

July 6, 1937.

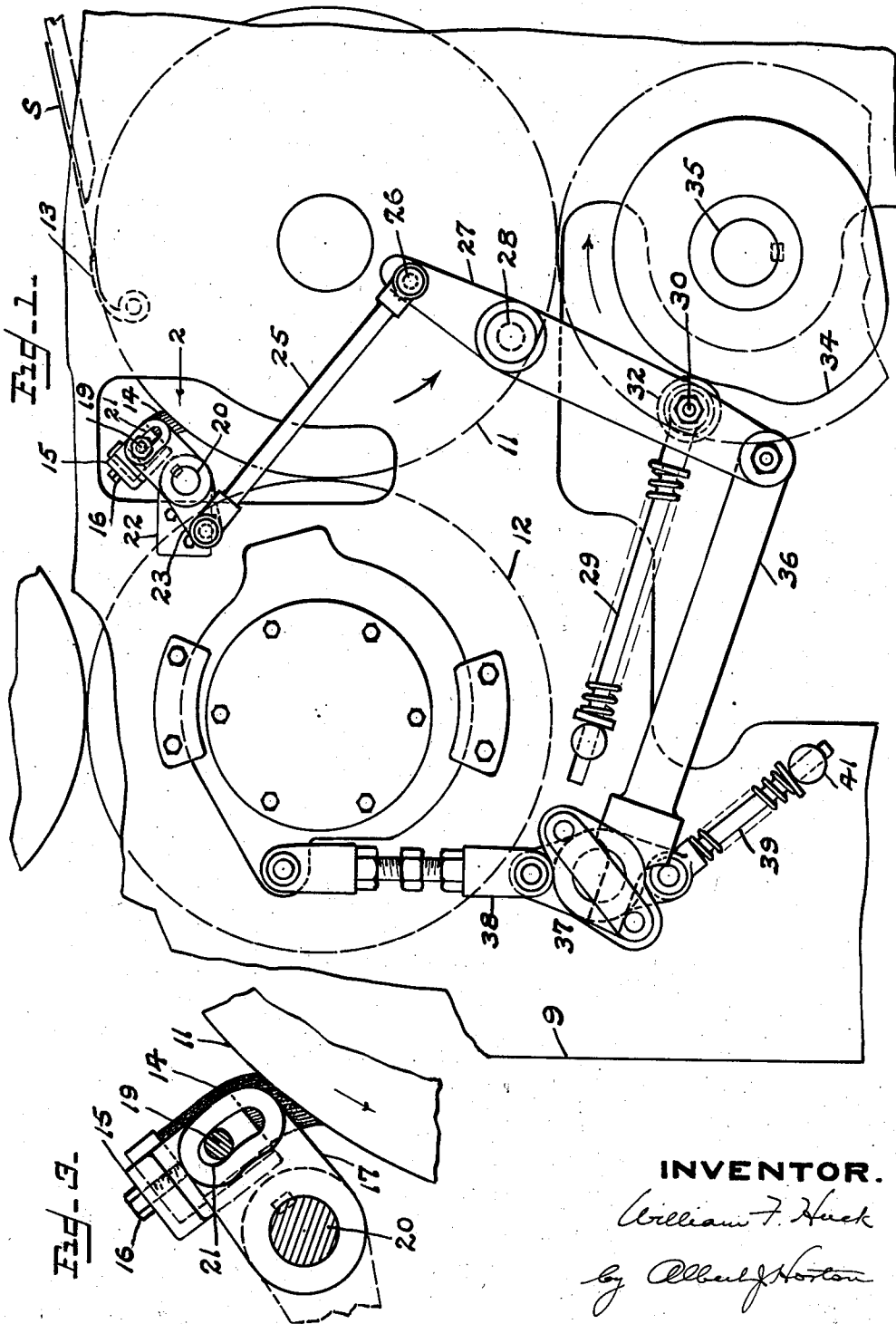
W. F. HUCK

2,086,227

PRINTING MACHINE

Filed June 7, 1935

2 Sheets-Sheet 1



INVENTOR.

William F. Huck

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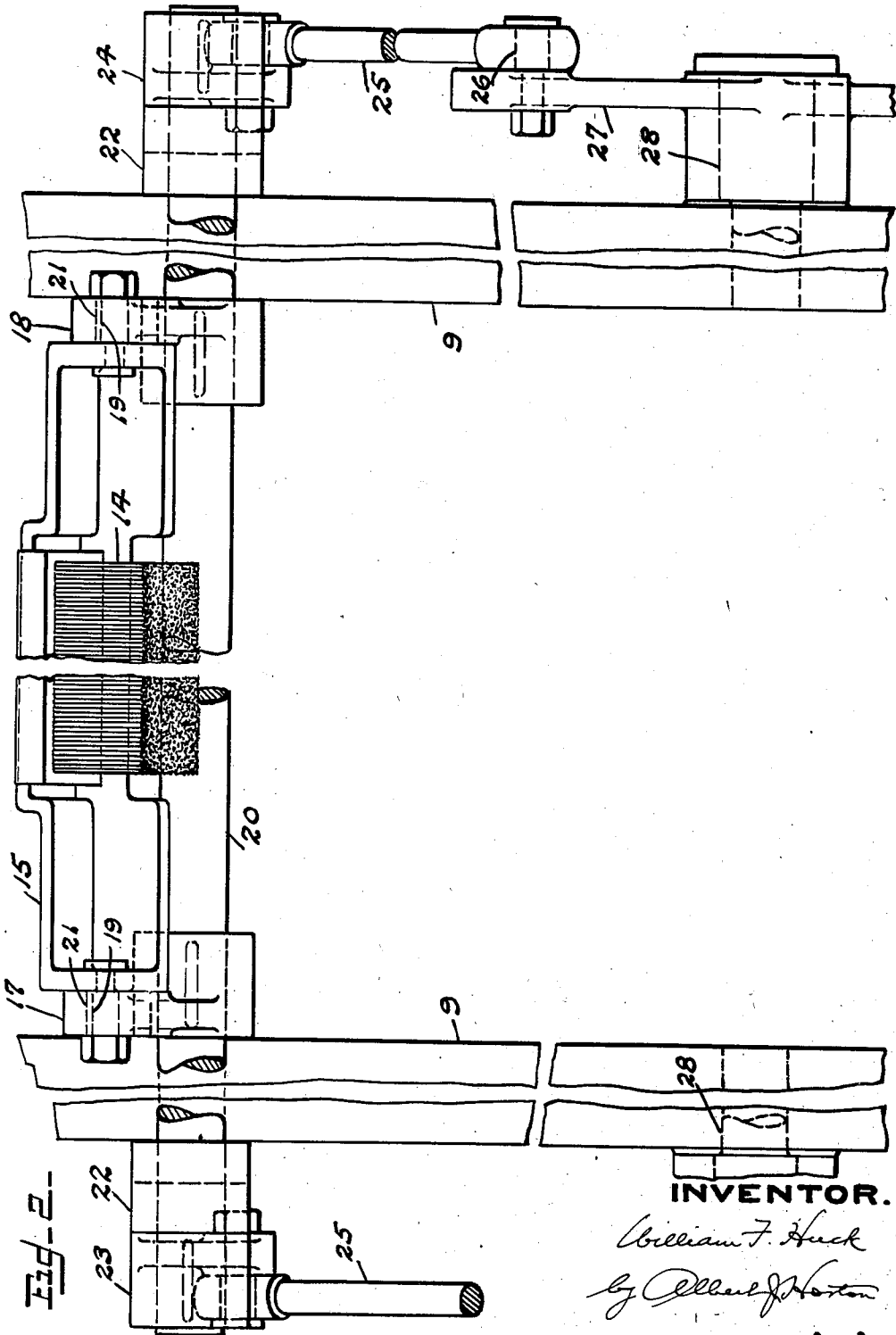
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2,086,227

PRINTING MACHINE

Filed June 7, 1935

2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,086,227

PRINTING MACHINE

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by mesne assignments, to R. Hoe & Co., Inc.,
New York, N. Y., a corporation of New York

Application June 7, 1935, Serial No. 25,338

2 Claims. (Cl. 101—425)

This invention in general relates to printing machines and more particularly to a rotary offset printing machine, having for its object the provision of automatically operated means, such as a brush for holding a sheet in contact with an impression cylinder while it is being printed in order to prevent sagging of the paper into premature contact with the blanket cylinder, thereby causing smudging and doubling.

Another object is the provision of a mechanically operated brush which serves both to prevent dust or other particles from getting between the impression and blanket cylinder of an offset printing machine, and to maintain a sheet in contact with the periphery of an impression cylinder so that as the leading edge of the sheet passes under the sheet grippers, the said brush will be raised and then immediately returned into operative engagement with the sheet in order to prevent the trailing edge of the sheet from contacting the blanket cylinder before the predetermined and proper time.

It is also an object of the invention to provide a sheet engaging brush and coacting brush tripping mechanism for use with a rotary printing machine; of generally improved construction, whereby the device will be simple, durable and inexpensive in construction, as well as convenient, practical, serviceable and efficient in its use.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts, and in the details of construction hereinafter described and claimed, it being understood that various changes in the precise embodiment of the invention herein disclosed may be made within the scope of what is claimed without departing from the spirit of the invention.

The preferred embodiment of the invention is illustrated in the accompanying drawings, wherein:

Figure 1 is a fragmentary side elevational view of a sheet fed, rotary printing machine to which an embodiment of the invention has been applied; certain parts being broken away and others omitted for the purpose of clearer illustration;

Figure 2 is a fragmentary elevational view as seen in the direction of the arrow 2 of Figure 1; and

Figure 3 is an enlarged fragmentary detail view of certain portions of the brush mechanism.

In accordance with the present invention, means, such as a brush, is arranged to be tripped

into and out of engagement with an impression cylinder of a printing machine, so as to permit the front edge of the paper to pass underneath the brush unobstructed. The brush is raised or tripped at the proper time or during the interval in which the grippers are passing thereunder, after which the brush is lowered or returned to position to smooth out the sheet. Further rotation of the cylinder will bring the trailing end of the sheet under the brush which will maintain it in contact with the periphery of the impression cylinder until it has passed completely under the said brush so that, as pointed out above, premature contact with the blanket cylinder cannot occur.

Referring now to the drawings, in which similar characters of reference indicate corresponding parts in the several views of the preferred form of the invention, 9 designates a frame whereon impression and blanket cylinders 11 and 12 respectively, are rotatably mounted, the impression cylinder being provided with grippers 13 adapted to engage sheets presented one at a time thereto during the normal operation of the machine. In accordance with the present invention, a brush 14, fastened to a member or bracket 15, by screws 16, is adapted to be engaged with and disengaged from each of said sheets at certain predetermined times, while being conveyed by the grippers. The brush-carrying bracket 15 is held in adjustable relation to levers or arms 17, 18 by screw studs 19, which are slidably arranged in elongated slots 21 formed in the said levers 17, 18.

To the ends of a rock shaft 20, which is held in position by brackets 22 fastened to the frame 9, the hubs of arms 23, 24 are fastened. To each of the arms 23, 24 is pivoted a link 25, in turn pivotally connected by a pin 26 to one end of a lever 27 pivoted on a stud 28 fastened to the frame 9. Each of the levers 27, adjacent its other end, is provided with a stud 30, upon which a spring actuated rod 29 and a cam roller 32 are journaled. The cam roller 32 is coactingly engaged with the surface of a cam member 34 secured to a shaft 35 driven by the press. The levers 27, at their lower extremity, are pivoted to links 36, which are associated with a cylinder tripping mechanism, indicated generally at 37 (Figure 1), of any well known and approved construction, which may, for example, be of the type shown in patent to Niles 1,119,861, dated December 8, 1914, to an adjacent portion of which at each end of the frame 9, one end of a turn-buckle rod 38 is pivotally connected. The other

end of each rod 38 is pivotally connected to that portion of the tripping mechanism which is directly associated with the cylinder 12. A pair of spring actuated rods 39 slidably mounted in poppets 41, fastened to the frame 9, serve to bias the tripping mechanism in operation. It will be understood, as best indicated in Figure 2, that the elements shown at one end of the frame, are substantially duplicated at the other end.

10 The operation of the device is briefly as follows: Assuming a sheet S forwarded by a sheet feeder (not shown), has been engaged by the grippers 13 and is being conveyed towards the cylinders 11 and 12, the cam 34 will actuate the rock shaft 15 through the elements connected thereto, to lift the brush 14 from the sheet at the moment the grippers 13 are passing directly thereunder. Simultaneously, with the actuation of the brush, the levers 27 will communicate movement to the links 36, which latter, however, are effective to operate the cylinder tripping mechanism 37 only when the said mechanism has been acted upon by means (not shown) operated in the event a sheet is not forwarded. In the latter case, the said tripping mechanism 37 will at once be placed in a position to receive movement from the links 36 thus moving the turnbuckle rod 38, and consequently, raising or tripping the blanket cylinder 12 out of engagement with the impression cylinder 11. After the grippers have passed beyond the brush, the cam operates through the elements indicated above to immediately return the brush into engagement with the sheet to keep same against the periphery of the impression cylinder and thus prevent the tail end of the sheet from possible smudging, as described hereinbefore. This cycle is repeated with each sheet presented to the grippers. The brush also serves to sweep dust and all foreign particles from the top of each sheet as it passes under the brush.

It will be understood that the invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof, and it is therefore desired that the present embodiment be considered in all respects as illustrative and not restrictive, reference being had to the claims rather than to the foregoing description to indicate the scope of the invention.

What I claim is:

1. In a sheet fed printing machine having a frame, a pair of cylinders mounted on said frame, and gripper means mounted on one of said cylinders and adapted to engage a sheet; a brush arranged adjacent said last mentioned cylinder and adapted to engage the trailing end of a sheet while being conveyed by said grippers, means for moving said brush away from the sheet when the leading edge of said sheet is passing thereunder, and means connected to and actuated by said last mentioned means for bodily moving one of said cylinders to trip the impression.

2. In a sheet fed printing machine having a frame, a pair of cylinders mounted on said frame, and gripper means mounted on one of said cylinders and adapted to engage a sheet; a brush arranged adjacent said last mentioned cylinder and adapted to engage the trailing end of a sheet while being conveyed by said grippers, a cam rotatably mounted on the frame, means including a cam roller having an operative connection to said cam and adapted to actuate said brush when the leading edge of the sheet is passing under the gripper means, a cylinder tripping mechanism connected to one of said cylinders, and other means operatively connecting the cylinder tripping mechanism and the means having the cam roller.

WILLIAM F. HUCK.