

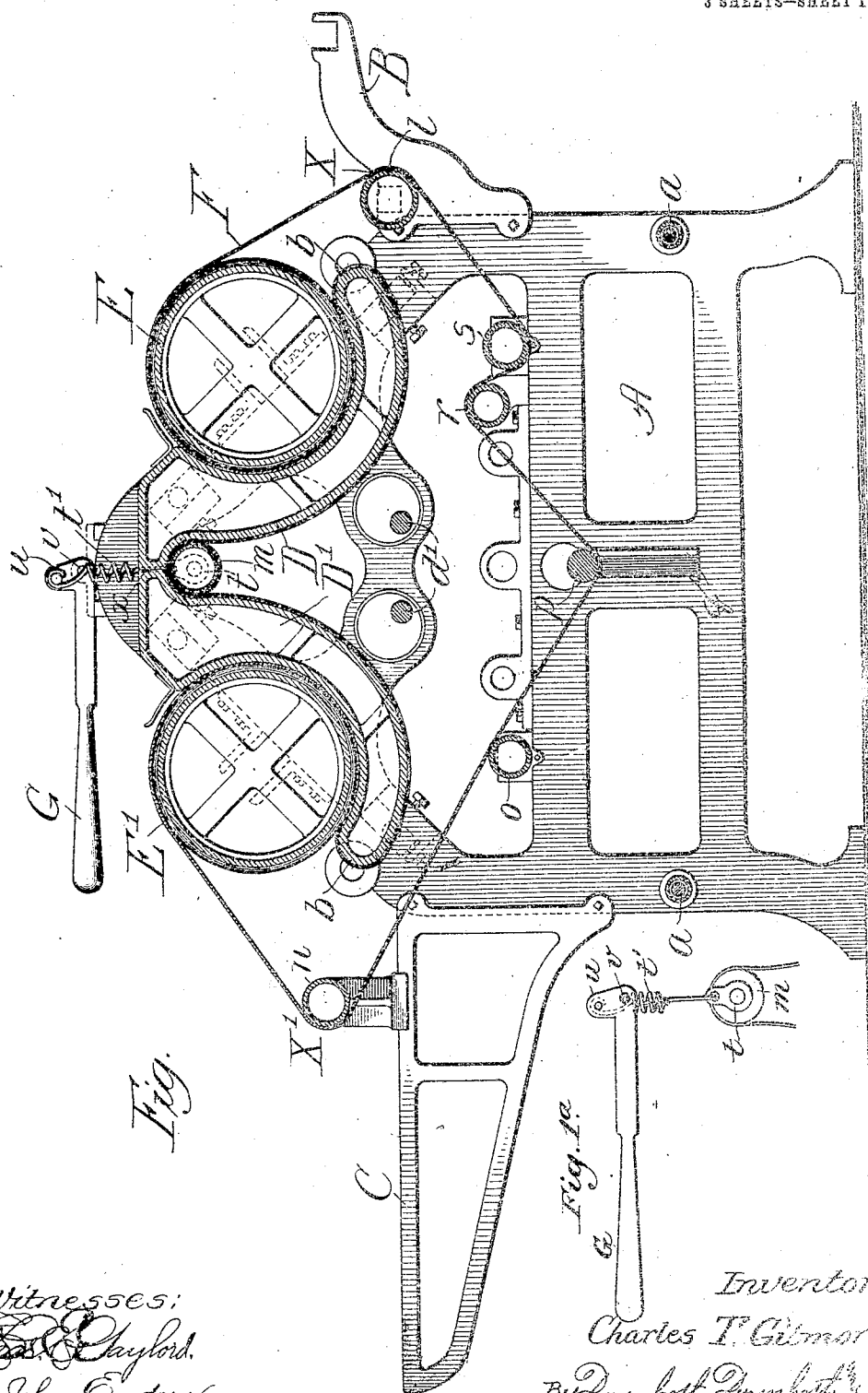
No. 835,188.

PATENTED NOV. 6, 1906.

C. T. GILMORE.
MANGLE.

APPLICATION FILED OCT. 14, 1905.

3 SHEETS—SHEET 1.



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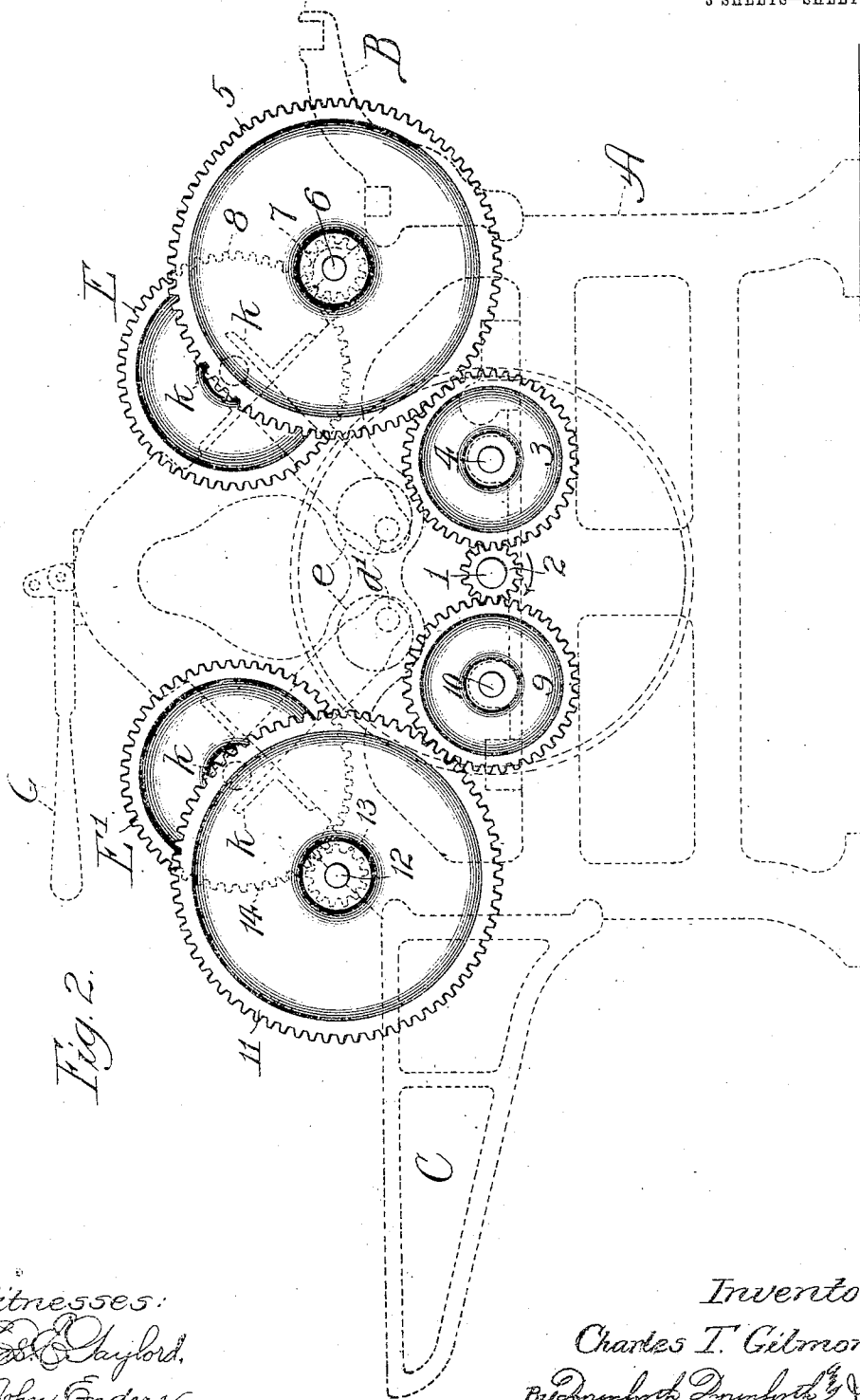
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

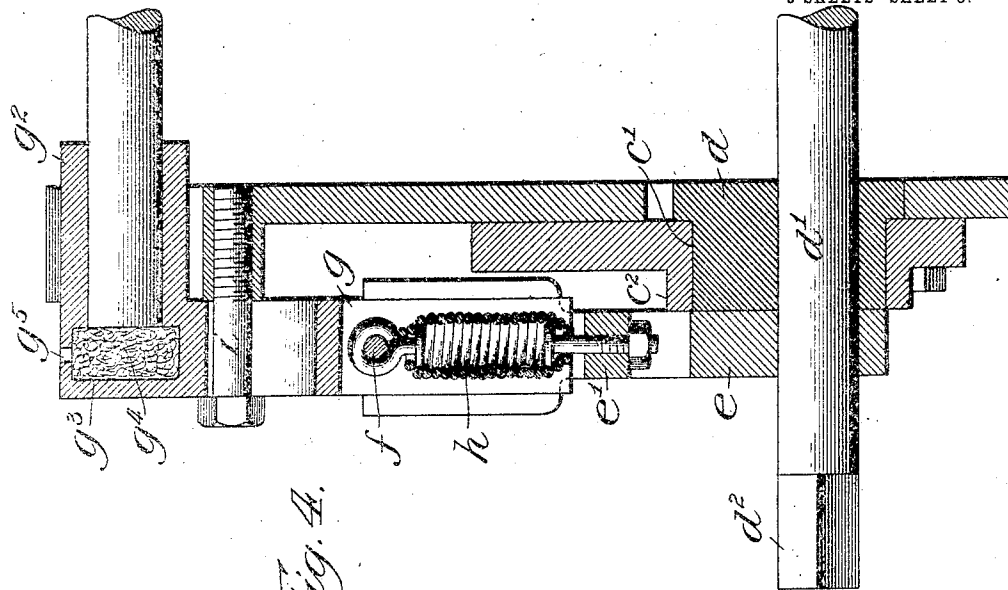


Fig. 4.

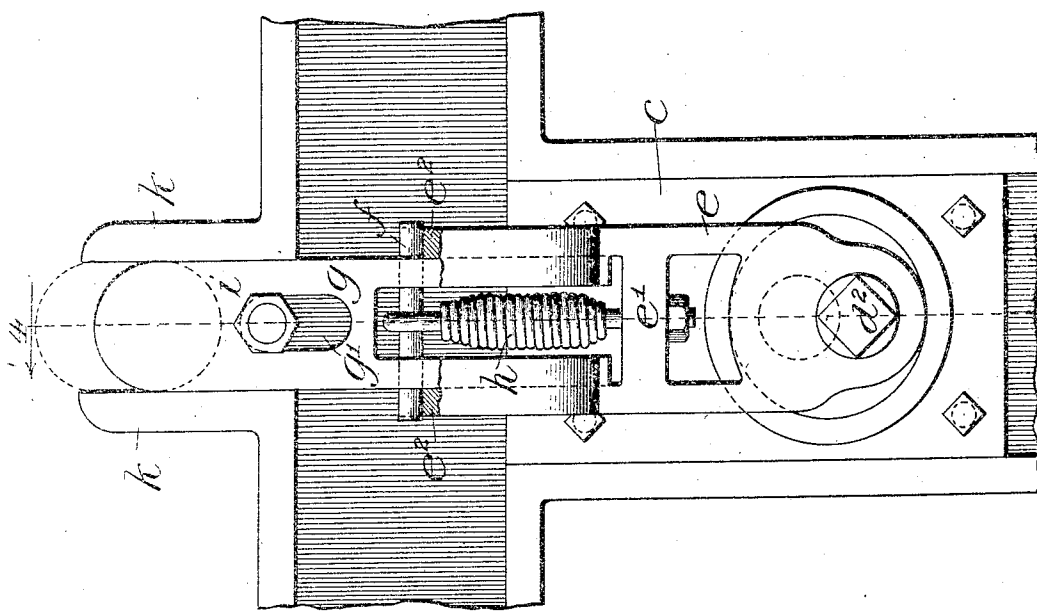


Fig. 3.

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UNITED STATES PATENT OFFICE.

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MANGLE.

No. 835,188.

Specification of Letters Patent.

Patented Nov. 8, 1903.

Application filed October 14, 1905. Serial No. 282,794.

To all whom it may concern:

Be it known that I, CHARLES T. GILMORE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Mangles, of which the following is a specification:

My invention relates to an improvement in the class of mangles for laundry-work in which the ironing-bed is formed by the concave surface of a steam-chest across which the work is moved by an endless traveling apron while undergoing pressure from a rotating cylinder coöperating with the ironing-surface of the bed, and it relates more particularly to an improvement in the variety of mangles in the class referred to in which the articles to be mangled are caused to traverse the concave surface of the bed for the ironing purpose and the convex surface thereof for drying.

The primary object of my improvement is to provide a construction of mangle of the variety last referred to whereby the surfaces traversed by the work shall be greatly increased in length with the advantage of accordingly increasing the extent of subjection of the work to the ironing and drying operations and whereby particularly the polishing of the work shall be materially enhanced after ironing it by stretching it over the end or nose of the heated ironing-bed in its course to the outer convex drying-surface of the latter.

In the accompanying drawings, Figure 1 is a longitudinal vertical section of my improved mangle in its preferred form; Fig. 1^a, a broken enlarged view in elevation of means for suspending the central apron-supporting roller; Fig. 2, a view showing the gears for driving the movable parts in side elevation with the frame and other parts shown by dotted representation; Fig. 3, an enlarged view in elevation of a broken section of the frame carrying an adjustable detail for yieldingly holding a roll against the steam-chest with which it coöperates, and Fig. 4 a section taken at the line 4 on Fig. 3 and viewed in the direction of the arrow.

A is the frame of the machine, one side of which is represented in Fig. 1 and the other corresponding side indicated in dotted lines in Fig. 2, the sides being connected by brace-rods *a*, extending between them. Brackets B are shown to be provided on the frame at the feed end of the machine for support-

ing the "basket" (not shown) and bracket extensions C of the frame are shown projecting from its opposite end.

D and D' are two steam-chests rigidly supported to extend between the frame sides at opposite sides of their vertical centers where the chests meet along their upper edges, as represented at *x* in Fig. 1, and whence they diverge curvedly to present concave upper and convex lower surfaces with rounded outer extremities or edges forming noses *b*.

Cylinders E and E', forming padded ironing-rollers which are not heated, are journaled on the frame to fit into the concave surfaces of the respective steam-chests, each of which extends around about one-half the circumference of the cylinder with which it coöperates. For journaling the cylinders I employ at the opposite ends of each the means illustrated in Figs. 3 and 4, involving the following-described construction. A rectangular plate *c* is provided near its lower end with a circular opening *c'*, having a flange *c''*, forming a hub and affording a bearing for an eccentric *d* on a shaft *d'*, made angular at one end, as shown at *d''*, to permit the application to it of an operating-handle (not shown) for turning the shaft to rotate the eccentric. The shaft passes through a yoke *e* near its lower end, having a cross-piece *e'* extending between its arms near their lower ends, the yoke-arms having concave bearings *e''* formed in their upper ends for the ends of a pin *f*, passing transversely through the arms of another upper yoke *g*, inverted relative to the yoke *e* and having its arms confined between those of the lower yoke, which are formed on their inner faces with guides, as shown, to permit the upper yoke to reciprocate vertically under the control of a stiff coiled spring *h*, which is fastened at its opposite ends, respectively, to the pin *f* and cross-piece *e'*. The yoke *g* contains an elongated slot *g'* above its arms and has a sleeve *g''* formed to project from the inner side of its upper end and form a roller-bearing containing in its outer end a chamber *g'''* for packing *g'''* to be lubricated through an opening *g''''*. These bearings are provided on each side of the frame in the positions indicated in Fig. 2 by bolting the plate *c* thereto and screwing a headed pin *i* into the frame through the slot *g'* in the upper yoke *g*, which is confined laterally between guides *k*, projecting from the top of the frame.

As will be understood from the foregoing

description of the bearing, it may be bodily raised or lowered on its plate *c* by turning the shaft *d'* to turn the eccentric *d* accordingly and that the yoke *g* may be raised relative to the yoke *e* against the resistance of the spring *h*, which tends to hold it down with the pin *f* against its bearings *e'*. The two bearings for the opposite ends of each ironing roll or cylinder employ one shaft *d'*, extending across the frame to engage the eccentrics of both bearings. The bearing construction thus described is the same as that set forth in my pending application for Letters Patent, Serial No. 221,692, filed August 22, 1904.

An endless traveling apron *F*, guided by rollers suitably journaled in the frame, extends as follows: from a roller *l* about the cylinder *E* to the nose *b* of the steam-chest *D*; thence about said nose *b* over the convex surface of the chest *D* and about a roller *m* spring-suspended, as hereinafter described, thence over the convex surface of the steam-chest *D'* and its nose *b* about the cylinder *E'*, from which it passes about a roller *n* and across a roller *o* about a gravity-roller *p*, having its ends confined to be vertically movable in guides *q*, thence over a roller *r* and under a roller *s* to the roller *l*. The roller *m*, which fits between the steam-chest below their junction, is journaled at its ends in hangers, (indicated at *t* in Fig. 1 and Fig. 1^a), and each hanger is connected with a spring *t'*, fastened to an arm *u* of a bell-crank lever *G*, which is fulcrumed on the frame at *v*.

When the machine is not in operation, and it is therefore desired to remove the ironing-cylinders out of engagement with the steam-chests, the shafts *d'* are turned to cause the eccentrics to raise the cylinders and support them in their raised positions, and the levers *G* are turned on their fulcrums *v* to slack the tension of the springs *t'* and permit the roller *m* to drop below the position in which it is represented in Fig. 1, with the effect of reducing the endless apron *F* to a slack condition.

Fig. 2 shows the gearing for driving the ironing-cylinder and the apron, and following is the description thereof:

The drive-shaft 1, which carries a pinion 2 and turns in the direction of the arrow on Fig. 2, meshes with a gear 3 on a shaft 4, journaled on the frame, this last-named gear meshing with a larger gear 5 on a shaft 6, suitably journaled in the frame and carrying a pinion 7, which meshes with a gear 8 on the cylinder *E*. The pinion 2 also meshes with a gear 9, like the gear 3, on a shaft 10, suitably journaled on the frame and the gear 9 meshes with a gear 11, like the gear 5 on a shaft 12, suitably journaled in the frame, which carries a pinion 13, meshing with a gear 14, like the gear 8 on the cylinder *E'*.

By following the motion of the moving

members of the machine it will be seen that the work to be mangled when fed to the traveling apron *F* at the point *X* in Fig. 1 is carried about the first cylinder *E* and ironed against the concave surface of the first steam-chest *D*, whence it is carried about the nose *b* of the chest *D* over the convex surface of the latter and about the roller *m*, whence it is moved over the convex surface of the second steam-chest *D'* and about the nose *b* of the latter between its concave surface and the second cylinder *E'*, from which the apron conveys it to the point of discharge at *X'*. The gravity-roller *p* tends to maintain the desired taut condition of the apron in a well-known manner.

It will be observed that in the progress of the work through the mangle it is first ironed on one side against the bed *D*, then stretched over the respective nose *b*, and thereby polished, that in its subsequent course over the convex surface of the two steam-chests *D* and *D'* it is thoroughly dried and thereupon stretched over the nose *b* of the chest *D'*, and thereby further polished, whereupon ironing it against the concave surface of the last-named steam-chest completes the ironing and polishing, and thus finishes the work preparatory to its discharge from the machine. It will also be observed that the action of the cylinder *E'* is to pull the work and stretch it over the nose *b* of the chest *D* and that the action of the cylinder *E* is to pull and stretch the work over the nose *b* of the ironing-bed *D'*.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a mangle, the combination of a concavo-convex steam-chest terminating at its outer edge in a nose, a padded ironing-roller journaled to cooperate with the concave surface of said chest, and an apron arranged to travel and feed the work initially over said roller and to pass thence immediately between the concave surface of said chest and the roller, thence over said nose and thence against the convex surface of said chest, whereby articles to be mangled may first be carried by the apron to be ironed against said concave surface, thereupon stretched over and polished against said nose and then dried by contact with said convex surface.

2. In a mangle, the combination of a concavo-convex steam-chest terminating at its outer edge in a nose, a padded ironing-roller journaled to cooperate with the concave surface of said chest, means for raising and lowering the roller relative to the steam-chest, and an apron arranged to travel and feed the work initially over said roller and to pass thence between the concave surface of said chest and said roller, thence immediately over said nose and thence against the convex surface of said chest, whereby articles to be mangled may first be carried by the apron to be ironed against said concave surface, there-

upon stretched over and polished against said nose and then dried by contact with said convex surface.

3. In a mangle, the combination of a concavo-convex steam-chest at the feed end thereof and terminating at its outer edge in a nose, a padded ironing-roller journaled to cooperate with the concave surface of said chest, a concavo-convex steam-chest at the discharge end of the mangle and terminating at its outer edge in a nose, a padded ironing-roller journaled to cooperate with the concave surface of the second steam-chest, apron-guiding rollers and an apron arranged to travel on said guiding-rollers over the first ironing-roller, to pass thence between it and the concave surface of the chest cooperating therewith, thence over the nose and against the convex surface of the first chest, thence against the convex surface of the second chest and about the nose thereof between the second ironing-roller and concave surface of the chest cooperating therewith, for the purpose set forth.

4. In a mangle, the combination of a pair of steam-chests curvedly diverging downwardly and outwardly from their upper edges and each terminating at its outer edge in a nose, cylinders cooperating with the concave surfaces of said chests, apron-guiding rollers including a spring-supported roller between said chests provided with means for raising and lowering it, and an apron arranged to travel on said rollers over the first cylinder, to pass thence between the latter and the

concave surface of the chest cooperating therewith, thence over the nose and against the convex surface of the first chest, thence over said spring-supported roller against the convex surface of the second chest and about the nose thereof between the second cylinder and the concave surface of the chest cooperating therewith, for the purpose set forth.

5. In a mangle, the combination of a pair of steam-chests curvedly diverging downwardly and outwardly from their upper edges and each terminating at its outer edge in a nose, cylinders cooperating with the concave surfaces of said chests, apron-guiding rollers including a spring-supported roller between said chests and bell-crank levers fulcrumed on the mangle-frame and connected with the supporting-springs for raising and lowering said roller, and an apron arranged to travel on said rollers over the first cylinder, to pass thence between the latter and the concave surface of the chest cooperating therewith, thence over the nose and against the convex surface of the first chest, thence over said spring-supported roller against the convex surface of the second chest, and about the nose thereof and between the second cylinder and the concave surface of the chest cooperating therewith, for the purpose set forth.

CHARLES T. GILMORE.

In presence of—

W. B. DAVIES,
J. H. LANDES.