

No. 729,214.

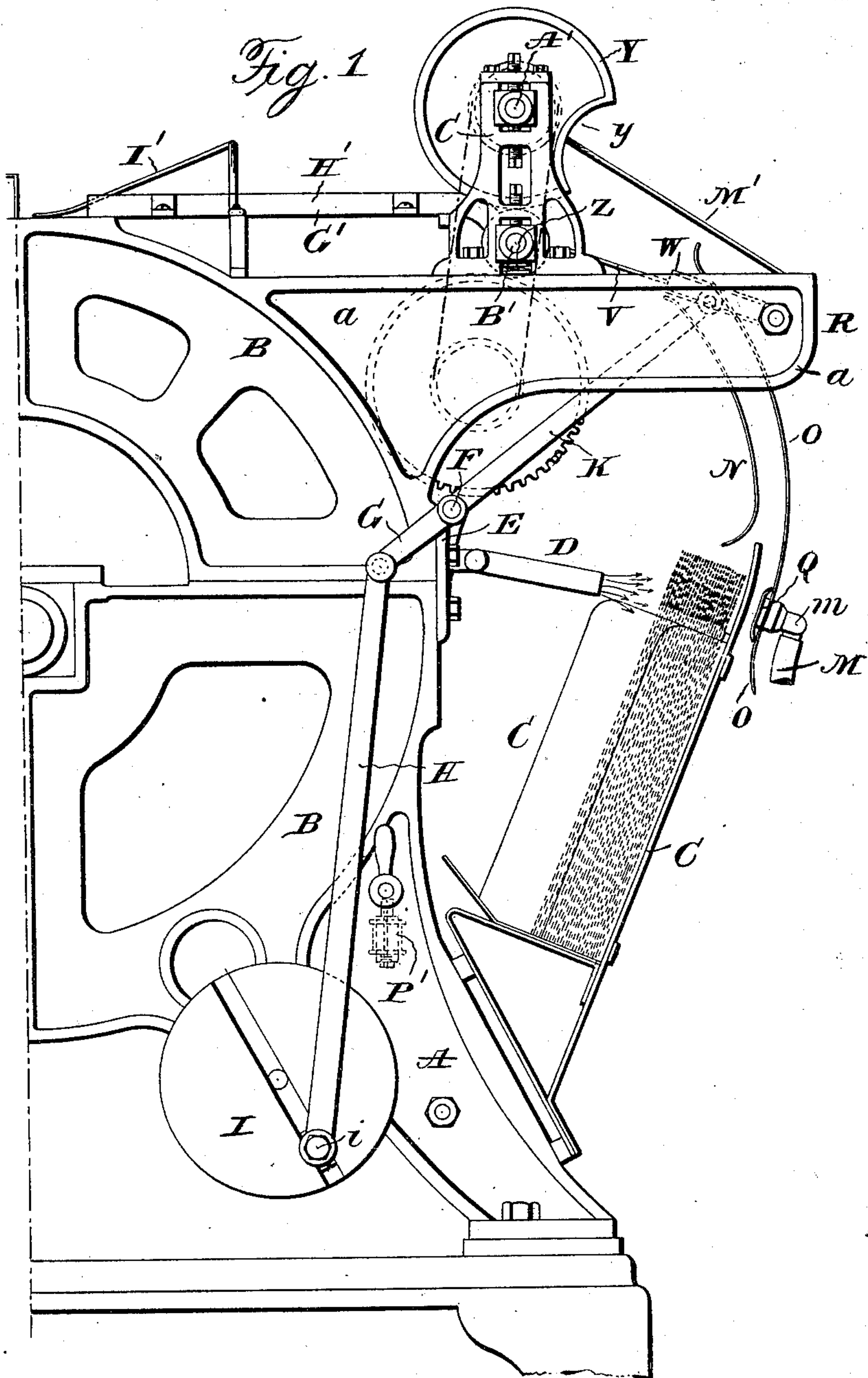
PATENTED MAY 26, 1903.

C. H. PALMER & J. W. DENMEAD.  
FEEDING MECHANISM FOR PRINTING PRESSES.

APPLICATION FILED SEPT. 6, 1900.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses:  
Jas. C. Hutchinson.  
Henry C. Hazard.

Inventors.  
Charles H. Palmer & John W. Denmead.  
Grindle & Russell, their Attys.

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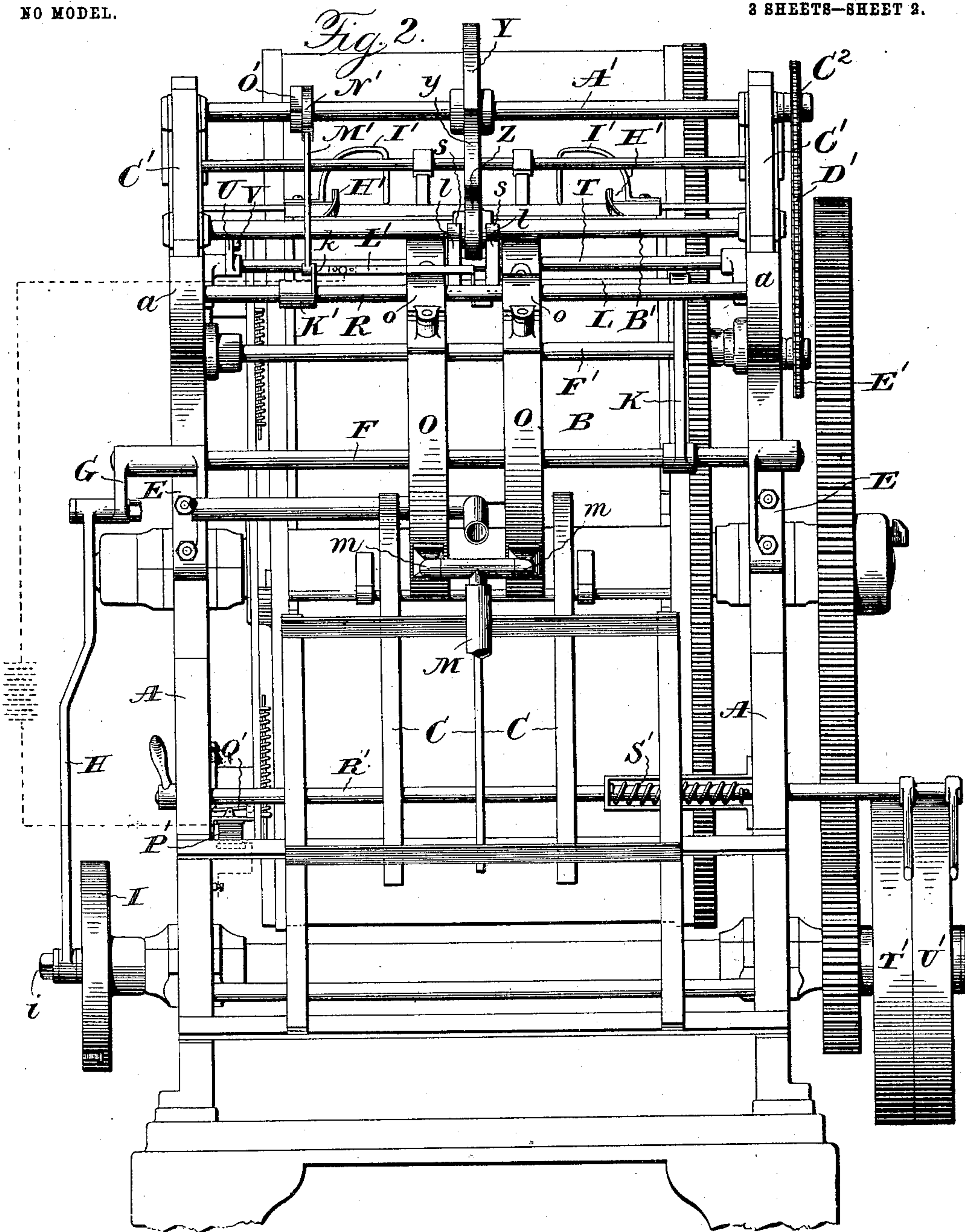
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3 SHEETS—SHEET 2.



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Inventors:  
Charles H. Palmer and John W. Denmead by  
Grindle and Russell, their Attys.



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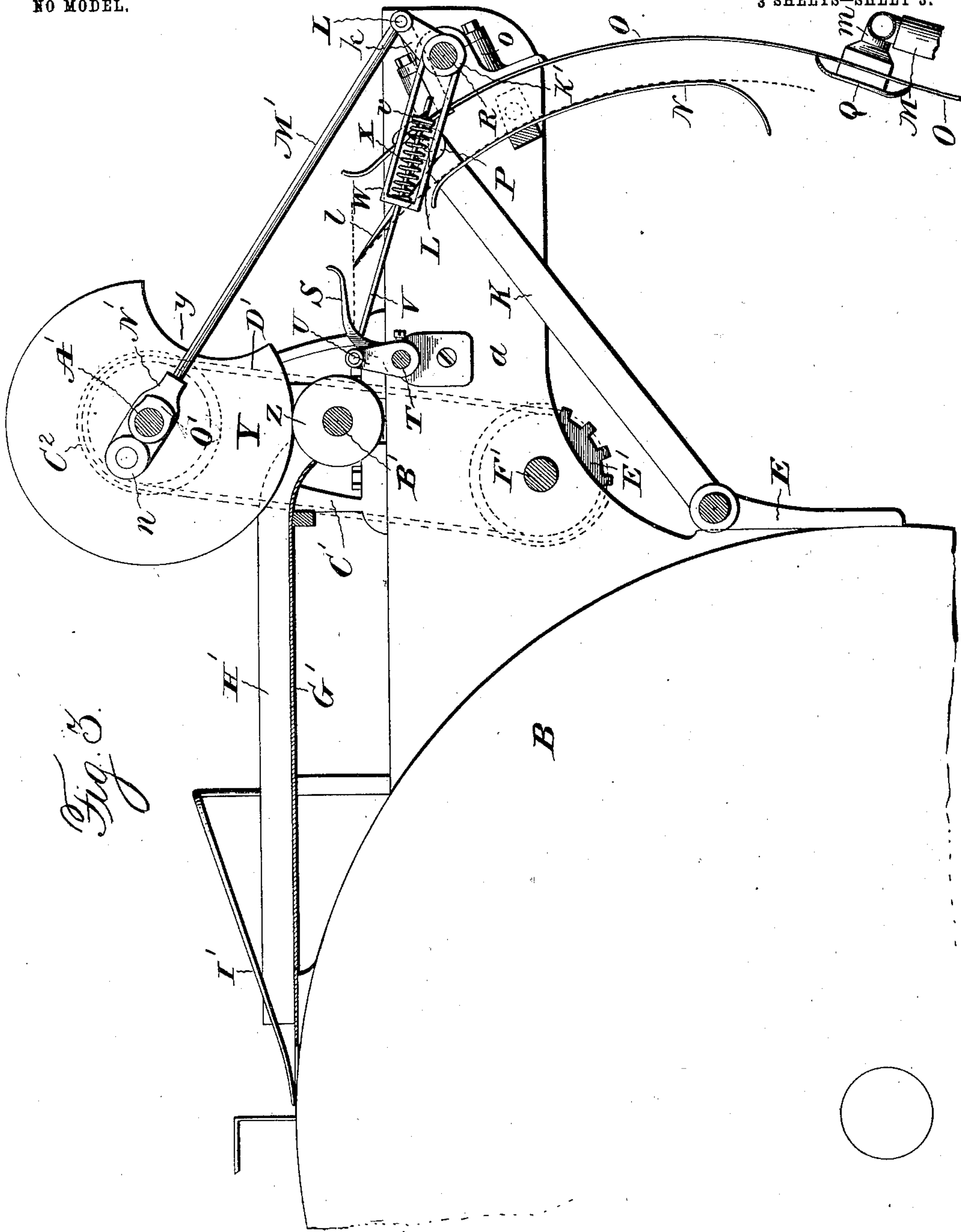
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C. H. PALMER & J. W. DENMEAD.  
FEEDING MECHANISM FOR PRINTING PRESSES.

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NO MODEL.

3 SHEETS—SHEET 3.



Witnesses:  
Jas. Hutchinson  
Henry C. Hazard

Inventors:  
Charles H. Palmer & John W. Denmead  
By  
Ernest A. Russell their Attys



# UNITED STATES PATENT OFFICE.

CHARLES HENRY PALMER AND JOHN WILLIAM DENMEAD, OF AKRON, OHIO,  
ASSIGNORS TO THE DIAMOND MATCH COMPANY, OF NEW YORK, N. Y.,  
A CORPORATION OF ILLINOIS.

## FEEDING MECHANISM FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 729,214, dated May 26, 1903.

Application filed September 6, 1900. Serial No. 29,202. (No model.)

*To all whom it may concern:*

Be it known that we, CHARLES HENRY PALMER and JOHN WILLIAM DENMEAD, of Akron, in the county of Summit, and in the State of Ohio, have invented certain new and useful Improvements in Feeding Mechanism for Printing-Presses; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of a printing-press embodying our invention. Fig. 2 is an end elevation thereof; and Fig. 3, a detail view, in vertical section, on an enlarged scale. Letters of like name and kind refer to like parts in each of the figures.

The object of our invention is to provide automatic means for feeding to printing-presses bags or sacks of the kind which as they come from the bag-machine have their bottoms folded over upon the bag and it is necessary to turn over the bottoms so that the surface previously covered by them may be exposed for printing; and to attain such object our invention consists in the mechanism having the features of construction substantially as hereinafter specified.

We illustrate our invention in connection with a rotary printing-press, but a portion of which, however, is shown in the drawings, which comprises a part of the frame A and a part of the impression-cylinder B. Mounted on the frame A, at one end thereof, is a box or hopper C for bags to be printed, in which they are stood on end with their folded-over bottoms uppermost. Said box inclines outward and upward to overcome any tendency of the bags to fall inward and to insure the presence of a bag in position at the outer side of the box for engagement by the feeding devices to be described. The outer side of the box is formed of several suitably-connected horizontal and vertical bars or strips. To supplement the inclination of the box as a means for holding the bags against the outer side of the box, a blast of air is directed against the inner side of the pile of bags, preferably at the upper end of the pile, from a pipe D, which is connected with a blower.

Mounted in brackets E and E on the opposite sides of the frame A is a rock-shaft F, having an arm G, which is connected by a pitman H with a wrist-pin *i* on crank-disk I, by the revolution of which the rock-shaft is actuated, and having an arm K, to the outer extremity of which is attached a horizontal rod L, that carries a pair of blades or fingers *l* and *l*, which project upwardly therefrom at an incline. By the vibration of the arm K the fingers are moved up and down, their downward limit of motion being to a point where their free ends can pass beneath the bag-lap and engage the fold or crease formed thereby, with the result that on the ascent of the fingers the bag will be carried along with them. To insure this engagement of the fingers and bag, means is provided for raising the lap sufficiently to enable the ready entrance of the fingers beneath the same. The means preferably employed for this purpose consists of a pipe M, connected with the induction-port of the air-blower previously mentioned and having preferably two mouths *m* and *m* opposite the lap, so that when air is drawn into them the lap will be raised by suction.

In moving with the fingers the bag travels over a guide N, that is curved on an arc concentric with the center of motion of the finger-carrying arm K, and to prevent the accidental opening out of the lap so far as to result in the disengagement of the fingers therewith one or more (preferably two) plates O and O are provided that are parallel or substantially parallel with the guide N and placed such distance therefrom as to engage the outer edge of the lap before the latter can turn so far as to permit the escape of the fingers from engagement therewith. The plates O and O are extended downward far enough to permit them to be used to support the pipe M, the two mouth portions thereof being attached to said plates, respectively, and the plates are preferably flexible and are supported at their upper ends only, so that their lower portions may be moved to carry the pipe-mouths toward and from the bags. The mouths *m* and *m* can thus be placed so that



normally they stand quite close to the bag to enable even a weak suction to raise the lap and can be moved out of the way of the fingers when they descend to catch the bag.

5 For moving the plates outward a roller P may be placed on the finger-carrying rod L to engage a bearing piece or shoe Q on the inner side of the plate near the lower end of the latter, and thereby cam or press the plate outward. The plates O and O are shown as supported by a cross bar or rod R, that extends between extensions  $a$  and  $a$  of the two sides of the frame A, to which bar or rod the plates are respectively secured by clamps  $o$  and  $o$ .

15 In the upper part of the path of the bag in moving with the fingers there are two arms S and S, that are mounted on a rock-shaft T, which is journaled in bearings on the frame extensions  $a$  and  $a$ . The outer ends of the arms

20 S and S are curved, and when the arms are engaged by the bag the continued movement of the latter by the fingers causes the upward swinging of the arms and results in the complete turning over of the lapped bottom and

25 placing that edge of the same in advance of the body of the bag, which originally overlay the same. Connected to a crank U on the rock-shaft T is a rod or pitman V, that passes through a yoke W, which at one end is attached to the rod or bar R, and between the

30 other end of the yoke and a collar  $v$  on the rod V is a coiled spring X, which acts to yieldingly hold the arms S and S in opposition to movement by the bag and fingers and to restore the same from the position from which they are thereby moved. The completion of the turning of the bottom being effected, what becomes the forward edge thereof is passed between a pair of feed-wheels Y and

40 Z, placed one above the other on shafts A' and B', journaled in bearings in standards C' and C', rising from the frame extensions  $a$  and  $a$ . To enable the turning over of the bottom and the entrance of its edge between

45 the feed-wheels, the upper wheel Y, which is the larger one, has a notch  $y$  in its periphery, into which the body-overlapping portion of the bottom moves while being turned over, the revolution of the wheel being of course

50 turned accordingly.

For driving the upper wheel a sprocket-wheel C<sup>2</sup> is placed on the shaft A', which is connected by a chain D' with a sprocket-wheel E' on a shaft F', that is revolved by being

55 geared to one of the gear-wheels of the press.

The bag is moved by the feed-wheels along a horizontal table G' to the impression-cylinder, being confined against lateral displacement by two side guides H' and H' on the table and held down to the latter by spring-arms I' and I', which reach close to the point where the nippers catch the bag and effectually prevent change in or derangement of the position of the bag-bottom.

60

65 In the event that it may be desired to print bags without reversing the position of the

bottom the turning-arms S and S are placed out of use by simply loosening set-screws, by which they are held in operative position, and permitting them to drop out of the way. 70

Should no bag be fed to the press, it is important to stop the latter to avoid printing upon the impression-cylinder, and for this purpose the following-described provision is made, viz: Journaled on the rod R is a sleeve 75 K', having a crank  $k$ , to which is attached a bar or strip L' of copper or other electrical conductor, one end of which is situated so that by the vibration or rocking of the sleeve it may be moved to and from the guide N. 80

A pitman M' extends between the crank  $k$  and a head N', carrying a roller  $n$ , which engages a cam O' on the feed-wheel shaft A', so that power may be taken from the latter to rock the sleeve. The bar or strip L' and the guide 85 N are in electrical connection with an electromagnet P', mounted on the frame A, the circuit through which is closed or open, according as the strip and guide are in or out of contact, and the armature of said magnet is connected to a latch or dog Q', that holds a belt-shipper rod R' against the pull of a spring S', which when free to act ships the driving-belt from the fast pulley T' to the loose one, U'. 90

When a bag is carried by the fingers  $l$  and  $l$ , 95 the bag prevents contact of the circuit-closing bar or strip L' and the guide N; but if no bag be present said guide will be touched by the bar or strip, and the circuit being thereby closed the magnet will be energized and the 100 latch or dog Q' disengaged from the shipper-rod, permitting the movement of the shipper to throw the belt to the loose pulley and stop the press.

It is thought the operation of our mechanism has been set forth sufficiently in the description already given to make further and special description thereof unnecessary. It will be seen that by the machine constructed as shown and described the operations of 110 feeding bags and turning over the bag-bottoms are done wholly automatically. It is to be understood, however, that the invention, as far as the mere feeding alone of the article to be printed is concerned, can be employed 115 in machines in which there is no occasion to turn over folded or lapping portions, and it is also to be understood that other departures from or variations in structure may be resorted to which will involve no departure or 120 change in principle.

Having thus described our invention, what we claim is—

1. As a means for feeding bags and other articles having folded or lapped parts, a feeder 125 that engages the fold or crease, and a part in the path of the feeder to turn the folded or lapped part, substantially as and for the purpose described.

2. As a means for feeding bags and other 130 articles having folded or lapped parts, a feeder that engages the fold or crease, and a movable



part in the path of the feeder to turn the folded or lapped part, substantially as and for the purpose described.

3. As a means for feeding bags and other articles having folded or lapped parts, a feeder that engages the fold or crease, a part in the path of the feeder to turn the folded or lapped part, and a feed wheel or wheels, substantially as and for the purpose described.

4. As a means for feeding bags and other articles having folded or lapped parts, the combination of a feeder that engages the fold or crease, and a pivoted arm or arms in the path of the article as it is moved by the feeder, substantially as described.

5. As a means for feeding bags and other articles having folded or lapped parts, the combination of a feeder that engages the fold or crease, a pivoted arm or arms in the path of the article as it is moved by the feeder, and a feed wheel or wheels to which the article is delivered after passing such arm or arms, substantially as described.

6. As a means for feeding bags or other articles having folded or lapped parts, the combination of a feeder that engages the fold or crease, and a pivoted arm or arms yieldingly held in the path of the article carried by the feeder, substantially as and for the purpose described.

7. As a means for feeding bags and other articles having folded or lapped parts, a feeder comprising a vibrating arm and fingers carried by the arm, and an arm or arms in the path of the feeder to turn the folded or lapped part, substantially as and for the purpose described.

8. As a means for feeding bags and other articles having folded or lapped parts, a feeder comprising a vibrating arm and fingers carried by the arm, and a feed-wheel to which the article is delivered by the feeder, having a notch in its periphery, substantially as and for the purpose described.

9. In combination with a source of supply of articles to be fed, a feeder, and means for subjecting the articles to air-pressure on the side opposite the feeder, substantially as and for the purpose described.

10. In combination with a source of supply of articles to be fed, a feeder, and an air-suction device that is movable relative to the source of supply, and means for moving said device when the feeder moves to a position to engage an article, substantially as and for the purpose described.

11. In combination with a source of supply of articles to be fed, a feeder, a suction de-

vice having a mouth or inlet that is movable toward and from the source of supply and means actuated by the feeder to move said device, substantially as and for the purpose described.

12. As a means for feeding articles having folded or lapped parts, the combination of a feeder constructed to engage the lapped parts, a guideway through which the feeder moves that engages the lapped parts to restrict the opening thereof, and a lap-turning device to which the article is delivered from the guideway, substantially as described.

13. As a means for feeding articles having folded or lapped parts, the combination of a feeder constructed to engage the lapped parts, a guideway through which the feeder moves, composed of opposing parts to restrict the opening of the lapped portion of the article and a lap-turning device to which the article is delivered from the guideway, substantially as described.

14. As a means for feeding articles having folded or lapped parts, the combination of a feeder constructed to engage the lapped parts and a guideway through which the feeder moves, composed of opposing parts, one of which is movable, and a suction device connected with the movable part, substantially as and for the purpose described.

15. The combination of a printing-press, a surface over which articles to be printed move, an electrode movable to and from such surface, means for moving said electrode timed to move the same toward the surface when the article to be printed is passing thereover, a circuit including a magnet, said surface and said electrode, and a press-stopping device that is actuated when such circuit is closed by the contact of the electrode and said surface, substantially as described.

16. The combination of a printing-press, a feeder for feeding articles to be printed to the press, a guide, an electrode movable to and from the guide, a circuit, including a magnet, the guide and said electrode, and a press-stopping device that is actuated when such circuit is closed by the contact of the electrode and said guide, substantially as and for the purpose described.

In testimony that we claim the foregoing we have hereunto set our hands this 6th day of August, 1900.

CHARLES HENRY PALMER.

JOHN WILLIAM DENMEAD.

Witnesses:

TOM A. PALMER,

B. C. ROSS.