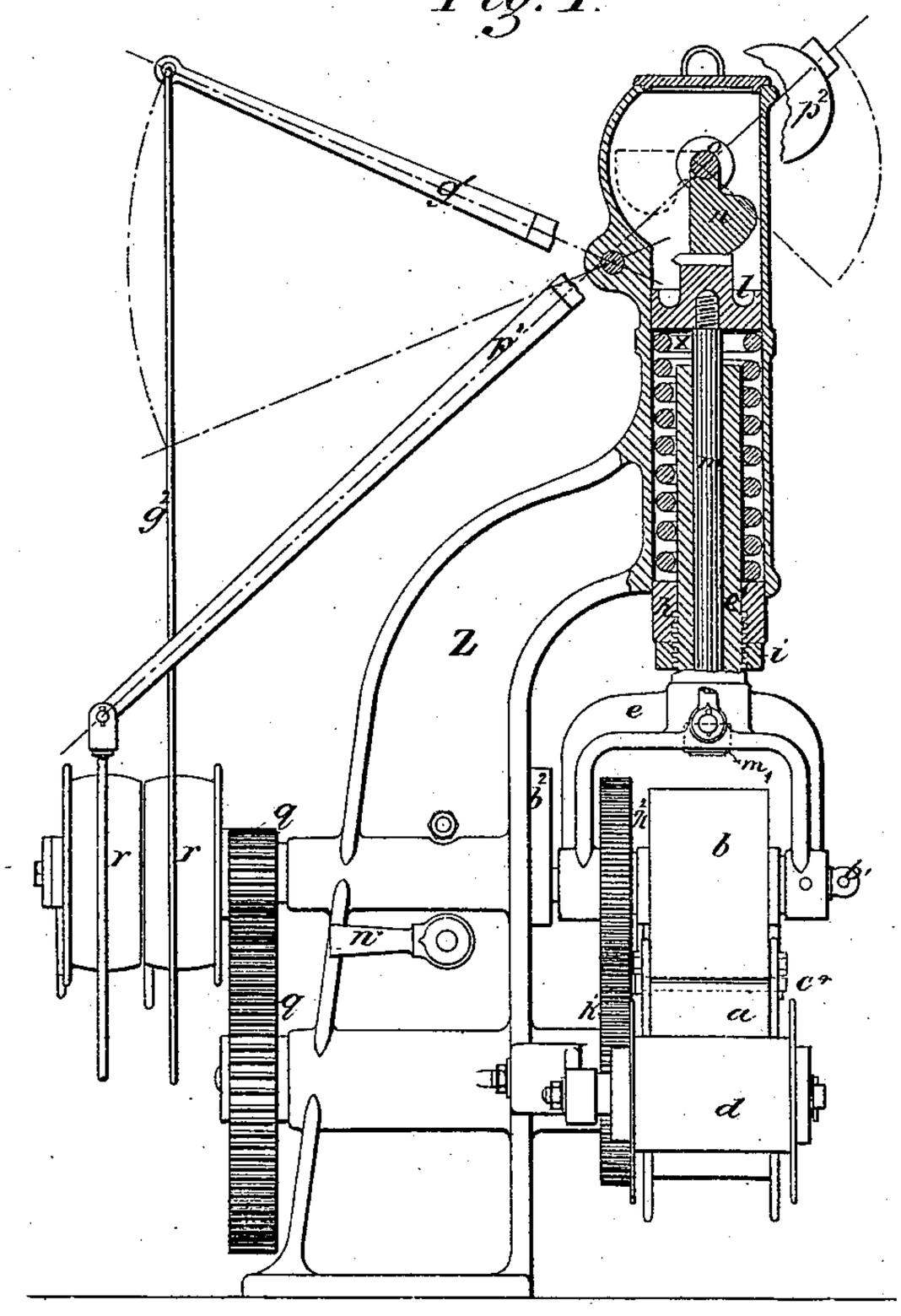
3 Sheets—Sheet 1.

F. BERNHARDT.
Wringing-Machines.

No. 226,647. **Patented April 20, 1880.**

Fig. 1.



Witnesses:

C. Wetter, 67, Strand, London

P. McLauchlan, " "

Inventor:

F. Bernhardt

p.p. Herbert & Co

Attys.

3 Sheets—Sheet 2.

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Fig. 2.

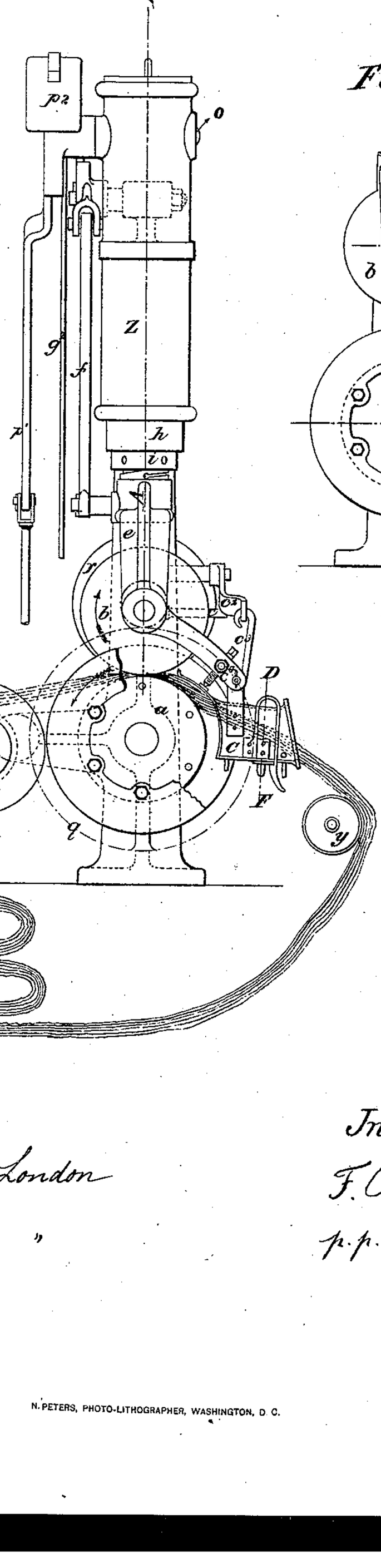


Fig. 4.

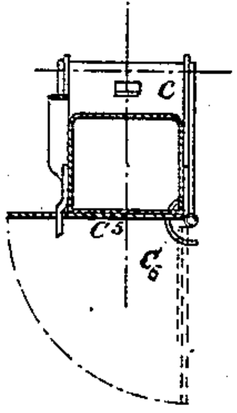
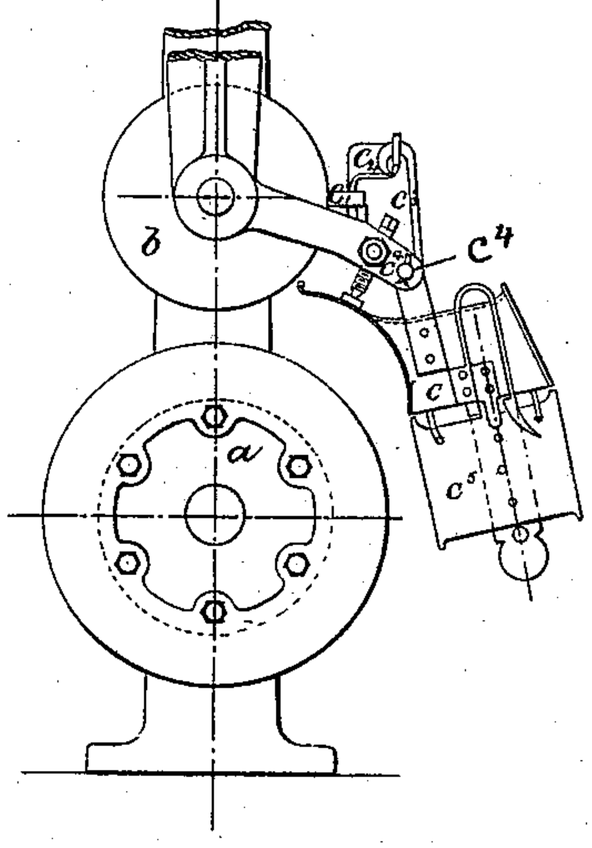


Fig. 5.



Witnesses:

6. Wetter, 67, Strand, London

P. McLauchlan, » »

Inventor:

F. Bernhardt

p.p. Herbert & Co

Attys.

3 Sheets—Sheet 3.

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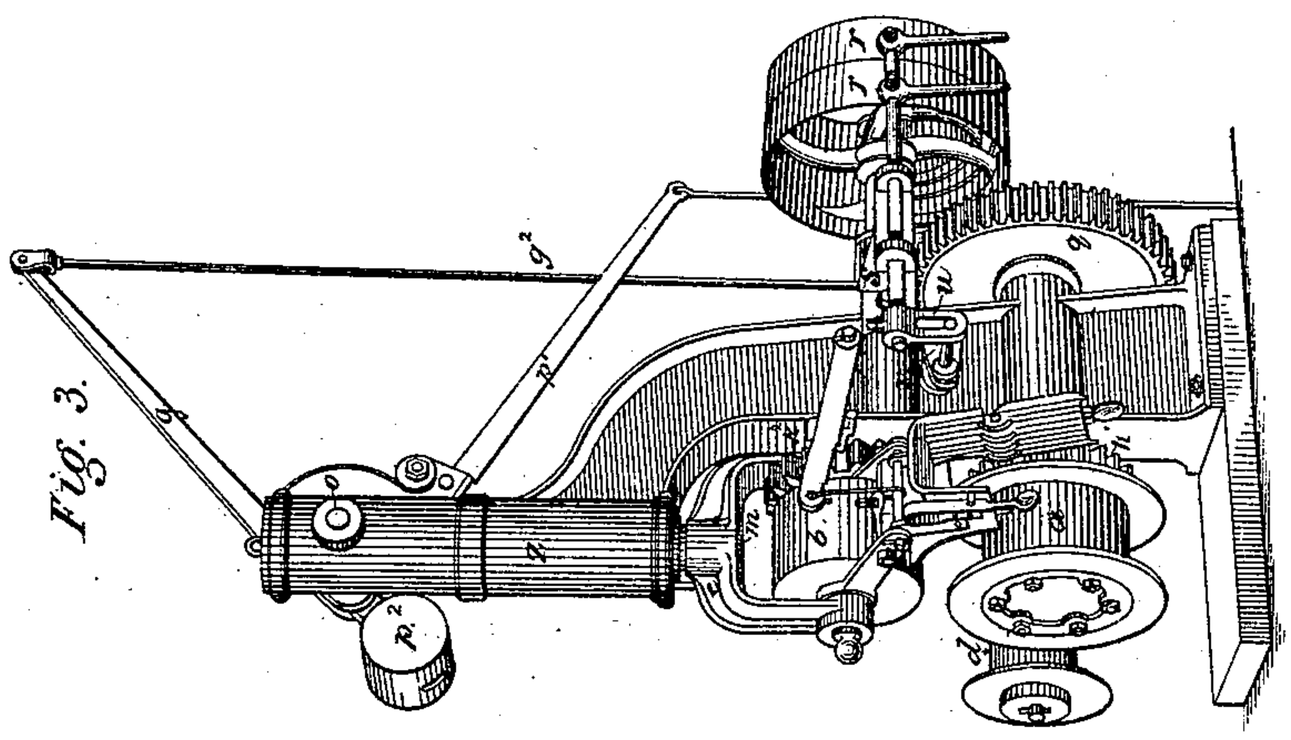

Fig. 3.

Witnesses:

C. Vetter, 67, Strand, London

P. McLauchlan, " "

Inventor:

F. Bernhardt

p.p. Herbert & Co

Attys.

UNITED STATES PATENT OFFICE.

FRIEDRICH BERNHARDT, OF FISCHENDORF, SAXONY.

WRINGING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 226,647, dated April 20, 1880.

Application filed August 7, 1879. Patented in England April 30, 1879.

To all whom it may concern:

Be it known that I, FRIEDRICH BERNHARDT, of Fischendorf, in the Kingdom of Saxony, have invented a new and useful Improvement in Wringing-Machines, which is fully set forth and described in the following specification.

This invention relates to a machine for recovering the soap applied for washing textile fabrics or skins, together with any grease or oil contained in said fabrics.

The machine may generally be used for pressing out liquids from textile or other fabrics or skins, but is especially constructed for pressing out from endless fabrics the mixture of water and soap, or water, soap, and grease, with which they are charged, for the purpose of recovering said matters in a concentrated state.

The accompanying drawings serve to show the construction of the machine, Figure 1 being a side elevation with partial section, Fig. 2 a front elevation, and Fig. 3 a perspective view, of the machine.

The fabric passes from the guide-roller *y* and through a guide-channel, *c*, between the press-rollers *a* and *b*, of which the lower one, *a*, has a stationary axis supported on one side only, while the upper one, *b*, is carried in a fork, *e*, which can be raised or lowered under the influence of the spiral spring *x* and the cam *n*.

Before inserting the fabric between the press-rollers the long arm of the lever *p'*, which turns on the axle *o*, and is balanced by the counter-weight p^2, is raised so as to bring the cam *n* into the position shown by dotted lines. This allows the fork *e*, and with it the roller *b*, to be lifted by means of the rod *f*, the lever *g'*, and the rod g^2, since the rod *f* is attached with its lower end to a stud on the fork *e* and with its upper end to a continuation of the lever *g*. After the fabric has been inserted the fork *e*, and therefore the roller *b*, is again lowered and the cam *n* brought into its former position by the lever *p'*, so as to compress the spiral spring *x*, which is inclosed between the pistons *h* and *l* in the cylinder *z*. The said spiral spring and pistons are arranged as follows: Upon the tube *e'*, cast in one piece with the fork *e*, is first set the piston *h*, which is made adjustable by means of the nut *i*. After the piston *h* follows the spring *x*, which is then compressed by means of the piston *l* and spindle *m*, which is guided in the tube *e'*, and carries at the bottom a nut, *m*.

When the machine is in operation and the cam *n* in the position of Fig. 1, the piston *l* and spindle *m*, with nut *m'*, remain stationary, while the roller *b*, with fork *e* and tube *e'*, moves up and down, according to the thickness of the fabric, the nut *m'* being attached to *m* only, so as to project over the base of the fork in proportion as the latter rises from its lowest position.

An important part of the machine is, further, the channel or guide *c*, which is attached to the fork *e*, and prevents the formation of folds on the margin of the roller *a*. The channel *c* can be turned on the axis of the roller *b*, and also on the bolt c^4. It can be opened from below by a simple lid, c^5, and shares the motion of the roller *b* when the latter is lifted or lowered by means of the stud *c'* on the fork *e*, the lever c^2, and the suspension-rod c^3.

Figs. 4 and 5 show the channel *c* in detail.

To prevent the fabric from being clipped by closing the lid c^5, a number of guards or bars, c^6, are attached to or cast on one side of the channel, which bars project downward and pass through slits of the cover c^5, so as to cover the edge or slit between the side of the channel and the open lid.

The roller *a* is firmly connected with the spur-wheel *k'* gearing into the spur-wheel k^2, which is again rigidly connected with the roller *b*, so that the motion of the latter cannot be stopped by the pressure of the spring *x*.

In order to counteract the lateral pressure exerted by the wheels *k'* and k^2 upon the fork *e*, the bolt or axle *b'* is guided in a slot and guide, b^2, on the machine-frame.

d is a flanged guide-roller, and *y* another guide-roller, which may be attached to a washing-machine or a dye-vessel, or any suitable support.

The bracket *s*, the slotted piece *u*, the short lever *v*, and the hand-lever *w* belong to the mechanism for shifting the belt on the pulleys.

What I claim is—

1. The pressure applying and disengaging mechanism of a wringing-machine, comprising

a forked axle-bearing, *e*, pistons *h* and *l*, a spindle, *m*, a spring, *x*, and a cam, *n*, substantially as described.

2. In a wringing-machine having a fixed roller supported on one side only and a roller with movable journals supported by a forked bearing, the combination of the spur-wheels k' k^2 with the rollers and the machine-frame, arranged as described, for the purpose specified.

3. In a wringing-machine, the combination, with a fixed roller supported on one side only and a roller with movable axis supported by a forked bearing, of a fixed guide, b^2, for the movable roller-axis, substantially as described.

4. In a wringing-machine having the movable roller-axis in a forked bearing, the mechanism for lifting said bearing and roller, consisting of a lever, g', and a rod, *f*, attached with its upper end to the said lever and with its lower end to the said bearing, substantially as described.

5. In a wringing-machine, an open guide-channel, *c*, provided with a movable lid, c^5, and guards c^6, substantially as described.

6. The combination, with a guide-channel and its frame pivoted to the movable roller-axis of a wringing-machine, and provided with an intermediate joint, c^4, of a suspension-rod, c^3, a lever, c^2, pivoted to the machine-frame, and a stud, c', connected with the bearing of the movable roller-axis, whereby the said lever will be raised and lowered by the latter, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

FRIEDRICH BERNHARDT.

Witnesses:
JNO. LIEBEL,
OSCAR MITSCHERLING.