

No. 652,262.

Patented June 26, 1900.

W. H. HANSELL.
PRINTING DEVICE FOR PAPER BAGS, &c.

(Application filed Jan. 9, 1900.)

(No Model.)

2 Sheets—Sheet 1.

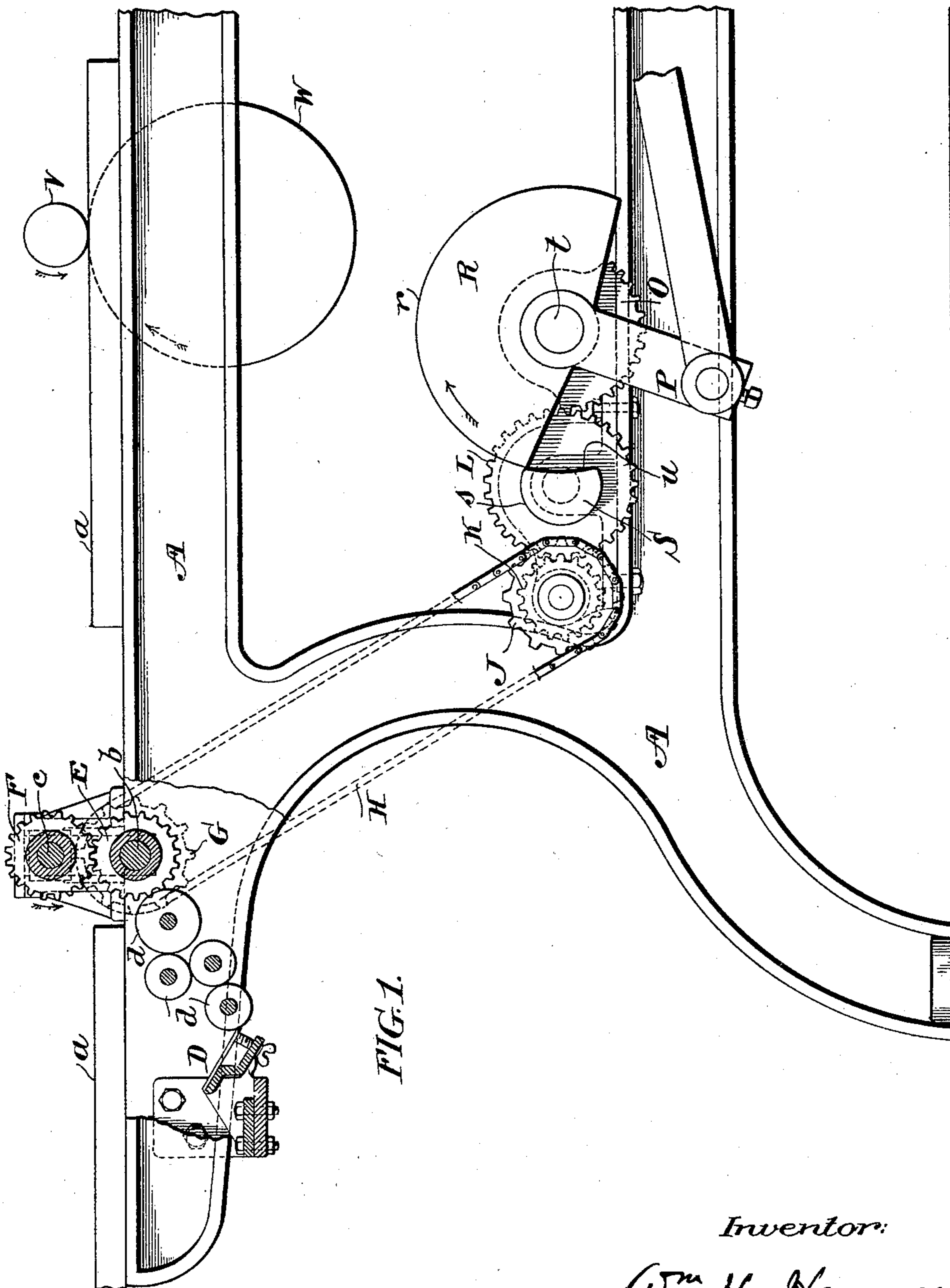


FIG. 1.

Witnesses:
Being sworn
R. M. Kelly.

Inventor:
Wm. H. Hansell
By *[Signature]*

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2 Sheets—Sheet 2.

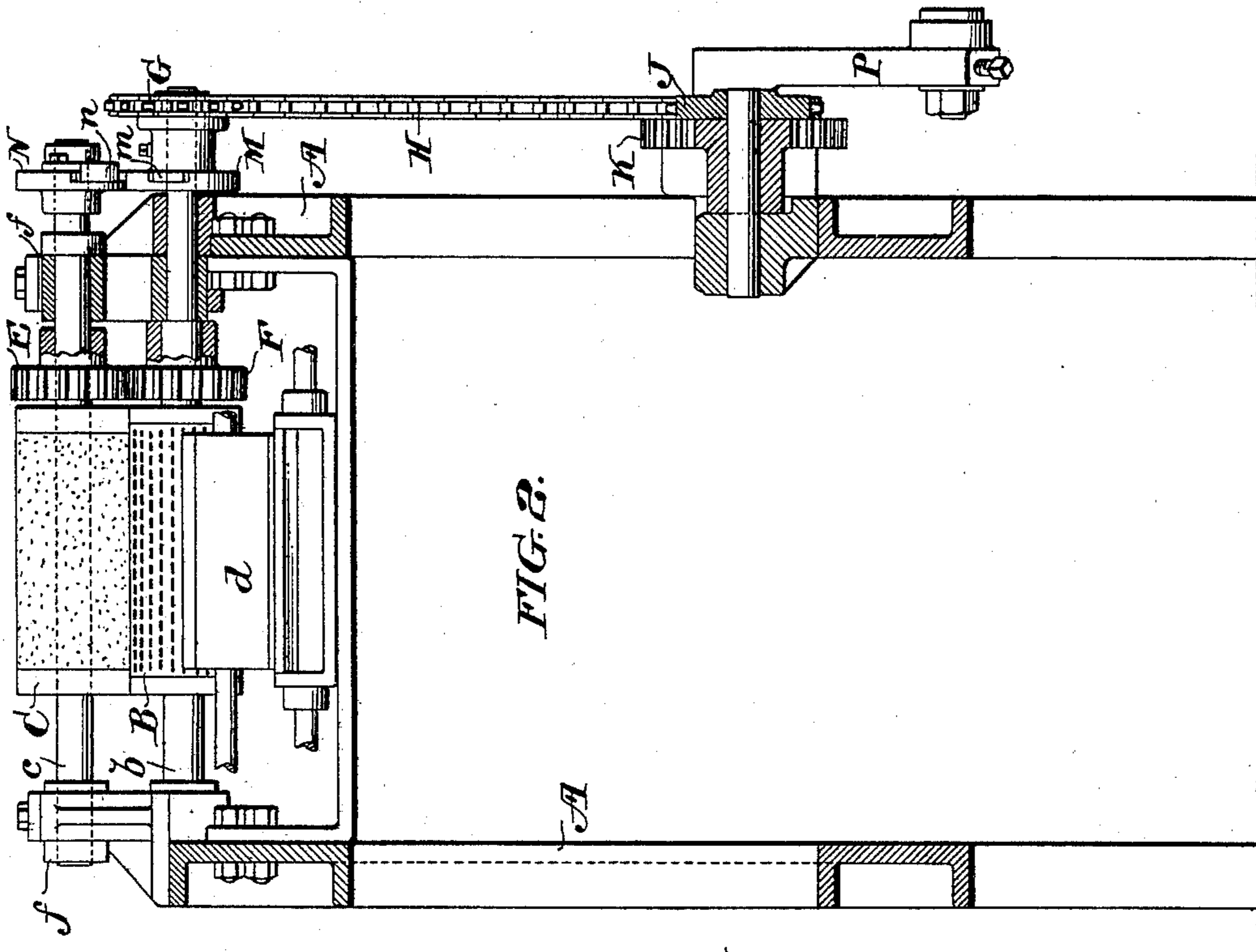


FIG. 4.

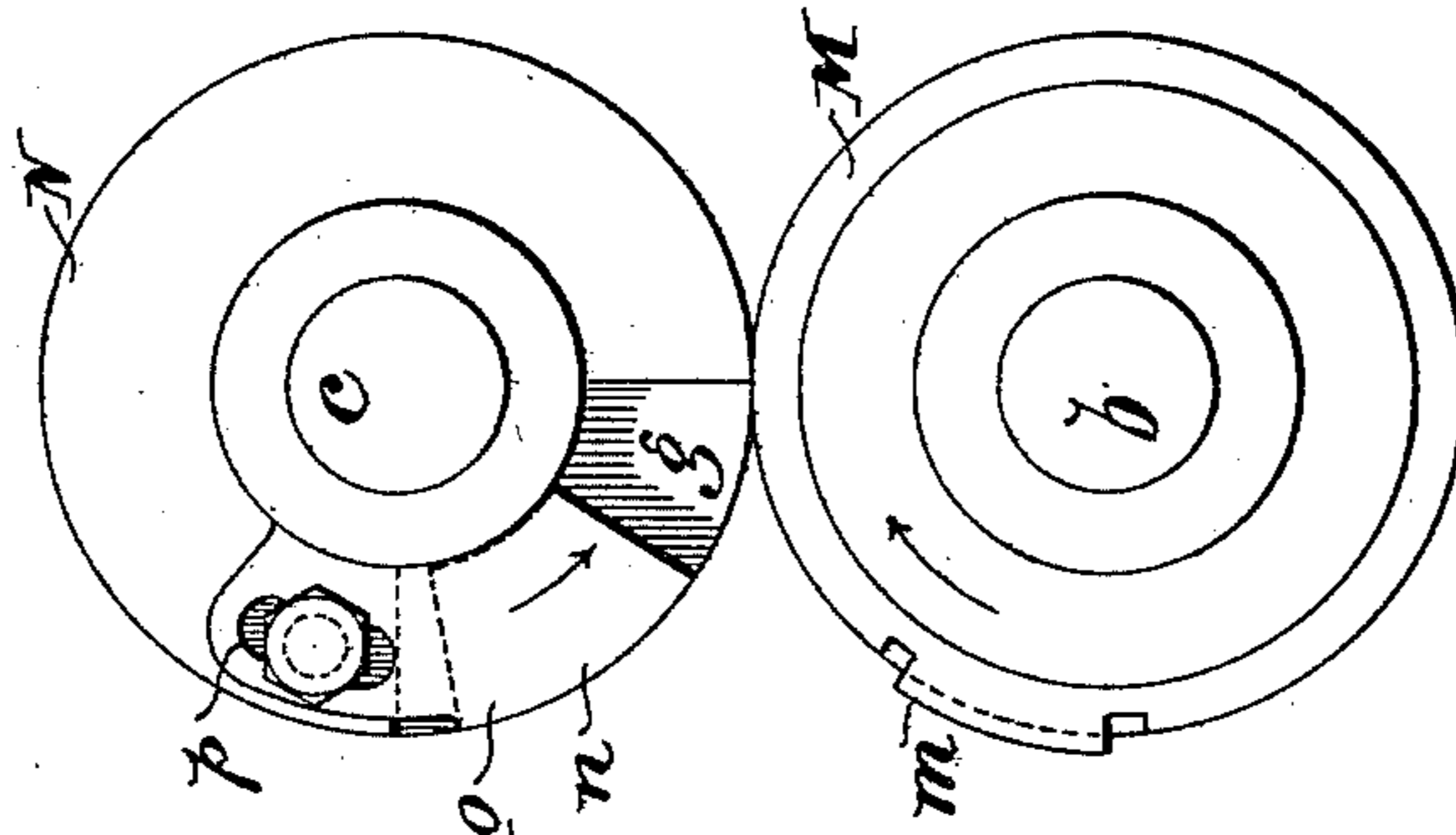
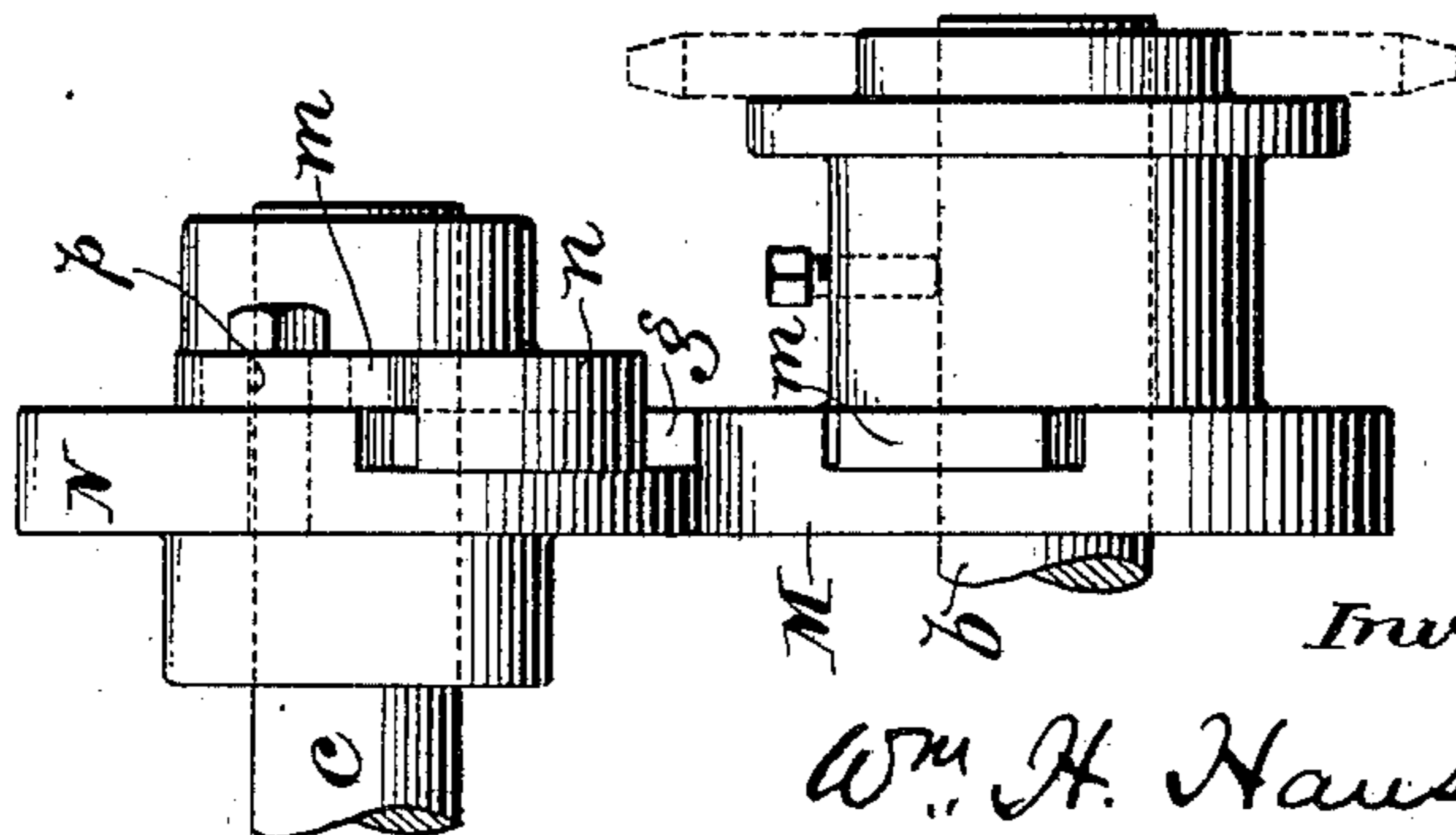


FIG. 3.



Witnesses:

Henry Dwyer
R. M. Kelly

Inventor:

Wm. H. Hansell
By *Wm. H. Hansell*

UNITED STATES PATENT OFFICE.

WILLIAM HENRY HANSELL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR
TO G. H. SPANGLER, OF SAME PLACE.

PRINTING DEVICE FOR PAPER BAGS, &c.

SPECIFICATION forming part of Letters Patent No. 652,262, dated June 26, 1900.

Application filed January 9, 1900. Serial No. 843. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HENRY HANSELL, of the city and county of Philadelphia, in the State of Pennsylvania, have invented an
5 Improvement in Printing Devices for Paper-Bag Machines, &c., of which the following is a specification.

My invention relates to printing devices designed for printing at regular intervals upon
10 a continuous web or series of blanks; and it consists of the improvements which are fully set forth in the following specification and are shown in the accompanying drawings.

In the manufacture of paper bags, for example, it is customary to print impressions
15 upon each bag, and it is necessary that the impressions should be made at uniform intervals, so as to be located in the same position on each finished bag. These intervals must
20 be varied with variations in the length or size of the bags.

It is one of the objects of my invention to enable the operation of the printing devices to be readily adjusted or regulated to suit intervals at which the printing operation is to
25 be performed. This object I accomplish by the employment, in connection with the rotary type and impression surfaces, of cam devices for causing the separation of the type
30 and impression surfaces during the desired interval of time, which may be varied by suitable means of adjustment to suit the length of the sections or the interval of time between successive impressions. It is especially desirable in printing attachments of this character, in which the printing devices are operated intermittently, that the periods of intermission should be certain and positive—i. e.,
35 that the printing devices should be instantly and positively arrested at the desired moment, should be positively maintained at rest during the required interval, and should again be put into instant operation at the proper moment.

It is another object of my invention to accomplish this result, and to this end I employ, in connection with the intermittently-acting power-transmitting connections for operating
40 the type and impression surfaces, automatic locking devices interposed in the power-transmitting devices for locking the driven mech-

anism against movement during the period of intermission.

In the accompanying drawings, Figure 1 is a side elevation of printing devices embodying my invention with part in longitudinal
55 vertical section. Fig. 2 is a transverse vertical sectional view of the same, taken on a broken line. Fig. 3 is a side elevation, enlarged, of the devices for controlling the printing-cylinders; and Fig. 4 is an end elevation
60 of the same.

The printing devices may be used in connection with any machine in which impressions are to made at intervals—such as envelop-machines, paper-bag machines, &c.—
65 and may be connected therewith so as to form part thereof and be driven from the main machine.

A is the main framework, which, as stated, may be a continuation or extension of the
70 main framework of the machine to which the attachment is applied, having a feeding-table or feeding-guides *a* on which the paper is fed.

B is the ordinary type-cylinder, carrying the type-plate and having its shaft journaled in suitable bearings on the main frame. Ink is applied to the type-cylinder from the fountain D by the distributing-rolls *d* in the
75 usual manner.

C is the impression-cylinder, having its shaft *c* journaled in yielding bearings *f*.

The shafts *b* and *c* may be geared together by suitable gears E F. On one end of the shaft *b* is a cam projection *m*, and on the corresponding end of the shaft *c* is a cam-piece
85 *n*, adapted to make contact with the cam *m*. As shown, the ends of the shaft *b* and *c* are provided with disks M and N, running in contact with one another, and the cams *m* and
90 *n* are fitted in these disks and arranged to make contact during a portion of each revolution of the shafts *c* and *b*. As the periphery of one of the cams, as *m*, projects beyond the periphery of its disk the cam will act to
95 raise the upper roller in its yielding bearings during the period of its contact with the cam *n*. The cam *n* is made radially adjustable, so that the period of contact of the cams *m* and *n* may be adjusted. As shown, the cam
100 *n* is carried by a plate *o*, radially adjustable through a screw and slot *p* in an opening *g*

in the disk N. Power is transmitted to the shaft *b* of the roller B by suitable power-transmitting devices having an intermittent or interrupted motion. As shown, these devices are as follows:

G is a sprocket-wheel on the shaft *b*, driven by a chain H from the sprocket-wheel J, journaled in the main frame and driven intermittently from the main machine.

K is a gear on the shaft of the sprocket-wheel J, driven through an intermediate gear L by a segmental gear O, operated through a crank P from the main driving devices. The segmental gear imparts to the gear L and thence to the rollers B C an intermittent motion dependent upon the proportional number of teeth in the segment, which may be regulated to suit the character of the work to be done.

As it is desirable that the period of intermission in the rotation of the rollers B and C should be positive and certain I employ devices for insuring the certain arrest of the driving devices the instant the segment O passes out of gear with the gear-wheel L and the maintenance of that interval of rest until said segment and gear again pass into engagement. To this end I employ coacting cam devices acting as a lock to hold the driven mechanism against movement during the period of intermission.

R is a segment on the crank-shaft *l*, having a periphery *r* of an arc complementary to the arc of the segment O on the shaft.

L is a gear having a periphery *s* of an arc similar to the arc of the periphery *r* and a periphery *u* describing an arc from the axis of rotation of the segment R as a center. It consequently follows that while the periphery *r* of the segment R is traveling over the concave periphery *u* of the segment S the segment S and the power-transmitting connections to the rollers B and C will be positively held against movement. These segmental faces *r* and *u* are so proportioned with reference to the segmental gear O that they will come into contact the instant the teeth of the segment O pass out of engagement with the gear L and will pass out of contact the instant the segment O reengages the gear L. These segments R and S thus constitute automatic locking devices interposed in the power-transmitting mechanism for positively holding the driven devices against movement during the period of intermission of the driving action.

I shall now describe the operation of these devices. The paper to be printed—for example, a paper web in a paper-bag machine—passes between the rollers B and C and is drawn in by the usual drawing-rolls V W, whence it passes to the cutters and bottom-forming devices and is made into paper bags. The cylinders B C during the interval of intermission are separated or held apart by the sections of the cam devices *m n*, and the paper passes freely through to the desired ex-

tent; but when the requisite length of paper has passed, determined by the speed of the drawing-in rolls V W or other feeding devices employed, the driving devices operate the cylinders B C, and as the cams *m* and *n* pass out of contact the cylinders B C make contact with one another and print the impression upon the paper. After one impression the cams *m* and *n* are again brought in contact, and the cylinders B and C are again separated and brought out of contact and are maintained in that condition during the period of intermission of the driving devices, after which they are again thrown into operative contact, and a second impression is made. Thus the paper passing between the cylinders B and C is printed at regular intervals. The adjustability of the cam devices *m* and *n* enables the moment of separation and contact of the cylinders B and C to be adjusted with reference to the driving devices, while the locking mechanism in the power-transmitting connections insures the positive arrest and starting of the printing devices at the proper instant, and thus the printing of the paper or blanks at the proper intervals is insured.

Such minor details of construction as have been shown for purposes of illustration may be varied without departing from the invention.

What I claim as new, and desire to secure by Letters Patent, is as follows:

1. In printing devices, the combination with rotary type and impression cylinders, and intermittently-acting driving devices for rotating said cylinders intermittently, of means carried by one of said cylinders and acting upon the other to effect a separation of said cylinders and to maintain said cylinders separated during the period of intermission of the driving devices.

2. In printing devices, the combination with rotary type and impression cylinders, and intermittently-acting driving devices for rotating said cylinders intermittently, of means carried by one of said cylinders and acting upon the other to effect a separation of said cylinders and to maintain said cylinders separated during the period of intermission of the driving devices, and automatic locking devices interposed in said driving devices to hold the driven mechanism against movement during the period of intermission.

3. In printing devices, the combination with rotary type and impression surfaces, of intermittently-acting power-transmitting connections for rotating said type and impression surfaces, a segment R having a segmental periphery *r* carried by the driving devices of the power-transmitting connections, and a segment S having a concave periphery *u* carried by the driven devices of said power-transmitting connections and coacting with the periphery *r* to form a lock to hold the driven devices against movement during the period of intermission.

4. In printing devices, the combination with

the rotary type and impression surfaces, of the rotary toothed segment O, the segment R carried with the segment O and having a segmental periphery r complementary to the segment O, the gear L engaging the segment O, and the segment S carried with the gear L and having a concave periphery u coacting with the periphery r of the segment R, substantially as and for the purposes described.

5 5. In printing devices, rotary type and impression cylinders of substantially the same diameter, combined with a cam projection m carried by one of said cylinders, and a circumferentially-adjustable cam-piece n carried by the other cylinder and coacting with and circumferentially overlapping the projection m to cause a separation of said cylinders during a predetermined portion of their rotation and whereby the time of separation may be
10 15 20 adjusted.

6. In printing devices, rotary type and im-

pression cylinders of substantially the same diameter, combined with a fixed cam projection m carried by one of said cylinders, an adjustable cam-piece n supported by a circumferentially-adjustable plate o carried by the other cylinder and circumferentially overlapping the cam projection m whereby the cam-piece n of the plate o coacts with the projection m to cause a separation of said cylinders during a portion of their revolution, and means for adjusting the angular circumferential position of the plate o and its cam-piece n upon its cylinder to regulate the time of action thereof.

In testimony of which invention I hereunto set my hand.

WM. HENRY HANSELL.

Witnesses:

ERNEST HOWARD HUNTER,
JOSEPH W. KENWORTHY.