when the bell-crank lever 68 is turned on its pivotal connection with the bracket 62. This pivotal connection is not parallel with the shaft 65 so that when the bell-crank lever 68 is actuated its star-wheel operating arm will slide off the star-wheel to the left (Fig. 5) after imparting to it a rotation of ninety degrees.

The free end of the vertical arm of the bell-crank lever 68 is positioned to be engaged by one end of a long flexible rod 69 having an operating head 70 on its other end. This flexible rod 69, in all respects like that in use for operating the shutter in a well known type of camera, is housed in a flexible tube 71, there being a coiled spring (not shown) in the tube 71 surrounding the rod 69 to maintain the head 70 projected from the free end of the tube. The tube 71 is secured in a sleeve 72 carried by the right side wall 11.

When the head 70 is pushed towards the free end of the tube 71 the free end of the rod 69 engages the bell-crank lever 68 which rotates the star-wheel ninety degrees to position the opposite ends of the plug 67 between the free ends of the leaf springs 59 and 60 and thus start the motor 45. As soon as the motor starts the head 70 is released to permit it to return to the position of Fig. 1. When the head 70 is released the bell-crank lever 68 is restored to the position of Fig. 6 by a spring 73 (Fig. 5) coiled about the pivot pin for the bell-crank lever, and having its opposite ends engaged with the bell-crank lever and the pivot pin, respectively.

In order to stop the motor automatically at the end of one cycle of movement of the suction mouths, the shaft 37 carries an arm 74 upon the free end of which a pawl 75 is pivoted. Normally the pawl 75 is held engaged with a pin 76 by a leaf spring 77. With this construction the pawl 75 yields as it passes on its down stroke the adjacent arm of the star-wheel 66. On its up stroke the pawl 75 engages the adjacent arm of the star-wheel 66 and rotates it ninety degrees to withdraw the opposite sides of the plug 67 from between the springs 59 and 60 thus

stopping the motor with the suction mouths in the position of Fig. 5 and with the plunger 33 in the position of Fig. 6.

Merely stacking the exhibits upended in a pile provides means for retaining the pile stationary during the withdrawal of the outermost exhibit therefrom. To insure absolutely the retention of the pile stationary during the operation of the suction mouths on the outermost exhibit thereof, the platform 20 is provided with two grooves 78 securing rubber strips 79. These strips 79 engage the bottom edge of the pile and frictionally retain it stationary during the withdrawal of the outermost exhibit therefrom.

If it should be desired to display narrower exhibits they may be stacked in a pile and placed in a tray 80 (Fig. 4) which may be placed in position on the platform 20 and against the partition 21.

Nothing herein explained is to be interpreted as limiting the invention in the scope of its application to use in connection with shoe designs or with the particular apparatus or the particular mode of operation selected for purposes of illustration and explanation. While the particulars of construction herein set forth are well suited to one mechanical form of the invention, it is not limited to these details of construction, nor to the conjoint use of all its features, nor is it to be understood that these particulars are essential since they may be modified within the skill of the artisan without departing from the true scope of the actual inventions, characterizing features of which are set forth in the following claims by the intentional use of generic terms and expressions inclusive of various modifications.

What is claimed as new, is:

1. In an exhibitor, the combination with means for supporting a plurality of exhibits stacked, upended, in a pile, means for exposing to view the outermost exhibit in the pile, and automatic means for withdrawing bodily the outermost exhibit from the pile, of means for retaining the pile stationary during the withdrawal of the outermost exhibit therefrom.

2. In an exhibitor, the combination with a cabinet having upper and lower compartments normally open and closed, respectively, means for supporting in the upper compartment a plurality of exhibits stacked loosely in a pile, and means for withdrawing the outermost exhibit in the pile therefrom and transferring the withdrawn exhibit to the lower compartment, of means for retaining the pile stationary during the withdrawal of the outermost exhibit therefrom.

3. In an exhibitor, the combination with means for supporting a plurality of exhibits stacked, upended, in a pile, of suction means engageable with the outermost exhibit in the pile for withdrawing the outermost exhibit therefrom.

4. In an exhibitor, the combination with a support for a plurality of exhibits stacked, upended, in a pile, and means normally open to the atmosphere, of mechanism for reciprocating said means into engagement with the outermost exhibit in the pile, for exhausting atmospheric air from said means, and for reciprocating said means to withdraw the outermost exhibit in the pile therefrom.

5. In an exhibitor, the combination with means for supporting a plurality of exhibits stacked, upended, in a pile, mechanism having a definite cycle of operations for withdrawing the outermost exhibit in the pile therefrom and manually operated means for throwing said mechanism into operation, of automatic means for throwing said mechanism out of operation at the end of its cycle.

6. In an exhibitor, the combination with means for supporting a plurality of exhibits stacked, upended, in a pile, a plurality of suction mouths for withdrawing the outermost exhibit in the pile therefrom, and power means for reciprocating the mouths into engagement with the outermost exhibit in the pile, of yielding means interposed in the connections between the power means and the suction mouths.

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

HERBERT E. EDWARDS.