(No Model.)

P. HOWE.

CLOTH CUTTING MACHINE.

No. 423,056. Patented Mar. 11, 1890.

Fig: 1.

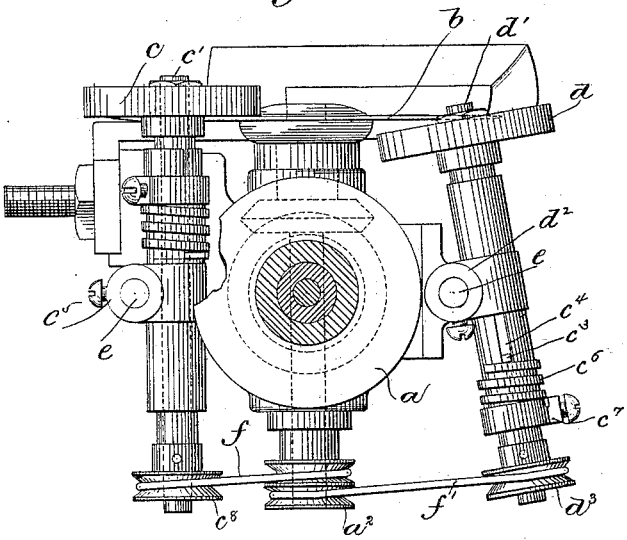


Fig: 2.

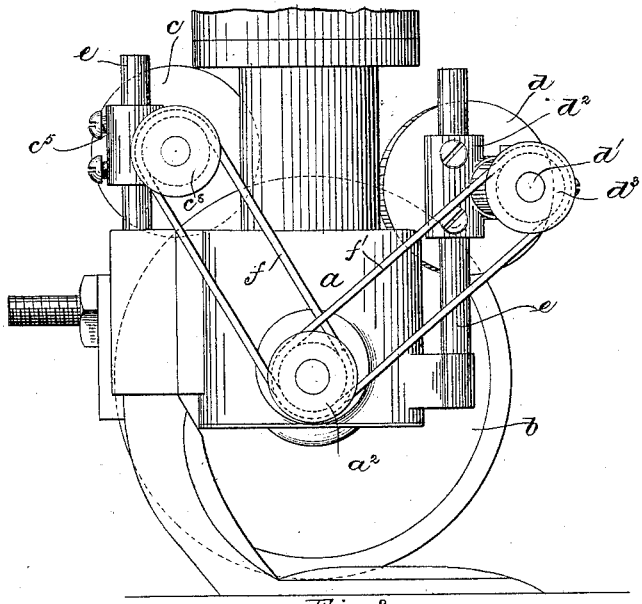
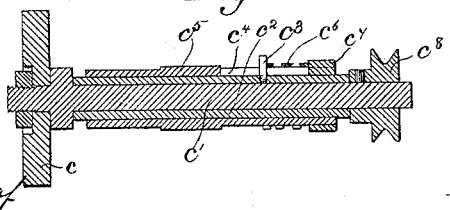


Fig: 3.



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UNITED STATES PATENT OFFICE.

PATRICK HOWE, OF BOSTON, ASSIGNOR TO ISAAC FENNO, RICHARD D. GOODWIN, AND CHARLES M. BLAKE, OF BOSTON, ADAMS K. TOLMAN, OF NEWTON, AND HENRY G. HARTSHORNE, OF WAKEFIELD, MASSACHUSETTS.

CLOTH-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 423,056, dated March 11, 1890.

Application filed July 23, 1889. Serial No. 318,376. (No model.)

To all whom it may concern:

Be it known that I, PATRICK HOWE, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Cloth-Cutting Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to a cutter-grinding mechanism for machines for cutting cloth; and its special object is to provide means for positively driving the grinder or grinders and for adjusting the same relatively to the cutter.

The invention will be described first, and then particularly pointed out in the claims.

In the drawings, Figure 1 shows in top view the head of a cloth-cutting machine having positively-driven grinding-wheels. Fig. 2 is a side view of the head and grinding-wheels shown in Fig. 1, and Fig. 3 a longitudinal section of the grinding-wheel and its shaft.

The head, comprising the frame a, and disk cutter b are arranged on a shaft having its bearings in the frame a and rotated by a suitable means, (not shown,) and may be as in my patent, No. 355,085, dated December 28, 1886.

Two grinding-wheels or grinders c d are provided and arranged on like shafts; hence only one will be described.

Referring to Fig. 3, the grinding-wheel c is secured to a shaft c', on which is a sleeve c^2, the latter having a pin c^3, which passes through and moves in a slot c^4, formed in the bearing c^5. A spiral spring c^6 encircles the bearing, with one of its ends bearing against a collar or projection c^7 and its other end pressing against the pin c^3, the tendency of the spring being to keep the grinding-wheel against the disk cutter.

The grinding-wheel d is arranged on a shaft d', supported in a bearing d^2, substantially as just described of the wheel c, the spring on the bearing c^5 tending to draw the wheel c against the cutter, while the spring on the bearing d^2 tends to press the wheel d against the cutter. The supporting-bearings c^5 and d^2 are arranged adjustably on independent vertical rods e, which latter are attached to the frame a. By this construction the grinder shaft or shafts of the grinding-wheel or grinding-wheels may be rotated each on its own rod, and also adjusted thereon longitudinally of its rod to change the angle and height of the grinding wheel or wheels relatively to the cutter.

The belt-pulley c^8 is fixed to the shaft c', and a belt-pulley d^3 is fixed to the shaft d'. A belt-pulley a^2, having two belt-receiving grooves, is fixed to the cutter-carrying shaft, and two belts f and f' connect the pulley a^2 and the pulleys c^8 and d^3, so as positively to drive the shafts c' and d' from the cutter-shaft.

It will be seen that as the cutter-carrying shaft is rotated the shafts c' and d', carrying the grinding-wheels, are revolved in the same direction; hence the contacting faces of the wheel or wheels and cutter move in opposite directions.

It is obvious that, if desired, only one grinding-wheel may be employed, and if only one be employed only one side of the cutter can be ground at a time. If but one grinding-wheel be employed, it will have the vertical and rotary adjustments described, and will be positively driven from the cutter-shaft.

When two grinding-wheels are employed, each is driven independently of the other, and each also is adjustable independently of the other.

It will be observed that the belts f and f' pass directly from the driving-pulley to the pulley to be driven, and thus the positive motion is obtained.

It is obvious that the vertical adjustment of the grinding-wheel shafts also necessitates a change of angle of the grinding-wheels, in order to keep the driving-belts sufficiently taut; and this is but another way of stating that the grinding-wheels are adjustable at angles to the cutter.

What I claim is—

1. The movable head of a cloth-cutting machine, a rotary shaft therein having a band-pulley on one end and a disk cutter affixed to its other end, combined with a suitable number of grinding-wheels, each having a rotary shaft, upon one end of which the wheel is mounted and at the other end of which is a

band-pulley, a bearing in which the shaft is arranged, a vertical rod upon which the bearing is secured and adjustable thereon longitudinally and rotarily around the said rod to vary the height and angle of the grinder relatively to the cutter, and a band directly and positively connecting the pulleys of the cutter-shaft and the grinding-wheel shaft to positively drive the grinding-wheel shaft in the same direction as the cutter, substantially as described.

2. The movable head of a cloth-cutting machine, a rotary shaft therein having a band-pulley on one end and a disk cutter affixed to its other end, combined with two grinding-wheels arranged upon opposite sides of the cutter, two shafts for such grinding-wheels, a band-pulley on each shaft, a bearing for each shaft, a vertical rod for each bearing, upon which rod its bearing is vertically and rotarily adjustable, so as to adjust each grinder-shaft independently of the other, and independent bands directly and positively connecting each of the grinder-shafts separately to the cutter-shaft, substantially as and for the purpose described.

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

PATRICK HOWE.

Witnesses:
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