

Aug. 6, 1940.

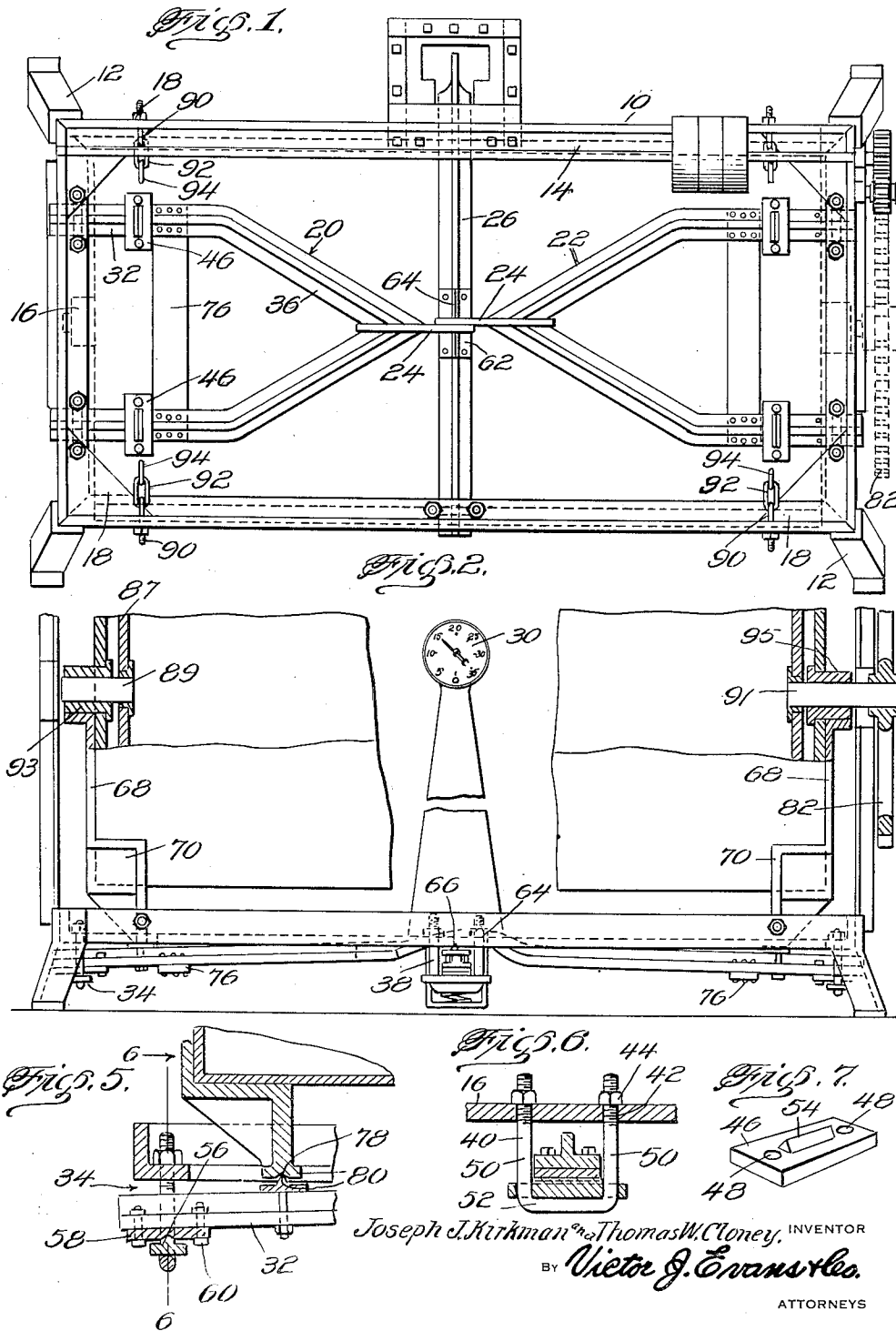
J. J. KIRKMAN ET AL

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LAUNDRY MACHINE WEIGHING COMBINATION

Filed July 31, 1939

2 Sheets-Sheet 1



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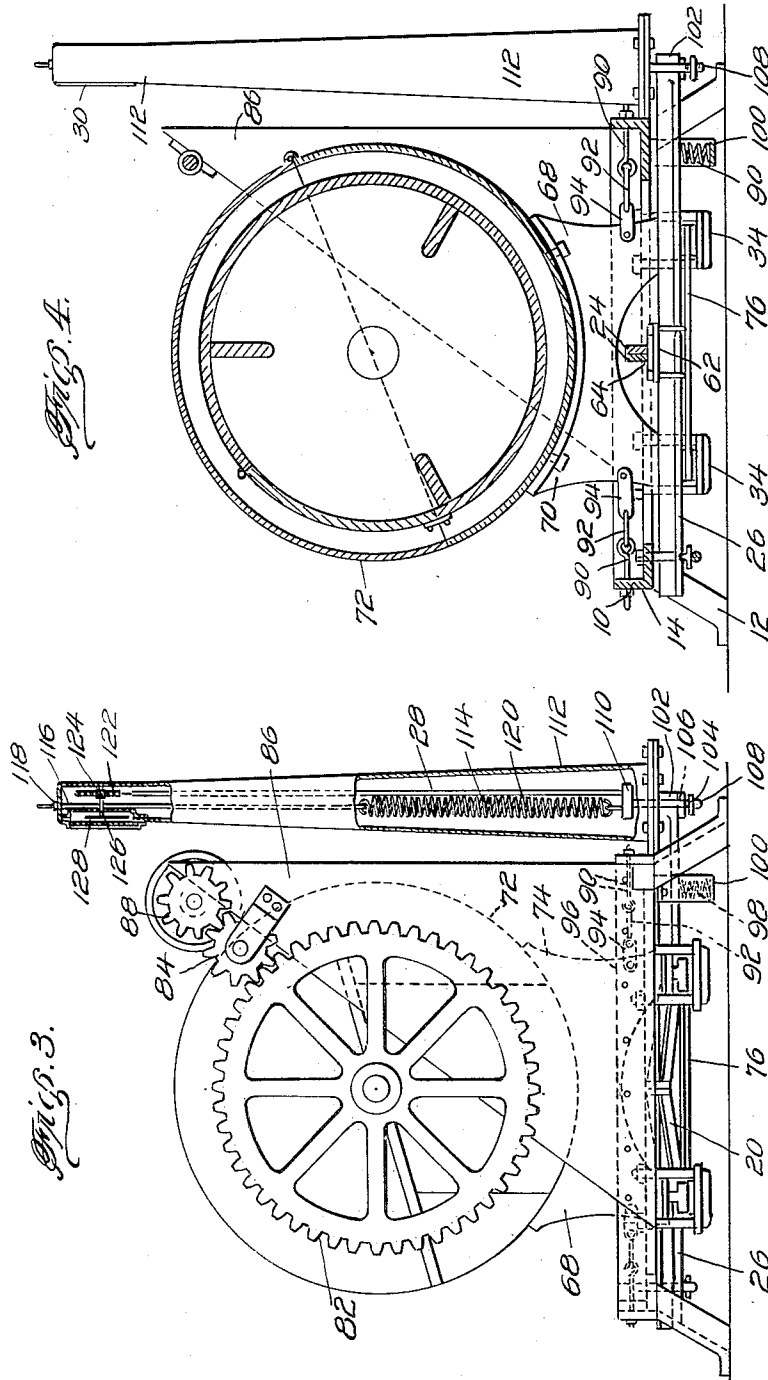
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LAUNDRY MACHINE WEIGHING COMBINATION

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UNITED STATES PATENT OFFICE

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LAUNDRY MACHINE WEIGHING
COMBINATIONJoseph J. Kirkman and Thomas W. Cloney, 2nd,
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Application July 31, 1939, Serial No. 237,643

6 Claims. (Cl. 265—27)

Our invention relates to laundry machinery, and has among its objects and advantages the provision of an improved laundry machine weighing combination.

5 In the accompanying drawings:

Figure 1 is a top plan view of a scale employed in our invention;

Figure 2 is a side elevational view;

10 Figure 3 is an end elevational view of the scale illustrating the outer cylinder of the machine attached to its supporting castings which rest on the scale, with certain parts broken away for the sake of clearness;

15 Figure 4 is a transverse sectional view of the scale and the washer;

Figure 5 is a sectional detail view illustrating the knife edge support for one of the outer cylinder castings;

20 Figure 6 is a sectional view along the line 6—6 of Figure 5; and

Figure 7 is a perspective view of one of the knife edge plates which cooperates with the beam structure of the scale.

25 In the embodiment selected to illustrate our invention, we make use of a main frame 10 mounted on supporting legs 12, which frame comprises parallel side members 14 and parallel end members 16. These members are connected into a unitary structure through the medium of plates 30 18, which may be welded to their respective members. Suspended underneath the frame 10 are two beam units 20 and 22, each of which includes a bar 24 partly overlapping the other bar and extending across a transverse beam 26 which actuates the weight indicator mechanism 28 having a dial 30 for registering the load of the goods placed in the machine.

Each beam unit 20 and 22 includes spaced members 32 which pivot in hangers 34 suspended from the end members 16. Members 32 converge at 36 to be welded with their respective bars 24. Cross beam 26 is also positioned underneath the frame 10 and has one end pivotally supported in a hanger 38, which is identical with the hangers 34. Referring to Figs. 5, 6 and 7, we illustrate one of the hangers 34, which hanger comprises a U-bolt 40 passing through openings 42 in the end member 16 and provided with nuts 44 for supporting the load carried by the hanger. Fig. 7 illustrates a plate 46 provided with openings 48 for receiving the legs 50 of the U-bolt, with the plate resting on the bight 52 of the bolt. We provide the plate with a rib 54 terminating in a knife edge, which knife edge parallels the frame member 16 and lies in a groove 56 in a plate 58

bolted at 60 to the member 32. Groove 56 is in the nature of a V shape so that the knife edge 54 will pivot freely inside the groove.

On the cross beam 26 we bolt a plate 62 having a knife edge 64 paralleling the beam and lying in grooves 66 in the bars 24, see Fig. 2. Thus, the inner ends of the beam units 20 and 22 rest on the bar 26 for transmitting weight thereto through the medium of the bars 24 and the knife edge 64.

Upon each of the beam units 20 and 22 we mount a casting 68 which includes a curved flange 70 bolted to one end of the outer cylinder 72, as at 74 in Fig. 4. Adjacent the castings 68 we interconnect the two members 32 by cross plates 76 so that the two members in their respective beam units are fixedly related for maintaining precise spacing. Each casting 68 includes two V-grooves 78 for the reception of knife edges 80 extending transversely of the parallel members 32 associated therewith. Knife edges 80 parallel the knife edges 56 associated with the hangers 34 and are spaced short distances therefrom as compared with the spacing between the knife edges 80 and the knife edge 64. Thus slight action in the zone of the knife edges 80 is multiplied into considerably more movement of the beams 20 and 22 at the knife edge 64.

The gear 82 of the washer is arranged in mesh with an idle gear 84 journaled in a bracket 86 attached to one of the end members 16. The inner drum 87 of the washer is provided with shafts 88 and 91 which are rotatably journaled in bearings 93 and 95 carried by the ends of the outer drum 72. Gear 82 is keyed to the shaft 91 so as to impart rotation to the inner drum. Idle gear 84 is arranged in mesh with a drive gear 88, which is also rotatably mounted on the bracket 86 and driven from any suitable source of power (not shown). Means for maintaining the castings 68 in predetermined positions on the beam units 20 and 22 so as to establish proper meshing relation between the gears 82 and 84 comprise hook bolts 90 adjustably connected with the side members 14 of the frame 10 and connected with links 92 having loose connection with links 94 pivotally connected at 96 with their respective castings 68. Bolts 90 may be adjusted for precisely positioning the castings 68 on the beam units 20 and 22, in addition to maintaining proper meshing relation between the large gear 82 and the idle gear 84.

Cross beam 26 rests on a coil spring 98 supported by a hanger 100 connected with the frame member 14 adjacent the mechanism 28. Spring

98 is located a short distance inwardly of the end 122 of the cross beam 26, and this end of the cross beam rests on a knife edge 104 lying in a groove 106 in the beam. Knife edge 104 is carried by a U 108 connected with a head 110 lying inside the housing 112 of the mechanism 28. Head 110 is connected with a tension spring 114 extending upwardly of the housing 112 for connection with a rod 116 provided with an adjusting nut 118. A rod 120 has one end connected with the head 110 and its opposite end connected with a pivotally mounted curved rack 122 arranged in mesh with a pinion 124 for rotating the shaft 126 to which the indicating needle 128 is secured. Thus, movement of the cross beam 26 is translated into rotary movement of the needle 128 for indicating the weight of the material placed in the washer.

Needle 128 may be adjusted to bring its reading position to zero for the washing machine when empty so that the weight of the material added to the machine will be accurately recorded. Beam units 20 and 22 are independently related and operate freely for actuating the cross beam 26, and the latter is similarly freely related to its hanger 38. Castings 68 have knife edge connection with the beam units 20 and 22 and may be accurately adjusted and restrained in such adjusted positions through the medium of the bolts 90.

Having thus described certain embodiments of our invention in detail, it is, of course, understood that we do not desire to limit the scope thereof to the exact details set forth except in so far as those details may be defined in the appended claims.

We claim:

1. The combination of a scale having a frame and movable beams carried by the frame, supports for a washer of the rotary type mounted on said beams including a drive gear for the washer, a weight indicating means operatively connected with said beams, and a geared drive carried by said frame and meshing with said first gear.

2. The combination of a scale having a frame and movable beams carried by the frame, supports for a washer of the rotary type mounted on said beams including a drive gear for the washer, a weight indicating means operatively connected with said beams, a geared drive carried by said frame and meshing with said first gear, and means for adjusting the supports relatively to said beams for bringing said first gear into precise relation with said geared drive.

3. The combination of a scale having a frame and movable beams carried by the frame, supports for a washer of the rotary type mounted on said beams including a drive gear for the washer, a weight indicating means operatively connected with said beams, a geared drive carried by said frame and meshing with said first gear, means for adjusting the supports relatively to

said beams for bringing said first gear into precise relation with said geared drive, and knife edge supporting elements interposed between said supports and said beams.

4. The combination of a scale having a frame and movable beams carried by the frame, supports for a washer of the rotary type mounted on said beams including a drive gear for the washer, a weight indicating means operatively connected with said beams, a geared drive carried by said frame and meshing with said first gear, means for adjusting the supports relatively to said beams for bringing said first gear into precise relation with said geared drive, said weight indicating means including a beam pivoted on said frame and arranged for supporting said first beams, and knife edge supporting means interposed between said first movable beams and said one beam.

5. The combination of a scale having a frame and movable beams carried by the frame, supports for a washer of the rotary type mounted on said beams including a drive gear for the washer, a weight indicating means operatively connected with said beams, a geared drive carried by said frame and meshing with said first gear, means for adjusting the supports relatively to said beams for bringing said first gear into precise relation with said geared drive, knife edge supporting elements interposed between said supports and said beams, said weight indicating means including a beam pivoted on said frame and arranged for supporting said first beams, and knife edge supporting means interposed between said first movable beams and said one beam.

6. The combination of a scale having a frame, a pair of beams pivotally connected to the frame, a cross beam underlying the pair of beams and pivotally connected at one end with said frame, a weight indicating means operatively connected with the free end of the cross beam, knife edge supports for carrying the load of the pair of beams at their pivotal connection with said frame, knife edge means interposed between said pair of beams and said cross beam, a washing machine support mounted on said pair of beams, a washing machine drive gear supported on said first support, a bracket mounted on said frame and having a power driven gear arranged in mesh with said first gear, knife edge supports interposed between said first support and said pair of beams, said knife edge supports extending transversely of said pair of beams, and means cooperable with said first support and said frame for moving the first support relatively to its knife edge supports for bringing the first gear into precise meshing relation with said power driven gear.

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