

No. 686,336.

Patented Nov. 12, 1901.

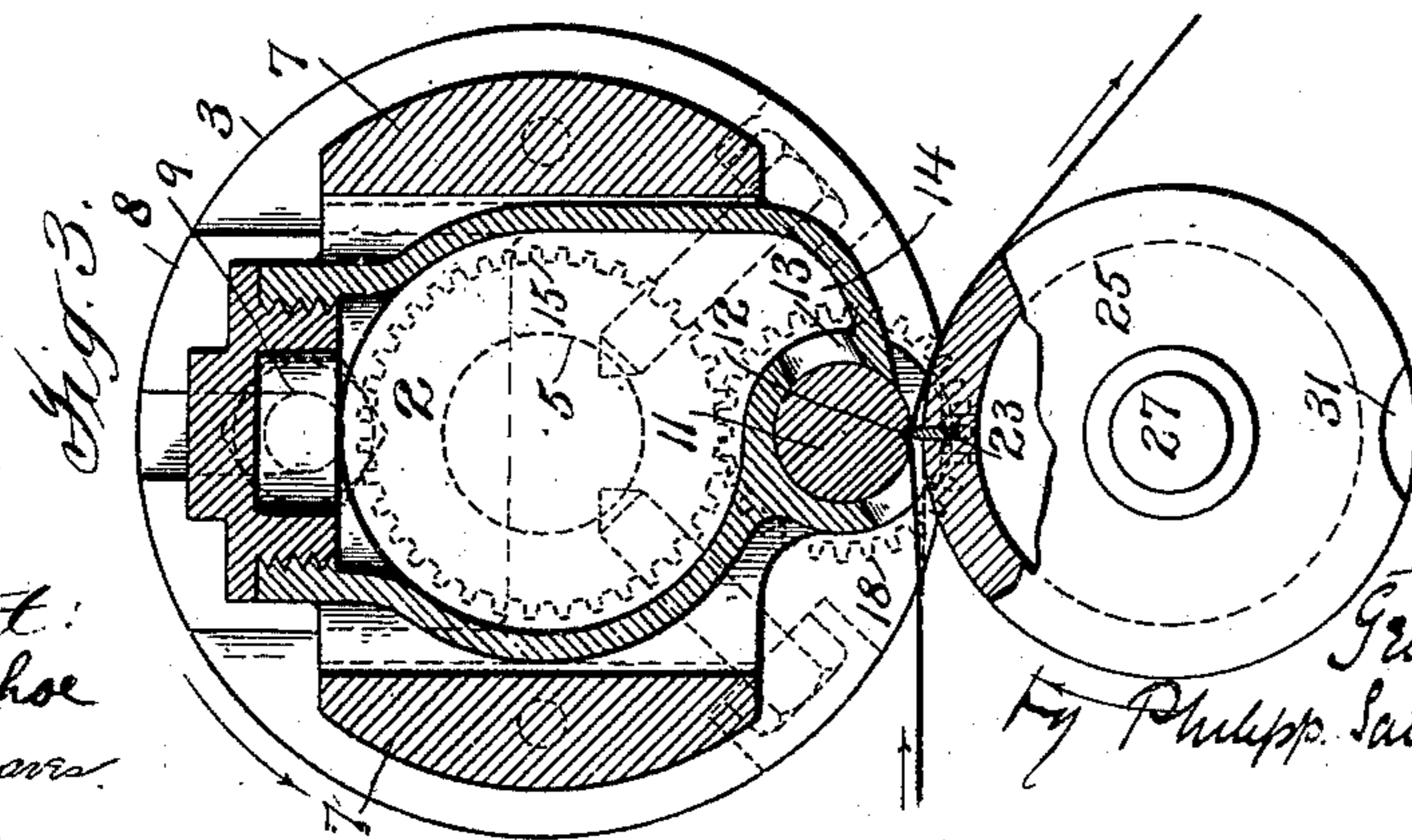
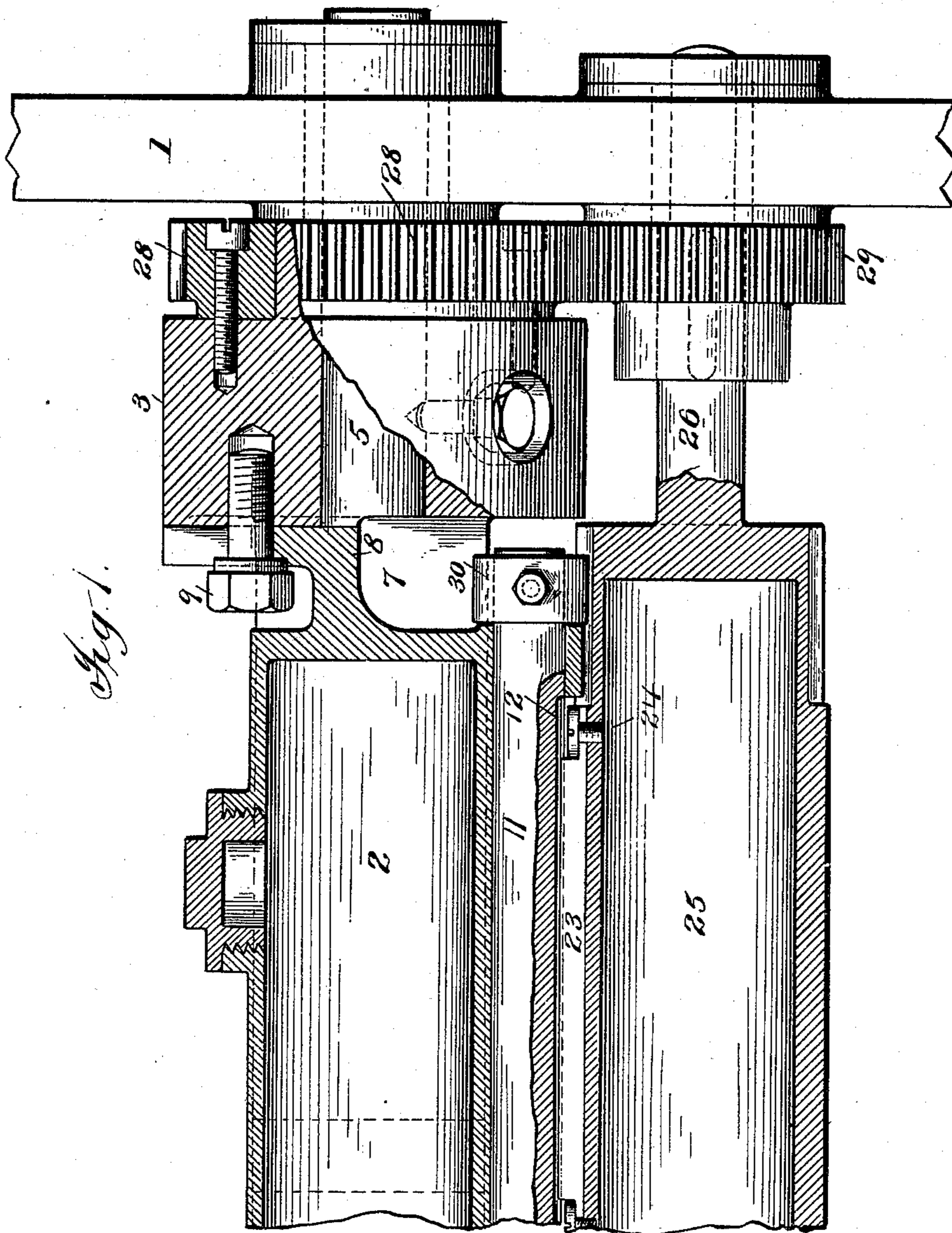
G. F. READ.

PASTE FOUNTAIN FOR PRINTING MACHINES.

(Application filed Jan. 21, 1901.)

(No Model.)

3 Sheets—Sheet 1.



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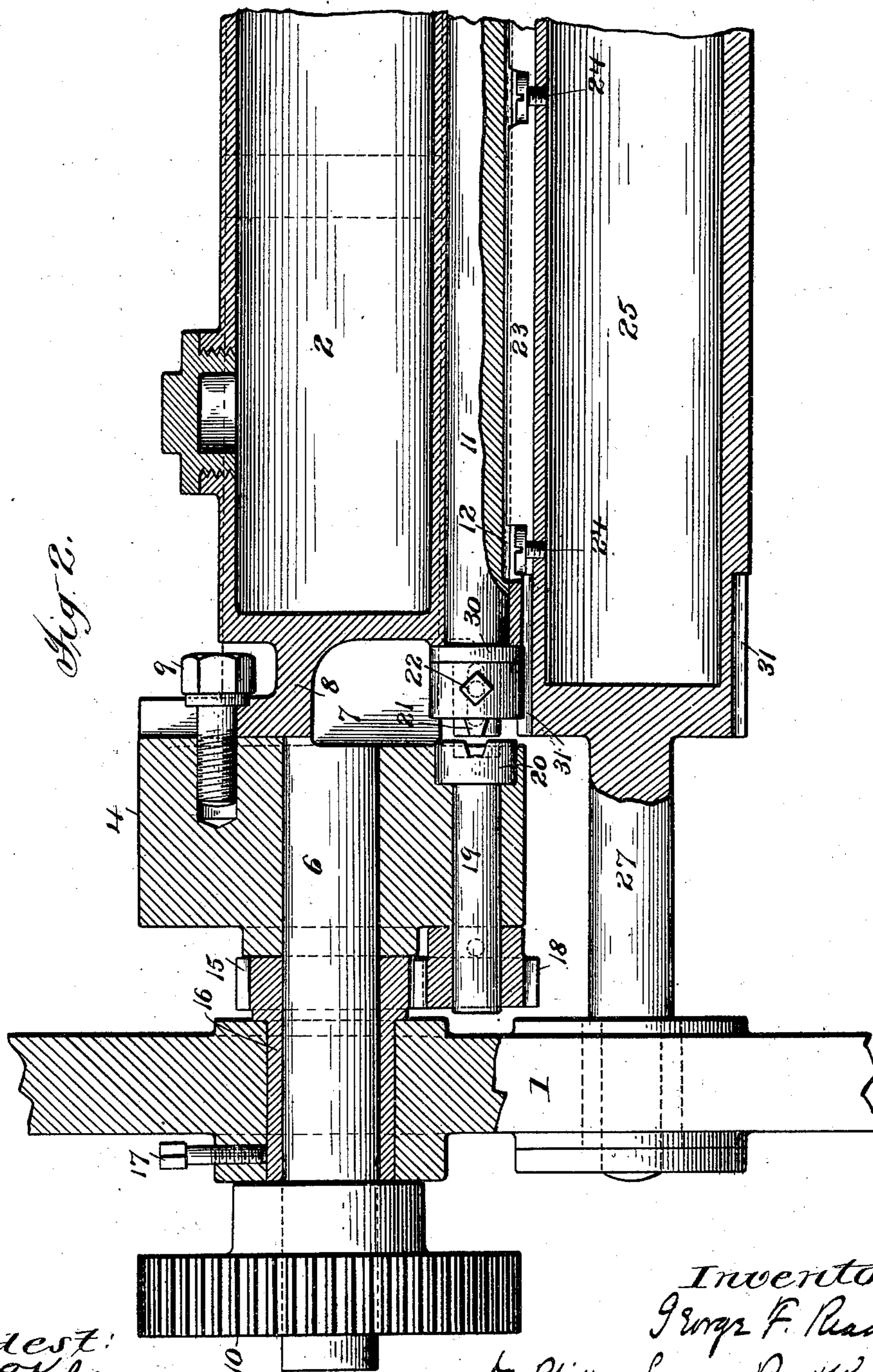
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PASTE FOUNTAIN FOR PRINTING MACHINES.

(Application filed Jan. 21, 1901.)

(No Model.)

3 Sheets—Sheet 2.



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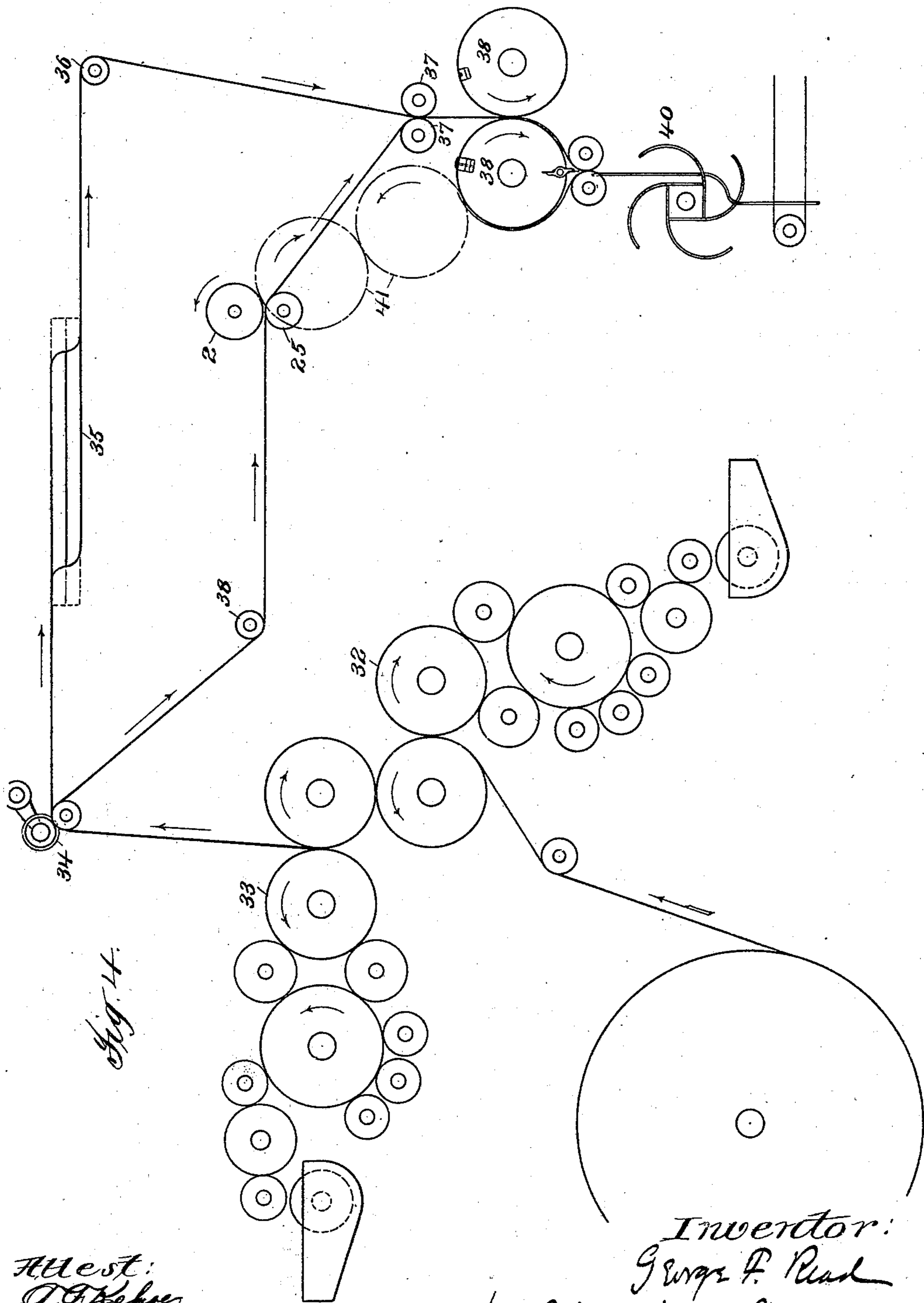
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PASTE FOUNTAIN FOR PRINTING MACHINES.

(Application filed Jan. 21, 1901.)

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3 Sheets—Sheet 3.



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UNITED STATES PATENT OFFICE.

GEORGE F. READ, OF NEW YORK, N. Y., ASSIGNOR TO ROBERT HOE, OF
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PASTE-FOUNTAIN FOR PRINTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 686,336, dated November 12, 1901.

Application filed January 21, 1901. Serial No. 43,969. (No model.)

To all whom it may concern:

Be it known that I, GEORGE F. READ, a citizen of the United States, residing at New York, county of Kings, and State of New York, have
5 invented certain new and useful Improvements in Paste-Fountains for Printing-Machines, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

10 This invention relates to certain improvements in devices for applying to moving material, such as a web or sheet of paper, liquid—such, for instance, as paste—in a transverse line or lines.

15 Transverse pasting devices now ordinarily used in the art, and more particularly those used in connection with fast rotary printing-machines, employ a rotating blade to which
20 ring the paste in a line to the moving web of material. The movement of such pasting-blades is necessarily rapid, and there is always liability that the paste will be thrown or flir-
25 ed off the blade onto the material. Furthermore, the transverse pasters now ordinarily employed are complicated and expensive in construction.

The object of this invention is to produce a simple, compact, cheap, and efficient de-
30 vice which may be used for applying transverse lines of paste or other similar substances to moving material, such as a web or sheet of paper, and which avoids the objection heretofore stated.

35 With this and other objects in view the invention consists in certain constructions and in certain parts, improvements, and combinations, as will be hereinafter fully described and then specifically pointed out in the claims
40 hereunto appended.

In the accompanying drawings, in which like characters of reference indicate the same parts, Figure 1 is a sectional elevation illustrating one end of a pasting device constructed in accordance with the invention. Fig. 2
45 is a view similar to Fig. 1, illustrating the other end of said pasting device. Fig. 3 is a sectional elevation taken at right angles to the plane of section of Figs. 1 and 2. Fig. 4
50 is a diagrammatic view illustrating the ap-

plication of the improved pasting device to a printing-machine.

Referring to the drawings, which illustrate a concrete embodiment of the invention, 1 indicates a portion of a frame of a printing or
55 other analogous machine in which is supported a moving liquid-receptacle 2. In the preferred form of the construction this receptacle will consist of a rotating fountain.

Any suitable means may be employed to 60 support the fountain in the machine so that it may be given a rotating movement, and the fountain will preferably be so arranged in the machine as to be detachable from its support. In the preferred form of the construc- 65 tion the support for the fountain consists of heads 3 and 4, the head 3 being suitably secured to a short shaft 5 and the head 4 being similarly secured to a short shaft 6. These heads are or may be connected by webs 7, as shown 70 in Fig. 3, the webs being spaced apart so as to allow the fountain to be placed between them. Each end of the fountain is preferably provided with a forked bracket 8, engaged by a screw 9, tapped into the head. 75 With this construction it will be seen that the fountain may be readily removed from the supporting-heads, and any desired adjustment of the fountain with respect to the heads may be secured. One of the short shafts, 80 herein shown as the shaft 6, is provided with a gear 10, so that the shaft may be driven from any suitable rotating part of the machine.

The fountain is provided with a suitable applying device which may be varied widely 85 in form and construction. In the preferred form of the construction this applying device will not only move with the fountain, but be given an independent movement with respect thereto. In the construction shown the ap- 90 plying device consists of a roll 11, preferably provided with a groove 12, for a purpose to be hereinafter stated. This roll 11 is mounted in a long bearing, preferably formed integral with the fountain, an aperture 13 being 95 provided in said bearing by which the roll communicates with the interior of the fountain. In the preferred form of the construction the fountain is formed with a pocket 14, as clearly shown in Fig. 3, and 100

the aperture 13 opens into this pocket. The centrifugal force developed by the rapid rotation of the fountain will tend to hold the paste or other liquid in the pocket, so as to insure an adequate amount being supplied to the roll. The bearing for the roll is so formed that the roll fits snugly therein. The edges of the aperture 13 therefore serve as a cleaning device for the roll and act to scrape from it all the liquid except that which is contained in the groove 12.

Any suitable means may be employed to give the roll the independent rotation it has with respect to the fountain. As shown, a gear 15 is provided, which is formed integral with the bushing 16, through which the shaft 6 passes, the bushing being made stationary with respect to the frame by means of a screw 17 or in any other suitable manner. The gear 15 is engaged by a pinion 18, secured to a short shaft 19, which is shown as mounted in the head 4. The inner end of this short shaft 19 is provided with a grooved head 20, which is engaged by a sliding clutch-piece 21, suitably secured to the roll 11. This clutch-piece is slidingly secured to the roll and is held in position by means of a bolt 22 or in any other suitable manner. Inasmuch as the gear 15 is a stationary gear it will be seen that as the fountain rotates the pinion 18 will be carried around onto the gear 15 and the roll 11 will be given its rotation.

Suitable means are provided which cooperate with the roll 11 to force the material to be pasted against it. In the construction shown these means consist of a blade 23, secured by screws 24 or in any other suitable manner to a cylinder 25. This cylinder is preferably formed with shafts 26 27, extending into suitable bearings in the frame. Any suitable means may be employed for rotating the cylinder 25. As shown, however, the head 3 has connected to it, by means of screws or in any other suitable manner, a gear 28, meshing with a gear 29, mounted on the shaft 26. While the gears 28 and 29 might be made of the same size, so as to cause the blade to cooperate with the roll 11 in the fountain on each revolution of the fountain and blade-carrying cylinder, this would under some circumstances necessitate making the fountain and the blade-carrying cylinder of a large diameter, since it is usually desired to place only a single transverse line of paste on each sheet or each section of web which is to form a sheet. In order to reduce the size of the fountain and the blade-carrying cylinder, therefore, each of these devices is given a predetermined number of revolutions with reference to the length of the sheet or the section of web which is to form the sheet, the number of revolutions of the fountain being different from that of the blade-carrying cylinder, the arrangement of the gearing being such that the blade will meet the paste-applying roll after the fountain and the blade-carrying cylinder have

made the predetermined number of revolutions. The predetermined number of revolutions given to the fountain and the blade-carrying cylinder may be varied as required by the special circumstances of each case. In the construction shown the fountain is arranged to be given two revolutions for each passing sheet, and the relation of the gears 28 and 29 is such that the cylinder 25 makes three revolutions while the fountain makes two. On every second revolution of the fountain, therefore, and on every third revolution of the cylinder 25 the blade 23 will force the passing web or sheet into the groove in the roll 11 and cause a transverse line of paste to be applied to it.

In order to insure that the roll 11 is positively held in its bearings, collars 30 are provided at each end of the roll, these collars being secured to the roll in any suitable manner. In order to permit these collars to pass the cylinder 25, said cylinder is provided with suitable recesses 31.

The operation of the construction will be evident from the diagram, Fig. 4. In this figure, 32 and 33 indicate the form-cylinders of a perfecting printing-machine. After the web is perfected it is slit by means of slitters 34. One part of the web is then carried through a suitable transferring mechanism 35 over a guide 36 and between rolls 37. The other part of the web is led over a guide 38 and then between the fountain 2 and the blade-carrying cylinder 25, (said parts being diagrammatically illustrated in this figure.) As the web passes through this pasting device it receives a transverse line of paste and is then led between the rolls 37, by which it is caused to adhere to the first part of the web. The two parts of the web thus secured together pass between the cylinders 38 of an ordinary cutting, collecting, and folding mechanism, and after being cut into sheets and suitably folded are delivered to a fly 40 or to any other suitable delivery mechanism. In this figure the fountain 2 is shown as being operated by a train of gears 41 from the cutting and collecting cylinders.

While the device which has been described is particularly applicable to the application of paste or other similar adhesive substance, and it is to be understood that the word "paste" is used in a generic sense in this specification to include any form of adhesive substance, it is obvious that the construction could be used for applying any other liquid which is generally similar in character.

While, further, the construction which has been described herein is particularly effective for the purpose, it is to be understood that the invention may be embodied in other constructions which are widely different from the one described. The invention is not, therefore, to be limited to the precise details of construction herein set forth.

What is claimed is—

1. The combination with suitable forward-

ing means, of a rotating grooved liquid-receptacle provided with a liquid-applying surface for applying a line of liquid to the material being forwarded, said line being transverse to the movement of said material, and means for pressing said material into the groove in the liquid-applying surface, substantially as described.

2. The combination with suitable forwarding means, of a moving liquid-receptacle provided with a liquid-applying surface for applying a line of liquid to the material being forwarded, and a moving blade for pressing the material against the liquid-applying surface, substantially as described.

3. The combination with suitable forwarding means, of a rotating liquid-receptacle provided with a liquid-applying surface for applying a line of liquid to the material being forwarded, and a rotating blade for pressing the material against the liquid-applying surface, substantially as described.

4. The combination with suitable forwarding means, of a moving liquid-receptacle provided with a liquid-applying surface for applying a line of liquid to the material being forwarded, said line being transverse to the movement of said material, and a moving blade for pressing the material against the liquid-applying surface, substantially as described.

5. The combination with suitable forwarding means, of a rotating liquid-receptacle provided with a liquid-applying surface for applying a line of liquid to the material being forwarded, said line being transverse to the movement of said material, and a rotating blade for pressing the material against the liquid-applying surface, substantially as described.

6. The combination with a suitable forwarding means, of a moving liquid-receptacle, a liquid-applying surface mounted to move with said receptacle and movable with respect thereto, said surface receiving liquid from said receptacle, and a moving blade for forcing the material being forwarded against the liquid-applying surface, substantially as described.

7. The combination with a rotating fountain, of a grooved applying device in said fountain, means for giving the applying device a rotating movement independent of the fountain, and means for forcing a moving web or sheet into the groove in said applying device, substantially as described.

8. The combination with a rotating fountain, of an applying device in said fountain, means for giving the applying device a rotating movement independent of the fountain, and a rotating blade for forcing a moving web or sheet against said applying device, substantially as described.

9. The combination with a rotating fountain, of a roll mounted therein, means for rotating the roll independently of the fountain, and a rotating blade for forcing a moving

web or sheet against the roll, substantially as described.

10. The combination with a rotating fountain, of a grooved roll mounted therein, means for rotating the roll independently of the fountain, and means for forcing a moving web or sheet into the groove of the roll, substantially as described.

11. The combination with a rotating fountain, of a grooved roll mounted therein, means for rotating the roll independently of the fountain, and a rotating blade for forcing a moving web or sheet into the groove of the roll, substantially as described.

12. The combination with a pair of independently-supported heads, of a fountain, means for detachably securing the fountain to the heads, rotating means, an applying device carried by the fountain and receiving liquid therefrom, and means for forcing a web or sheet against the applying device, substantially as described.

13. The combination with a pair of independently-supported grooved heads, of a fountain, brackets extending from the fountain, means for detachably securing the brackets of the fountain in the grooves in the heads, rotating means, an applying device carried by the fountain and receiving liquid therefrom, and means for forcing a web or sheet against the applying device, substantially as described.

14. The combination with a suitable support, of means for giving said support a movement, means for detachably securing a fountain to said support, an applying device carried by the fountain and receiving liquid therefrom, and a moving blade for forcing a web or sheet against the applying device, substantially as described.

15. The combination with a suitable support, of means for giving said support a movement, means for detachably securing a fountain to said support, an applying device mounted in said fountain, means for giving said applying device a movement with respect to the fountain, and a moving blade for forcing a web or sheet against said applying device, substantially as described.

16. The combination with a suitable support, of means for rotating said support, means for detachably securing a fountain to said support, an applying device carried by the fountain and receiving liquid therefrom, and a rotating blade for forcing a web or sheet against the applying device, substantially as described.

17. The combination with a suitable support, of means for rotating said support, means for detachably securing a fountain to said support, an applying device mounted in said fountain, means for rotating said applying device with respect to the fountain, and a rotating blade for forcing a web or sheet against said applying device, substantially as described.

18. The combination with a suitable sup-

port, of means for rotating the support, a fountain carried thereby, a roll mounted in the fountain, means for rotating the roll with respect to the fountain, and a rotating blade for forcing a web or sheet against the roll, substantially as described.

19. The combination with a suitable support, of means for rotating the support, a fountain carried thereby, a grooved roll mounted in the fountain, means for rotating the roll with respect to the fountain, and means for forcing a web or sheet into the groove of the roll, substantially as described.

20. The combination with a suitable support, of means for rotating the support, a fountain carried thereby, a grooved roll mounted in the fountain, means for rotating the roll with respect to the fountain, and a rotating blade for forcing a web or sheet into the groove of the roll, substantially as described.

21. The combination with a suitable support, of means for rotating said support, a fountain carried thereby, said fountain consisting of a chamber provided with a pocket and an applying device located in the pocket, means for forcing the web or sheet against the applying device, substantially as described.

22. The combination with a suitable support, of means for rotating said support, a fountain carried thereby, said fountain consisting of a chamber provided with a pocket, a roll mounted in the fountain in communication with the pocket, means for rotating the roll with respect to the fountain and means for forcing the web or sheet against the roll, substantially as described.

23. The combination with a suitable support, of means for rotating said support, a fountain carried thereby, said fountain consisting of a chamber provided with a pocket, a roll mounted in the fountain in communication with the pocket, means for rotating the roll with respect to the fountain, and a rotating blade for forcing a web or sheet against the roll, substantially as described.

24. The combination with a suitable support, of means for rotating said support, a fountain carried thereby, said fountain consisting of a chamber provided with a pocket, a grooved roll mounted in the fountain in communication with the pocket, means for rotating the roll with respect to the fountain, and a rotating blade for forcing a web or sheet into the groove of the roll, substantially as described.

25. The combination with a suitable support, of means for rotating the same, a fountain detachably connected to the support, a roll mounted in the fountain, a short shaft mounted in the support, means for rotating the shaft, a detachable connection between the shaft and the roll, and a rotating blade for forcing a moving web or sheet against the roll, substantially as described.

26. The combination with a suitable support, of means for rotating the same, a fountain

detachably connected to the support, a grooved roll mounted in the fountain, a short shaft mounted in the support, means for rotating the shaft, a detachable connection between the shaft and the roll, and a rotating blade for forcing a moving web or sheet into the groove of the roll, substantially as described.

27. The combination with a support comprising two heads, of means for rotating said support, a fountain detachably secured to the heads, a grooved roll mounted in the fountain, a short shaft mounted in one of the heads, means for rotating the shaft, a detachable connection between the shaft and the roll, and a rotating blade-carrier cooperating with the roll, substantially as described.

28. The combination with means for forwarding a web or sheet, of a rotating fountain provided with a liquid-applying device, a rotating device for forcing the web or sheet against the liquid-applying device, means for giving the fountain a predetermined number of rotations for a given length of material, and means for giving the forcing device a different number of rotations for the same length of material, whereby the material will be forced against the liquid-applying device after said forcing device and the fountain have each made their predetermined number of rotations, substantially as described.

29. The combination with means for forwarding a web or sheet, of a rotating fountain provided with a liquid-applying device, a rotating blade for forcing the web or sheet against the liquid-applying device, means for giving the fountain a predetermined number of rotations for a given length of material, and means for giving the rotating blade a different number of rotations for the same length of material, whereby the material will be forced against the liquid-applying device after said blade and the fountain have each made their predetermined number of rotations, substantially as described.

30. The combination with means for forwarding a web or sheet, of a rotating fountain, a grooved roll mounted in the fountain for applying the liquid to said web or sheet, a rotating blade for forcing the web or sheet into the groove of the roll, means for giving the fountain a predetermined number of rotations for a given length of material, and means for giving the rotating blade a different number of rotations for the same length of material, whereby the material will be forced into the groove of the roll after said blade and the fountain have each made their predetermined number of rotations, substantially as described.

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

GEORGE F. READ.

Witnesses:

F. W. H. CRANE,
L. ROEHM.