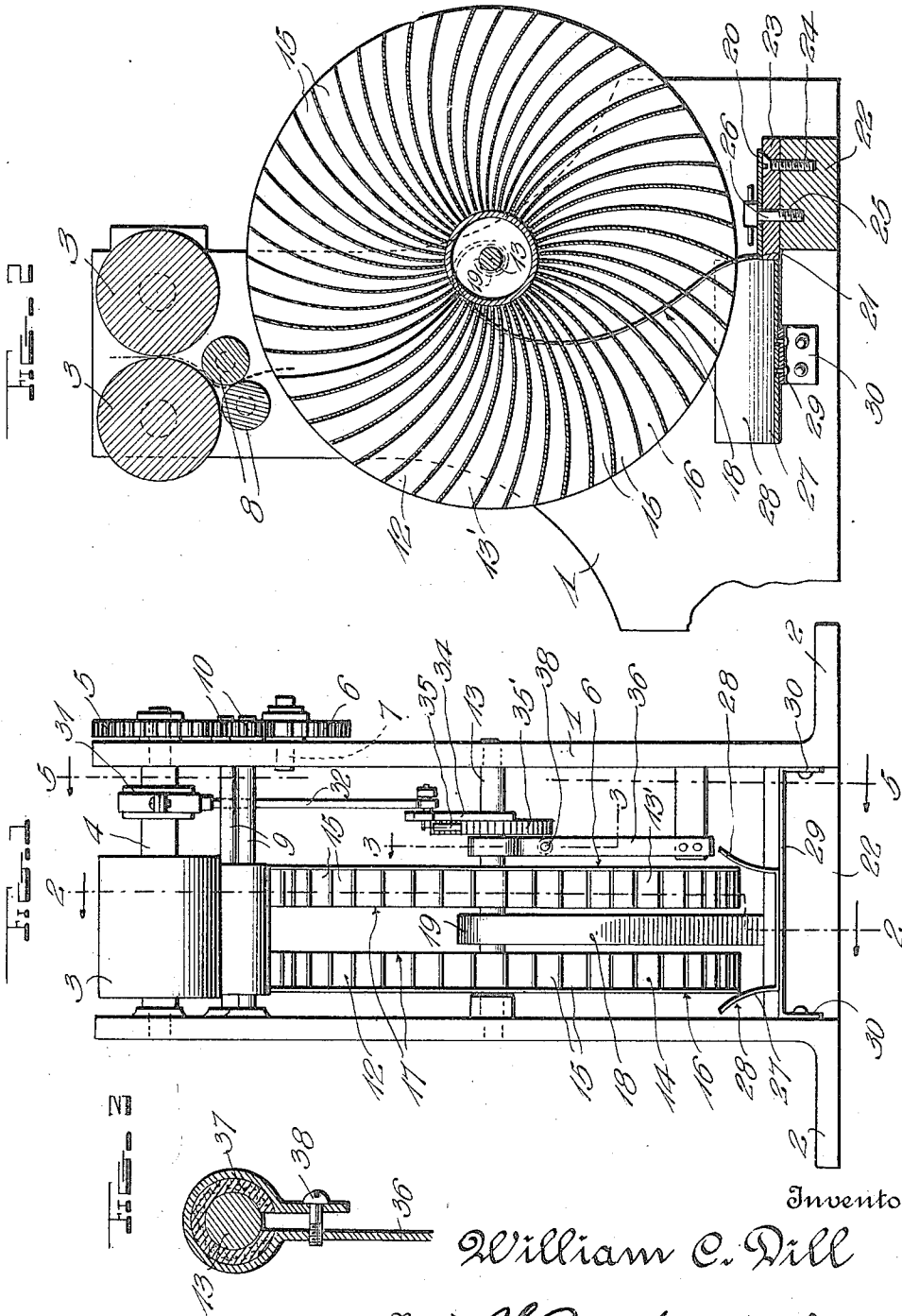


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APPLICATION FILED AUG. 17, 1916.

1,232,776.

Patented July 10, 1917.
2 SHEETS—SHEET 1.



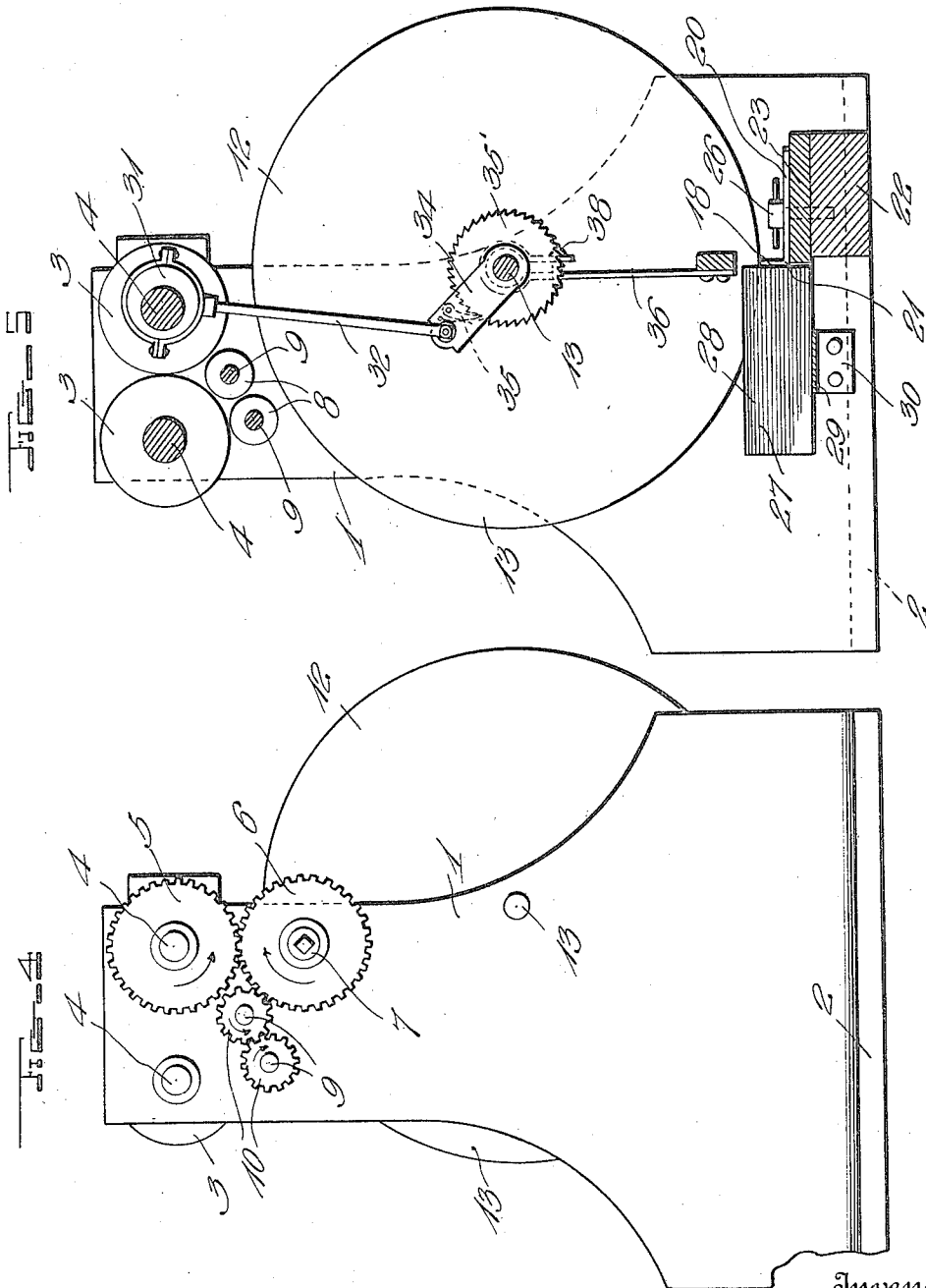
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UNITED STATES PATENT OFFICE.

WILLIAM C. DILL, OF ORANGE, MASSACHUSETTS, ASSIGNOR TO INTERNATIONAL PRESS COMPANY, OF ORANGE, MASSACHUSETTS, A CORPORATION.

PAPER AND CARD GATHERING AND JOGGING DEVICE.

1,232,776.

Specification of Letters Patent.

Patented July 10, 1917.

Application filed August 17, 1916. Serial No. 115,487.

To all whom it may concern:

Be it known that I, WILLIAM C. DILL, a citizen of the United States, residing at Orange, in the county of Franklin and State of Massachusetts, have invented certain new and useful Improvements in Paper and Card Gathering and Jogging Devices; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to new and useful improvements in gathering and jogging one or more sheets of paper or cards as they are delivered from a rotary printing press, folding, creasing, or punching machine, and the primary object of the invention is to deliver the sheets into a hopper disposed at the bottom of the device in a uniform stack. The principal idea involved in the device is to gather the sheets as they pass through guiding rollers into a transfer wheel comprising a plurality of compartments each adapted to receive a sheet, which is driven forward one compartment upon each revolution of the rollers 3 by an eccentric movement operating a ratchet gear and pawl, and carrying the sheets disposed in the compartments against an ejector of increasing radius whereby they are discharged into the hopper one above the other.

Another object of this invention is to provide a device of this character which is simple and durable in construction, inexpensive to manufacture, and one which will be very efficient in operation.

With these and numerous other objects in view, my invention consists of the novel features of construction, combination and arrangement of parts which will be herein referred to and more particularly pointed out in the specification and claims.

In the accompanying drawings:

Figure 1 is an end elevation of a device constructed in accordance with this invention;

Fig. 2 is a longitudinal sectional view taken on the plane of the line 2—2 of Fig. 1;

Fig. 3 is a detail sectional view taken on the plane of the line 3—3 of Fig. 1;

Fig. 4 is a side elevation of the device; and,

Fig. 5 is a longitudinal sectional view taken on the plane of the line 5—5 of Fig. 1.

In describing my invention I shall refer

to the drawings in which similar reference characters designate corresponding parts throughout the several views and in which the numeral 1 designates the two upright spaced sides which are provided with laterally projecting securing feet 2 at the bottom of the same for positioning the sides upon any suitable base. This gathering and jogging device is secured or mounted between the spaced sides 1, and the device is placed in position to receive the cards as they are delivered from the printing press, etc.

Rotatably mounted between the sides 1 adjacent the top of the same is a pair of large rollers 3 on horizontal axes 4. The axes of these rollers 3 project through one of the sides of the device, one of the former having secured at its outer end a gear which is designated by the numeral 5. Rotatably mounted beneath the gear 5 and adapted to intermesh with the same is a driving gear 6 which is mounted on a short stub axle 7 projecting outwardly from the side 1. This gear 6 is driven by any desired means and provides the power by which the device is operated. Disposed beneath the guide rollers 3 is a pair of smaller supplemental guide rollers 8 mounted on horizontal axes 9, and which also project through the side 1 and have on their projecting ends gears 10, which intermesh with each other, and one of the same is adapted to be positioned into engagement with the driving gear 6. By this means, upon the operation of the driving gear the power will be transmitted to the guiding rollers, and sheets of paper discharged from the machine will be carried therethrough for a purpose to be hereinafter described more fully. The rollers 3 and 8 are shorter than the space between the sides 1, and are disposed adjacent one of the sides, a space being left between the opposite ends of the rollers and the other side.

Rotatably mounted between the sides 1 below the sheet guiding rollers is a sheet transfer wheel 12, which is mounted on a horizontal axle 13 extending between said sides. This transfer wheel 12 is formed in two spaced sections 13' and 14 having formed therebetween a plurality of radially curved compartments 15 which have their outer ends 16 closed while the inner ends 17 which are spaced from each other are open and disposed in alinement with each other.

By this arrangement, and owing to the fact that the transfer wheel is positioned beneath the sheet guiding rollers, sheets carried therethrough are adapted to be discharged so that they will fall in one of the compartments 15 of the wheel. The sheets are of sufficient width so that they will extend across the space between the two sections of the wheel, the opposite edges of the same being disposed in the sections 13' and 14 which are positioned in alinement with each other.

The transfer wheel 12 is provided with an ejector 18 which is formed of a flat spring positioned between the sections 13' and 14 of the wheel, and having its upper end 19 surrounding the axis of the same. This ejector 18 is curved substantially arc-shaped and extends forwardly and downwardly to a point on the periphery of the wheel in the same vertical plane with the axis. From this point the outer end of the ejector which is designated by the numeral 20 projects from the wheel and is bent at right angles as shown at 21. The flat portion of the bent end is positioned above a block 22 positioned between the sides of the device and attached to the bottom of said angular portion is a flat washer plate 23 which is secured to the block by a screw 24 secured to the upright portion of the same. The horizontally extending portion of this bent end is provided with an opening which is adapted to aline with the opening in the washer plate 23 and these alining openings when the washer is in position, are disposed over an internally threaded recess 25 in the block 22. A locking bolt 26 is adapted to be positioned through said alining openings and will securely hold the outer end of the ejector against the washer when fixed in position.

Secured between the sides 1 adjacent the forward end of the same and positioned beneath the forward portion of the transfer wheel 12 is a sheet receiving tray 27 which is provided with upwardly extending outwardly curved sides 28 and which is supported in position by a U-shaped supporting platform 29 which has its sides 30 secured to the opposite inner surfaces of the sides 1 of the device. This tray or hopper 27 is so positioned that it will be disposed directly beneath the forward portion of the transfer wheel and will receive the sheets as they are discharged therefrom in a manner to be hereinafter more fully described.

Secured to the axis 4 of the roller 3 which has its gear intermeshed with the driving gear is an eccentric 31 which has secured thereto a downwardly extending eccentric rod 32. The lower end of the rod 32 is loosely connected with the axle 13 of the transfer wheel by means of a projecting arm 34 loosely mounted thereon, and mounted on

the arm 34 is a pawl 35. The axle 13 of the transfer wheel has a ratchet 35' mounted thereon, and adapted for engagement with the pawl 35. By this construction and arrangement, upon each revolution of the roller 3, the motion of the same will be transmitted through the eccentric and rod to the pawl and ratchet to operate the same, whereby the transfer wheel will be moved forward one compartment thereby. The momentum of the transfer wheel is regulated by a spring brake 36 which has its upper end positioned around the axle 13 and interposed between said brake and axle is a leather washer 37 which surrounds the said axle. The bent portion of the upper end of this brake is connected with the adjacent portion of the same by a set screw 38, by which means the tension of the brake may be adjusted.

By the above described construction, when this means is in operation the sheets which are discharged from the printing press or other machine are fed in between the rollers 3 and downwardly through the supplemental guide rollers 8 into the various compartments of the transfer wheel 12 as shown in dotted lines in Fig. 2. Upon each revolution of the guide rollers 3, owing to the eccentric connection between the axle of one of said rollers and the transfer wheel, the transfer wheel will be moved forwardly one compartment upon each revolution of said rollers. This operation will discharge a sheet into each compartment as the same comes into alinement with the supplemental guide rollers 8.

Owing to the fact that the transfer wheel moves forwardly, the forwardly and downwardly moving compartments each holding a sheet therein as they are moved, will by the operation of the ejector gradually force the sheet therefrom until the same is positioned within the tray beneath the same. This ejector is of a gradual increasing radius and serves to move the sheet farther outward upon the jogging movement of the transfer wheel. Owing to the fact that the compartments 15 of the wheel are curved, the sheets will be secured therein until at a point adjacent the bottom of the wheel, whereupon the ejector will finally throw them outwardly into the tray. By this operation it will be obvious that the sheets will be gathered in piles in the tray where they may be easily removed therefrom. The sheets are held in the compartments of the transfer wheel by the radially curved shape of said compartments, and the action caused by the swift movement of the wheel. This will firmly hold the additional sheets in separate compartments during their downward movement from the rollers to the receptacle and will prevent the sheets dropping by gravity before they are ejected by

the increasing radius of the ejector. This tray has an open outer end, so that the piled up sheets may be easily removed therefrom. The spring brake 36 prevents the wheel from moving too fast, and regulates the jogging motion of the same. This jogging motion is always timed in spaced relation to the movement of the rollers 3, and should the rollers be driven faster, the transfer wheel will move correspondingly faster so as to bring an unoccupied compartment into alinement with the discharge sheets upon each revolution of the rollers.

From the foregoing description of the construction and operation of my improved sheet gathering device, the manner of applying the same to use, and the operation thereof will be readily understood, and it will be seen that I have provided a simple and efficient device of this character for carrying out the objects of the invention.

I claim:

1. A device of the class described comprising a rotatable transfer wheel including two spaced sections mounted on a horizontal axis, inwardly and laterally projecting radially curved strips on the inner faces of said sections forming alining sheet receiving compartments, a sheet delivery mechanism disposed above said wheel, means to rotate the wheel to receive the sheets in successive compartments, a curved ejector of increasing radius extending from the hub to the periphery adapted to push the sheets gradually from the wheel on their down movement, and a sheet receiving receptacle beneath the wheel.

2. A device of the class described comprising a rotatable transfer wheel including two spaced sections mounted on a horizontal axis, inwardly and laterally projecting radially curved strips on the inner faces of said sections forming alining sheet receiving compartments, a sheet delivery mechanism disposed above said wheel, means to rotate the wheel to receive the sheets in successive compartments, tension-

ing means to regulate the movement of said wheel, a curved ejector between the sections having its end surrounding the axis of the wheel and extending in an arc to the lowermost point of the periphery of the wheel to gradually push the sheets from the compartments when the wheel is operated, and a sheet receiving receptacle beneath the wheel.

3. A device of the class described comprising a rotatable transfer wheel formed of two spaced sections mounted on a horizontal axis, a curved spring ejector having its upper end surrounding said axis between the sections and extending in an arc to a point in a vertical plane with said axis on the periphery of the wheel, the outer end of said ejector being bent at right angles, and said end of the ejector being secured to a supporting block disposed beneath the wheel.

4. A device of the class described comprising a pair of upright spaced sides, rotatable sheet guiding rollers mounted between the same, a sheet transfer wheel comprising a plurality of radially curved compartments rotatably mounted between the sides beneath the rollers, an eccentric on the axis of one of said rollers, a rod projecting therefrom, a link connecting said rod and the axis of the wheel, a pawl on said link, and a ratchet on the axis of said wheel connected with the pawl and adapted to move the transfer wheel forward upon each revolution of the rollers, an ejector of increasing radius for the compartments on their downward movement, a spring brake for said wheel, and a sheet receiving tray secured between the sides and beneath the wheel to gather the sheets discharged therefrom.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIAM C. DILL.

Witnesses:

ALBERT C. S. RAYMOND,
HENRY S. AMES.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."