J. REPETTI.

Combined Pulley, Clutch, and Brake.

No. 218,063. Patented July 29, 1879.

Fig. 1

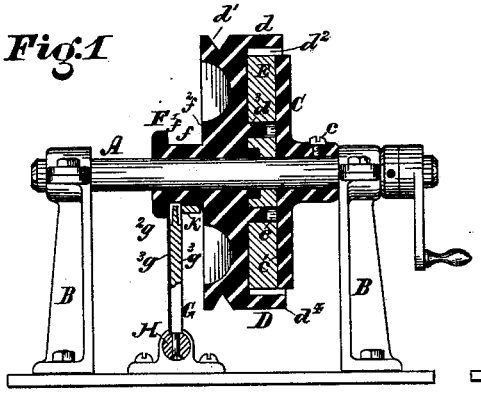
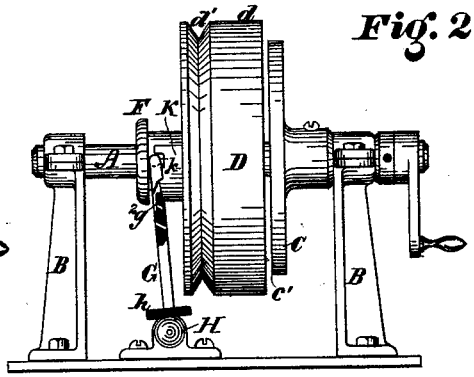


Fig. 2



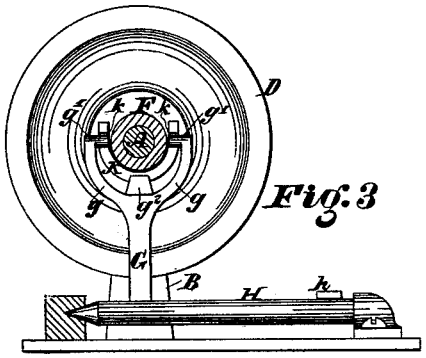
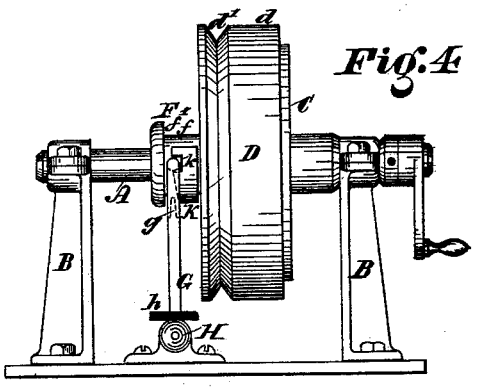


Fig. 3

Fig. 4



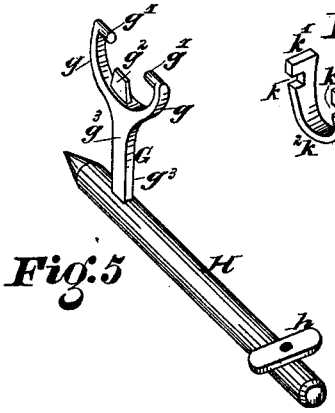


Fig. 5

Fig. 6

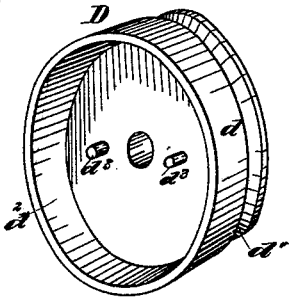
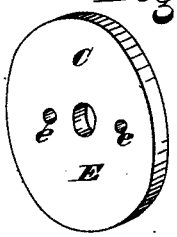


Fig. 7

Fig. 8



WITNESSES:

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Jos. B. Connolly

INVENTOR,

Joseph Repetti,

By Connolly Bro, ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOSEPH REPETTI, OF VINELAND, ASSIGNOR TO ALEXANDER SINZHEIMER, OF CAMDEN, NEW JERSEY, AND SIGMUND DEUTSCH, OF PHILADELPHIA, PENNSYLVANIA, ONE-THIRD TO EACH.

IMPROVEMENT IN COMBINED PULLEY, CLUTCH, AND BRAKE.

Specification forming part of Letters Patent No. **218,063**, dated July 29, 1879; application filed November 22, 1878.

To all whom it may concern:

Be it known that I, JOSEPH REPETTI, of Vineland, in the county of Cumberland and State of New Jersey, have invented a certain new and useful Combined Pulley, Clutch, and Brake for Sewing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a longitudinal vertical section of my invention. Figs. 2 and 4 are side elevations; Fig. 3, an end view, partly in section; and Figs. 5, 6, 7, and 8, detail perspectives.

My invention has relation to a combined pulley, clutch, and brake for sewing-machines; and consists in the novel construction, combination, and arrangement of parts, as hereinafter described and specifically claimed.

Referring to the accompanying drawings, A indicates a power-driven shaft, which is designed to communicate motion to a number of sewing-machines, and is sustained in supports B B. C is a rigid collar or disk, firmly secured on the shaft A by a set-screw, *c*, or equivalent means, so as to always turn with said shaft.

D is a pulley, the periphery of which is flat at *d* for the reception of a flat belt, and grooved at d^1 to receive a round belt. One side of said pulley is recessed, forming a chamber, d^2, and provided with projecting pins or studs d^3.

E is a disk of wood, leather, or equivalent material, fitted within the chamber d^2, and having openings *e e* for the reception of the pins d^3. On the opposite side of the pulley is a hub, F, channeled or grooved at *f*.

G is the stop-lever, secured in a rock-shaft, H, having a treadle or foot-piece, *h*, which projects on either side of said shaft, as shown. Said lever is bifurcated or formed with two curved arms, *g g*, which embrace the hub F, and have inwardly-turned arms or pins g^1 g^1, which enter the groove *f* in said hub. g^2 is a stud, centrally located in the lever G, between the arms *g g* and between the sides g^3 g^3.

K is a yoke-shoe, composed of a semicircular band, notched at *k k* to receive the pins or arm ends g^1 g^1, and tapering in width from its ends, k^1 k^1, to its middle, k^2, the side adjacent to the lever G being beveled or inclined, while the side next the pulley is straight and vertical.

The operation is as follows: The parts being relatively arranged as shown in Figs. 1, 2, 3, and 4, power is communicated to the shaft A, and a belt applied to the pulley D, said belt, if flat, running on the part *d*, but if round entering the groove d^1. The pulley, occupying the position shown in Fig. 2, is loose on the shaft A, and does not, in this position, revolve with said shaft. As will be observed, it is now slid some distance away from the fast collar C. To bring the pulley into clutch engagement with said collar C, the shaft H is rocked to the right by the operator placing the foot on one arm of the foot-plate *h* and depressing the same. This causes the lever G to swing to the right and move the pulley D along the shaft A until the friction-disk E meets and rests against the fast collar C. The friction will cause the pulley now to revolve with the shaft A, and so to continue as long as the disk E is kept pressed up against the collar C. At the same time the side of the lever G adjacent to the hub-shoulder f^1 is out of contact with said shoulder, the side of the brake-shoe K adjacent to the pulley D touching the hub F at one point, or with such slight surface contact as to produce no appreciable friction or brake-action.

To slide the pulley out of clutch engagement with the disk C, the rock-shaft H is, by the action of the operator's foot on the plate *h*, rocked to the left. This causes the lever G to swing to the left, the pulley D being slid away from the collar C. Owing to the high speed at which the pulley usually runs, and the momentum thereby obtained, said pulley would continue to revolve for some time after being slid away from the collar C were not a brake provided to instantly arrest its revolution when out of clutch engagement. When, therefore, the pulley is out of such engagement, occupying the position shown in Fig. 2, the ends g^1 g^1 bear against the hub-shoulder f^1, and the stud g^2 against the shoe K, pressing the lower part of the side k^3 of

the latter against the adjacent face of the pulley-hub F. The pins or arm ends g^1 g^1 and shoe K thus become wedged between the shoulder f^1 and hub-face f^2, producing a brake-action, which instantly arrests the revolution of the pulley, thereby enabling the operator to stop stitching at the precise place desired.

It will be noted that the lever-and-brake arrangement may be applied to either side of a pulley—*i. e.*, to the right or to the left hand side. Thus, in the drawings the same are illustrated as applied to a right-hand pulley. But the lever might remain as shown, and the pulley be located to its left with equal effect, said pulley being turned around, of course, so as to bring its hub adjacent to the lever. The shoe K^1 would also be required to be transferred from the right to the left of said lever and reversed, the central location of the stud g^2 adapting it to act as set forth, whether the shoe be on one side or on the other.

When the pulley is in friction-clutch engagement, as shown in Fig. 1, the inner side, c', of the fixed collar C is within the chamber d^2, or, in other words, the flange d^4 of said pulley extends over the periphery of said collar. The result is, that when a belt breaks—an accident of frequent occurrence—said belt will not get caught between said pulley and collar, which, but for the construction described, it would be quite certain to do.

I am aware that it is not new to provide a friction-clutch with an elastic disk arranged between the fixed and loose collars and attached to one of them. I therefore do not broadly claim such as my invention.

What I claim as my invention is—

1. The start and stop lever G, constructed as described, having arms g g, with inwardly-bent ends or pins g^1 g^1 and stud g^2, substantially as set forth.

2. In combination with lever G and pulley D, the rock-shaft H, having treadle or foot-plate h, and arranged at right angles to the driving-shaft A, whereby the tilting of the treadle on opposite sides will cause the clutch engagement and release, respectively, substantially as shown and described.

3. The brake-shoe K, constructed as described, consisting of a semicircular band, notched at k k, and tapering from its ends to its middle, substantially as shown and described.

4. In combination with pulley D, having hub F, with groove f, the lever G, having arms g g, with turned-in ends or pins g^1 g^1 and stud g^2, and shoe K, notched at k k, and tapering, as set forth, said parts being arranged and operating substantially as described.

5. The combination of shaft A, fast collar C, loose sliding pulley D, having grooved hub F, friction-disk E, lever G, rock-shaft H, with foot-plate h, and brake-shoe K, substantially as shown and set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 10th day of November, 1878.

JOSEPH REPETTI.

Witnesses:
A. SINZHEIMER,
JAMES B. SMITH.