

No. 822,661.

PATENTED JUNE 5, 1906.

A. ESCHENBACH.
FEEDING MECHANISM FOR PRESSES AND THE LIKE.

APPLICATION FILED SEPT. 15, 1904.

2 SHEETS—SHEET 1.

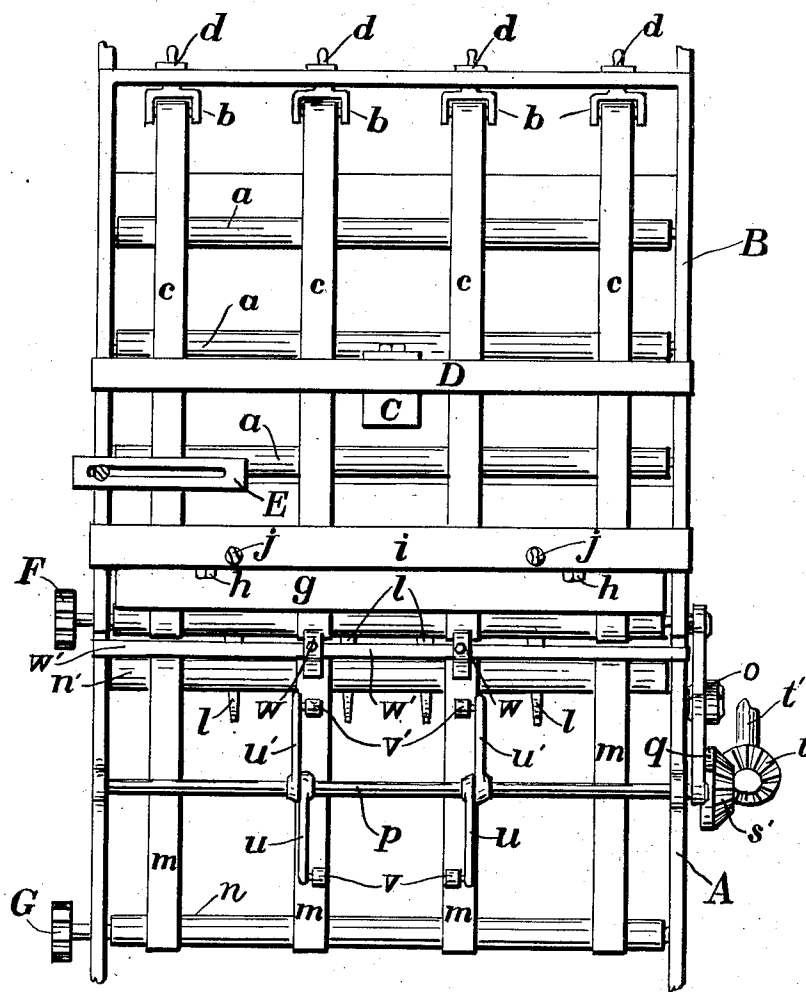


Fig. 1.

Witnesses

Joseph R. Rohrer

Engene C. Kennedy.

Inventor

Anthony Eschenbach,

By *Law, Wideman, Muhlhofer*

Attorneys.

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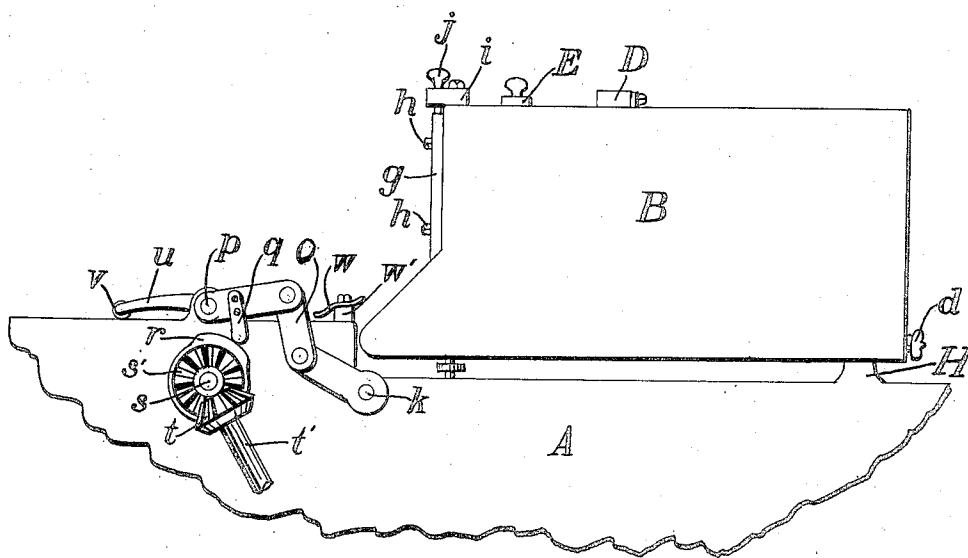


Fig. 2.

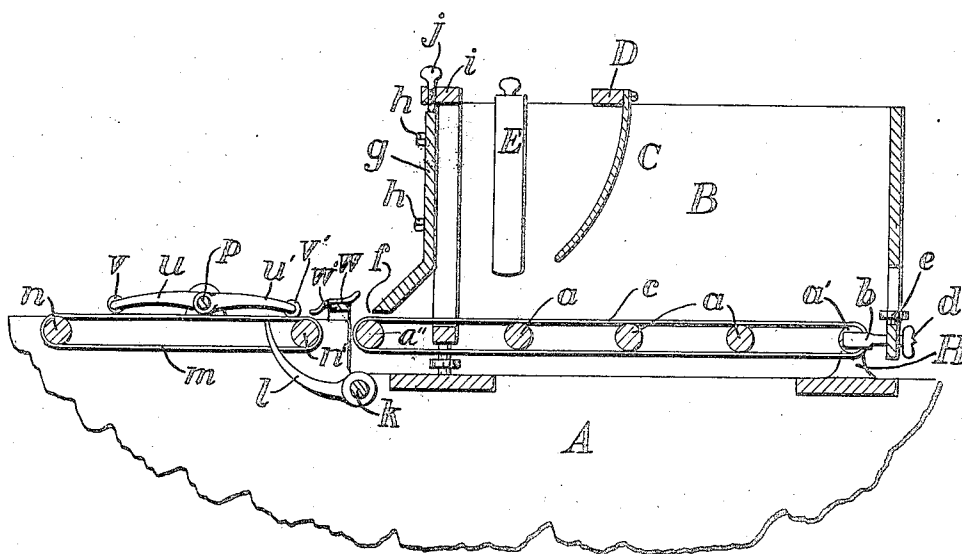


Fig. 3.

Witnesses

Joseph R. Rohrer

Engene C Kennedy

Inventor:

Inventor.
Anthony Eschenbach,
By Henry Heidman Mellick.
Attorneys.

By Stembridgeau Mellob

Attorneys.

UNITED STATES PATENT OFFICE.

ANTHONY ESCHENBACH, OF DAYTON, KENTUCKY.

FEEDING MECHANISM FOR PRESSES AND THE LIKE.

No. 822,661.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ANTHONY ESCHENBACH, a citizen of the United States, and a resident of Dayton, in the county of Campbell and State of Kentucky, have invented a certain new and useful Improvement in Feeding Mechanism for Presses and the Like, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of my specification.

My invention relates to the feeding mechanism for presses and other machines wherein the paper to be operated on must be automatically fed forward to the desired point, and is more especially adapted for use in connection with machines for folding and wrapping newspapers and periodicals, the mechanism being operated by the power used for driving the balance of the press or machine to which my improved feeding mechanism is attached, it being understood that the mechanism is properly geared to the balance of the machine in such a manner as to have the papers fed forward at predetermined intervals, as will more fully hereinafter appear.

In the drawings, Figure 1 is a top plan view of my improved feeding mechanism as applied to a machine for folding and wrapping newspapers and periodicals, only a portion of the machine being illustrated. Fig. 2 is a side elevation thereof, while Fig. 3 is a longitudinal sectional view of the same.

Like letters of reference indicate identical parts in the various figures.

A is a part of a folding-machine on which is mounted the feed-box B, provided with a series of rollers *a* in its bottom, of which there may be any suitable number, the rollers extending, preferably, entirely across the bottom of the feed-box and having suitable bearings in the side walls of the box. Mounted in yokes or hangers *b*, which are adjustably secured to the rear walls of the feed-box, are rollers *a'*. Endless tapes or bands *c* take about the rollers and are given movement thereby. The roller *a''* in the forward end of the feed-box B extends through one of the side walls of the box and is provided with pinion F, as shown in Fig. 1, which meshes with gearing receiving power from the driving-shaft of the machine. This roller *a''* being revolved compels the endless belts or tapes *c* to travel in a similar direc-

tion. In order that the belts or tapes may operate, it of course is necessary to keep them taut, and for that reason the yokes *b* are made adjustable. Any slack that may occur in the endless belts or tapes can be taken up by turning the thumb-screws *d*, which take over the screw-threaded shank of the yokes, the shank of the yokes *b*, passing through the rear wall of the feed-box, being held in place by the thumb-screws *d*. I prefer to construct the yokes or hangers in this manner, as I believe it to be the most convenient way in which to accomplish the result desired.

With the construction as shown in the drawings and just described in order to keep the yokes *b* from turning the screw-threaded shanks are formed with a flat upper surface, as is usual in cases of this sort, and the thumb-screw *e*, (see Fig. 3,) which has its seat in the rear wall of the box B, takes onto the flat surface of the shanks when screw *e* is screwed down into place, and thus prevents the yoke *b* from turning. Of course it is understood that a similar thumb-screw *e* is provided for each yoke or hanger *b*. The box is provided with cut-out portions in its rear wall to permit of the screws *e* and access thereto.

The lower portion of the front wall of the feed-box B is left open, as at *f*. (See Fig. 3.) The front wall of the feed-box is an adjustable plate *g*, whose lower end is bent forward at an angle and extends in the direction in which the papers are fed. This plate *g* is adjustably secured to the front side of the box, so that the opening between the bottom of the plate *g* and the endless belts or tapes beneath it may be varied according to the thickness of the papers or periodicals to be fed from the box. This plate *g* is provided with slots through which bolts *h* take, whereby it is secured to the box B.

Taking through extensions *i* on the box-top are set-screws *j*, whereby the plate *g* is held down in place and prevented from being shifted or jarred upward, enlarging the opening beneath and thus permitting more than one paper to be passed through. Of course the set-screws *j* might have their seat through a strip or portion of the box extending from the side walls of the box B over the plate *g*. Furthermore, the set-screws might be made to take into the top of the plate *g* and have controllable connection therewith, so that

when bolts *h* are loosened by turning the set-screws *j* the plate *g* will be adjusted to the desired point.

One of the rollers *a''* is mounted at the extreme front end of the box B, beneath the adjustable plate *g*, so as to carry the papers out of the feed-box. Just forward of the box B is a shaft *k*, (see Fig. 3,) loosely mounted in the frame of the machine and provided with any suitable number of dogs *l*, which are adapted to extend up above the top of the machine slightly and into the path of the papers, so as to retard their forward movement caused by belt *m*, mounted on rollers *n* and *n'*, which are geared to the driving-shaft, and thus the papers are "lined up," as it were, and the papers held until the dogs *l* are dropped out of their path. The shaft *k*, on which the dogs *l* are mounted, is operated by the bell-crank lever *o*, secured at its end, which latter is secured to the shaft *p*. The bell-crank lever *o* is provided with a dependent arm *q*, which is adapted to ride on the cam *r*, (see Fig. 2,) secured to the end of a shaft *s*. This shaft *s* has also mounted on it the bevel-gear *s'*, which meshes with the bevel-gear *t*, mounted on shaft *t'*, which latter is shown broken away, as it is geared at its opposite end to the driving-shaft of the machine to which the feeding mechanism is attached.

It is apparent that the shaft *k* and the dogs *l* mounted thereon are made to oscillate by reason of the bell-crank lever being operated by the arm *q* riding on the cam *r*, the dogs *l* dropping down by their own weight after the dependent arm *q* has passed over the cam *r*.

Mounted on shaft *p* are arms *u u'*, which are provided with rollers *v v'*, which are adapted to ride on the belts or tapes *m*. There may be as many of these bearing-rollers as there are tapes or belts, although I find that two are sufficient. The purpose of these rollers *v v'* is to hold the paper down on the belt and insure its being fed forward. The arms *u'* are securely fastened to shaft *p*, so that when shaft *p* is rocked by the bell-crank lever *o* they will be similarly rocked. It will be seen that the bearing-arms *u'* and their rollers *v'* will be brought or rocked down onto the paper on the belts *m*, while the dogs *l* are tipped or rocked downward and out of the path of the paper which has already been fed out of the box B and lined up by the dogs *l*, thus bearing the paper down on the belts *m* and compelling it to move forward with the belts *m* to the point where it is to be acted upon by the remainder of the machine or press.

The bearing-arms *u* and their rollers *v* are loosely mounted on the shaft *p* and are merely intended to hold the paper down by their weight on the belt or tape *m*.

I prefer to have mounted in front of the feed-box B some flat spring guiding-blades

w, which guide the paper in a horizontal plane as it is being fed out of the box B. These blades are simply flat pieces of steel or other metal, preferably bent, as illustrated, and are mounted on a cross-piece *w'*, which is slightly above the path of the paper.

In order to keep the papers to the front end of the machine, with the lower ones slightly in advance of the upper, I provide the retainer or supporting arm C, which is secured to the cross-piece D, which may be adjustably secured on top of the feed-box, so as to accommodate papers of different sizes.

In practice the papers to be fed are stacked and arranged so that each paper will lie in the same direction, and the retainer or supporting arm C is arranged a distance away from the forward end of the receptacle substantially corresponding at its top with the width of the papers to be fed, thus bringing the lower free end of the retainer or supporting arm C a distance away from the forward end of the receptacle slightly short of the size or width of the papers. It will be seen that this retainer or supporting arm by reason of its forward curvature will not permit the papers to lie flat in the bottom of the receptacle, but will hold them up at the rear end on an incline, thus forcing the forward end of the papers against the front of the receptacle at a point slightly below the rear ends, permitting the undermost paper, of course, to come into contact with the belts or tapes *c*. This arrangement prevents any "crowding" of the papers at the forward end of the receptacle.

I also find that it is preferable where the papers to be fed are not of the full width of the feed-box and in order to have them feed from the feed-box at the same point to have a gage in the feed-box against which the ends of the papers be placed, thus insuring all of the papers being fed out evenly and so as to be in a position for the bearing-rollers to grasp them alike. This gage E may be of any desirable form, preferably as illustrated, with a vertical and horizontal arm, the horizontal portion or arm being provided with a slot, as shown in Fig. 1; through which a bolt takes, whereby it is secured to the feed-box top. The slot permits the gage to be adjusted or set for different-sized papers.

The roller *n*, about which belt *m* takes, is provided with a pinion G, (see Fig. 1,) which is driven by the remainder of the machine.

As will be seen, the bottom paper is fed out of the box, and this is made possible by providing the forwardly-sloping plate *g*, thus permitting the papers to be placed in the hopper or feed-box B with the lower papers slightly forward of the upper.

The hopper or feed-box is pivotally mounted on the machine at its rear end, as at H, the front simply being supported on the machine in any suitable manner, thus permit-

ting the feed-box B to be tilted upward for any occasion that may arise.

I have thus described what I believe is the simplest and best construction of my improved feeding mechanism; but it will be readily understood that slight modifications may be made without departing from the spirit of my invention.

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

1. The feeding mechanism for presses and the like, comprising a receptacle with an opening in its forward lower end, said forward end being adjustable and inclined at its bottom, means for securing it in its adjusted position, rollers arranged in the plane of the receptacle-bottom, belts or tapes adapted to take about said rollers and pass along the bottom of said receptacle, and mechanism whereby the tension of said belts or tapes is regulated, in combination with mechanism normally held in the path of the paper fed from the receptacle and in advance thereof, and means for holding the paper in its horizontal path, substantially as shown and for the purpose described.

2. The feeding mechanism for presses and the like, comprising a receptacle with an opening in its forward lower end, said forward end being adjustable and inclining outward at its lower end, means for securing it in its adjusted position, rollers arranged in the bottom of said receptacle, belts or tapes adapted to take about said rollers, one of said rollers being adjustable, whereby the belts or tapes are kept under proper tension, mechanism against which the rear ends of the papers to be fed rest and whereby they are forced forward against the inclined lower part of said forward end, means normally held in the path of the papers fed, whereby they are alined, and mechanism for retain-

ing the papers in their proper path, substantially as shown and described.

3. Feeding mechanism for presses and the like, comprising a receptacle with an opening in its forward lower end, said forward end being adjustable, means for securing it in its adjusted position, rollers arranged along the bottom of the receptacle, one of said rollers being adjustably mounted, belts or tapes taking about said rollers, gages slidably mounted on the receptacle whereby the papers are held in the desired path and against the forward end of the receptacle, mechanism normally held in the path of the papers fed from the receptacle whereby they are alined, and means for holding the papers down to their proper horizontal path, substantially as shown and described.

4. The feeding mechanism for presses and the like comprising a receptacle, mechanism arranged along its bottom, and adapted to receive motion from the power-shaft, the front end of the receptacle being adjustable to provide an opening at the lower forward end, means for securing said end in its adjusted position, mechanism adjustably secured to said feed-box whereby the papers to be fed are held against the lower front end of the receptacle, mechanism forward of the receptacle, to receive the papers fed therefrom, means arranged forward of said receptacle and normally in the path of the mechanism for receiving the papers fed, whereby the latter are temporarily retarded in their forward movement, and mechanism for removing the means from the path of the papers to permit their further movement, substantially as shown and in the manner described.

ANTHONY ESCHENBACH.

Witnesses:

GEORGE HEIDMAN,
JOSEPH R. ROHRER.