D. M. COOPER.

FEEDING MECHANISM FOR MANGLES.

APPLICATION FILED JAN. 25, 1909.

976,553.

Patented Nov. 22, 1910.

2 SHEETS—SHEET 1

Fig. 9.

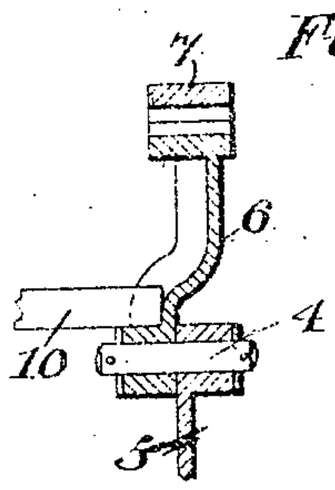

Fig. 10.

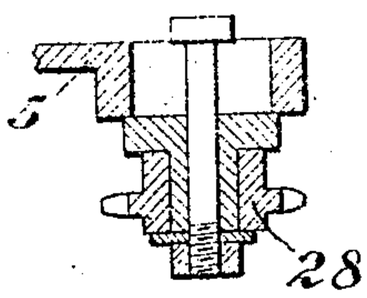

Fig. 1.

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2 SHEETS—SHEET 2.

Fig. 2.

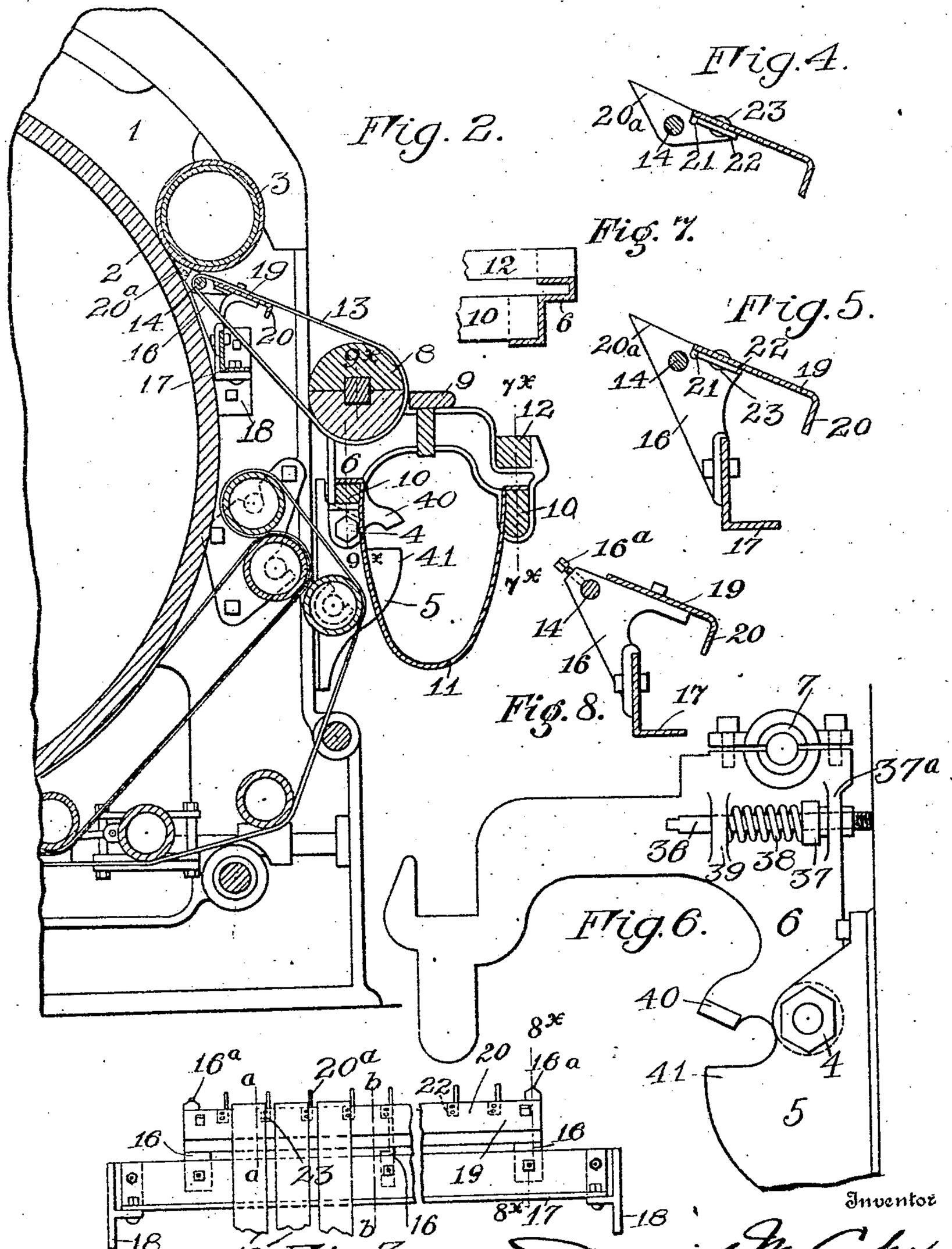

Fig. 4.

Fig. 7.

Fig. 5.

Fig. 8.

Fig. 6.

13 Fig. 3.

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UNITED STATES PATENT OFFICE.

DANIEL M. COOPER, OF ROCHESTER, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, TO AMERICAN LAUNDRY MACHINERY COMPANY, OF CINCINNATI, OHIO, A CORPORATION OF OHIO.

FEEDING MECHANISM FOR MANGLES.

976,553. Specification of Letters Patent. Patented Nov. 22, 1910.

Application filed January 25, 1909. Serial No. 474,041.

To all whom it may concern:

Be it known that I, DANIEL M. COOPER, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Feeding Mechanism for Mangles; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference-numerals marked thereon.

The present invention relates to feeding mechanism for mangles for clothes and other wash goods of the type in which the goods are fed by a plurality of belts or aprons to the intake of the mangle, and an object of the invention is to provide a support for the belts in proximity to the intake, which will not warp or bend under the action of the heat and the moisture and at the same time will be light in construction and inexpensive to manufacture.

Another object of the invention is to support and drive the driving roller of the belts in such a manner that a like tension will be applied to all of the belts so that an uneven feeding is prevented.

In the drawings: Figure 1 is a side view of a portion of a mangle with parts of the driving mechanism broken away to further illustrate it; Fig. 2 is a vertical section, transverse to the axis of the mangle drum; Fig. 3 is a front view of the feed table and its support; Figs. 4 and 5 are sections on line *a*—*a* and *b*—*b*, respectively, of Fig. 3; and Fig. 6 is a side view of one of the frames that support the belt driving roller. Fig. 7 is a detail view taken on the line 7ˣ—7ˣ of Fig. 2; Fig. 8 is a detail view similar to Fig. 5, taken on the line 8ˣ—8ˣ of Fig. 3; Fig. 9 is a detail sectional view taken on the line 9ˣ—9ˣ of Fig. 2; and Fig. 10 is a detail sectional view illustrating the adjustability of one of the idler sprocket wheels.

In the present embodiment the feeding mechanism is shown as applied to a mangle of the type which comprises a frame 1 supporting a drum 2 surrounded by a series of coöperating rolls 3, only one of the latter (the first or intake roller) being shown.

Pivotally mounted as at 4, preferably on brackets 5 attached to the side pieces of the main frame, is a frame which may embody two side pieces 6 having journal boxes 7 for the shaft of a roller 8 and connected by bars or cross pieces 9 which may act as a shield for the roller and as a support for the goods as they are fed by hand to the feeding mechanism. The side pieces may be provided with oppositely arranged seats on their inner faces to receive cross pieces or bars 10 which are connected by a flexible sheet 11 serving as a support for the inner ends of the wet goods that are carried by the usual removable bar 12. It will be noted that the pivot of the swinging roll frame is located on the rear side of the center of gravity of the frame and the parts supported thereby. This arrangement causes the roller 8 to have a tendency to swing forwardly or away from the mangle drum, and to place tension on the endless belts 13 which it drives.

The belts 13 extend to the intake of the mangle, in this instance between drum 2 and roller 3, and pass around a rod or wear piece 14 which is supported by brackets 16 from a cross piece 17, being secured to the end brackets by screws 16ª. The cross piece may be formed from angle iron and be supported at its ends below the belts on brackets 18 that are secured to the inner faces of the main-frame side-pieces. The brackets 16 also support a feed table or board 19 which is preferably formed from sheet metal in order that it will not warp and will at the same time be light in structure, the forward edge of the table being turned downwardly at 20 so that the belts will travel freely thereover and the goods will not be caught by the edge.

Projecting between the drum 2 and the intake roller 3 is a plurality of fingers 20ª which lie between the belts and prevent the goods traveling with the latter beyond their inner ends. Some of these fingers extend from some of the brackets 16, while others project from the feed table 19 and have the rod 14 arranged loosely therein. The upper edges of the fingers lie in a plane with the upper edge of the feed table so that the goods pass freely from the belts to the fingers. To accomplish this result the rear ends of those fingers which project from the table are formed with depressions 21 to receive the table, and the table is also fitted in like depressions in the brackets 16, the

brackets and the fingers having laterally deflected flanges 22 at the depressions to which the feed table is secured by rivets 23 or other suitable means.

The roller 8 has the driving mechanism connected directly thereto and for this purpose one end may carry a sprocket wheel 24 about which passes an endless sprocket chain 25. This sprocket chain may be driven from a sprocket wheel 26 on the main frame and pass about two idlers 27 and 28 on a bracket, the idler 28 being movably mounted in order to take up slack in the sprocket chain.

The driving of sprocket wheel 26 is in this instance effected from a drive shaft 29 which carries a worm 30 meshing with a worm wheel 31 on the main frame. Arranged on the shaft of worm wheel 31 is a gear wheel 32 which meshes with a gear 33 in turn meshing with a pinion 33^a that is arranged on the shaft of sprocket wheel 26. The shaft of gear wheel 33 also carries a gear wheel 34 on the inner side of the main frame to mesh with the large gear 35 which is secured to the drum 2, to drive the latter.

As the driving mechanism is connected to one end of the driving roller 8 there is a tendency to pull down on this roller and cause the latter to apply greater tension to the belts at this end than at the other, thus causing the belts at the other end to slacken. To prevent this action there is provided an adjustable and yielding pressure-device to act on the other end of the swinging frame. This device may consist of a screw 36 turning in a nut 37 that is guided at 37^a on the swinging frame and having an end abutting the main frame. The nut is acted on by a resilient device preferably in the form of a helical spring 38 surrounding the screw and bearing at one end against the nut 37 and its other end abutting a shoulder 39 on the swinging frame, this shoulder also serving to guide the screw.

When the belts 13 are removed the swinging frame is prevented from dropping too far downwardly by stops 40 on the frame coöperating with stops 41 on brackets 5.

In operation, the bar 12 with the goods thereon is placed on the swinging frame, the sheet 11 serving to support the inner ends of the goods out of contact with the floor or dirty parts of the machine. The machine being in operation, the goods are placed by hand on the aprons or belts 13 and are carried thereby to the fingers 20^a which direct them into the mangle.

Owing to the arrangement of the feed roller 8 on a self adjusting frame it is possible to maintain the belts 13 under an equal tension at all times. The feed board and its adjacent parts are of a strong yet light construction which may be subjected to a great deal of wear without liability of warping.

What I claim is:

1. A feeding mechanism for mangles comprising a feed board or table, fingers projecting from the delivery edge of the feed board, a rod passing through the fingers and feeding belts passing over the feed board, around the rod and between the fingers.

2. A feeding mechanism for mangles comprising a feed board or table formed from sheet material and having its receiving edge turned downwardly to prevent the material to be ironed being caught, fingers arranged at the delivery edge of the feed board and feeding belts passing over the feed board and between the fingers.

3. A feeding mechanism for mangles comprising a feed board or table, fingers having depressions on their upper surfaces receiving the delivery edge of the feed board so as to lie flush with the upper surface of the latter, and feeding belts passing over the feed board and between the fingers.

4. A feeding mechanism for mangles comprising a feed board or table having fingers at its delivery edge, a plurality of belts passing over the feed board and between the fingers, and a self adjusting driving roller for the belts.

5. A feeding mechanism for mangles comprising a feed board or table, fingers at the upper edge of the board or table, a plurality of belts passing over the feed board and between the fingers, a swinging frame, and a roller on the frame having the belts passing about the same.

6. A feeding mechanism for mangles comprising a feed board or table, fingers at the upper edge of the board a plurality of belts passing over the feed board and between the fingers, a swinging frame, a roller on the frame having the belts passing about the same, driving mechanism connected to one end of the roller, and a yielding pressure device acting on the swinging frame at the other end of the roller.

7. A feeding mechanism for mangles comprising a feed board or table, fingers at the upper edge of the board a plurality of belts passing over the feed board and between the fingers, a swinging frame, a roller on the frame having the belts passing about the same, driving mechanism connected to one end of the roller, a yielding pressure device acting on the swinging frame at the other end of the roller and comprising a nut guided on the swinging frame, a screw working in the nut and bearing against a fixed part of the machine, and a yielding element abutting the nut and the swinging frame.

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Witnesses:
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