

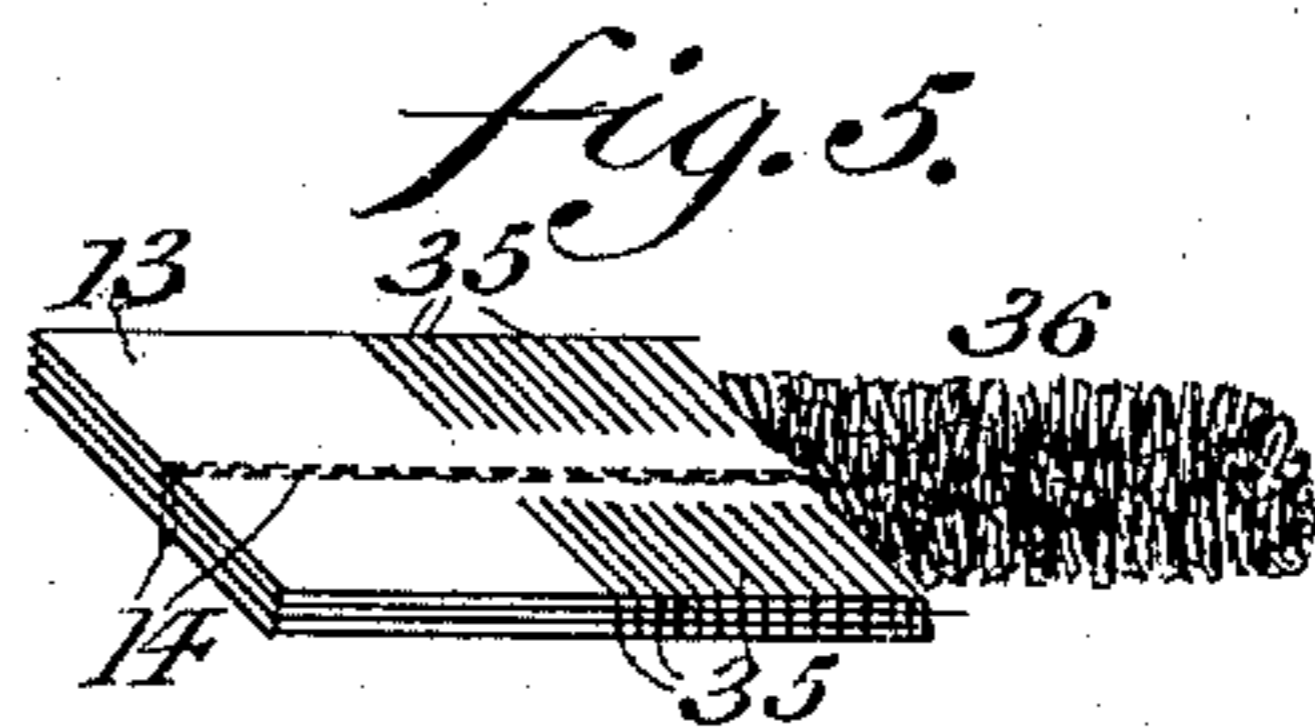
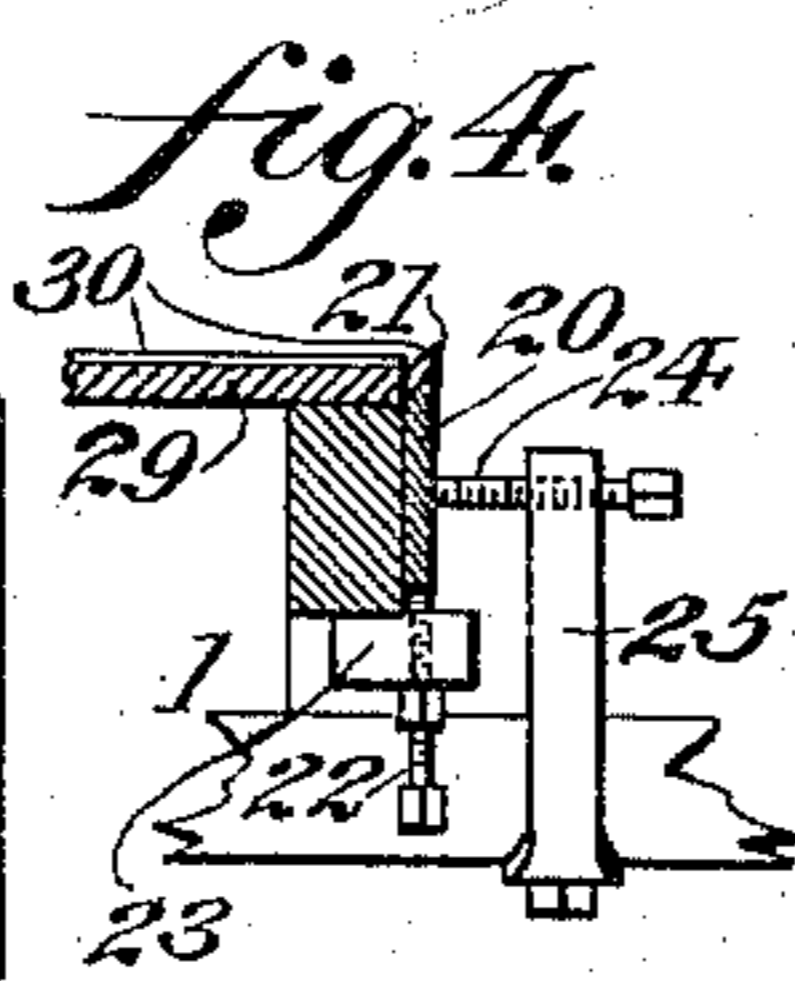
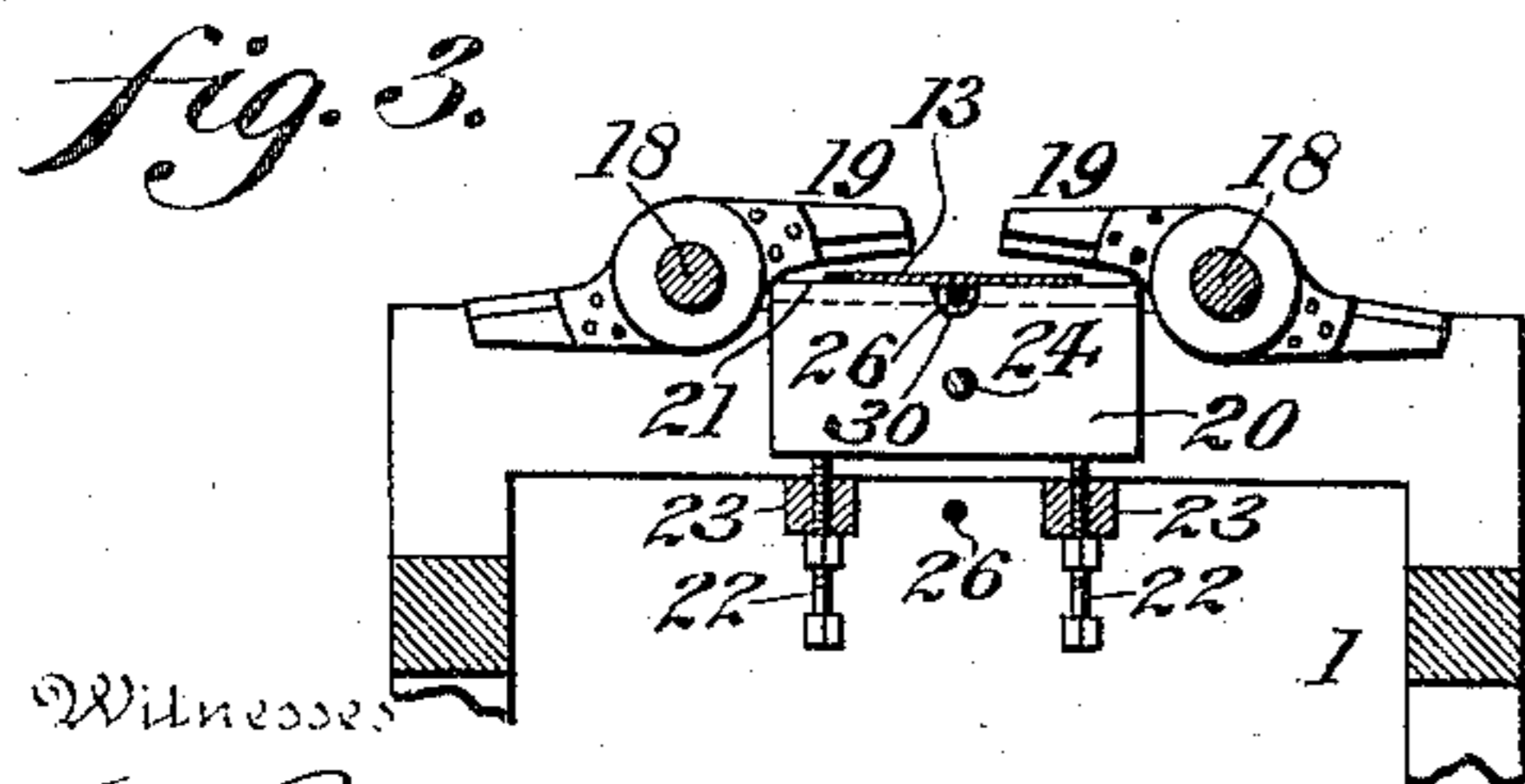
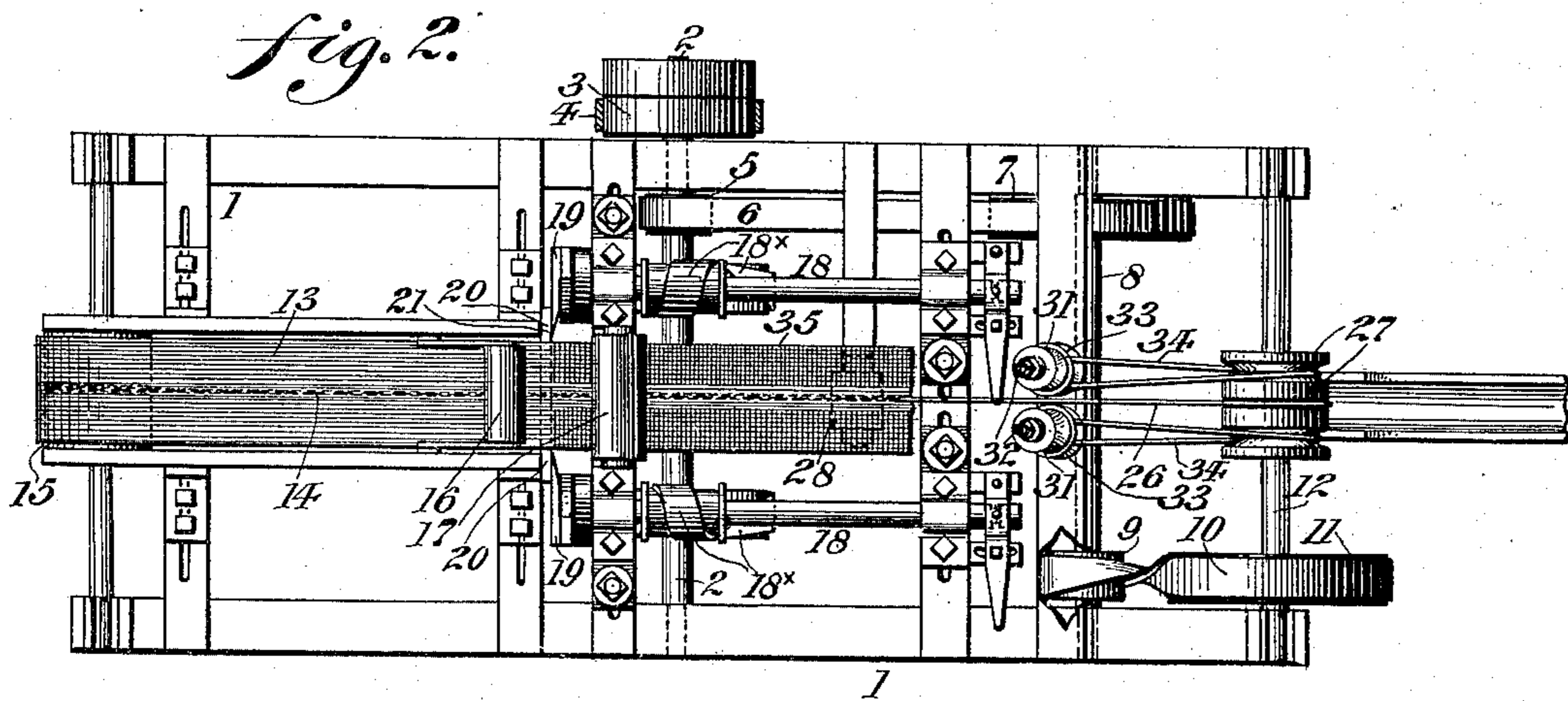
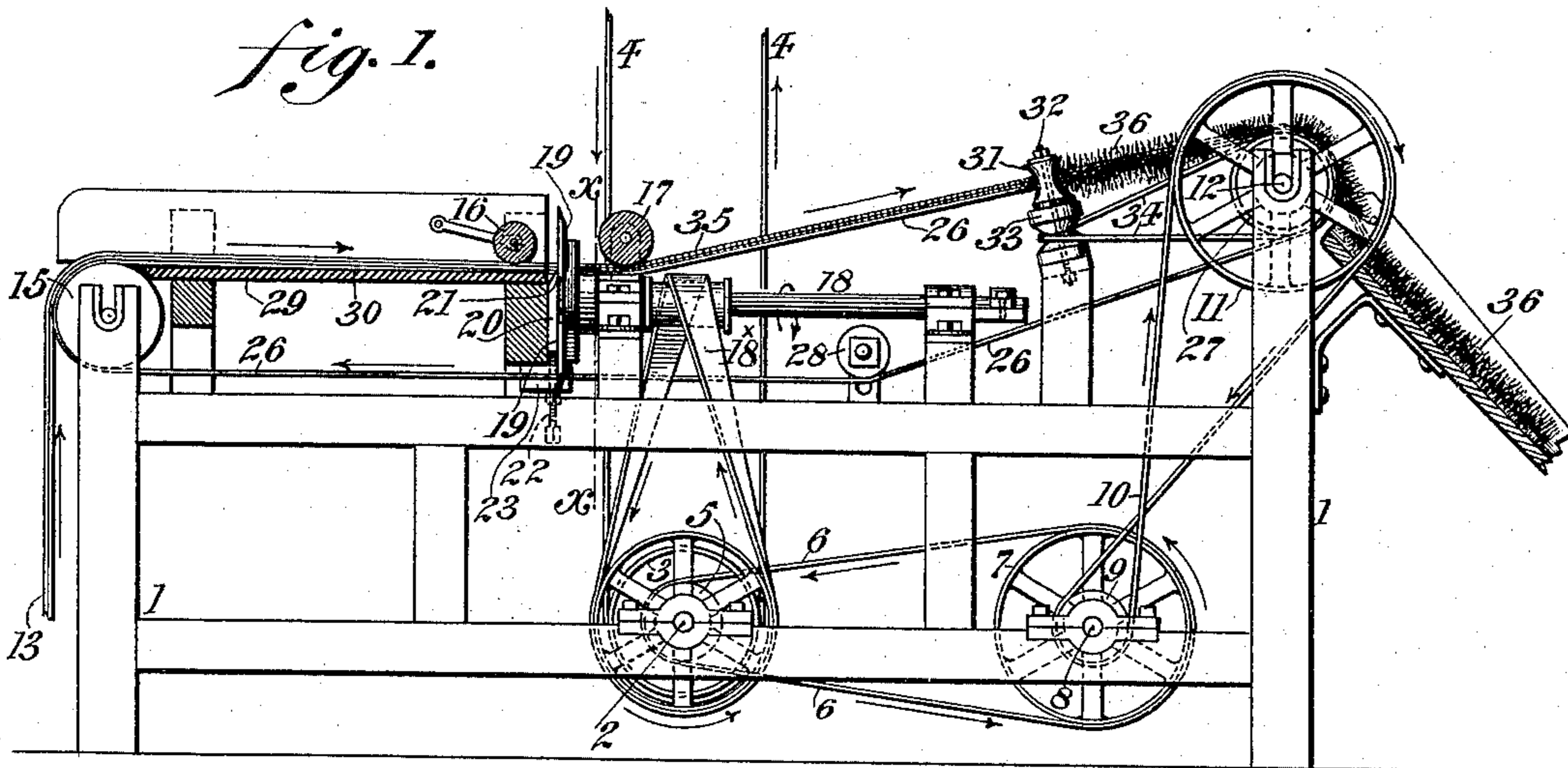
No. 638,361.

Patented Dec. 5, 1899.

C. SCHUMANN.
PAPER FRINGING MACHINE.

(Application filed June 16, 1899.)

(No Model.)



Witnesses
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PAPER-FRINGING MACHINE.

SPECIFICATION forming part of Letters Patent No. 638,361, dated December 5, 1899.

Application filed June 16, 1899. Serial No. 720,761. (No model.)

To all whom it may concern:

Be it known that I, CHARLES SCHUMANN, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Paper-Fringing Machines, which improvement is fully set forth in the following specification and accompanying drawings.

10 My invention relates to paper-fringing machines; and it consists of a novel construction of devices whereby a blank which is formed of a plurality of strips of tissue or other thin paper stitched longitudinally is subjected to the action of shears, which cut the same transversely, provision being also made for enabling said paper blanks or strips to be fringed or crimped by succeeding operations in the same machine.

20 It further consists of novel details of construction, all as will be hereinafter fully set forth, and particularly pointed out in the claims.

Figure 1 represents a side elevation, partly in section, of a paper-fringing machine embodying my invention. Fig. 2 represents a plan view of Fig. 1. Fig. 3 represents a section on line $x x$, Fig. 1. Fig. 4 represents a front elevation of Fig. 3, showing the stationary cutting-knife and the means for adjusting the same. Fig. 5 represents a perspective view showing the appearance of the blank before and after cutting and also the appearance of the finished product.

35 Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings, 1 designates the framework or housing of the machine, and 2 a shaft having bearings therein, power being applied initially to said shaft by means of the pulley 3 and belt 4.

5 designates a pulley mounted on the shaft 2, from which power is transmitted by the belt 6 to the pulley 7, which is mounted on the shaft 8, which carries the pulley 9, from which power is transmitted by means of the belt 10 to the pulley 11, mounted on the shaft 12.

13 designates a blank which is composed of several thicknesses of thin or tissue paper se-

cured by a central line of stitching 14, which may be done in any ordinary sewing-machine.

15 designates a roller over which the blank 13 passes when it enters the machine, said blank being held in place by a pressure-roller 16 and passing thence under the roller 17, which is mounted in suitable bearings.

18 designates shafts which extend longitudinally of the machine, are mounted in suitable bearings, and rotated by belts 18^x, one end of said shaft terminating in the space between the rollers 16 and 17 and having mounted thereon the shears 19, the cutting edges of which revolve against the stationary knife 20, which is provided with the sharp edge 21, over which the blank 13 passes. The manner of holding the knife 20 in position will be understood from Figs. 3 and 4, said knife being capable of vertical adjustment by means of the set-screws 22, which pass through the arms 23, and is tightened in the desired position by means of the screw 24, which passes through the post 25.

26 designates an endless cord which passes around a groove in the pulley 27, said cord passing under the roller 28 and thence around the roller 15, then through a groove 30 in the bed 29 and knife 20, and thence under the roller 17, said cord serving to support the paper blank during the act of fringing.

31 designates fringing rollers or spools which are rotatably mounted on their bearings 32, said spools being carried by the pulleys 33, which are actuated by the belts or cords 34, which are operated by the pulley 27.

It will be seen that during the operation of the machine the blank 13 passes over the roller 15 and under the roller 16 in the direction indicated by the arrows, and during its passage by the action of the shears 19 said blank will be cut transversely, as indicated by the lines 35, the cuts extending from the outer edge of the blank to a point near the center thereof, but not quite to the line of stitching 14, said shears being rotated in the direction indicated, as will be apparent by following out the direction of rotation of the belts and their adjuncts. The blank after being cut passes on between the spools or rollers 31, as will be understood from Fig. 1,

and by their action the free ends of the transversely-slitted portions will be disarranged or twisted and caused to assume a fluffy or crimped appearance, as indicated at 36 at the right of Figs. 1 and 5, the completed article leaving the machine in a condition ready for packing or transportation and being adapted for festooning or for the formation of wreaths or trimmings of various characters.

It will of course be evident that, if desired, the blank after cutting may have the final finishing step imparted thereto—in other words, the finished product may be caused to assume the appearance at 36—by rubbing the same between the hands of the operator. I, however, prefer to employ the construction seen in Figs. 1 and 2, since by this means the product leaves the machine in a finished condition.

The knife 20 can be raised and lowered or otherwise adjusted by manipulating the screws 22 and 24, as is evident, and it will be apparent that the shears 19 can be shifted longitudinally, according to requirements.

It will be seen that in the practical operation of my machine it is essential in order to produce the finished article having the proper appearance that none of the material be removed during or after the act of cutting, this result being effected by locating the revolving shears in close proximity to the upright knife 20 and dispensing with extraneous devices for removing the slitted portions, the appearance of the blank after cutting being understood from Figs. 2 and 5.

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

1. In a fringe-cutting machine, a table for supporting a blank, means for feeding said blank on said table in longitudinal direction, cutting devices arranged on opposite sides of said blank and adapted to slit the latter at substantially a right angle to the plane of said blank, and in a plane transversely to the line of movement thereof without the removal of any of the material of said blank, and means for operating said cutting devices.

2. In a paper-fringing machine, means for feeding a paper blank, and means for fringing the same comprising devices for transversely cutting the sides of the blank at intervals to produce slitted side portions and devices for twisting or disarranging said slitted portions.

3. In a paper-fringing machine, means for feeding a paper blank, means for transversely cutting the sides of the blank at intervals to produce slitted side portions, and means situated in the rear of said cutting devices and on opposite sides of the blank for twisting or crimping said slitted portions.

4. In a paper-fringing machine, a roller over which the paper blank is adapted to be passed, a bed for supporting said blank, a stationary knife over which said blank is fed and a plurality of revolving shears arranged on oppo-

site sides of said blank and adapted to cut the edges thereof on a line transversely to its direction of movement, a plurality of spools adapted to fringe or crimp a blank after cutting and means for operating said spools.

5. In a paper-fringing machine, a roller over which the paper is adapted to be passed, a roller 27 adapted to have power applied thereto, an endless cord 26 passing around said rollers 15 and 27, rollers 17 and 28 under which said cord also passes, a stationary lower knife over which said blank passes, rotary shears adapted to cut the edges of the blank on a line transversely to the direction of movement thereof and spools for fringing said blank after being transversely cut.

6. In a paper-fringing machine, a suitable housing, a knife 20, an endless cord adapted to support the material to be cut, pulleys or rollers located at the front and rear of the machine over which said cord passes, shears 19 adapted to cut the material transversely to its line of movement, spools 31 adapted to complete the operation of fringing or crimping, means for rotating said spools and means for adjusting said shears.

7. In a machine for fringing paper, a housing, a roller 15 at the front of the machine over which the blank passes, a rear roller 27, rollers 17 and 20, an endless cord or band passing over said rollers, a stationary knife, shafts extending longitudinally of the machine, transverse shears mounted on said shafts, spools for fringing or crimping the paper blank after cutting, and means for actuating said spools.

8. In a paper-fringing machine, means for feeding a paper blank in a longitudinal direction, means for cutting the same transversely to the line of movement thereof and a plurality of spools adapted to fringe said strip after cutting.

9. In a paper-fringing machine, means for feeding a paper blank in a longitudinal direction, a plurality of revolving shears arranged on opposite sides of said blank and adapted to cut the edges thereof on a line transversely to its direction of movement, devices for crimping or disarranging the cut edges of said blank, and means for operating said devices.

10. In a paper-fringing machine, means for feeding a blank, a plurality of revolving shears arranged on opposite sides of said blank and adapted to cut the edges thereof on a line transversely to its direction of movement, a stationary knife, means for adjusting said knife, and means for crimping or disarranging the cut edges of the blank.

11. In a paper-fringing machine, means for supporting and feeding a paper blank, a stationary knife over which said blank moves during feeding, a plurality of revolving shears arranged on opposite sides of said blank and adapted to cut the edges thereof on a line transversely to its direction of movement, and

means for crimping or disarranging the cut edges of the blank.

12. In a paper-fringing machine, means for supporting and feeding a paper blank, an upright stationary knife having an upper laterally-extending cutting edge over which said blank moves during feeding, a plurality of revolving shears arranged on opposite sides of said blank and adapted to slit the edges thereof on lines transversely to its direction of movement, without the removal of any of the material of said blank during or subsequent to the act of slitting the same.

13. In a paper-fringing machine, means for feeding a paper blank in a longitudinal direction, an upright stationary knife over which said blank moves, revolving shears arranged on opposite sides of said blank and adapted to slit the edges thereof on lines transversely to its direction of movement, means for adjusting said knife upwardly or

downwardly and means for adjusting the position of said shears relative to said knife.

14. In a paper-fringing machine, means for feeding a paper blank in a longitudinal direction, and revolving shears located on each side of said blank, and cutting the edges of the latter in a plane at substantially a right angle to the plane of said blank, and without the removal of any of the material thereof.

15. In a paper-fringing machine, means for feeding a paper blank in a longitudinal direction, and shears located on opposite sides of the support of said blank and operating in a plane at substantially a right angle to the plane of said blank whereby the edges of said blank are slit without the removal of any of the material thereof.

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