

(No Model.)

2 Sheets—Sheet 1.

F. WILKENING.

ROLLING GAGE FOR PAPER CUTTING MACHINES.

No. 576,643.

Patented Feb. 9, 1897.

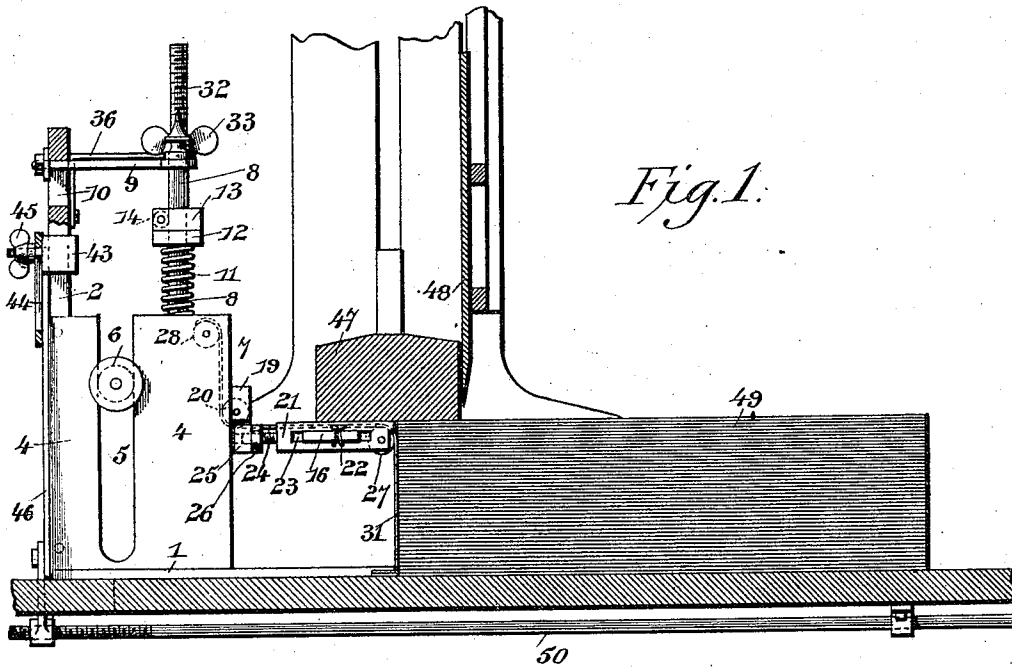


Fig. 1.

Fig. 5.

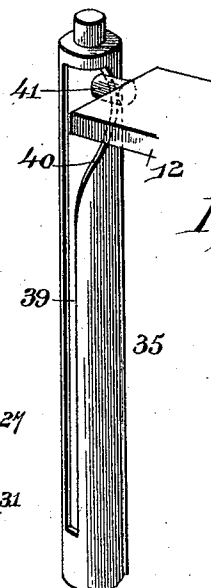
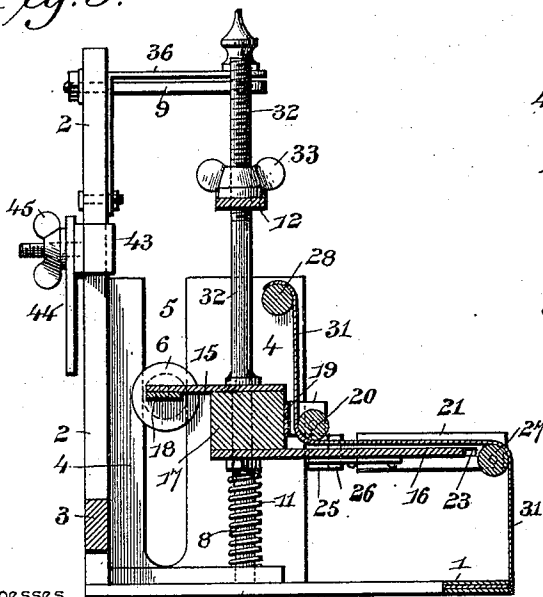


Fig. 4.

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2 Sheets—Sheet 2.

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Fig. 2.

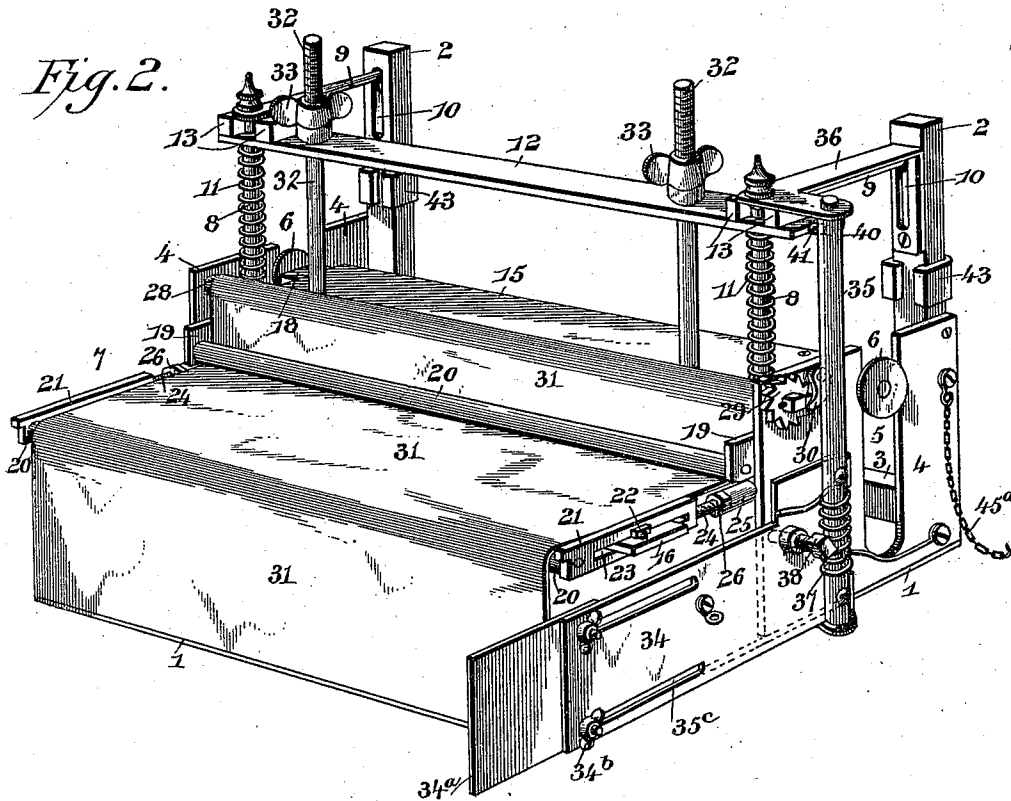


Fig. 3.

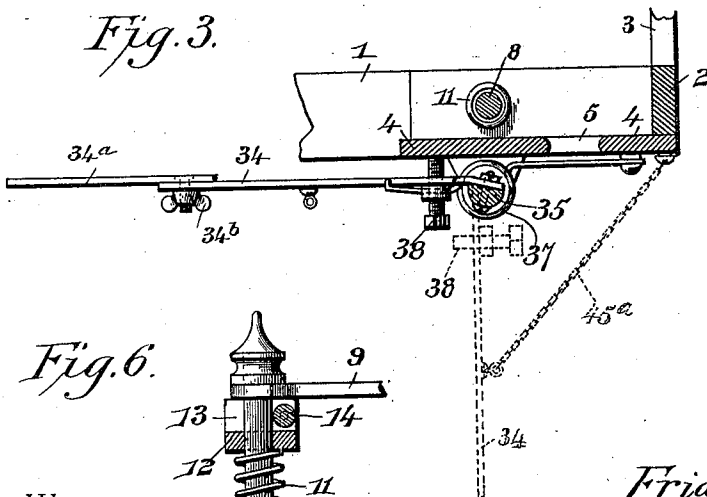


Fig. 7.

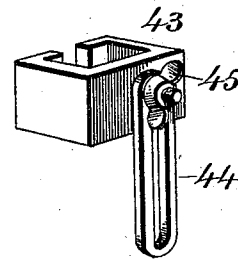
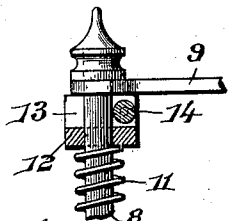


Fig. 6.



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UNITED STATES PATENT OFFICE.

FRIDERICH WILKENING, OF ELKHART, INDIANA.

ROLLING GAGE FOR PAPER-CUTTING MACHINES.

SPECIFICATION forming part of Letters Patent No. 576,643, dated February 9, 1897.

Application filed August 31, 1896. Serial No. 604,490. (No model.)

To all whom it may concern:

Be it known that I, FRIDERICH WILKENING, a citizen of the United States, residing at Elkhart, in the county of Elkhart and State of Indiana, have invented a new and useful Rolling Gage for Paper-Cutting Machines, of which the following is a specification.

Paper-cutting machines as generally constructed for use in printing-offices, bookbindingeries, paper-warehouses, and stationery-supply depots are not well adapted for cutting paper, cardboard, &c., into very narrow strips, owing to the fact that the clamp-bar for binding the pile of paper during the cutting operation is of such a width as not to admit of gaging the cutter for strips of two inches or less.

The purpose of this invention is to provide an attachment to be used in connection with the ordinary paper-cutting machines which will admit of a machine being set for cutting paper into strips as narrow as may be desired without requiring any alteration of the clamping mechanism or any other part of the paper-cutting machine, the said attachment being independent of the machine and applied thereto in such a manner and capable of being shifted and adjusted to attain the desired end.

For a full understanding of the merits and advantages of the invention reference is to be had to the accompanying drawings and the following description.

The improvement is susceptible of various changes in the form, proportion, and the minor details of construction without departing from the principle or sacrificing any of the advantages thereof, and to a full disclosure of the invention an adaptation thereof is shown in the accompanying drawings, in which—

Figure 1 is a detail view showing the invention applied. Fig. 2 is a perspective view of the attachment. Fig. 3 is a detail view showing the side gage, its mountings, and the parts coöperating therewith. Fig. 4 is a detail view of the mechanism for throwing the side gage out of the way upon the descent of the clamp-bar. Fig. 5 is a transverse section showing the carriage depressed. Fig. 6 is a detail view of the upper end of a guide-rod,

the transverse and stay bars mounted thereon, and the spring supported by the guide-rod for returning the transverse bar to a normal position. Fig. 7 is a detail view of a clip and key for securing the gage in place.

Corresponding and like parts are referred to in the following description and indicated in all the views of the accompanying drawings by the same reference-characters.

The base 1 of the attachment may be of suitable design, but is preferably of skeleton form. Standards 2 rise from the rear end of the base and are secured to the latter at their lower ends in any substantial way, and are connected by a cross-bar 3. Side plates 4 are attached at their lower ends to the base and at their rear edges to the standards 2, and have vertical slots 5, forming ways for the grooved pulleys 6 of the carriage 7 to travel in.

Guide-rods 8, extending parallel with the standards 2, have connection at their lower ends with the base 1 and are braced at their upper ends by stays 9, which have adjustable connection with the upper ends of the standards 2 by operating in slots 10, formed in the standards 2 near the upper ends thereof. Coil-springs 11 are mounted upon the guide-rods 8 and exert an upward pressure against the carriage or a transverse bar 12 thereof, said transverse bar having vertical openings near its extremities to receive the guide-rods 8, which pass loosely therethrough. Ears 13 are located upon opposite sides of the openings at the ends of the bar 12 and support pins upon which are mounted antifriction-rollers 14, which bear against the guide-rods 8 and relieve the friction between the transverse bar 12 and the rods 8 during the reciprocating movements of the carriage.

The carriage comprises horizontal plates 15 and 16, disposed at different elevations, and an intermediate bar 17, to which the plates 15 and 16 are firmly and rigidly secured. A strip 18 is secured to the rear edge of the plate 15 and terminates in journals upon which are mounted the grooved pulleys 6. Brackets 19 are fastened to the bar 17 and provide journals for a roller 20, which extends parallel with and adjacent to the intermediate bar 17, and has its lower portion approaching close to the top side of the plate 16. Arms

21 are slidably mounted upon the terminal portions of the plate 16 and are retained in place by keys 22, passing through openings in the projecting terminals of the plate 16.

5 Each arm 21 has a slot 23 and a threaded portion 24, the latter operating in a cuff 25, provided at the end of the plate 16. An adjusting-nut 26 is mounted upon the threaded portion 24 and obtains a bearing against the cuff

10 25 and serves to properly position the arm, whereby the front portion of the gage may be brought parallel to the plane of the knife. A roller 27 is journaled at its ends in the projecting portions of the arms 21, and its upper

15 portion is about in the plane of the top side of the plate 16. A web or strip of canvas or other flexible material is fastened at its lower end to the base 1 and extends vertically and passes over the roller 27, thence horizontally

20 over the plate 16, beneath the roller 20, and is secured at its upper end to a roller 28, which is journaled in the side plates 4, and which is supplied at one end with a ratchet-wheel 29 to be engaged by a pawl 30 to prevent the

25 roller 28 from turning backward after the loose end portion of the canvas or flexible material 31 is wound thereon. The canvas or flexible material 31 is subjected to tension and is held between stationary parts. When

30 depressing the carriage, the intermediate portion of the canvas or flexible material 31 will pass over the roller 27 and beneath the roller 20, thereby preserving the relationship of the parts and maintaining the flexible material

35 31 under a uniform tension.

The transverse bar 12 has connection with the carriage proper by means of rods 32, the latter having their lower ends rigidly secured to the inner edge portions of the plates 15

40 and 16 and to the bar 17, whereas the upper ends of the rods are threaded and pass loosely through vertical openings in the bar 12, adjusting-nuts 33 being mounted upon the threaded extremities of the rods 32, so as to

45 adjust the carriage vertically and vary the tension of the springs 11.

The side gage 34 for evening the ends of the strips is a plate and is secured at its rear end to a turn-post 35, suitably journaled at

50 its ends, the upper journal obtaining a bearing in a bracket 36, which is fastened in any convenient way to the upper ends of the adjacent standard 2 and guide-rod 8. A spring 37 has one terminal in engagement with the

55 side gage and its opposite terminal in engagement with a part of the frame, and is designed to hold the side gage close against the edge of the base 1. A set-screw 38 is let into a threaded opening near the inner end of the

60 side gage and bears laterally against the adjacent side plate, and serves to limit the folding movement of the side gage toward the base. A groove 39 extends longitudinally of

65 the turn-post, and an edge portion of a side wall is slightly curved, forming a cam 40, which is engaged by a projection 41 of the transverse bar 12, so that upon depressing

the carriage the turn-post will have imparted thereto a quarter-turn, whereby the side gage is caused to sit at right angles to the adjacent side plate 4. By this means the side

70 gage is withdrawn from the path of the clamp-bar of the paper-cutter when the said clamp-bar descends to bind the paper to be cut. The carriage must be adjusted to such a height

75 so that when it lowers with the clamp-bar the side gage will be thrown out of the way before the clamp-bar can possibly come in contact therewith. When it is not desired to use the side gage, the latter is held back out of

80 the way by a short chain 45^a or similar connection which has attachment with the side gage and with the contiguous side plate. A leaf 34^a is adjustably secured to the free end of the plate 34 by binding-screws 34^b, operating in longitudinal slots 35^c in the said plate

85 34. This construction admits of the gage being lengthened or shortened according to the size of the paper to be cut.

The attachment is applied to the ordinary

90 gage or to the bed of the paper-cutting machine, and is capable of adjustment so that the paper may be cut into strips of any desired width from two inches or less. As shown, clips 43 are loosely mounted upon the

95 standards 2, and slotted plates or keys 44 have adjustable connection therewith by means of bolts and thumb-nuts 45 or equivalent means, and the ordinary gage 46 is clamped between the plates 44 and the standards 2, the attachment being movable with the said gage 46

100 when adjusting the latter by means of the rod 50 in the usual way.

That portion of the canvas or flexible strip 31 extending vertically between the base 1

105 and the roller 27 constitutes the gage proper, and when it is required to cut paper into strips of less width than the clamp-bar 47 of the paper-cutting machine the attachment is adjusted until the distance between the gage

110 and the plane traveled by the knife 48 corresponds with the required width of strip, and after the paper 49 is placed in position the clamp-bar is lowered in the usual way and, engaging with the arms 21, causes the carriage

115 to descend and binds the paper, provision being had for the movement of the canvas or flexible strip over the plate 16 by having the clamp-bar engage with the arms 21, so as to form a space between the top side of the plate

120 16 and the lower side of the clamp-bar. After the cutting is effected and the clamp-bar ascends the carriage will rise by the expansion of the springs 11, previously compressed by the lowering of the carriage.

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Having thus described the invention, what is claimed as new is—

1. A gage for paper-cutting machines, comprising a base, a flexible strip attached to the base and extending therefrom, forming a stop

130 for the edges of the paper to abut against, a carriage for determining the height of the stop and movable toward and from the base to adapt itself to the pile of paper to be cut,

and means for preserving a tension upon the flexible strip at all positions of the carriage, substantially as set forth.

2. A gage comprising a base, a flexible strip secured to the base and having a vertical portion, and a movable carriage having the flexible strip applied thereto, substantially as shown for the purpose described.

3. In a gage, the combination of a flexible strip secured at its ends and normally subjected to tension, and a movable carriage provided with rollers to deflect the flexible strip between its ends and adapted to relieve the friction incident to the relative movement between the flexible strip and carriage during the movements of the latter, substantially as and for the purpose set forth.

4. In a gage, the combination of a flexible strip secured at its ends and normally subjected to tension, a carriage constructed to move vertically and having an approximately horizontal portion, and rollers disposed in different relative planes and at opposite portions of the horizontal part of the carriage, and having the said flexible strip passing beneath one roller and over the other roller, substantially as shown for the purpose set forth.

5. In a gage, the combination of a flexible strip secured at its ends and normally subjected to tension, a movable carriage, and a roller at the front end of the carriage for the flexible strip to pass over and capable of adjustment to properly position the vertical portion of the flexible strip, substantially as set forth for the purpose described.

6. In a gage, the combination of a flexible strip secured at its ends and normally subjected to tension, a movable carriage, arms adjustably connected with the carriage, and a roller journaled in the arms and having the front portion of the flexible strip passing thereover, substantially in the manner and for the purpose set forth.

7. In a gage, the combination of a base having vertical portions, a roller journaled in the vertical portions of the base and provided with means to secure it against backward rotation, a flexible strip secured at one end to the base and at its opposite end to the roller, and adapted to have a portion wound upon the said roller, a vertically-movable carriage having an approximately horizontal portion, a roller at the inner end of the horizontal portion and having its lowest element about in the plane of the top side of the said horizontal portion of the carriage, a second roller located at the front end of the horizontal portion of the carriage and having its upper portion about in the plane of the top side of the horizontal part of the carriage, the said flexible strip passing under the inner roller and

over the outer roller, and means for returning the carriage to a normal position after being depressed, substantially as described.

8. In a gage, the combination of guide-rods, springs mounted upon the guide-rods, a movable carriage, a bar directed in its movements by the aforesaid guide-rods and receiving the end thrust of the springs, rods connecting the carriage with the said bar, and adjustable connections for varying the distance between the carriage and the bar with which it is connected, substantially as and for the purpose set forth.

9. In a gage, the combination of a vertically-movable carriage, a strip having connection with the carriage and constituting an adjustable stop, a post having a cam portion to be engaged by the carriage for effecting a turning thereof, a gage attached to and movable with the said post, and a set-screw for limiting the throw or turning of the post and gage, substantially as described.

10. In a gage, the combination of a turn-post having a longitudinal guide formed with a cam portion, a side gage having connection with the turn-post, and a carriage movable vertically and having a portion to engage with the guide of the turn-post to effect a turning of the latter upon the descent of the carriage, substantially as set forth.

11. A gage attachment for paper-cutting machines, comprising a base having standards and guide-rods, and side plates formed with vertical slots, clips movable upon the standards and having slotted plates adjustably connected therewith, a vertically-movable carriage having rollers operating in the vertical slots of the side plates, a transverse bar adjustably connected with the carriage and operating upon the guide-rods, springs mounted upon the guide-rods and exerting an upward pressure against the transverse bar, a vertical turn-post having a guide formed with a cam portion and adapted to be engaged by a projecting portion of the said transverse bar to be actuated when lowering the carriage, a side gage having connection with the turn-post, and a flexible strip secured at its ends to the base and a roller connecting the side plates, and normally subjected to tension, and adapted to travel over a horizontal portion of the carriage when the latter moves upward or downward, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

FRIDERICH WILKENING.

Witnesses:

ELLIOTT CRULL,
CHAS. D. BURLINGAME.