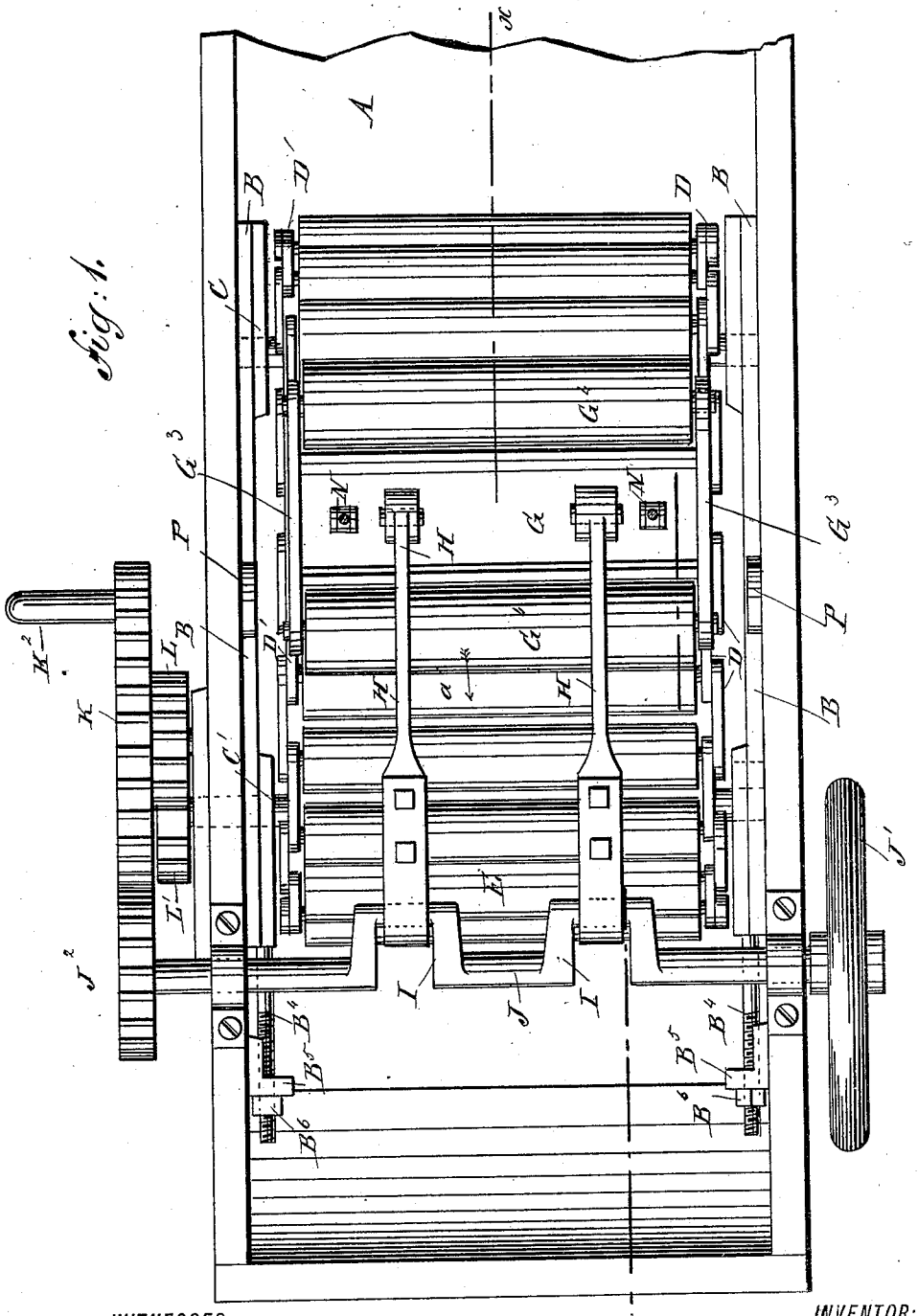
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L. N. CAMPBELL & J. PYLE.

WASHING MACHINE.

No. 416,395. Patented Dec. 3, 1889.

Fig. 1.



WITNESSES:

Chas. Nida.

C. Sedgwick

INVENTOR:

L. N. Campbell

BY J. Pyle

Munn & Co

ATTORNEYS.

N. PETERS. Photo-Lithographer. Washington, D. C.

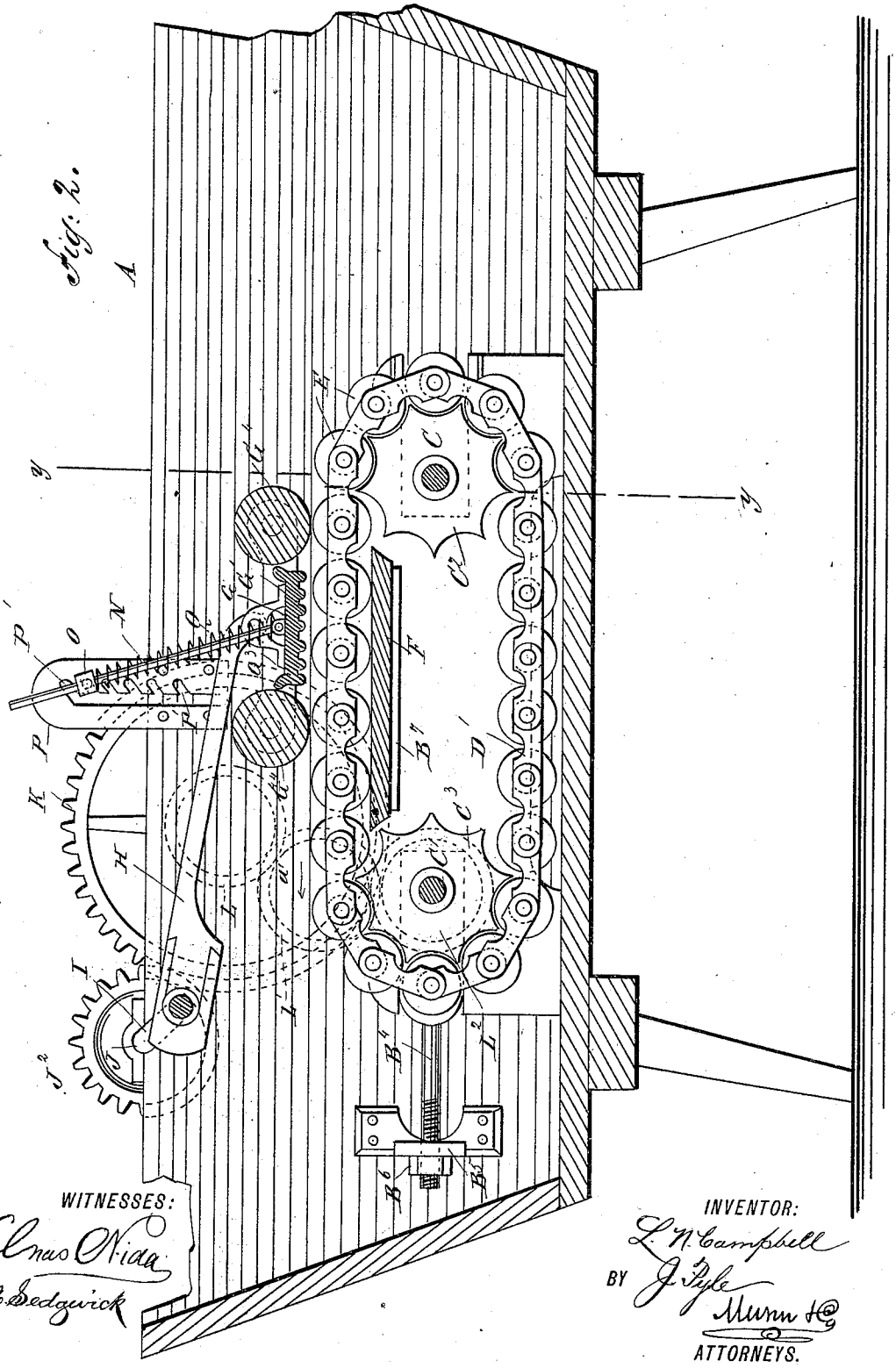
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WASHING MACHINE.

No. 416,395. Patented Dec. 3, 1889.

Fig. 2.



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(No Model.) 3 Sheets—Sheet 3.

L. N. CAMPBELL & J. PYLE.

WASHING MACHINE.

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Fig: 3.

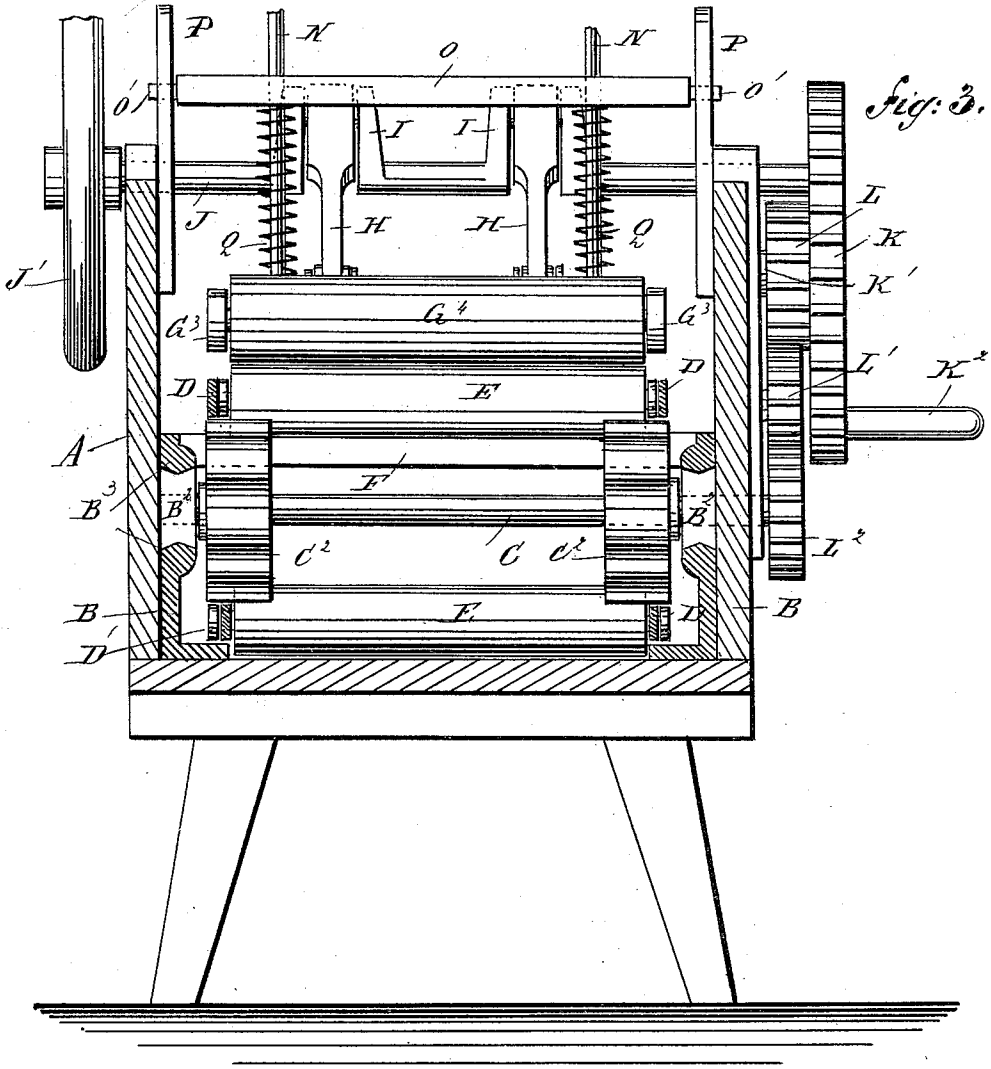
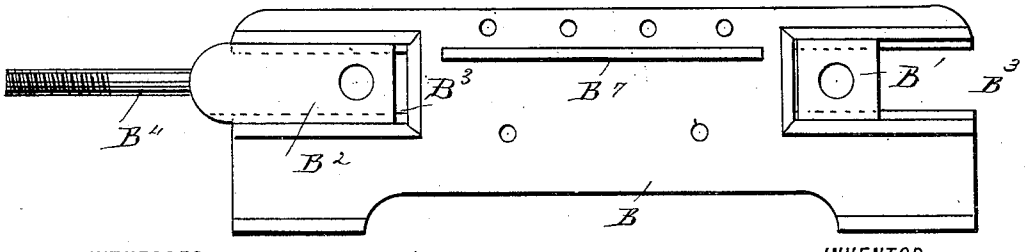


Fig: 4.



WITNESSES:

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C. Bedzurek

INVENTOR:

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UNITED STATES PATENT OFFICE.

LEWIS N. CAMPBELL AND JOHN PYLE, OF WILMINGTON, DELAWARE.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 416,395, dated December 3, 1889.

Application filed May 15, 1889. Serial No. 310,823. (No model.)

To all whom it may concern:

Be it known that we, LEWIS N. CAMPBELL and JOHN PYLE, both of Wilmington, in the county of New Castle and State of Delaware, have invented a new and Improved Washing-Machine, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved washing-machine which is simple and durable in construction, very effective in operation, self-feeding, and enables the operator to direct the rubbing to any particular spot on the clothing for any desired length of time.

The invention consists in certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of the improvement with parts removed. Fig. 2 is a longitudinal sectional elevation of the same on the line *x x* of Fig. 1. Fig. 3 is a transverse section of the same on the line *y y* of Fig. 2, and Fig. 4 is a side elevation of one of the roller-brackets.

The improved washing-machine is provided with a tub A, of suitable size and construction, and supporting on its bottom, at the sides, brackets B B, located directly opposite each other and carrying the boxes B′ and B^2, mounted to slide longitudinally in suitable guideways B^3, formed in the said brackets. The boxes B′ and B^2 are held loosely in the guideways B^3, and the box B^2 is also provided with a longitudinally-extending screw-rod B^4, passing through a lug B^5, secured on the side of the tub A. On the outer threaded end of each screw-rod B^4 screws a nut B^6 against the lug B^5.

In the boxes B′ and B^2 are mounted to turn the shafts C and C′, respectively, each provided with two star-shaped wheels C^2 and C^3, respectively, over which pass the rollers E, connected by their trunnions with the endless chains D D′, the links being connected with each other by the trunnions of the rollers E. The rollers when in their uppermost position travel on a fixed board F, extending transversely and secured on offsets B^7, formed on the brackets B. Above the rollers E is located a rubbing-board G, provided on its under side with transversely-extending corrugations G′ and secured at its ends to side beams G^3, carrying at their outer ends rollers G^4, having their lower surfaces a short distance below the lower faces of the corrugations G′, as is plainly shown in Fig. 2. The top of the rubbing-board G is pivotally connected with links H, pivoted to the crank-arms I, formed in a transversely-extending shaft J, mounted to turn in suitable bearings on the sides of the tub A.

On one end of the shaft J is held a fly-wheel J′ and on the other end is secured a gear-wheel J^2, meshing into a gear-wheel K, held to turn on a stud K′, fastened on one of the sides of the tub A. The gear-wheel K is provided with a handle K^2 for turning said gear-wheel, and thereby imparting motion to the main driving-shaft J. On the inner face of the gear-wheel K is secured a smaller gear-wheel L, which meshes into an intermediate gear-wheel L′, meshing into a gear-wheel L^2, and secured on one end of the shaft C′, which is for this purpose extended through one side of the top A. When the gear-wheel K is turned, the said shaft C′ is rotated by means of the gear-wheels L L′ L^2, whereby the star-wheels C^3 turn, and as the latter engage the rollers E they travel over the star-wheels C^3 in the same manner that a sprocket-chain travels over sprocket-wheels. The motion of the rollers E turns the star-wheels C^2 on the shaft C in a manner similar to that in which the star-wheels C^3 rotate. The rotary motion of the shaft K causes the shaft J to turn, whereby a reciprocating motion is imparted to the rubbing-board G above the top of the uppermost rollers E.

The top of the rubbing-board is pivotally connected with upwardly-extending rods N, passing loosely through a transversely-extending bar O, provided on its ends with trunnions O′, each adapted to fit in one of the notches P′ of a bracket P, secured to the side of the tub A. On each of the rods N is coiled a spring Q, resting at its lower end on the rubbing-board G and pressing at its upper end against the transversely-extending bar O,

whereby the latter is held with its trunnions in the respective notches P′ of the bracket P. The notches P′ slant upward and permit the operator to quickly change the position of the bar O from a higher notch to a lower one, or vice versa, as desired. When the cross-bar O is in one of the lower notches, the springs Q are very heavily compressed, and consequently cause a heavy downward pressure of the rubbing-board G on the clothing held between the rubbing-board and the rollers E, traveling on top of the board F.

The operation is as follows: When the operator desires to use the machine, he turns the gear-wheel K so that the rollers E travel over the board F in the direction of the arrow a', and at the same time the shaft J imparts a reciprocating motion to the rubbing-board G, flanked by the rollers G^4. The clothing between the rollers E, the board G, and its rollers G^4 is thus continually rubbed between the corrugations G′ and the rollers E. At the same time the clothing is fed forward in the direction of the arrow a', when the rubbing-board G slides forward and backward in its reciprocating motion—that is, it slides in the same direction as the travel of the rollers E. When part of the clothing is inserted between the rollers E and the rubbing-board G, and the operator holds onto that part of the clothing not between the rubbing-surfaces, he can hold the clothing in one place for any length of time, so that the rubbing-board and the rollers E act on this particular spot of the clothing until the operator permits said clothing to be fed forward by loosening his grip on it.

It will be seen that the pressure with which the rubbing-board G and its rollers G^4 are pressed on the clothing to be washed is regulated by adjusting the transversely-extending bar O in the brackets P. It will further be seen that any slack in the endless chains D and D′, carrying the rollers E, can be readily taken up by adjusting the nuts B^6 on the screw-rods B^4, so as to move the box B^2.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the tub and rubber, of the brackets B, secured to the opposite sides of the tub, provided at their ends with longitudinally-extending slots forming ways B^3 B^3, and provided between said slots with ribs B^7, the boxes B′ B^2, grooved to fit said ways, the rods B^4, extending from the boxes B^2, the apertured lugs B^5, through which the rods pass, the nuts on said rods, the board F, resting at its ends on said ribs, the shafts journaled in the said bearings, wheels on said shafts, and the endless series of rollers, substantially as set forth.

2. In a washing-machine, the combination, with a rubbing-board having a reciprocating motion, of rods pivotally connected with the said rubbing-board, a bar mounted to turn and through which said rods pass loosely, springs held on the said rods and pressing against the said bar, and brackets provided with slots adapted to hold the said transversely-extending bar, substantially as shown and described.

LEWIS N. CAMPBELL.
JOHN PYLE.

Witnesses:
THOMAS REARDON,
LUTHER A. CLOUD.