W. LEIST.

MANGLE.

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975,260.

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Fig. 1

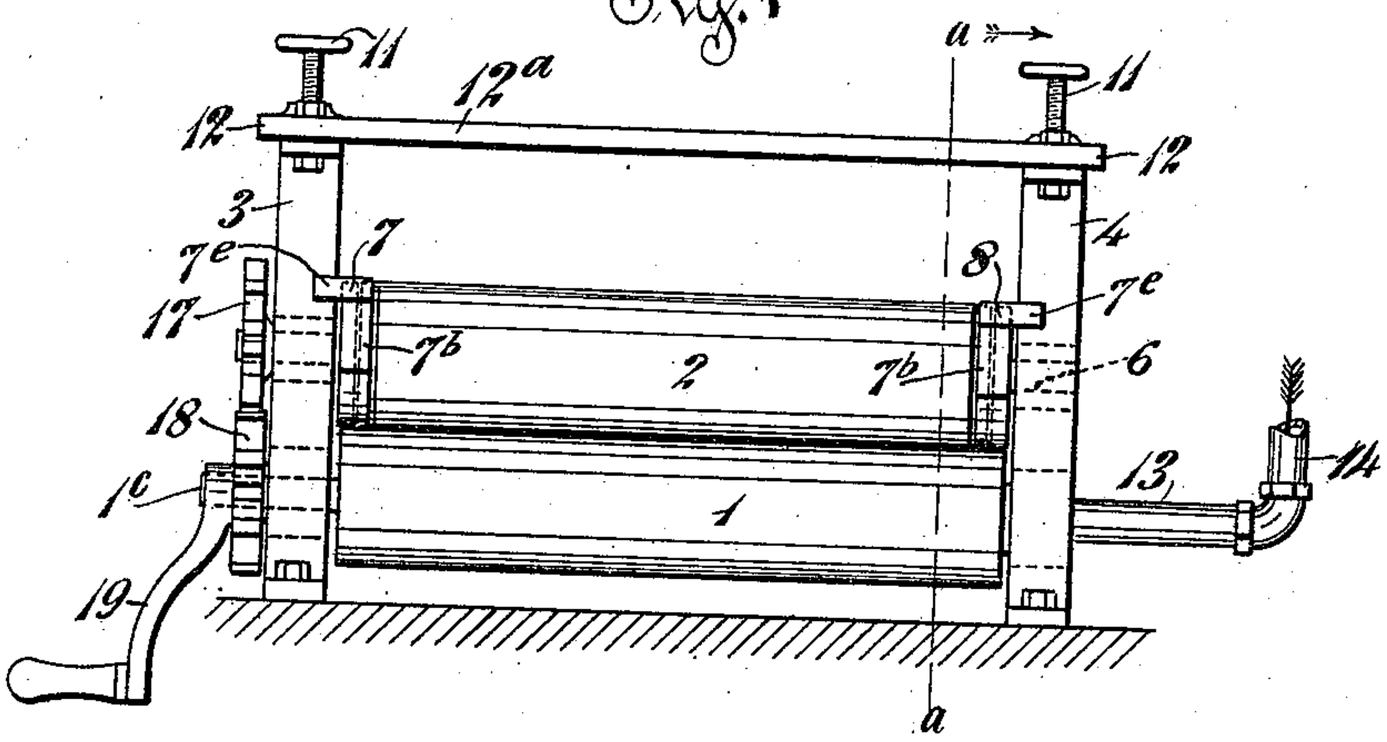


Fig. 2

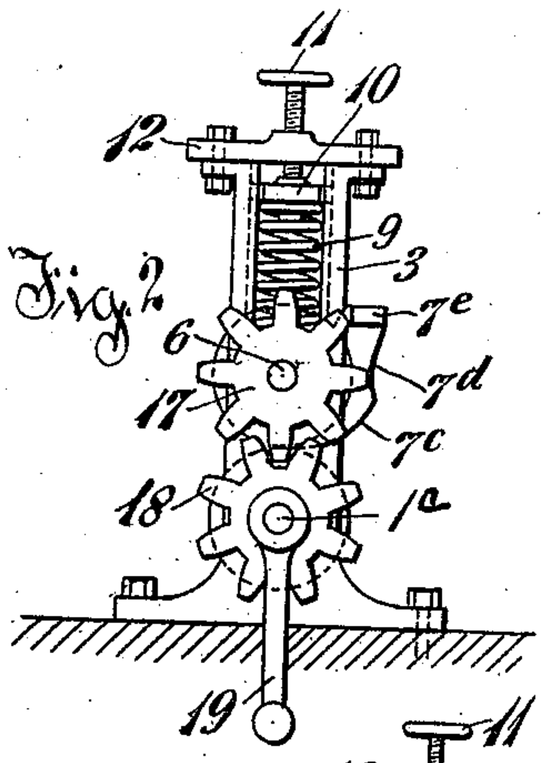


Fig. 5

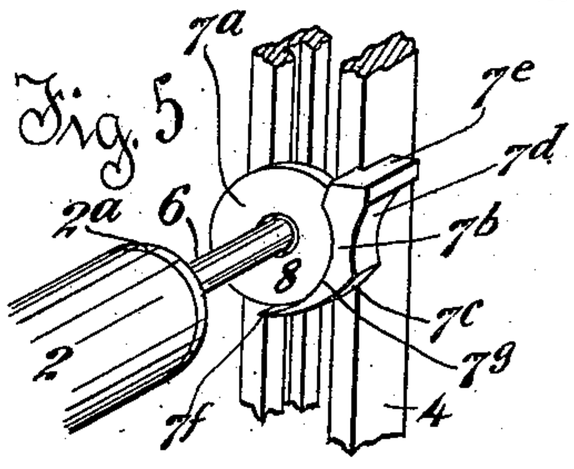


Fig. 6

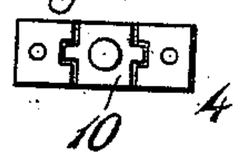


Fig. 3

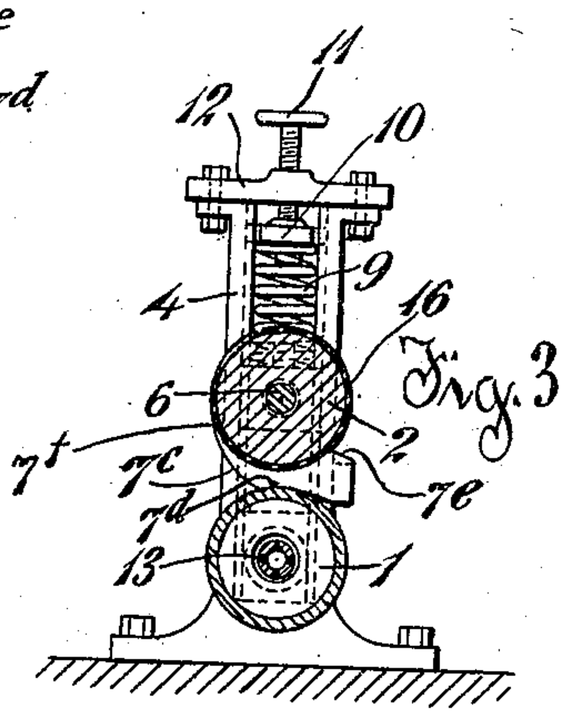
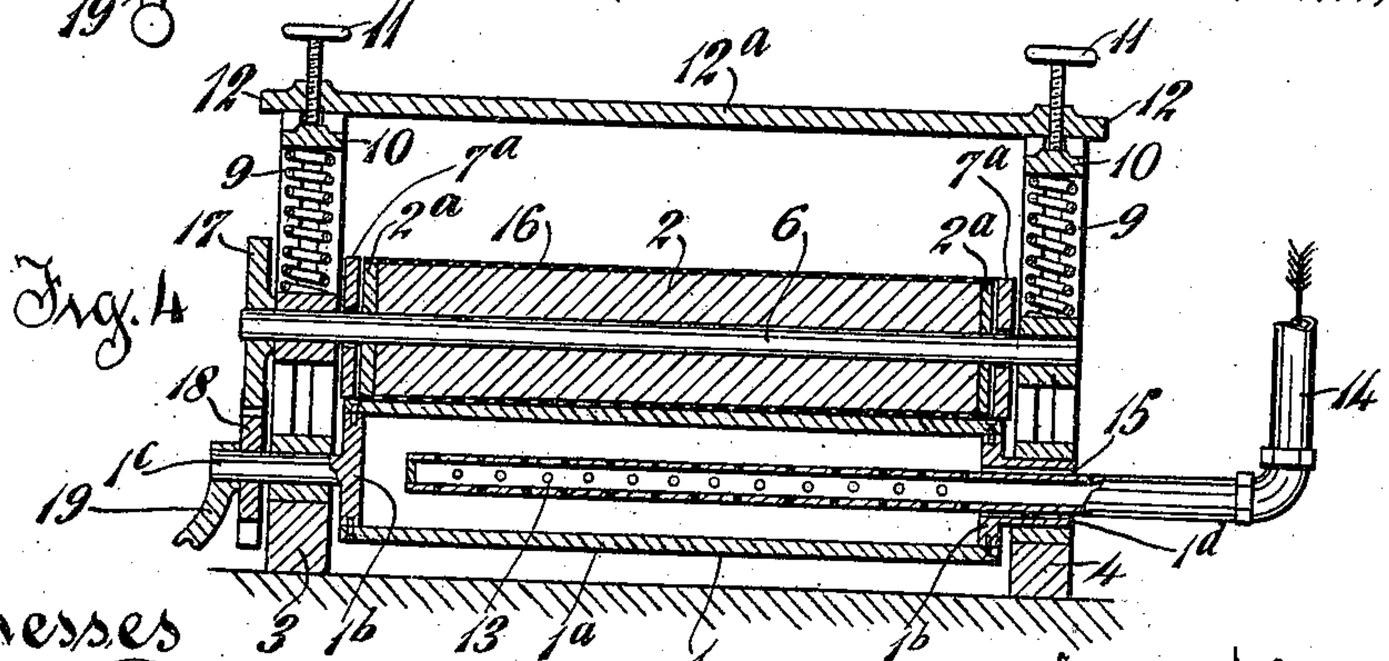


Fig. 4



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MANGLE.

975,260. Specification of Letters Patent. Patented Nov. 8, 1910.

Application filed January 14, 1909. Serial No. 472,163.

To all whom it may concern:

Be it known that I, WILLIAM LEIST, a citizen of the United States of America, and a resident of Norwood, in the county of Hamilton and State of Ohio, have invented a certain new and useful Improvement in Mangles, of which the following is a specification.

This invention relates to improvements in mangles, especially to those adapted for use in laundries in connection with what is commonly known as "flat work," such mangles having one of the pair of their parallel rolls duly heated for the proper smoothing of the work passed between them.

The object of the invention is to enable the mangle rolls to be readily separated or parted and so held when not in the act of working on the clothes and to free the unheated padded or cloth faced roll from touching or heating contact with the metal face of the smoothing or ironing hot roll.

In the accompanying single sheet of drawings, representing my invention herein, Figure 1 is a front elevation of a mangle embodying my invention herein, the pair of rolls being shown in normal position as they appear when in use for work; Fig. 2, an elevation of the device, taken at the left side of Fig. 1; Fig. 3, a sectional elevation taken on the vertical dotted-line *a*, *a*, of Fig. 1, but showing the rolls parted by the wedging action of the disks; Fig. 4, an axial, sectional elevation, taken longitudinally through the center of the device shown in Fig. 1, but with the driving-handle broken off; Fig. 5, a fragmentary, perspective view showing the upper unheated roll, the shaft, the wedging-disk separated from said roll on the shaft and the vertical guides, but with the presser-spring removed from the latter; and Fig. 6, a detail plan view of the upper end of one of the guide-ways with the adjusting-screw and top-plate omitted.

In these views, 1 indicates the lower, heated roll and 2 the upper, unheated roll of the device. These rolls are arranged between upright supporting guide-ways 3, 4 the roll 2 being rigidly mounted on a central shaft 6 and roll 1 having trunnions 1^c and 1^d and the body of roll 1 extending beyond the body of roll 2 at either end.

7, 8, indicate disk-members loosely mounted on the shaft 6 of the unheated roll, at either end of the latter, intermediate its opposite ends and the adjacent guide-ways 3, 4. Each of these disk-members comprises a body portion or disk 7^a, which is somewhat more than a half circle, and an irregular tangentially extended cam-member proper or shoe 7^b, the latter having an inclined wedging surface 7^c, an outwardly-facing concavity or depression 7^d, an inner concavity 7^g and, also, a lateral extension 7^e, all as best seen in Fig. 5. The peripheral face of the body portion 7^a is normally spaced a sufficient distance away from the peripheral face of roll 1 so that the wedging-disks do not contact with the latter nor turn therewith when the device is in forward use on the work, the lateral extensions 7^e preventing the wedging-disks turning forward on the axis 6 during such regular forward operation of the device and sustaining the lower wedge-edge 7^f slightly away from touching contact with the opposite projecting ends of the body of the roll 1, in position, however, ready for the backward turn of the latter when it is desired to part or separate the unheated roll 2 perpendicularly upward from the heated metallic face of roll 1. When roll 1 has been turned backward, it first engages the inclined surfaces 7^c of the disk members 7 and 8, the latter gravitating downward caused by the overweight of the shoe portions 7^b on the periphery of the body portions 7^a and practically feeding the points of wedges 7^f against the periphery of the adjacent extended ends of the body of the roll 1. Both disks revolve freely on their common axis 6 until the depressions 7^d of both disks rest in arc-contact with the peripheral face of heated roll 1. The depressed surfaces 7^d form seats to sustain the upper roll 2 in its raised position away from the heated surface of said roll 1 in a positive manner that is not likely to be displaced until the drive-handle is turned forward again for the working operation. When the upper roll 2 is in raised position and the depressions 7^d peripherally seated on the extended ends of the body of the roll 1, the lateral projections 7^e bear against the upright guides 3, 4, thus preventing the disks rotating farther on the axis 6, as best seen in Fig. 3, wherein the cylindrical bodies of the two rolls 1 and 2 are shown spaced apart. The lateral extensions 7^e prevent the disks rotating farther forward on the axis 6 and hold the cams in check ready for the back-

ward movement of the heated roll 1 when it is desired to throw the rolls apart and at the time when the work is not being passed between them.

9 indicates a spiral-spring interposed between each of the sliding boxes of the upper roll shaft 6 and the vertical sliding presser-plates 10 in the guide-ways 3 and 4.

11 indicates each one of the two adjusting-screws used in regulating the tension of the springs 9 for exerting the desired pressure on the upper roll 2 to suit the variable kinds of work passed through the device.

12 indicates each one of two cap or top plates bolted in place over the guide-ways 3 and 4 and provided with a central screw-threaded opening for the engagement of the adjusting-screws 11.

12[a] indicates a cross-bar integrally connecting the two cap or top plates 12, as best seen in Figs. 1 and 4.

The heated roll 1 is preferably a hollow one, such as best shown in Fig. 4, and made up of a tube or cylinder 1[a] and end-heads 1[b], 1[b], one end-head having a central, solid journal or trunnion 1[c] that journals in a suitable box in the lower part of the guide-way 3 and the other end-head 1[b] having a hollow, central journal or trunnion 1[d] that journals in a suitable box in the lower part of the guide-way 4. A suitable jet-pipe 13, having a number of perforations along its inner portion, extends axially through the hollow journal 1[d] of the end-head 1[b] into the hollow roll 1 and extends outwardly for connection with a steam or other hot medium supply-pipe 14 that is duly supported independent of the mangle device so that the hollow roll 1 may duly revolve independent of said jet-pipe 13. A suitable annular space 15 is provided around the jet-pipe 13 in the journal extension 1[d] of the hollow roll 1 so that the latter may ride or revolve entirely free from the jet-pipe 13 and, also, for due escape of the steam or other heating medium from the interior of the heated roll 1, the conduct of such escape being duly provided for in any suitable manner (not herein shown).

A surface or pad of cloth or other suitable material 16 is preferably provided on the face of the unheated roll 2, as customary in the construction of mangles.

The upper roll 2 is preferably a solid one composed of wood or other suitable material and provided with end disks or heads 2[a] and rigidly mounted on the shaft 6 so as to rotate therewith. This roll 2 may be cloth covered or not, as desired, to suit the work passed through the mangle. A cog-wheel 17 is rigidly mounted on the left outward extension of the shaft 6 and meshes with a similar cog-wheel 18 rigidly mounted on the outward extension 1[c] of the heated roll 1, and a drive-handle 19 is properly secured to the extreme end of the outward extension 1[c] whereby both rolls are positively actuated in unison. It will be seen, in Fig. 2, that the cogs of the wheels 17 and 18 are of such radial length as to make provision or due allowance for the upward spacing of the roll 2 away from the roll 1 and still maintain a positive co-engagement between them for both the forward and backward turns of the two rolls.

It will be seen that when the upper roll is parted from the lower heated roll, the cloth-padded or otherwise prepared surface of the former roll is not burned or scorched, or otherwise injured by the heat radiated from the lower roll, and such cloth-covered surface of the unheated roll is relieved of the pressure of the springs 9, (which are now compressed upward,) that might otherwise bring its periphery in contact with the surface of roll 1 to uneven it.

I claim:—

1. In a mangle, the combination of an upper unheated roll, a lower, parallel heated roll of greater length than the latter and extended at its opposite ends beyond said unheated roll, a shaft extending at its opposite ends from said unheated roll, centrally-orificed and loosely-mounted disks on said extended ends of said shaft and having progressively-inclined and recessed formations thereon that are adapted for frictional-contact with the adjacent peripheral face of the extended ends of said lower heated roll, suitable supporting means and suitable roll-rotating means.

2. In a mangle, the combination of an upper unheated roll, a lower, parallel heated roll of greater length than the latter and extended beyond the said unheated roll, journals for the heated roll, shaft-extensions at the opposite ends of said unheated roll, centrally-orificed and loosely-mounted disks on the said shaft-extensions of the upper unheated roll and having a progressively inclined, recessed and detent formation thereon, journal-supporting means for both rolls, spring-pressure means for the upper unheated roll and driving-means for both rolls.

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