

No. 814,539.

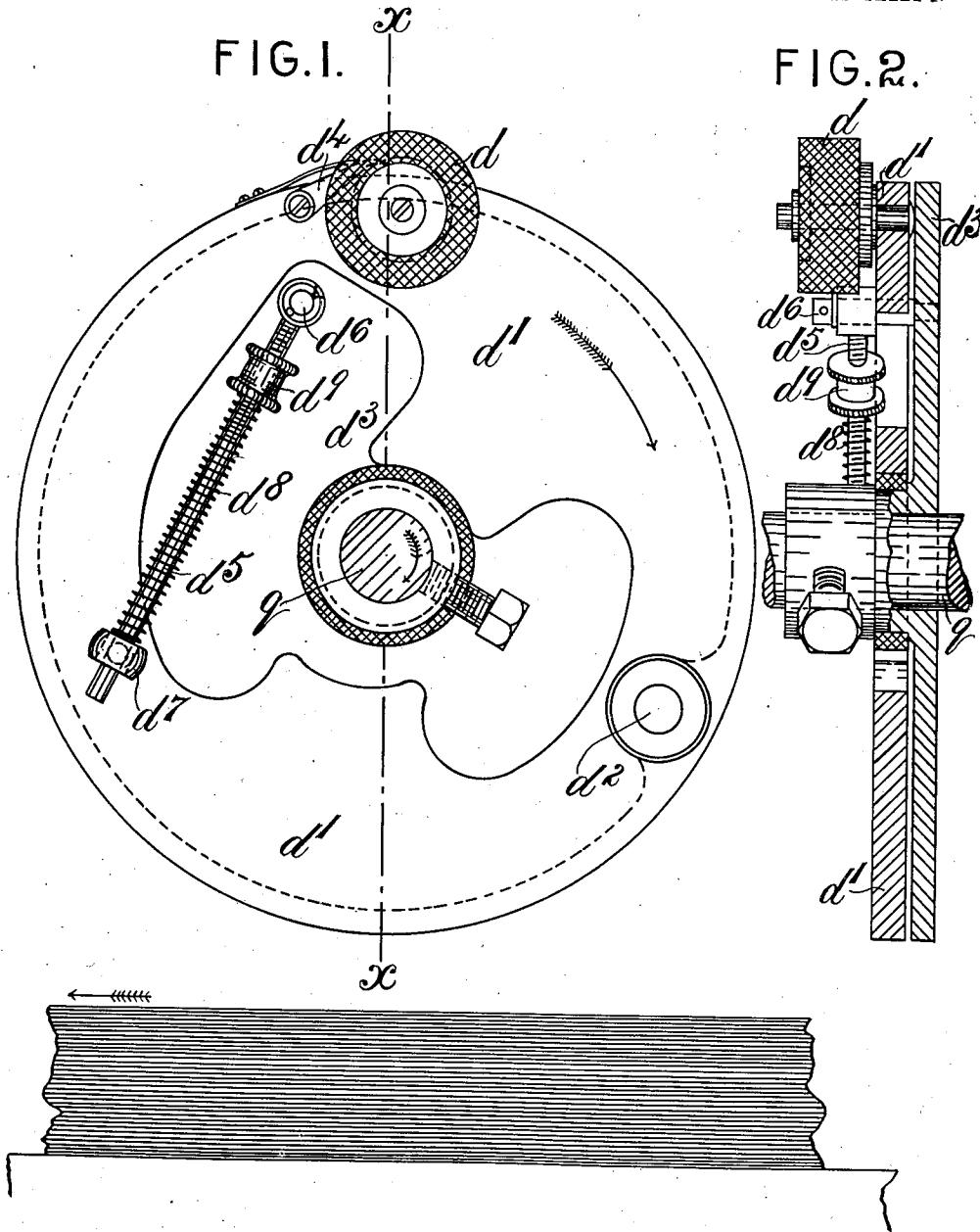
PATENTED MAR. 6, 1906.

J. HALL & M. T. BARBER.

TAKING-OFF DISK FOR FEEDING PAPER IN PRINTING AND THE LIKE
MACHINES.

APPLICATION FILED SEPT. 19, 1904.

2 SHEETS—SHEET 1.



Witnesses.
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W. A. Williams

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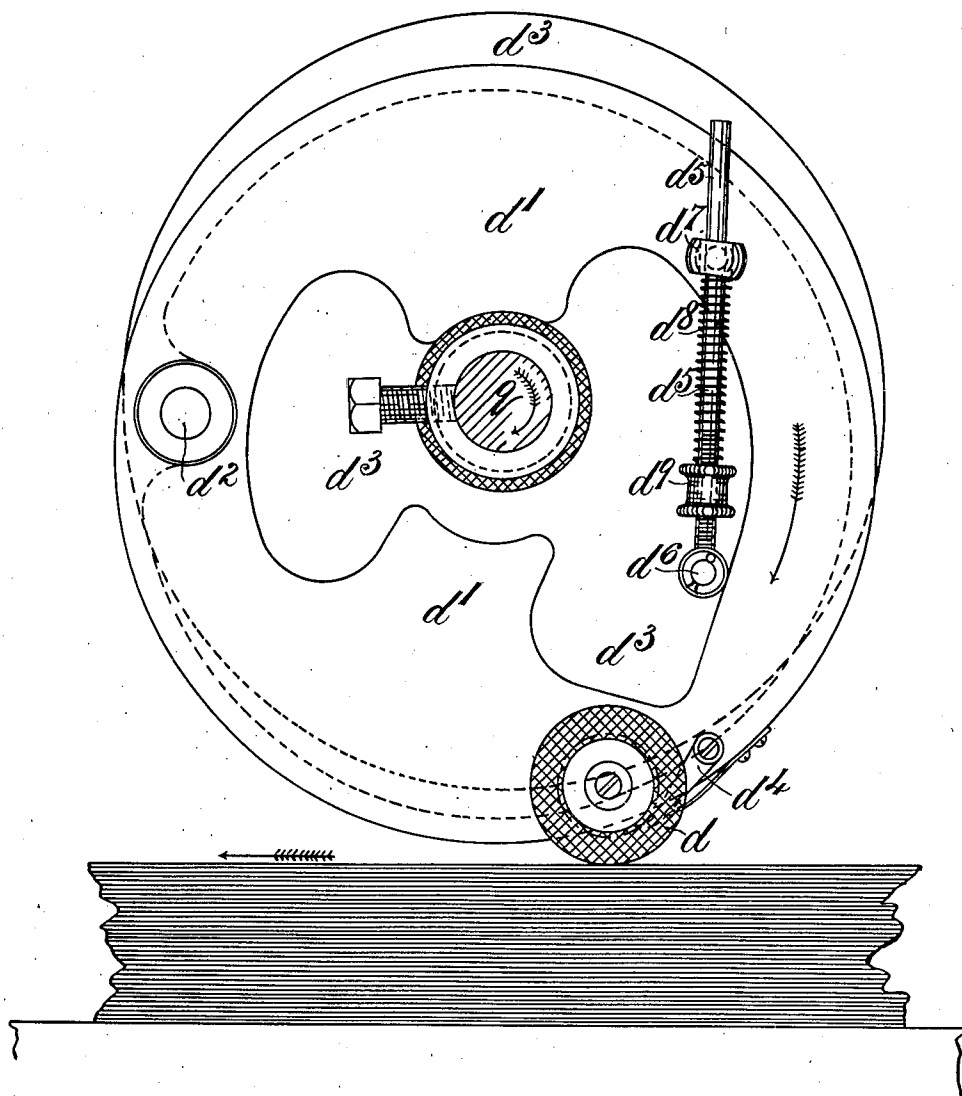
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2 SHEETS—SHEET 2.

FIG. 3.



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UNITED STATES PATENT OFFICE.

JAMES HALL, OF REDDISH, AND MAXIMILIAN THOMAS BARBER, OF MANCHESTER, ENGLAND, ASSIGNORS TO PRINTERS' ENGINEERS LIMITED, OF MANCHESTER, ENGLAND.

TAKING-OFF DISK FOR FEEDING PAPER IN PRINTING AND THE LIKE MACHINES.

No. 814,539.

Specification of Letters Patent.

Patented March 6, 1906.

Application filed September 19, 1904. Serial No. 225,126.

To all whom it may concern:

Be it known that we, JAMES HALL, a resident of 308 Gorton road, Reddish, and MAXIMILIAN THOMAS BARBER, a resident of 14 Cumberland street, Manchester, county of Lancaster, England, subjects of the King of Great Britain and Ireland, have invented certain new and useful Improvements in Taking-Off Disks for Feeding Paper in Printing and the Like Machines; and we do hereby 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.

The said invention is an improvement on the subject of Letters Patent No. 716,983, of Maximilian T. Barber, dated December 30, 1902; and it consists in the construction and combination of parts hereinafter set forth and claimed.

In the accompanying drawings, Figure 1 represents a side elevation of one of the feed-disks and proximate parts embodying our invention, the shaft with which the said disk rotates being shown in cross-section and the feed-roller raised out of operative position. Fig. 2 represents a section on the line $x x$ of Fig. 1; and Fig. 3 is similar to Fig. 1, but shows the said roller in contact with the pile of paper sheets for feeding the same.

In the patent above mentioned a fixed peripheral pad is carried by the transversely-moving and rotating feed-disk for thus taking off sheets successively from the pile. In the present improvement we substitute therefor a roller d , suitably coated on the periphery and mounted on the feeding-disk d' , so as to project beyond the circumference of the latter. The said roller is provided with a ratchet-wheel engaged by a retaining-pawl d^4 , pivoted on the said disk and arranged to prevent the said roller from rotating when in contact with the sheet and carried forward by the rotation of the shaft q and the said disk. When not in operation, the said roller may, however, be easily adjusted by hand to bring another part of its periphery into position for such contact. The said feeding-disk d' is pivoted on one side at d^2 to a carrier disk or plate d^3 , fast at its center to the rotating shaft q , and the former disk is adapted to drop by gravity sufficiently below the said carrier-disk for contact of the said roller with

the upper sheet of the paper pile, as shown in Fig. 3, whenever the said roller approaches the lowest point of its revolution with said feeding-disk. Diametrically opposite pivot d^2 is a connecting and guiding rod d^5 , screw-threaded for a part of its length and pivoted at one end on a stud d^6 of the said carrier disk or plate, its other end being movable through a lug d^7 on the feeding-disk. A spring d^8 is interposed between the latter lug and a nut d^9 on said rod.

When the parts are in the operative position (shown in Fig. 3) the said spring bearing upward against the lug d^7 on the relatively movable feeding-disk d' tends to lift the latter and lighten its pressure on the paper, thus resisting the action of gravity aforesaid. Such resistance may be increased or diminished by adjusting the said nut on the said rod to regulate the tension of the said spring as required, the pressure of the roller being thus adapted at will to the lightness or heaviness of the paper. In this position the weight of the feeding-disk on the side opposite the pivot d^2 is partly borne by the pile of paper, partly by the said spring, and (through nut d^9 and rod d^5) by the stud d^6 and carrier plate or disk d^3 . As the said shaft and disks continue to revolve in the direction of the arrow the roller d passes up out of contact with the paper, the rod d^5 is pulled gradually through lug d^7 , relieving the spring d^8 from tension, the nut d^9 reaches into the same horizontal plane as lug d^7 , then passes above it, attaining the position shown in Fig. 1, the disk d' simultaneously swinging over on its pivot d^2 until concentric with carrier disk or plate d^3 , with the roller d vertically above the shaft q and projecting but slightly above the said carrier-disk. The continued rotation of shaft q and the said disks will bring the parts gradually around again into the position shown in Fig. 3, the spring d^8 meanwhile resisting the independent downward and forward movement of feeding-disk d' .

This improvement thus provides a very delicate means of adjustment of the pressure of the feeding-surface to the quality and requirement of the material to be operated on.

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

1. In combination with a rotary carrier

disk or plate, a feeding-disk rotating there-
with but connected thereto for independent
transverse, gravitating movement, a spring
arranged to resist said independent movement
5 and means for adjusting the tension and re-
sistance of said spring substantially as set
forth.

2. In combination with a rotating carrier-
disk, a paper-feeding disk turning therewith
10 but pivoted thereto at one side of the center
in order that it may drop down independ-
ently for contact with the paper, a rod at-
tached at one end to one of the said disks and

working through a lug on the other, a nut on
said rod, and a spring adjustable by said nut 15
and arranged to support the said feeding-
disk against gravity to a degree determined
by said nut substantially as set forth.

In witness whereof we have hereunto set
our hands in the presence of two witnesses. 20

JAMES HALL.

MAXIMILIAN THOMAS BARBER.

Witnesses:

JOHN HALL,

G. W. TUNSTALL.