Dec. 3, 1935. H. SMYTHERMAN 2,022,746

NEWSPAPER PRINTING MACHINE

Filed Nov. 20, 1931 2 Sheets-Sheet 1

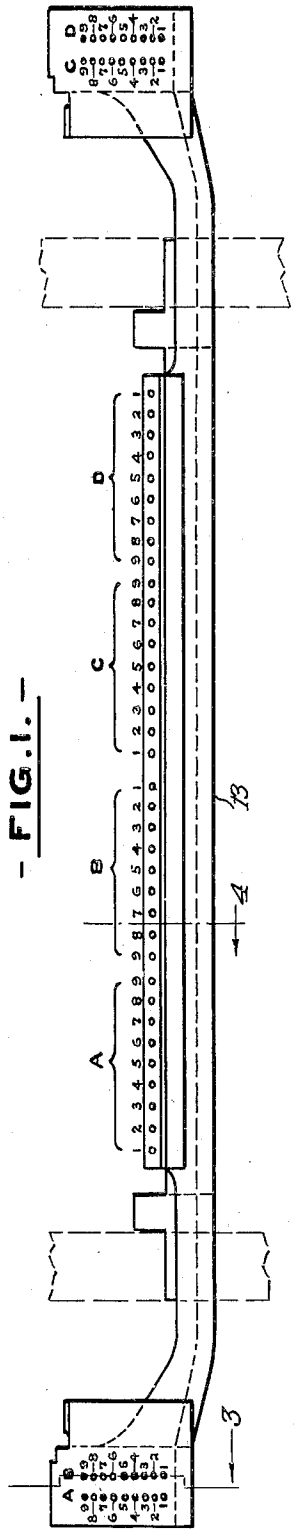


FIG. 1.

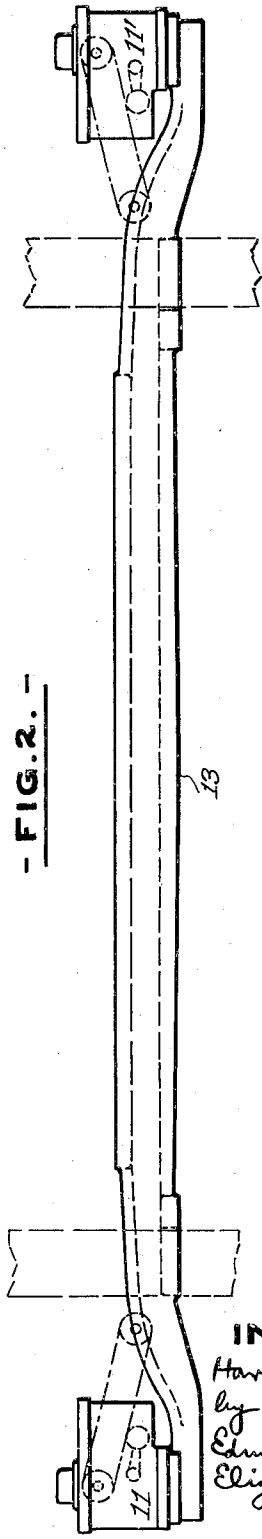


FIG. 2.

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Fig. 3.

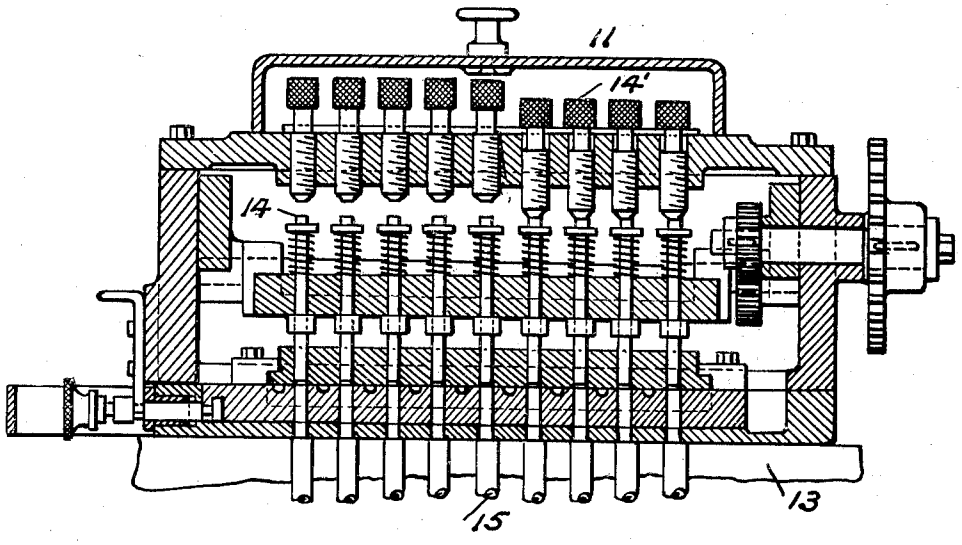
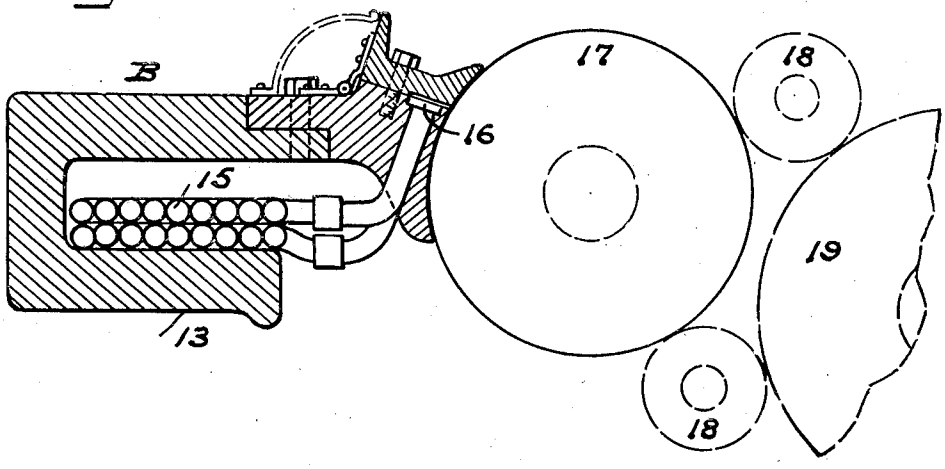


Fig. 4.



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2,022,746

UNITED STATES PATENT OFFICE

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NEWSPAPER PRINTING MACHINE

Harold Smytherman, Twickenham, England, assignor to R. Hoe & Co., Inc., New York, N. Y., a corporation of New York; Irving Trust Company, permanent trustee

Application November 20, 1931, Serial No. 576,273

2 Claims. (Cl. 101—365)

The invention relates to newspaper printing machines, and more particularly to mechanism in such machines by which the ink is supplied through suitable conduits and other mechanism to the printing couples of such machines.

One of the principal objects of the invention is to provide means by which the supply of ink from the reservoir or reservoirs in which the same is primarily contained may be efficiently, quickly and conveniently controlled, so that the relative supply of ink to different portions of the ink rail may be quickly increased or decreased, as may be determined by the operator in charge of that part of the operation of the machine. The invention relates particularly to machines in which the ink supply mechanism comprises a plurality of pumps. On these machines it is customary to provide one ink pump for each printing couple, each pump, however, comprising a plurality of separate pistons or plungers, so that in effect the pump is multiple. Each of the said pistons or plungers discharges through a conduit to an ink rail having a separate orifice for each column, in the case of newspaper printing, and it is thus possible to control the flow of ink to suit the particular description of printing which is being done. In the case of news matter or classified advertisements, the pump plungers are adjusted to give a long stroke and to deliver the maximum amount of ink, but for certain kinds of display advertising, and other work where the printed matter covers but a portion, large or small, of the space, the stroke of the particular piston supplying ink to that part of the work may be shortened so as to lessen the amount of ink delivered at that point. Special means are provided for regulating the stroke of the individual pistons so as to accomplish the result above mentioned, but as these devices, as well as the pumps, pistons and plungers generally, are known to the prior art, it is not necessary to describe the same here.

Ordinarily a single pump including its reservoir supplies the entire width of the press, but in my invention two separate and independent supply reservoirs containing ink pumps or ink pump assemblies are shown, each of which supplies the adjacent half of the ink rail. This arrangement is desirable in printing machines, more particularly newspaper printing machines, which are of double width and which print a web four pages wide and which are necessarily tended by two operators, one on each side of the machine. In such cases, it is practically necessary that each operator should be enabled to control the ink supply for his side of the machine, and it is one of the principal objects of this invention to permit such separate control.

Another object of the invention is to increase the efficiency of the machine and remove certain disadvantages which are present in the operation of such a machine provided with an inking pump at one end only of the ink rail, as follows: Newspaper presses may be supplied with double folders, and the printed sheets delivered from both folders simultaneously, that is to say, pages that correspond to the sections of the ink rail indicated by A and B on the accompanying drawings are led to one folder, and pages corresponding to the sections indicated by C and D are led to the other folder. The deliveries of the folders are carried to opposite sides of the press. If a large press is employed and an operator is stationed on each side of the machine, it is much more practicable and efficient for each operator to from time to time examine the printed pages delivered from his side of the machine, and then immediately make such adjustments in the ink supply as may be necessary, according to whether such printed pages are over-printed or too faintly printed, as the case may be, as will be quite obvious to anyone skilled in the art to which this invention relates.

Further objects and advantages of the invention will be in part set forth in the following specification, and in part will be obvious therefrom without being specifically pointed out, the same being realized and attained by means of the instrumentalities and structural characteristics and relative arrangements and combinations which will be hereinafter more fully described or which will be pointed out in the claims hereof.

With the above and other objects of the invention in view, the invention consists in the novel construction, arrangement and combination of various devices, elements and parts, as set forth in the claims hereof, one embodiment of the same being illustrated in the accompanying drawings and described in this specification.

In the accompanying drawings, Figs. 1 and 2 are diagrammatic views of devices embodying my invention, as will be hereinafter explained.

Figure 3 is a sectional view of one of the pump assemblies shown in operative relation to the ink rail; and

Figure 4 is a transverse sectional view taken on the line and as seen in the direction of the arrow 4 of Figure 1, certain coacting parts being shown diagrammatically and in elevation.

In carrying my invention into effect in the embodiment thereof which is under consideration at

the present time and which is diagrammatically indicated in the accompanying drawings, I provide a pair of reservoirs 11 and 11' respectively, each containing pumps or pump assemblies for propelling the ink from the ink reservoirs to the ink rail indicated generally at 13. As above explained, the pumps or pump assemblies are multiple, that is to say, they comprise a plurality of plungers 14, each provided with an adjustable stop 14' to regulate the amount of ink delivered by each individual plunger to a separate conduit 15, as best shown in Figure 3. In Fig. 4 of the drawings the orifices or outlets 16 of these various conduits are shown in the ink rail. A complete showing and full details of a pump of this type will be found in Schmidt Patent 1,348,900, dated Aug. 10, 1920. The ink rail (Figure 1), is divided into sections, marked A, B, C and D, and a series of conduit openings are shown, one for each column of the newspaper to be printed, these conduit openings being indicated by numbers, for instance, in section A the conduit openings are numbered 1, 2, 3, 4, 5, 6, 7, 8, and 9, in section B the conduit openings are numbered 9, 8, 7, 6, 5, 4, 3, 2 and 1, in section C the numbers are 1, 2, 3, 4, 5, 6, 7, 8 and 9, and in section D the numbers are 9, 8, 7, 6, 5, 4, 3, 2 and 1. At the left-hand side of the drawings is shown diagrammatically controlling mechanism for regulating the stroke of the plungers controlling the ink delivered to the individual conduits comprised in sections A and B of the ink rail, and at the right-hand end of the drawings are similarly diagrammatically shown the controlling mechanism controlling the ink delivered to the individual conduits comprised in sections C and D of the ink rail. It will be observed that these plunger-controlling devices, best shown in Figure 3, bear numbers indicating the particular conduits which they are adapted to control.

A number of the details embodied in the invention which have been alluded to above, and other coacting mechanism such as the ink receiving drum 17, transfer rolls 18, and second ink receiving drum 19 are well known in the art and need not be described here.

The operation of my invention will be well understood from what has been above said, and its advantages also are obvious from the explanations which have been above given as to the operation of such devices, and need no further elucidation.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is as follows:

1. An inking mechanism for a printing machine adapted to print a plurality of pages widthwise of the machine, comprising in combination, a reservoir arranged at each side of said machine, an ink pump assembly secured within said reservoir, each of said ink pump assemblies serving to propel ink from its reservoir, an ink rail and a plurality of conduits connected to each of said assemblies and adapted to deliver ink from said pump assembly and discharge same at said rail, said plurality of conduits being arranged on said ink rail in spaced groups between said reservoirs, each of said groups being adapted to supply ink to a separate page.

2. An inking mechanism for a printing machine adapted to print a plurality of pages widthwise of the machine, comprising in combination an ink rail, an ink-containing reservoir arranged at each end of said ink rail, a pumping mechanism secured within each of said reservoirs, and a plurality of conduits leading from each of said pumping mechanisms, each of said conduits leading from one of the pumping mechanisms to a predetermined location in a portion of said ink rail, one-half of said conduits being arranged in a group and secured to a portion of said ink rail adjacent one of said reservoirs and the other half of said conduits being correspondingly arranged in a group and secured to another portion of said ink rail adjacent another of said ink reservoirs, each of said groups being positioned on the ink rail in spaced relation relatively to the other group and adapted to supply ink to an adjacent half of the plurality of pages.

H. SMYTHERMAN.