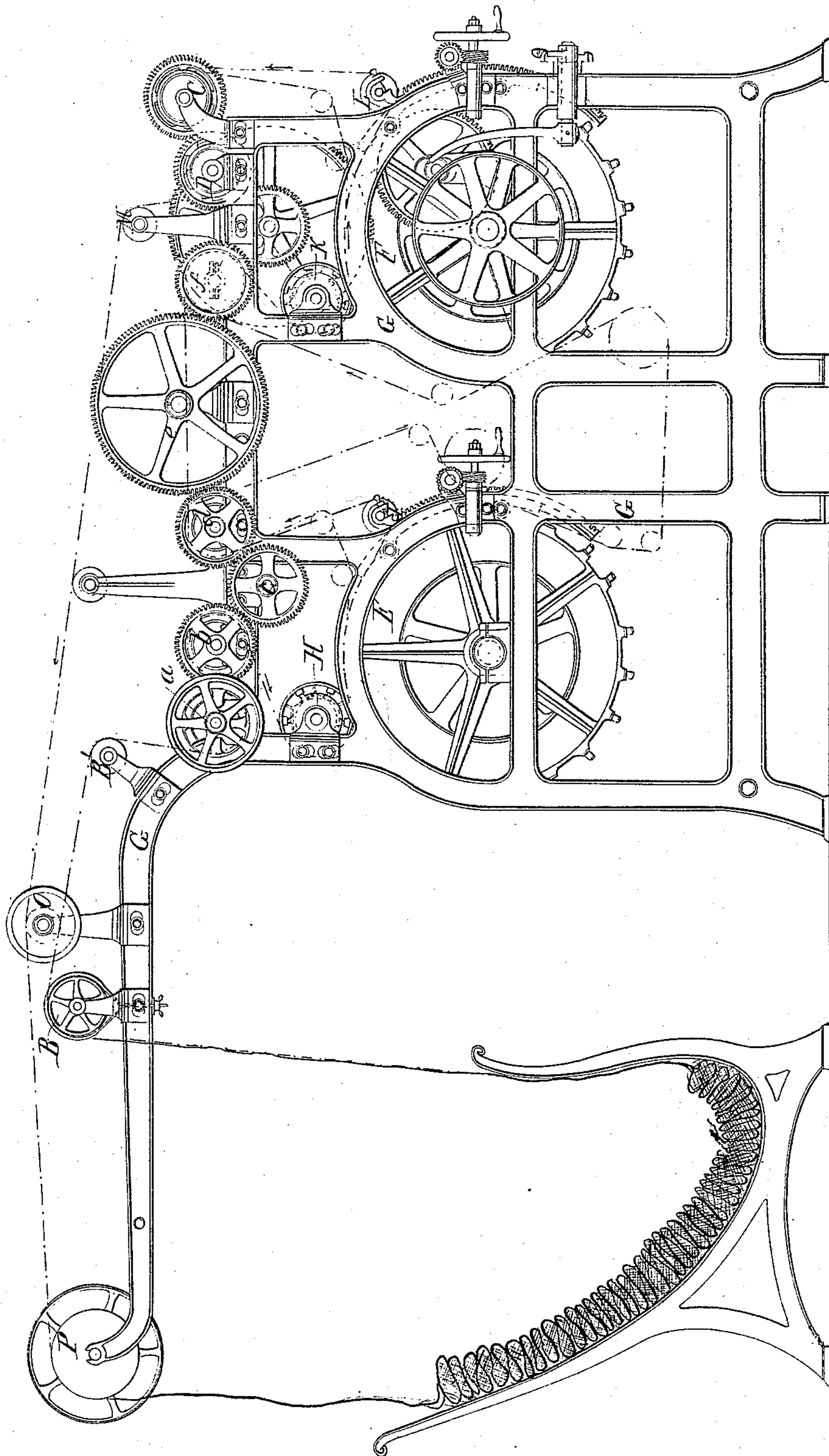


A. Houget.
Mangling Cloth.

N^o 63,896.

Patented Apr. 16, 1867.



United States Patent Office.

ADRIEN HOUGET, OF VERVIERS, BELGIUM.

Letters Patent No. 63,895, dated April 16, 1867.

IMPROVEMENT IN MACHINES FOR RAISING A NAP UPON CLOTH.

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

TO WHOM IT MAY CONCERN:

Be it known that I, ADRIEN HOUGET, of Verviers, in the Kingdom of Belgium, have invented certain new and useful improvements in Gigs; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings.

Gigs heretofore most generally in use may be classified, first, into single-cylinder gigs and double-cylinder gigs. The former may be subdivided into single-acting gigs and double-acting gigs. In both, however, in order to properly tease the cloth in opposite directions, it is necessary to reverse the motion of the cloth and at the same time reverse the motion of the cylinder and the position of the tease-slats on the cylinder. To obviate loss of time and expenditure of labor attending this reversing of the slats and of the run of the cloth, and to produce a more even or uniform teasing, double-cylinder gigs were contrived; that is, gigs in which two cylinders are used, one of which revolves in one direction, and the other in the opposite direction, while the cloth runs continuously in one direction. The first double-cylinder gigs were really duplicated gigs, *i. e.*, two gigs were so combined as that the cloth passed through one of them first; then it was collected in a trough, whence it was taken up by and worked in the other gig. It will be readily understood that this system involves much labor, requires much power to drive the machinery, and affords no means to properly watch the operation upon the cloth. Other improvements have been devised with a view of remedying these evils. For example, in the Gessner gig, which is the best double-cylinder gig heretofore in use, the cloth passes under the two cylinders, and thus is caused to receive the broken teazles and flocks of wool; and these particles are afterwards pressed into the body of the cloth, and often cause the tearing of the fabric, particularly if it be fine. Besides, it is difficult to observe the manner in which the teasing is performed by reason of the limited length of the cloth which can be brought under the eye of the workman. In other double gigs, the cloth passes under the two cylinders, and then returns above and over the same. It thus receives in like manner the teazles or broken pieces therefrom, and also the flocks of wool. On the other hand, the height at which the cloth and cylinders are placed renders the operation of handling and inspecting the cloth extremely inconvenient, and the examination itself cannot be satisfactorily made on account of the partial obscuration of the light in which the cloth is seen. It is to remedy these and other disadvantages which generally attend the use of double gigs whose drums or teasing cylinders are in juxtaposition, that I have invented or devised the arrangement of a double-cylinder gig, as indicated in the accompanying drawing, which represents a side elevation of a mill to which my improvements are applied.

The mill consists of a frame, G, in which the stretching and conducting rollers, and the cylinders which carry the teazles, have their bearings. The cylinders E F are mounted in the frame so as to be in juxtaposition and at the same height from the bottom of the frame, their axes lying in the same horizontal plane. They may be operated so as to revolve in similar or opposite directions, by means of a strap or connecting belt, either straight or crossed. In the upper part of the frame above the cylinders are the rollers *a, b, &c.*, geared together as shown in the drawing, and forming a system by means of which the cloth is fed along or regularly conducted through the mill. Under this arrangement the cloth is placed in a trough or basin, A, which is separated from the moving parts of the machine, so as to allow the operator free access to the machine, and, at the same time, to thoroughly examine the work in progress at the delivery end, or side marked *n*, of the machine. In order to reach the first teasing drum E, the cloth is extended above the workman, over the roller B, placed in that part of the frame which overhangs the basin A. Around this roller B, or a pulley or drum mounted on its shaft, a strap, *m*, is passed, whose tension over the roller is regulated by means of a thumb-screw, *p*. The object of this arrangement is to give the cloth the amount of resistance requisite to bring it into proper tension while passing over or against the teasing cylinder. Passing over the succeeding roller B the cloth is carried under the roller *a*, the first of the series of geared rollers. It is thence conducted successively over the roller *b* and downward under the expanding roller H, placed just over the upper part of the cylinder E. The cloth, as soon as it leaves the roller H, meets the drum E, and remains in contact therewith until it reaches the roller I, which is movable by means of the segmental rack *o*, operated by a crank-wheel, through the intermediary of a pinion and endless screw, so as to give more or less contact of the cloth with the tease cylinder E at pleasure. The cloth, after passing around the roller I, reascends until it meets the geared roller *d*, which is

connected with the rollers *a b* by the gear-wheel *c*. It then passes over this roller *d*, and, traversing the space which intervenes between the two parts of the gig, extends over the leading or conducting roller *f*, which is connected with the rollers over the first teasing cylinder *E* by means of the large gear-wheel *e*. Thence it is carried downward under the expanding roller *K*, and comes in contact with the upper part of the teasing drum *F*, continuing in such contact until it meets the roller *L*, which is movable in a similar manner and for the same purpose as the roller *I*. The cloth passes under and around the movable roller *L*, and thence extends upwards to the geared roller *C*. It is conducted over this roller and down under the roller *D*, after which it is carried upwards and passed successively over the guide and supporting rollers *M N O* and draught-roller *P*, which may be covered with cards or any other material which will cause the adhesion of the cloth so as to produce the required draught. From this latter roller the cloth falls again into the basin or trough *A*, being entirely under the eye of the workman, who can easily manipulate it, or judge of the quality of the work performed. The great length of the course traversed by the cloth allows a correspondingly great increase in the length of the cloth to be operated on at one working. For cloth which requires the perfect preservation of the nap in the condition in which it is left by the second cylinder *F*, such cloth is taken out on the first roller *C* above the cylinder, and from this roller it is conducted over the rollers *M N*, &c., directly to the basin *A*, without passing under the roller *D*, thus keeping its teased side exterior to the conducting and guiding rollers. In the drawing, the course traversed by the cloth when brought in contact but once with each cylinder is indicated in black lines. But the arrangement of rollers, &c., necessary in order to give it the double contact with each cylinder, as is sometimes done in gig-mills, can be easily effected in the manner shown in red lines in the same drawing. It will be seen, however, that under either arrangement the cloth is brought in contact only with the tops, or, at the furthest, no lower down than with the sides of the cylinders, and that the cloth is in no degree carried underneath such cylinders, thus obviating the disadvantages recited in the first part of this specification.

The principal advantages of this arrangement are, freedom of the workmen from danger, the perfect conducting of the cloth, without liability to injury from bits of teazles, flocks, or dirt; the facility with which it may be examined and adjusted; the ease with which the machine may be operated, either for supplying the drums with teazles or for regulating the contact of the cloth with the teazles; and, lastly, the increased length of the cloth, allowed by the length of the course which the cloth traverses in its "move" through the mill.

Having thus described my invention, and the manner in which the same is or may be carried into effect, what I claim, and desire to secure by Letters Patent, is as follows:

In machines for raising the nap on cloth by means of two teasing drums, I claim the arrangement substantially as herein shown of the teasing drums, conducting and stretching rollers, and suitable gear mechanism for imparting to the cloth its "move" to, against, and from the said teasing drums, and also to and from the receiving basin, in the manner and for the purposes set forth.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

Aix la Chapelle, this 8th day of January, 1866.

AD. HOUGET.

Witnesses:

W. N. VESEY,
WILLIAM PRICE.