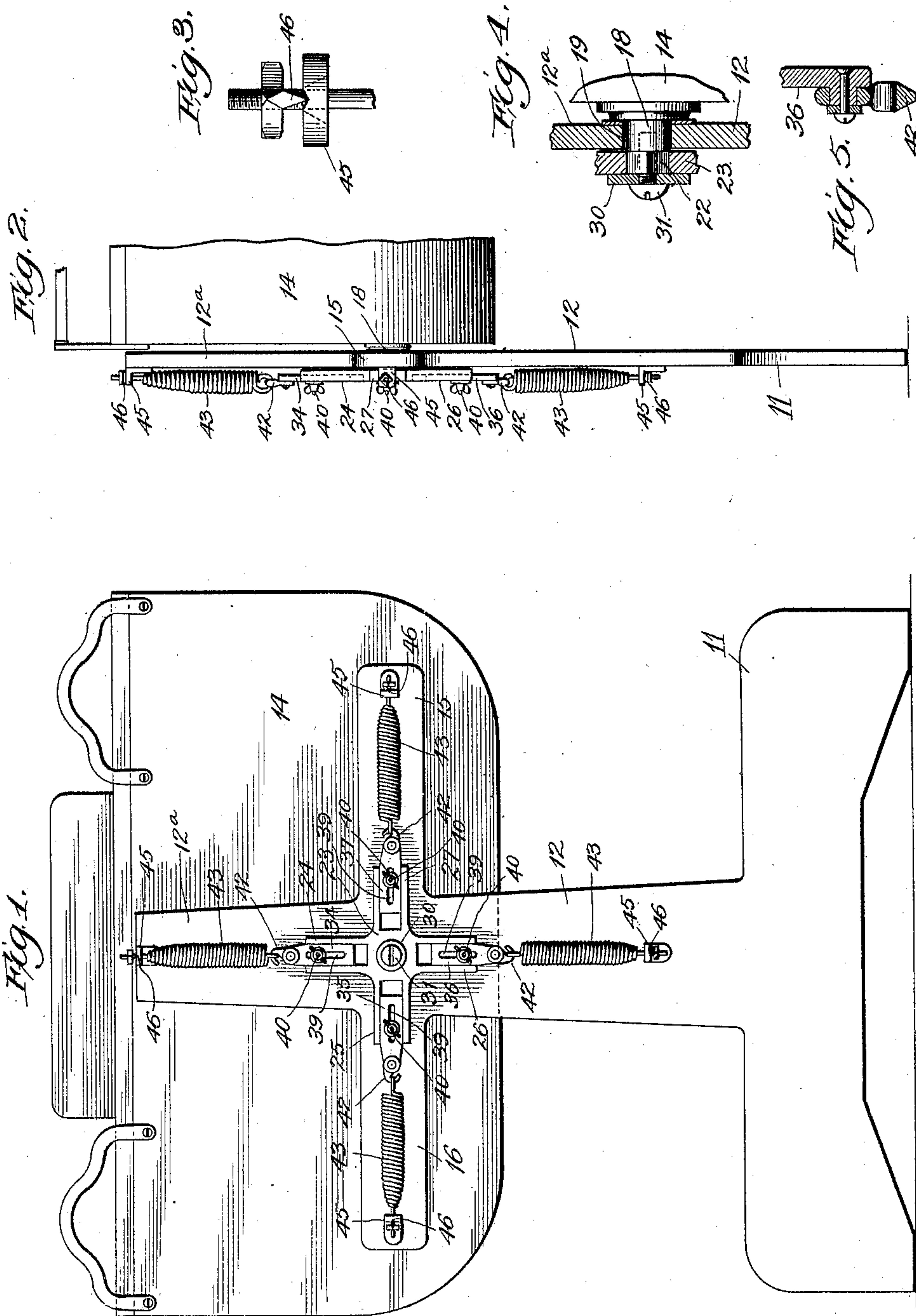


H. S. JUDD & H. PLETSCH.
WASHING MACHINE.
APPLICATION FILED AUG. 4, 1908.

983,286.

Patented Feb. 7, 1911.



Witnesses
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UNITED STATES PATENT OFFICE.

HENRY S. JUDD AND HENRY PLETSCH, OF CHICAGO, ILLINOIS, ASSIGNORS, BY DIRECT AND MESNE ASSIGNMENTS, TO H. S. JUDD MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

WASHING-MACHINE.

983,286.

Specification of Letters Patent.

Patented Feb. 7, 1911.

Application filed August 4, 1906. Serial No. 329,245.

To all whom it may concern:

Be it known that we, HENRY S. JUDD and HENRY PLETSCH, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Washing-Machines, of which the following is a specification.

Our invention relates to washing machines.

In the drawings,—Figure 1 is a side view of a washing machine having the mechanism of our invention applied thereto; Fig. 2 is a fragmentary detail end view of the washing machine showing said mechanism; Fig. 3 is a detail view of one of the knife edge supports for the springs; Fig. 4 is a detail view of the trunnion mounting for the device; Fig. 5 is a detail view of the hook to which each spring is attached.

Again referring to the drawings, we see one of two horizontal bases 11, each having an upright support or standard 12 arising therefrom, there being similar parts on opposite sides of the vessel 14 in which the clothing is washed. In order to apply our invention to the machine, we make each standard 12 in the form of a cross with horizontally extending arms 15 and 16, and an upwardly extending arm 12^a. Extending from each side of the closed vessel 14 is a trunnion or short shaft 18 journaled in the center of the adjacent cross-shaped standard 12. The outer end of each trunnion 18, after it passes through the cross-shaped support that is outside the standard has a non-circular portion 22 formed thereon, over which a hub 23 having one or more arms 24, 25, 26 and 27 extending therefrom is detachably secured. The hub 23 is secured in position preferably by means of the washer 30 and screw 31 entering the end of the trunnion, but other means may be provided. The advantage in employing radial arms extending in diametrically opposite directions as shown is that the strain on the mechanism is always evenly distributed whether two springs are in use or four. It is not essential that the arms 24, 25, 26, 27 be located outside of the standards of the framework for the strain-distributing feature would be present if said arms were located between the standards and the vessel. The most advantageous

form however, is the one in which the arms are outside of the standards for the reason that with such arrangement the standards may be located more closely together which renders the machine more compact and consequently stronger. Although the machine is illustrated with arms on one side of the vessel only, it is obvious that they might be employed on both sides without exceeding the scope of this invention.

Different loads in the machine require different tensions and different leverages and in order to provide for different leverages we construct the arms 24, 25, 26, 27 in such manner that their effective length may be increased or decreased. This is in addition to the fact that the tension of the springs themselves is adjustable by means of the adjusting nuts 46 hereinafter mentioned. Of course the longer the effective length of said arms the greater will be the leverage and the greater will be the restraining effect of the springs 43 hereinafter mentioned. Various constructions might be provided for lengthening or shortening the effective length of said arms, but in a suitable design which is here shown the outer end of each arm 24, 25, 26 and 27 is made channel-shaped, as is best shown in Figs. 1 and 2. A block 34 slidably fits in the channel of the arm 24 and corresponding blocks 35, 36 and 37 fit in the corresponding U-shaped channel-recesses of the arms 25, 26 and 27. Each of the blocks 34 to 37 inclusive, just described, has cut in it an elongated slot 39 through which a thumb screw 40 passes. These thumb screws engage the respective arms in which the respective blocks are mounted, and are adapted to hold the blocks in different positions to which they may be moved lengthwise of the arms for the purpose of increasing or decreasing the effective length and consequently the leverage of said arms. On the upper end of each block 34 to 37 inclusive, is pivotally mounted a hook 42. To each hook 42 is attached a coil-spring 43 extending radially away from the trunnion. Each spring is fastened to its adjacent arm of the standard or framework 12, by means of L shaped lugs 45, secured to the arm of the framework, and by nuts provided with suitable knife edges 46 bearing thereon as illustrated in Fig. 3. Each spring 43 may

be adjusted in tension by loosening its adjacent thumb-nut 40.

When the vessel 14 is rocked on its trunnions by the operator in the ordinary manner, the arms 24, 25, 26 and 27 are moved from the position shown in Fig. 1 to positions at either side of said normal position, thus stretching the springs 43, which in turn, tend to restore the machine to the normal position of Fig. 1. These springs thereby perform the functions of springs attached to some portion of the vessel below the same and between the upright standards 12.

When the machine is being operated with a very light load the four springs may be adjusted to light tension, or, if desired, one or more springs may be removed from operative condition, either by wholly removing the block 24, 25, 26 or 27 to which it is attached, or by unhooking the spring from the hook 42 to which it is attached. The construction here shown and described removes the springs wholly from beneath the vessel, thereby doing away with interference between the springs and the vessel, and at the same time it enables the supporting standards 12 to be placed very close to the vessel, thereby making the machine very compact.

We desire to call attention to the advantage of having the springs 43 detachable and arranged radially opposite each other in one or more pairs. By such arrangement various loads in the vessel may be taken care of. With a heavy load all four springs will be used or eight springs might be used in the case of large machines, four on each side of the vessel. With lighter loads however, fewer springs will be used and three, two or even a single spring might be sufficient. For the lighter loads moreover the operator would decrease the effective lengths of arms 24, 25, 26, 27 in the manner above pointed out, and would decrease the tension on the one or more acting springs by backing off the adjusting nuts 46. Thus the machine may be accommodated to a wide range of variation in load.

The L-shaped lug 45 with a depression to receive the knife edge 46 which is on a nut screw threaded upon the rod which is connected with the spring, is shown in Fig. 3 where the parts illustrated at the top of Figs. 1 or 2 are shown enlarged.

In Fig. 5 an enlarged view of the connection between the hook and the sliding block is shown. The sliding block 36 has a lug and upon this is pivotally secured the upper part of the hook. A transverse bolt holds the parts together.

What we claim as new and desire to secure by Letters-Patent is:

1. In mechanism of the class described in combination with a supporting framework and a vessel carrying a trunnion journaled in said framework, a lever arm rigidly secured to said trunnion, a block slidably mounted lengthwise of said lever arm, means for detachably securing said block in position upon said lever arm, and a spring secured to said block and to said framework adapted to control the motion of the vessel as described.

2. The combination of a washing tub with a frame on which it is mounted so as to oscillate around a fixed horizontal axis, near the bottom of the tub with springs arranged radially, one extending vertically downward from such axis of oscillation, and two extending laterally from such axis of oscillation in a horizontal plane, and secured each at one end to the frame and at the other end to a radial projection from the tub at a distance from its axis of oscillation.

3. The combination of a washing tub with a frame on which it is mounted so as to oscillate around a fixed horizontal axis, near the bottom of the tub with springs arranged radially, one extending vertically downward from such axis of oscillation, and two extending laterally from such axis of oscillation in a horizontal plane, and secured each at one end to the frame and at the other end to a radial projection from the tub at a distance from its axis of oscillation, the connection between the spring and the tub being adjustable to vary the tension of the springs.

4. The combination of a washing tub with a frame on which it is mounted so as to oscillate around a fixed horizontal axis, near the bottom of the tub with springs arranged radially, one extending vertically downward from such axis of oscillation, and two extending laterally from such axis of oscillation in a horizontal plane, and secured each at one end to the frame and at the other end to a radial projection from the tub at a distance from its axis of oscillation, each of said springs provided at each end with a rocking connection to the frame or tub as the case may be.

In witness whereof, we have hereunto subscribed our names, in the presence of two witnesses.

HENRY S. JUDD.
HENRY PLETSCH.

Witnesses:

HOWARD M. COX,
C. J. CHRISTOFFEL.