

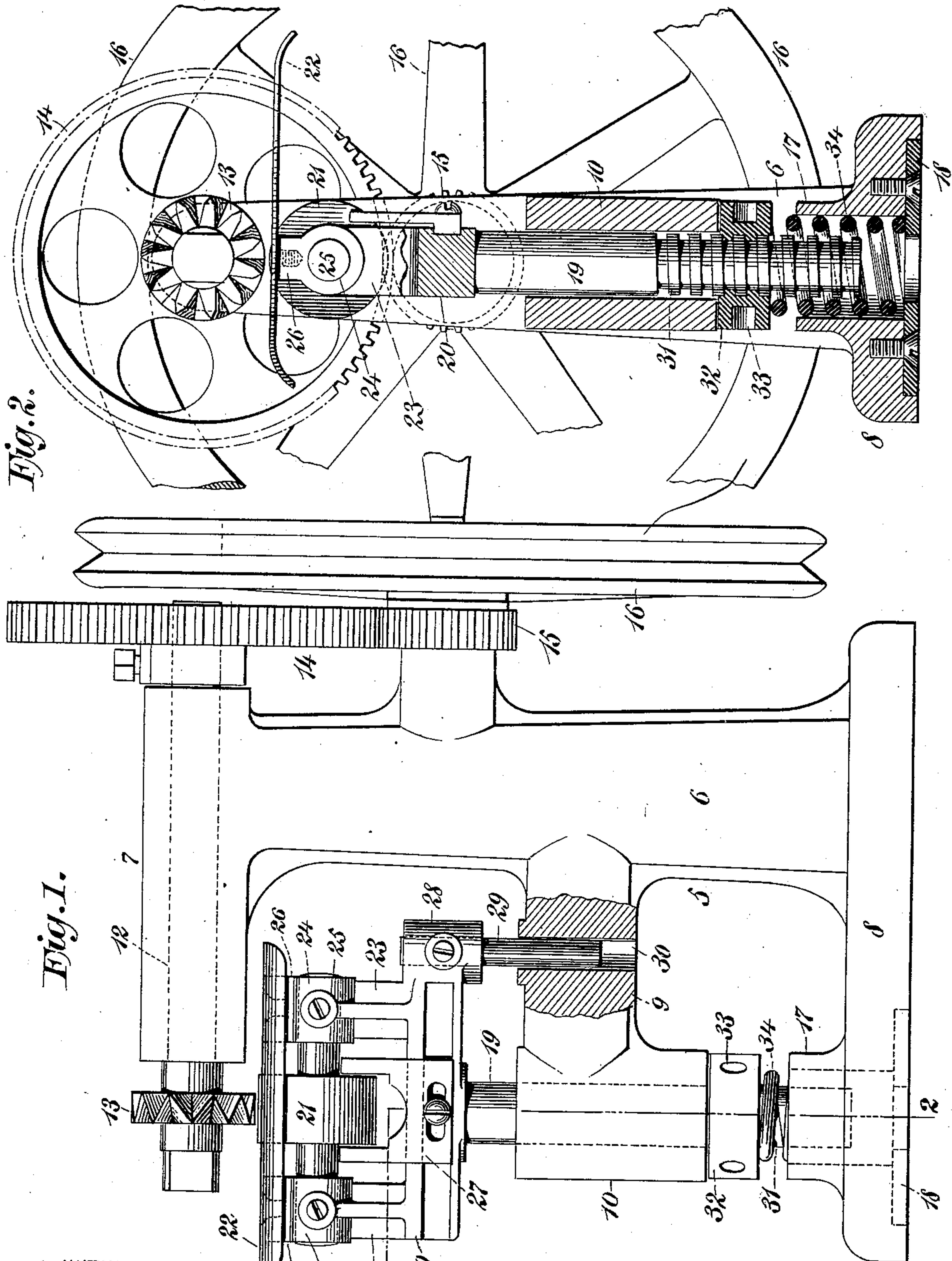
No. 672,901.

Patented Apr. 30, 1901.

R. J. HEARNE.
ROTARY CUTTER MACHINE.

(Application filed July 14, 1899.)

(No Model.)



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ROBERT J. HEARNE, OF NEW YORK, N. Y.

ROTARY-CUTTER MACHINE.

SPECIFICATION forming part of Letters Patent No. 672,901, dated April 30, 1901.

Application filed July 14, 1899. Serial No. 723,782. (No model.)

To all whom it may concern:

Be it known that I, ROBERT J. HEARNE, a subject of the Queen of Great Britain, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Rotary-Cutter Machines, of which the following is a specification.

The invention relates to improvements in rotary-cutter machines; and it consists in the novel features of construction and combinations of parts hereinafter described, and more particularly pointed out in the claims.

I have embodied the invention in its presentation in this application in a pinking-machine comprising a cutting-wheel, an anvil-wheel, means for rotating the cutting-wheel, a frame sustaining the anvil-wheel and work-table, means yieldingly supporting said frame, and means for adjusting said table and anvil-wheel with relation to the cutting-wheel and affording an adjustable yielding pressure for said wheels with respect to one another.

The nature and objects of the invention will be fully understood from the detailed description hereinafter presented, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation, partly in section, of the pinking-machine constructed in accordance with and embodying the invention; and Fig. 2 is a vertical section of same on the dotted line 2 2 of Fig. 1.

In the drawings the numeral 5 designates the general frame of the machine, said frame comprising the standard 6, having at its upper end a bearing-sleeve 7, at its lower end the bed-plate 8, and about at its middle portion the arm 9, carrying at its outer end the vertical sleeve 10. Within the sleeve 7, at the upper end of the standard 6, is mounted the shaft 12, carrying at one end the cutting-wheel 13 and at its opposite end being supplied with the gear-wheel 14, which, as usual, is in engagement with the pinion-wheel 15, secured upon the shaft of the driving-wheel 16, the said wheels 14, 15, and 16 being usual in this art for imparting motion to the shaft 12 and cutting-wheel 13. The bed-plate 8, directly below the vertical sleeve 10, is formed with the hollow hub 17, which is partly closed

at its lower end by the plate 18, which, as more clearly illustrated in Fig. 2, is fastened to the lower side of the bed-plate 8 by means of screws. Within the vertical sleeve 10 and hub 17 is placed the vertical standard 19, having at its upper end the head 20, which supports the anvil-wheel 21 and table 22 and which comprises the transverse base and vertical arms 23 23, the latter having the bearing-sleeves 24 24 to receive the pin 25, upon which the anvil-wheel 21 has its movement. The vertical arms 23 23 extend upward above the bearing-sleeves 24 and above said sleeves form the supports 26, upon which the table 22 is fastened by screws.

The anvil-wheel 21 is loose upon the pin or shaft 25 and is retained in proper position upon said shaft by means of the plate 27, whose upper portion is bifurcated to straddle the wheel 21, as illustrated. The head 20 at its side which is adjacent to the standard 6 is formed with the vertical sleeve 28, into which is fastened by means of a screw the upper end of the vertical pin 29, whose lower portion passes within the vertical aperture 30, formed in the arm 9, intermediate the standard 6 and vertical sleeve 10.

The vertical standard 19, supporting the head 20, anvil 21, and table 22, is in the form of a vertical shaft whose lower portion is threaded, as at 31, and receives the nut 32, which has a bearing against the lower end of the sleeve 10 and is formed with the recesses 33 to facilitate its rotation upon the threaded portion of said standard 19.

Encircling the lower end of the vertical standard 19 is the firm coiled spring 34, which is seated within the hollow hub 17 and confined at its upper and lower ends by the nut 32 and plate 18, respectively, as illustrated more clearly in Fig. 2. It will be observed that the spring 34 furnishes a yielding seat for the standard 19 and the parts carried thereby.

The purpose of the nut 32 is, primarily, to enable the vertical adjustment of the standard 19 and anvil 21 with respect to the cutting-wheel 13, and it will be obvious that when the nut 32 is turned in one direction it will effect the elevation of the standard 19 and wheel 21 and that when said nut is turned in the reverse direction the said standard 19

and wheel 21 will be lowered. An important feature in the adjustment upward of the standard 19 in accordance with my invention is that the tension of the spring 34 remains normal until the cutting-wheel and anvil come into contact with one another and that thereafter the continued rotation of the nut 32 in the same direction results in the downward travel of said nut on the standard 19 and against the spring 34, whereby the force of said spring is brought under absolute control and there is afforded an adjustable yielding pressure without regard to the special diameters of the wheels or the distances their centers may be apart.

In the operation of the machine hereinbefore described power is applied to the wheel 16 and the fabric is fed upon the table 22 and between the cutting-wheel 13 and anvil 21, said wheel and anvil operating in a well-known manner. The head 20, supporting the anvil-wheel 21 and table 22, is prevented from having an axial rotation by means of the engagement of the vertical pin 29 with the aperture 30 in the arm 9.

The relation of the anvil-wheel 21 and table 22 with respect to the cutting-wheel 13 is governed by the nut 32, by which the said anvil-wheel 21 and table 22 may be moved toward or from the cutting-wheel 13 at will and without altering their relations to one another. The head 20 carries both the anvil-wheel 21 and table 22, and hence said wheel and table move together. The adjustment upward of the standard 19 by means of the nut 32 will have no effect upon the spring 34 until the anvil-wheel commences to bear against or meets the resistance of the cutting-wheel, and then should the rotation of the nut 32 in the same direction be continued the compression of the spring will take place and the yielding pressure of the anvil against the cutting-wheel will be increased. When the anvil-wheel is moved upward until it simply reaches the cutting-wheel, there exists the normal yielding support furnished by the spring 34 in its initial condition; but any further rotation of the nut 32 in the same direction will increase the tension of the spring, and consequently the force with which the anvil-wheel will press against or toward the cutting-wheel, the degree of this tension or force being subject to the manual movement of the nut 32, and consequently being adjustable to meet varying conditions and under the positive control of the operator. Thus the spring 34 affords, when under pressure, a yielding resistance to one of the wheels which cooperate to effect the cutting of the fabric, and the nut 32 may be utilized to first secure the primary adjustment of said wheels with respect to one another without regard to or affecting said spring and then to apply pressure to any extent desired against said spring, whereby the tension of the latter, and consequently the amount of its resistance, may be adjusted or regulated at will under

the positive control of the operator. The spring 34 has no fixed connection with either the cutting or anvil wheel or with the parts connected to move therewith, and consequently is not affected by any primary movement of one of said wheels toward the other thereof, and hence said spring may be independently adjusted to any extent desired and affords a very desirable adjustable yielding resistance for the wheel against which its force is exerted.

The table 22, as shown in Fig. 2, has a substantial portion of its extent at the front of the head 20 or toward the operator, while at the rear of the head 20 the table 22 is of limited area and turns downward at its rear edge, the table at its rear portion being thus given the limited extent and the downwardly-turned edge, so that the work may rapidly leave said table and, hanging downward, aid in drawing the work from the machine. The front portion of the table 22 is given the broad area, so as to furnish a very convenient work-table and one well adapted to receive the various kinds of fabrics and also the proper guides for said fabrics. The table 22 in regard to its length is somewhat longer than the top of the head 20, as shown in Fig. 1, and centrally of its length contains the slot up through which the anvil-wheel 21 projects a slight distance. The head 20, wheel 21, and table 22 always maintain a fixed vertical relation in respect to one another and are supported by the standard 19.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a machine of the character described, the shaft 12, the cutter-wheel 13 on said shaft, and means for rotating said shaft and wheel, combined with the vertical standard 19, means for moving said standard vertically, the head 20 carried at the upper end of said standard and having the side arms 23, 23, the anvil-wheel disposed between said arms 23, 23, the shaft for said anvil-wheel and having the ends supported in bearings in said arms 23, 23, and the table 22 having a slot up through which the said anvil-wheel projects slightly, said table being rigidly fastened to said head 20, whereby said head, table and anvil-wheel are always in fixed vertical relation in respect to one another; substantially as set forth.

2. In a machine of the character described, the shaft 12, the cutter-wheel 13 on said shaft, and means for rotating said shaft and wheel, combined with the vertical standard 19, means for moving said standard vertically, the head 20 carried at the upper end of said standard and having the side arms 23, 23, the anvil-wheel disposed between said arms 23, 23, the shaft for said anvil-wheel and having its ends supported in bearings in said arms 23, 23, and the table 22 having a slot up through which the said anvil-wheel projects slightly and which table, transversely considered is unequally disposed on said head 20, whereby it presents an extended front surface and a

limited rearsurface, but considered in respect
of its length is equally disposed on said head,
said table 22 being rigidly fastened to said
head 20, whereby said head, table and anvil-
5 wheel are always in fixed vertical relation in
respect to one another; substantially as set
forth.

Signed at New York, in the county of New
York and State of New York, this 12th day
of July, A. D. 1899.

ROBERT J. HEARNE.

Witnesses:

CHAS. C. GILL,
GUNDER GUNDERSON.