

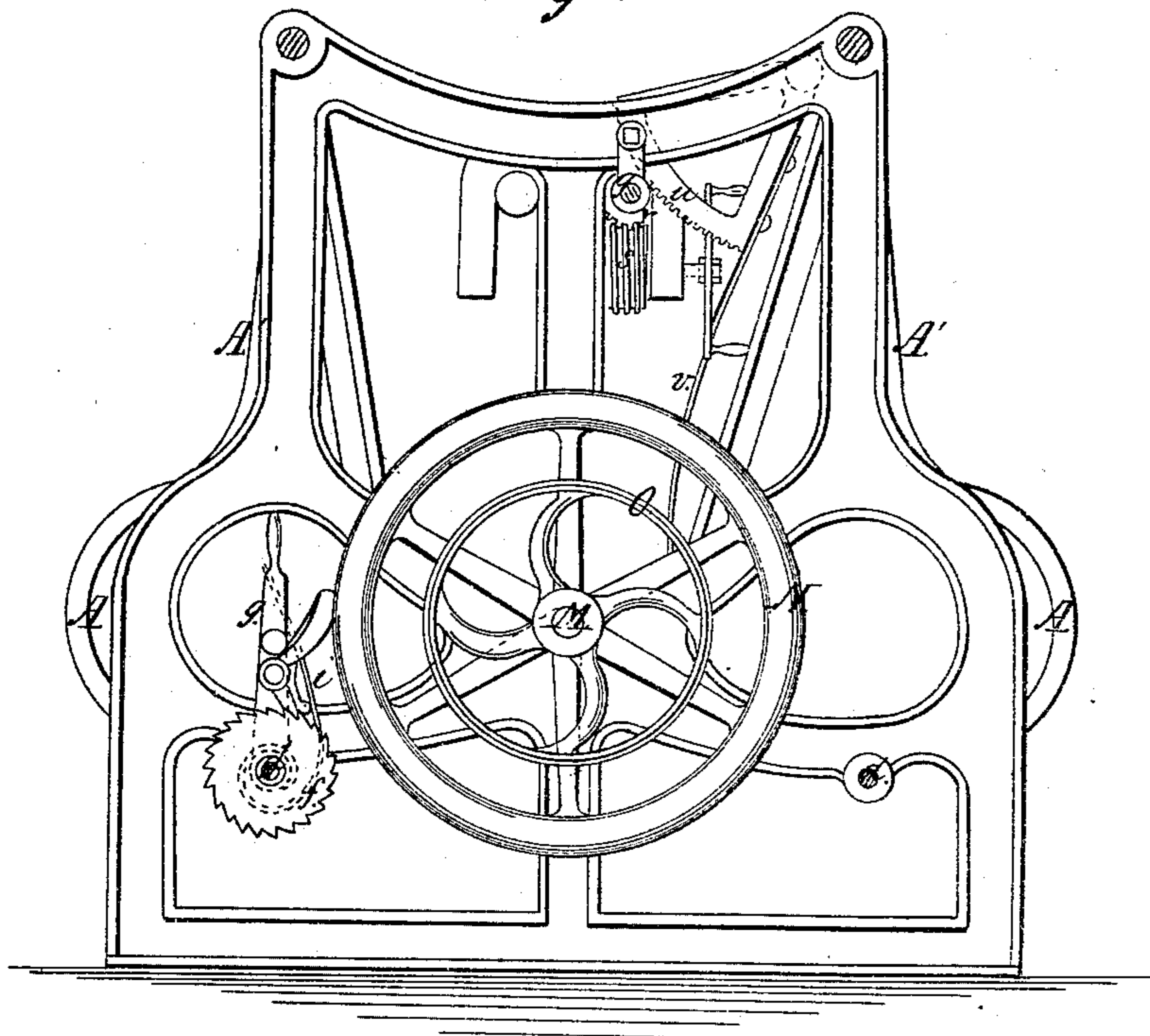
E. Gessner. Sheet 1, 3 Sheets.

Fulling Mach.

N^o 78,660.

Patented Jun. 9, 1868.

Fig. 1.



Witnesses.

E. F. Hastinhuber.

J. C. Poller.

Inventor.

E. Gessner.

per

Van Sankwood & Hauff

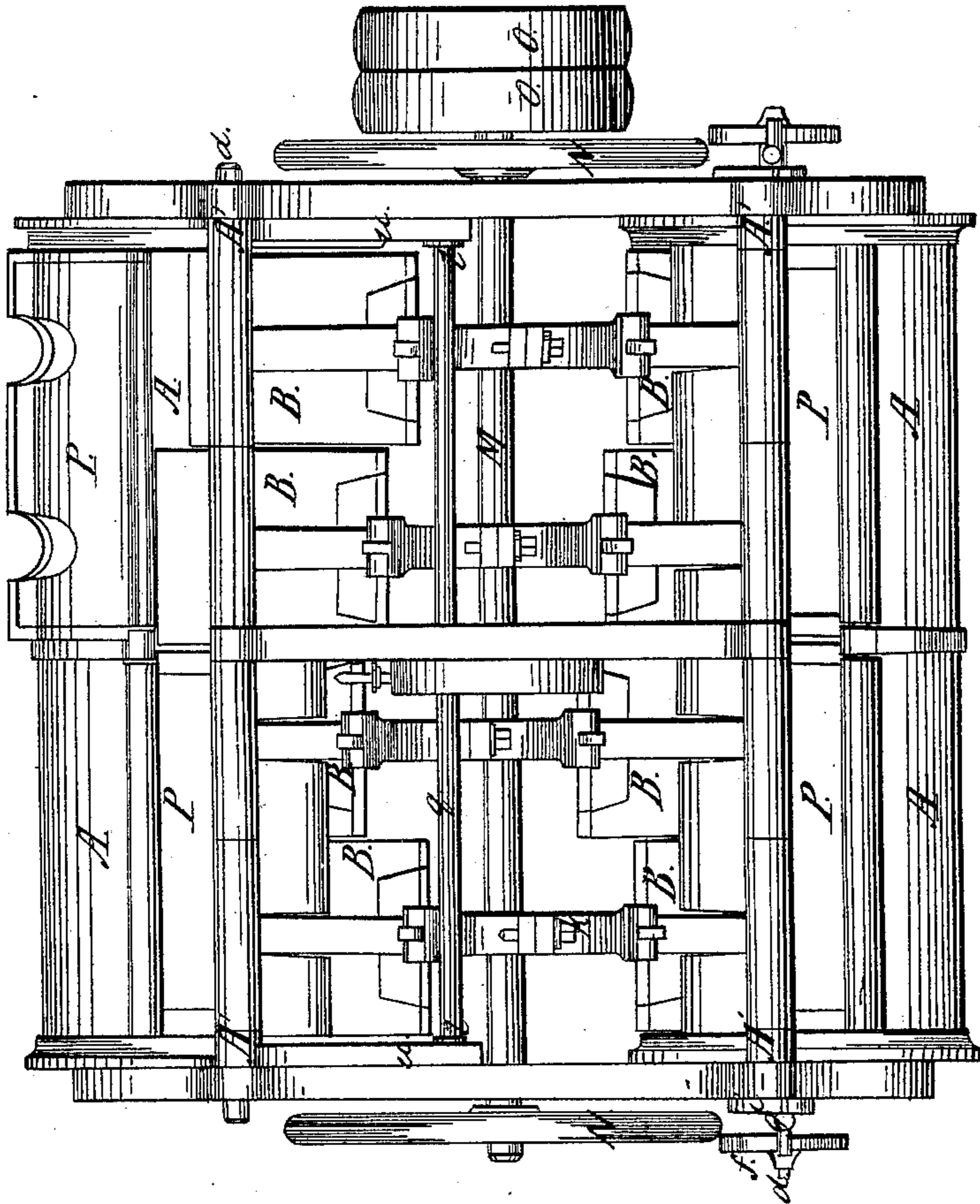
Attys

E. Gessner Sheet 2, 3 Sheets

Fulling Mach.

N^o 78,660. Patented Jun. 9, 1868.

Fig. 2.



Inventor:

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Witnesses:

E. F. Hastenhuber

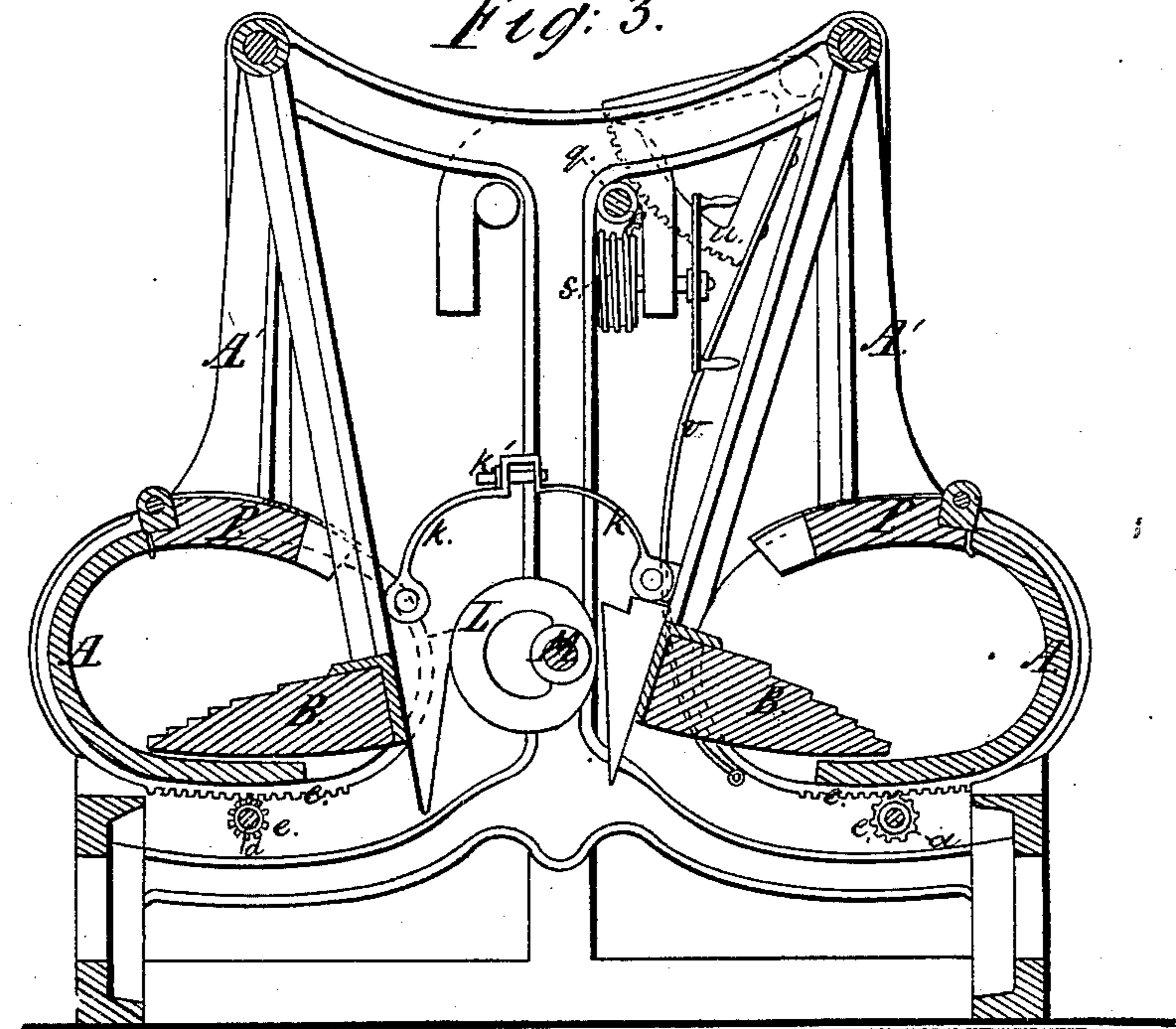
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E. Gessner. Sheet 3, 3 Sheets.

Fulling Mach.

Nº 78,660. Patented Jun. 9, 1868.

Fig. 3.



Witnesses.

E. F. Hasenhuber.

J. C. Poller

Inventor.

E. Gessner

per

Vor Sanborn & Hauff

Attys.

United States Patent Office.

ERNST GESSNER, OF AUE, SAXONY.

Letters Patent No. 78,660, dated June 9, 1868.

IMPROVEMENT IN FULLING-MILLS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, ERNST GESSNER, of Aue, in the Kingdom of Saxony, have invented a new and improved Fulling-Machine; and I do hereby declare the following to be a full, clear, and exact description thereof, enabling those skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which drawing—

Figure 1 represents an end view of this invention.

Figure 2 is a plan or top view of the same.

Figure 3 is a transverse vertical section of the same.

Similar letters indicate corresponding parts.

This invention consists, first, in the arrangement of an adjustable fulling-stock or tub, in combination with one or more oscillating or reciprocating beaters, in such a manner that said tub can be moved closer to or further from the beater or beaters, according to the quantity of goods to be fulled; second, in the arrangement of a spring or weight, acting on the fulling-stock or tub, and forcing the same up against the beater or beaters with a yielding pressure, in such a manner that said tub is capable of adjusting itself to the larger or smaller quantity of goods to be acted upon by the beaters; third, in the arrangement of two or more beaters in pairs, each pair being connected together by springs, and acted on by a common eccentric, in such a manner that said beaters are alternately forced into one tub and then into the other, and a double-acting fulling-machine is obtained, which occupies comparatively little room, and produces a large amount of work.

A represents the fulling-stock or tub, which is suspended by means of arms, A', from a shaft, x, so that it is free to oscillate on said shaft. On the same shaft oscillate the beaters B, and under the tub extends a shaft, d, on which are mounted two gear-wheels, e, which mesh into toothed segments c secured to the tub A, so that, by turning the shaft d, the tub A is moved uniformly towards or from the beaters, and thus adjusted in the desired position.

Instead of the gear-wheels and toothed segments, however, simple drums or pulleys could be used, which would connect with the tub by cords or belts. If desired, any other suitable mechanism might be substituted for the purpose of adjusting the tub.

On the shaft d is secured a ratchet-wheel, f, and a movable lever, g, which is connected to a spring, i, and which carries a click, h, that gears into ratchet-wheel f, whereby the power of the spring i is transmitted to the shaft d, and through it to the tub.

By these means the tub is rendered yielding, so that it can adjust itself according to the quantity of goods to be acted on by the beaters.

The mechanism employed for making the tub yielding or self-adjusting may also be arranged as follows: Between the frame, which forms the bearings for the axle x of the tub, is situated a shaft, q, on which is mounted a worm-wheel, r, which gears into the worms s. On said shaft are also secured two gear-wheels, l, which mesh into toothed segments u, which turn loosely on the shaft x, and connect with the tub A by means of the springs v.

By turning the worm s the tub A is moved towards or from the beater or beaters, and by the action of the springs v said tub is rendered yielding.

For the springs i or v, weights might be substituted, which, when properly arranged, would produce the same effect as said springs.

The tub A is provided with a lid, P, which is hinged, and so arranged that it presses down upon the goods to be fulled by its inherent gravity, and that it closes the tub during the operation of fulling, while it yields to the action of the beaters, and allows of being thrown open, while said beaters are in motion, for the purpose of introducing or removing the goods.

In the drawing, the lid is shown as being made in two parts, but it might be made in one or more parts.

Said lid may be provided with a suitable aperture or apertures, for the introduction of soap and water during the operation of fulling.

The length of the tub A is equal to the width of the cloth or other fabric to be fulled, so that, during the operation of fulling, all folds in a longitudinal direction can be avoided. The number of beaters is increased to four or more in each tub, and the motion of the beaters is alternating, so that the operation of the fulling-machine is rendered steady, and that the driving-power is applied in the most economical manner.

The beaters B are arranged in pairs, each pair being connected by a peculiar spring, K. This spring consists of two parts, which are connected together by a screw, K', and which are hinged to the beaters, in such a manner that they keep the backs of said beaters in contact with an eccentric-disk, L, which is mounted on the driving-shaft M, and that each pair of beaters is operated by one eccentric.

By means of the screw K' the beaters can be kept in close contact with their eccentric. On the driving-shaft M is also mounted the fly-wheel N, and the fast and loose pulleys O, by which said shaft receives its motion.

The fulling-machine may also be constructed with one tub and one set of beaters. If desired, the driving-shaft can be extended, so that a number of fulling-machines will be driven from the same shaft, in the same manner as now applied to the old hole-füller, with that difference, however, that in the old fulling-mill the beaters are stopped, while in my fulling-mill the tubs are moved towards and from the beaters, while the motion of said beaters continues.

This fulling-mill is applicable for fulling cloth of every description, also for all fabrics of wool, or wool and cotton mixed, or of cotton alone, also for leather and so forth, and it can also be used with advantage for washing clothes of any description.

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

1. The toothed segments *c*, gearing in pinions *e*, in combination with the beaters and tub or tubs of a fulling-mill, substantially as and for the purpose set forth.

2. The springs *v* or *f*, in combination with the tub or tubs of a fulling-mill, substantially as and for the purpose described.

3. The springs *k* and adjusting-screws *k'*, in combination with the eccentrics L and beaters B of a fulling-mill, substantially as and for the purpose set forth.

The above specification signed by me, this 3d day of September, 1867.

ERNST GESSNER.

Witnesses:

ALFRED NOEZOLD,
JULIUS TROMLER.