

May 16, 1933.

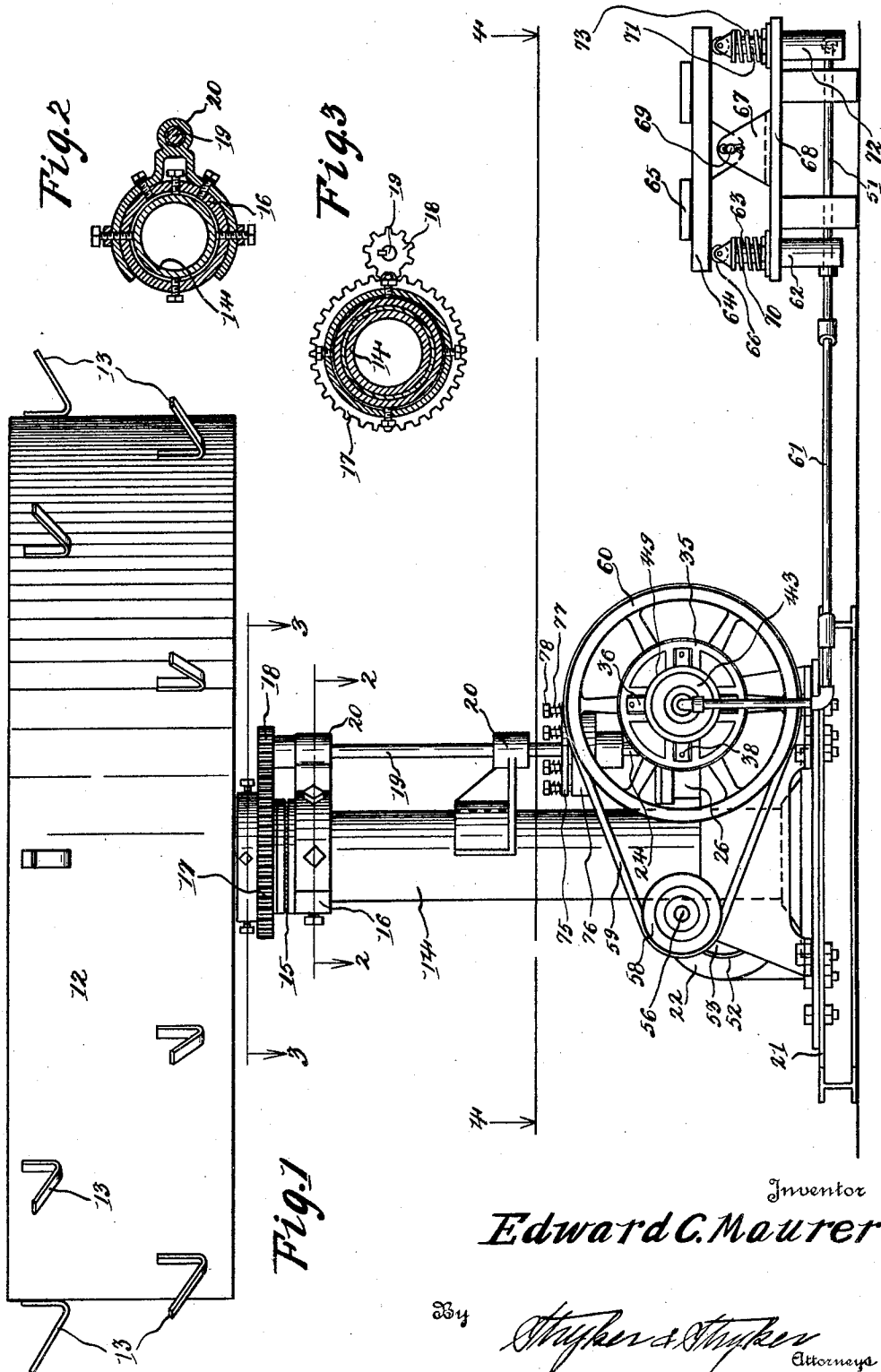
E. C. MAURER

1,909,700

ASSEMBLING REEL FOR LAUNDRIES

Filed Dec. 13, 1930

4 Sheets-Sheet 1



Inventor
Edward C. Maurer

334
Stuyker & Stuyker
Attorneys

May 16, 1933.

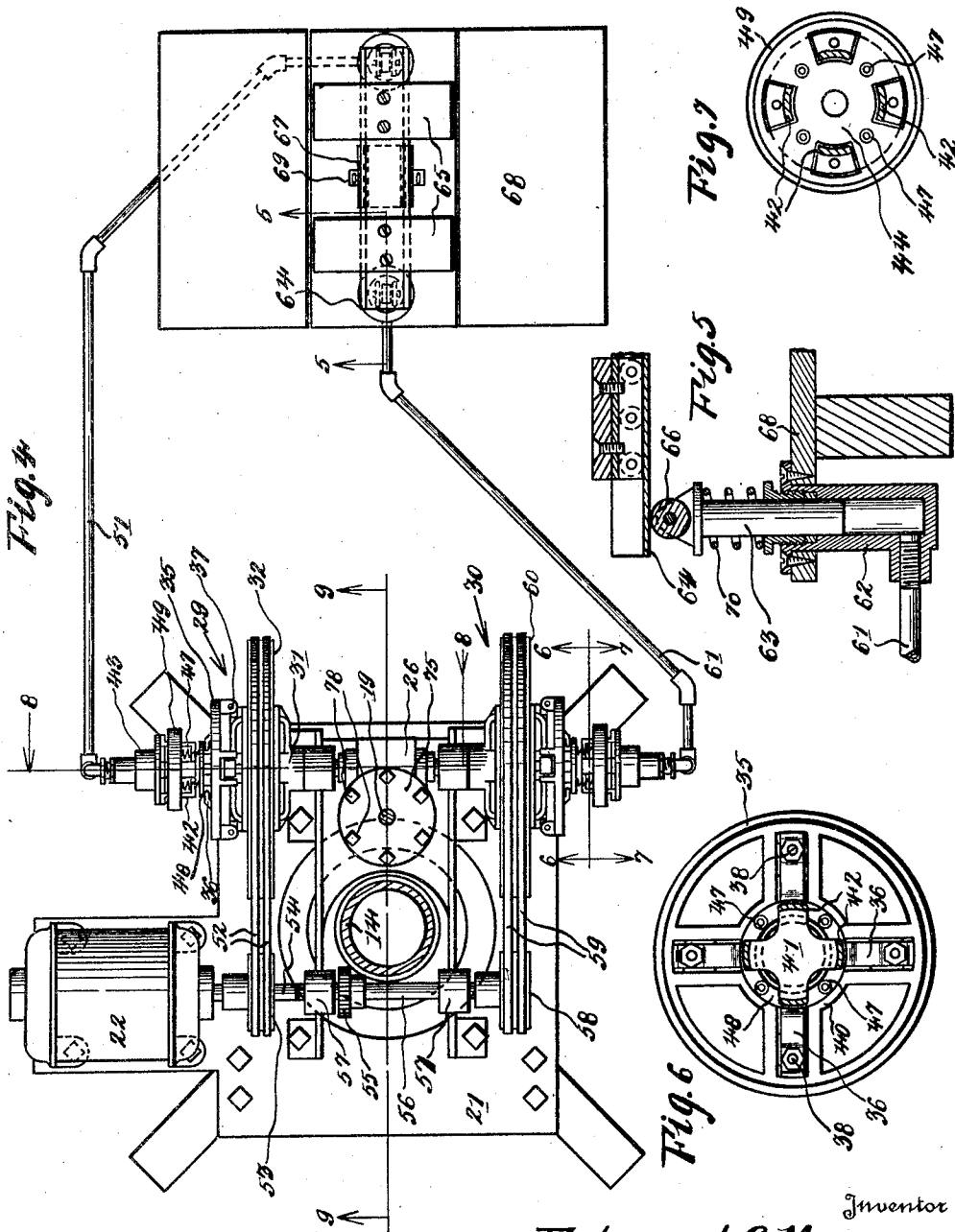
E. C. MAURER

1,909,700

ASSEMBLING REEL FOR LAUNDRIES

Filed Dec. 13, 1930

4 Sheets-Sheet 2



Inventor
Edward C. Maurer

384

Stuyker & Stuyker
Attorneys

May 16, 1933.

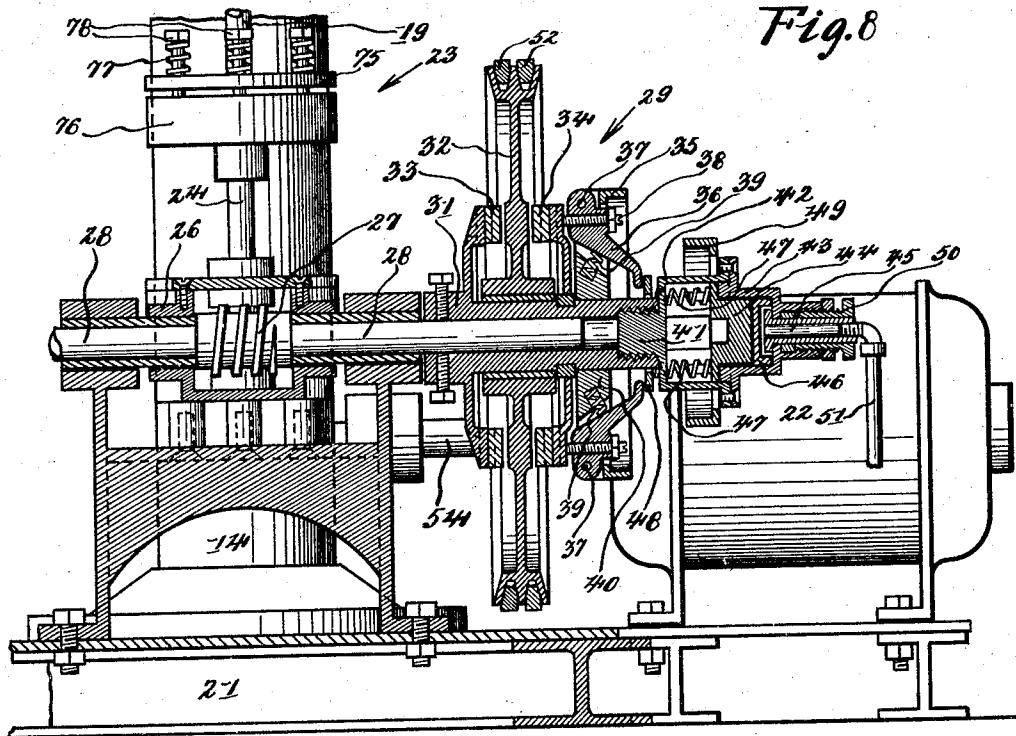
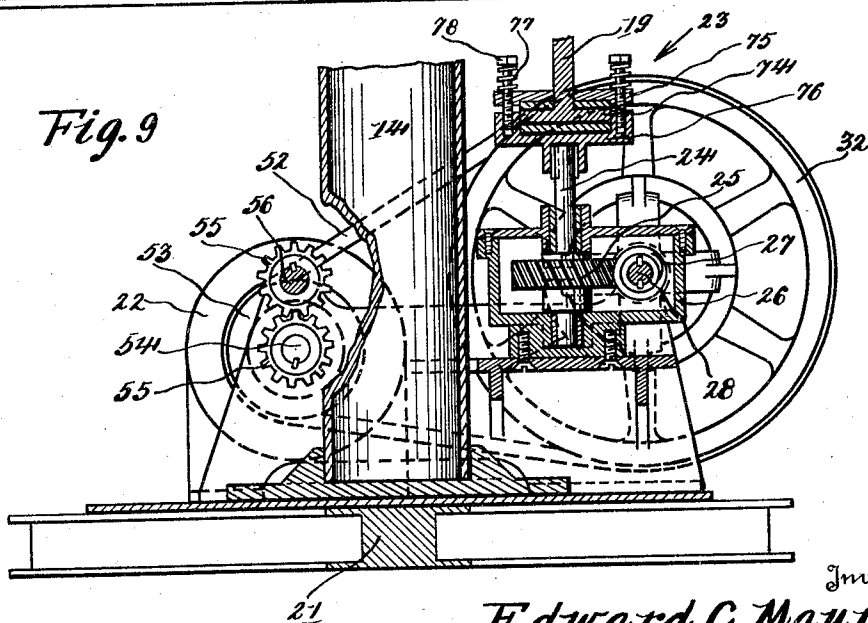
E. C. MAURER

1,909,700

ASSEMBLING REEL FOR LAUNDRIES

Filed Dec. 13, 1930

4 Sheets-Sheet 3



Inventor

Edward C. Maurer

334

Stephens & Stephens
Attorneys

May 16, 1933.

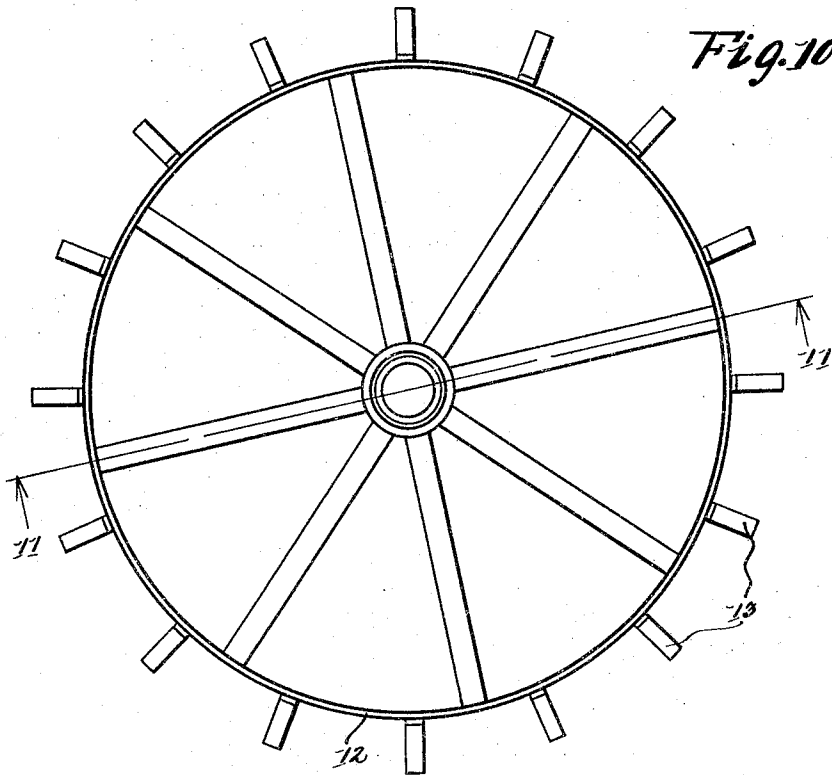
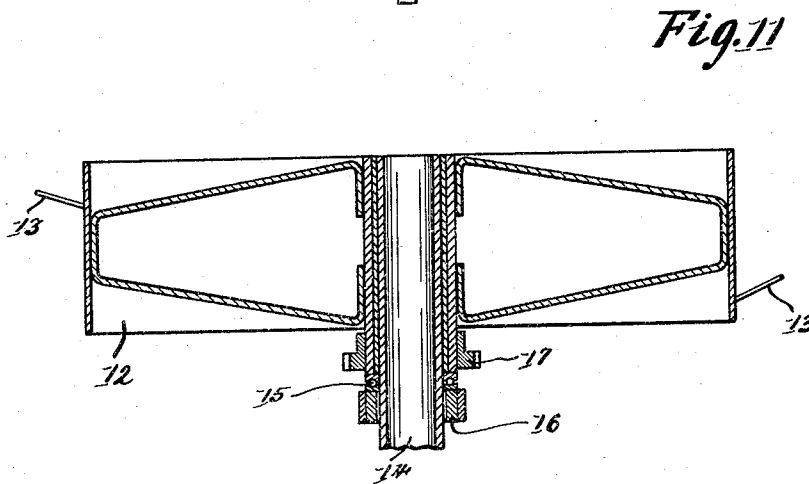
E. C. MAURER

1,909,700

ASSEMBLING REEL FOR LAUNDRIES

Filed Dec. 13, 1930

4 Sheets-Sheet 4



Inventor
Edward C. Maurer

By *Stephen & Stephen* Attorneys

UNITED STATES PATENT OFFICE

EDWARD C. MAURER, OF ST. PAUL, MINNESOTA

ASSEMBLING REEL FOR LAUNDRIES

Application filed December 13, 1930. Serial No. 502,244.

This invention has for its object the provision of a novel machine adapted to facilitate the work of sorting and assembling in groups the laundry of several kinds or
5 classes for each customer.

It is common practice in laundries to place articles of different kinds in separate groups to be washed separately and it is usually necessary that the laundry of each
10 customer be separated into a number of groups, each group contained in a mesh bag and having an identifying number or key which corresponds to that of the other bags for the same customer. Upon completion of
15 the washing operation the bags are removed from the extractor and placed on a rack and it is then necessary to assemble the several bags for each customer. This work of sorting and assembling the laundry has heretofore involved manual delivery of the
20 heavy bags to a large number of points more or less distant from the extractor and rack. By the present invention I greatly reduce this labor by making it unnecessary for the
25 operator to leave a fixed station.

The invention will be best understood by reference to the accompanying drawings in which Figure 1 is a side elevation of my improved machine; Figs. 2, 3 and 4 are horizontal sections taken respectively on the
30 lines 2—2, 3—3 and 4—4 of Fig. 1; Fig. 5 is a fragmentary, vertical section through the control taken on the line 5—5 of Fig. 4; Figs. 6 and 7 are vertical sections taken respectively on the lines 6—6 and 7—7 of Fig.
35 4; Figs. 8 and 9 are fragmentary, vertical sections, on an enlarged scale, taken on the line 8—8 and 9—9 of Fig. 4; Fig. 10 is a plan view of the large wheel or reel proper and Fig. 11 is a central vertical section through said wheel.

A large, horizontally disposed wheel 12 is formed with a cylindrical outer periphery upon which is mounted a multiplicity of
45 bracket arms 13 each designed to support a number of bags of laundry belonging to a customer. The wheel 12 is freely revoluble on the upper end of a vertical pedestal 14 and has an anti-friction bearing 15 (Figs. 1
50 and 11) supported on a collar 16 which is

suitably fixed on the pedestal 14. Secured to the wheel 12 above the bearing 15 is a ring gear 17 adapted to be turned by a pinion 18 on the upper end of a vertical shaft
19. Bearings 20 for the shaft 19 are supported in brackets projecting from the pedestal 14. The pedestal 14 is rigidly secured to a supporting base 21 which also supports a motor 22 and driving connections
60 between said motor and shaft 19. A friction clutch 23 connects the lower end of the shaft 19 with a coaxial shaft 24 adapted to be driven by a worm wheel 25 in a suitable gear housing 26. A worm 27 is fixed on a
65 shaft 28 in the housing 26 to drive the worm wheel 25. The shaft 28 projects from opposite sides of the housing 26 and is adapted to be driven in opposite directions respectively through clutches 29 and 30.

As the clutches 29 and 30 are similar, only
70 one will be described in detail. As shown in Fig. 8, the shaft 28 has a sleeve 31 secured thereto and a pulley 32 is freely revoluble on this sleeve. At one side of the pulley a support for an annular shoe 33 is
75 formed integral with the sleeve 31 and at the opposite face of said pulley a support for an annular shoe 34 is mounted on the sleeve 31 and is free to move longitudinally thereon to grip the pulley between the shoes
80 33 and 34. The sleeve 31 also supports a ring 35 carrying a plurality of levers 36 for actuating the shoe 34, these levers having pivotal supports 37 near the outer periphery of the ring and extending substantially radially to be actuated at their inner ends.
85 An adjustable screw 38 is threaded in each lever 36 to engage the support for the shoe 34 and said levers are normally retracted to release the shoe from the pulley by springs
90 39 which are confined between the levers and a hub 40 of the ring 35. Threaded in the end of the sleeve 31 is a head 41 integral with arms 42 for supporting a cylinder 43.
95 A piston 44 within the cylinder 43 is adapted to be actuated by fluid under pressure delivered through a tube 45. A flexible cup washer 46, preferably of rubber, is provided on the head of the cylinder 44 to prevent leakage. Motion of the piston 44
100

is transmitted by coiled springs 47 to a ring 48 which is slidable longitudinally on the sleeve 41 to actuate the levers 36. Integral with the piston 44 is a guard ring 49. A suitable packing gland and nut 50 is provided to seal the end of the cylinder 43 through which the tube 45 passes and a pipe 51 is threaded in said tube. Thus the entire clutch-operating mechanism is revoluble about the tube 45.

V-shaped belts 52 are arranged to drive a pulley 32 and are driven in turn by a pulley 53 fixed on a shaft 54 driven by the motor 22. As best shown in Fig. 9, gears 55 connect the shaft 54 with a counter shaft 56. The latter shaft is supported in bearings 57 and at one end has fixed thereon a pulley 58 for driving belts 59. A pulley 60, similar to the pulley 32, is driven by the belts 59 for driving the shaft 28 through the clutch 30. Fluid under pressure for actuating the clutch 30 is supplied through a pipe 61 extending to a cylinder 62 in which the fluid may be compressed by a plunger 63. A lever 64 is arranged to be actuated by a treadle 65 and is mounted in position to engage an anti-friction wheel 66 on the upper end of the plunger 63. To pivotally support the lever 64 a bracket is mounted on a platform 68 for the operator and a pivot pin 69 extends through the bracket and lever. The plunger 63 is normally extended from the cylinder 62 by a spring 70. Near the opposite end of the lever 64 a plunger 71, similar to the plunger 63 is arranged to compress fluid in a cylinder 72. The pipe 51 communicates with the lower end of the cylinder 72 and the plunger 71 is normally elevated by a spring 73 similar to the spring 70 so that the lever 64 is normally retained in substantially horizontal position. The cylinders 62 and 72, pipes 51 and 61, and other passages communicating with the heads of the pistons 44 for the clutches 29 and 30, are filled with a suitable fluid, such as a mixture of glycerine and alcohol, for actuating these clutches.

A friction clutch 23 is designed to prevent undue strain on the driving mechanism when the large wheel 12 is stopped or reversed. Any suitable friction clutch may be employed but that illustrated has a head 74 on the shaft 19 which is frictionally held between upper and lower gripping members 75 and 76 and the upper gripping member is pressed against the head 74 by a plurality of small springs 77 confined on bolts 78. These bolts pass freely through the upper gripping member and are threaded in the lower gripping member.

Operation

Distinguishing characters or numerals may be placed adjacent to each of the brack-

et arms 13 on the periphery of the wheel 12 and the operator takes his position on the platform 68. The motor 22 continuously drives the shafts 54 and 56 and the belts 52 and 59 drive the pulleys 32 and 60 in opposite directions, the clutches 29 and 30 being normally disengaged from said pulleys. The operator receives the mesh bags containing the laundry from the rack near the extractor and hangs them on the appropriate bracket arm 13 according to the identifying key or tag on each bag. To bring any desired bracket arm within reach of the operator he actuates the treadle 65 to depress either the plunger 63 or 71 depending on the direction of rotation which is desired. When the plunger 63 is depressed, a quantity of fluid contained in the cylinder 62 is forced through the pipe 61 to operate the clutch 30 and connect the pulley 60 to the worm shaft 28. Through the worm 27 and worm wheel 25, the vertical shaft 24 is driven and the friction clutch 23 establishes the connection with the shaft 19. From the latter shaft power is transmitted to the large wheel 12 through the pinion 18 and gear 17. When the treadle is released the lever 64 is returned to horizontal position by the springs 39 and 70.

When it is desired to rotate the wheel 12 in the reverse direction, the lever 64 is tilted to depress the plunger 71 and thereby force fluid for actuating the clutch 29 into the cylinder 43. This, as hereinbefore described, actuates the movable shoe 34 to cause gripping of the pulley 32 between said shoe and the stationary shoe 33 so that driving connection is established between said pulley and the shaft 28. Each of the bracket arms 13 is designed to receive a number of the mesh bags and, if desired, the bracket arms may be replaced by other bracket arms having different keys or identifying numerals.

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

1. An assembling machine for laundries comprising, a horizontally disposed wheel, supporting arms for a multiplicity of groups of articles spaced around the periphery of said wheel, each of said arms being adapted to support a plurality of groups, power-driven means for rotating said wheel and for reversing the direction of rotation, a station for an operator adjacent to the periphery of said wheel and a control for said rotating and reversing means associated with said station.

2. An assembling machine for laundries comprising, a conveyor, a station for an operator adjacent to said conveyor, a multiplicity of supports each adapted to carry a plurality of individual bags of laundry projecting from said conveyor, power-driven

means for moving said conveyor to present said supports at said station, means for reversing the movement of said conveyor and controls for said moving and reversing means associated with said station.

3. An assembling machine for laundries comprising, a horizontally disposed, endless conveyor, a station for an operator adjacent to said conveyor, a multiplicity of supports each adapted to carry a plurality of individual bags of laundry projecting from said conveyor, a motor, connections between said motor and conveyor for moving said conveyor to present said supports successively at said station, said connections including a pair of clutches and means for reversing the movement of said conveyor and controls for actuating said clutches associated with said station whereby said clutches may be severally actuated to selectively actuate said conveyor forward or backward.

4. An assembling machine for laundries comprising, a large, horizontally disposed wheel having a cylindrical periphery, supports for groups of laundry on said periphery, a pedestal arranged to revolvably support said wheel, a motor, a shaft driven from said motor, a counter-shaft extending parallel to said first mentioned shaft and connected thereto for rotation in the reverse direction, means for rotating said wheel by driving connection with either of said shafts and means for controlling the connections between said shafts and wheel.

5. An assembling machine for laundries comprising, a large, horizontally disposed wheel for supporting groups of laundry, a pedestal arranged to revolvably support said wheel, a motor mounted near the base of said pedestal, a shaft driven from said motor, a counter-shaft extending parallel to said first mentioned shaft and connected thereto for rotation in the reverse direction, a third shaft operatively connected to said wheel, selective means for connecting said third shaft to either said first or second shafts, a station for an operator adjacent to said wheel and means associated with said station for controlling said selective means.

6. An assembling machine for laundries comprising, a large, horizontally disposed wheel having a cylindrical periphery, horizontally and vertically spaced supports for groups of laundry on said periphery, a pedestal arranged to revolvably support said wheel, a motor mounted near the base of said pedestal, a shaft driven from said motor, a counter-shaft extending parallel to said first mentioned shaft and connected thereto for rotation in the reverse direction, connections, including clutches, for severally rotating said wheel by driving connection with either of said shafts, a station for an operator adjacent to said wheel and controls associated with said station for selectively

rendering said connections operative through said clutches.

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

EDWARD C. MAURER. 70

75

80

85

90

95

100

105

110

115

120

125

130