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ADJUSTABLE FOLDER UNIT

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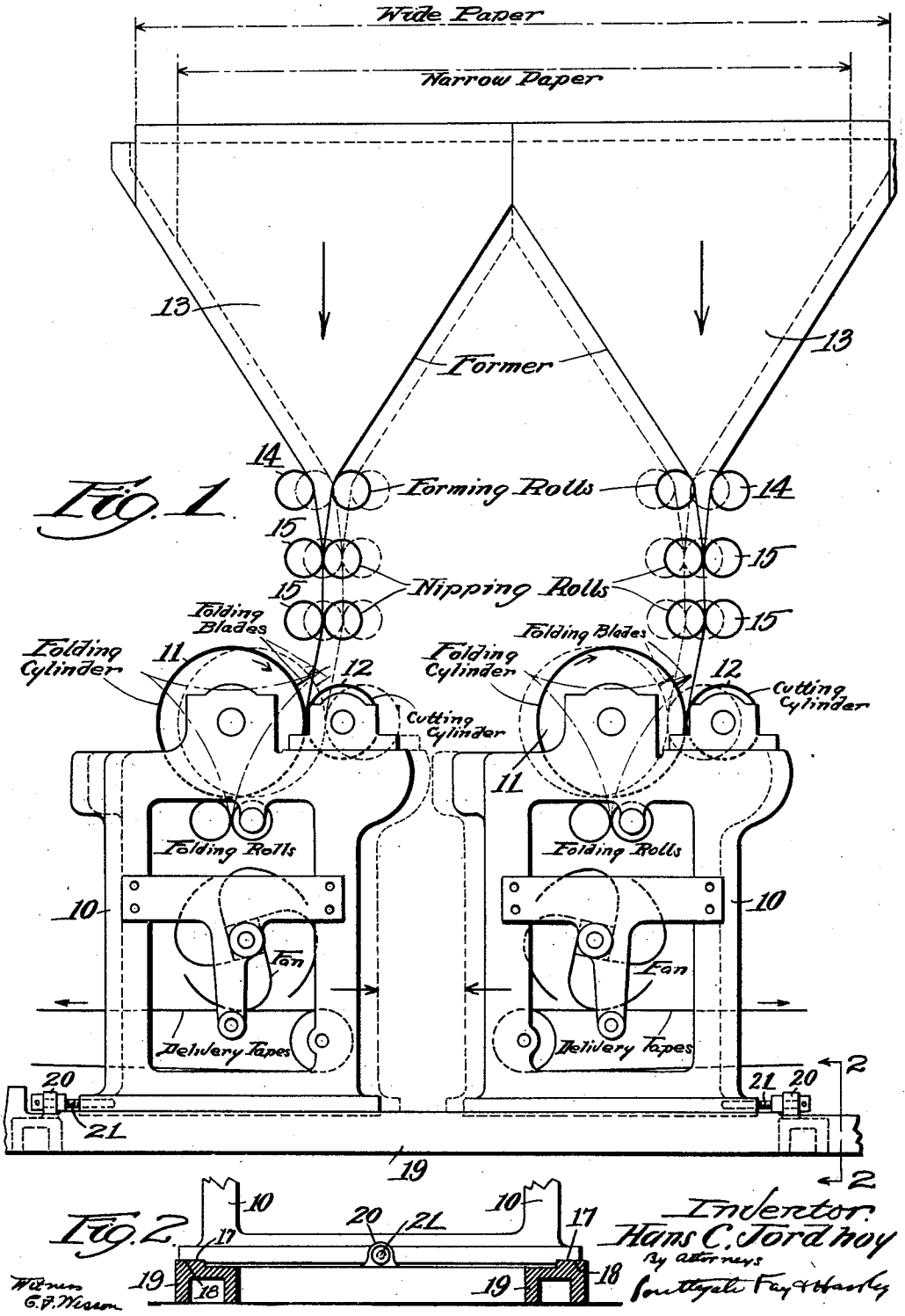


Fig. 1.

Fig. 2.

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UNITED STATES PATENT OFFICE

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ADJUSTABLE FOLDER UNIT

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The principal object of this invention is to so mount each folder unit that it can be shifted as a whole relative to the adjustable former in a transverse direction to bring the folding couple in proper relation to the folding rolls and nipping rolls for different widths of web.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings in which

Fig. 1 is an end view of a pair of folders and formers showing them located in two different positions for the folding of wide and narrow sheets; and

Fig. 2 is a sectional view on the line 2—2 of Fig. 1.

The majority of newspaper presses are equipped with two folding units placed directly under each of the two formers, each unit handling two pages of a four page wide web. The position of the folder unit is important, as care must be taken that the folding blade, which projects in three places on the periphery of the folding cylinder, may not touch the web as it comes from the nipping rolls. With fixed folder units, a relative position must be determined so that the blade may be clear of the web and at the same time not have the web enter the cylinders at too great an angle from the side opposite the blade protruding point. Heretofore, when a press is equipped to take both wide and narrow webs, a compromise must be found for the position of the folder unit, so that the web may approach the folding blade on one folder unit without touching it when one extreme width of web is used and that it may approach the folder blade on the other folder unit without touching it when the other extreme width of web is used. This compromise produces an arrangement of the several parts which is wrong for both positions. By this invention, I provide an arrangement that is correct in both positions.

Referring now to the drawings I have shown folding units comprising frames 10, folding cylinders 11 and cutting cylinders 12 with the other usual features of folding units. These cooperate with the formers 13 forming rollers 14 and nipping rollers 15 as will be understood.

No change is made in the forming elements, but if wide paper is being used the formers and forming and nipping rolls are held in the position shown in full lines.

If narrow paper is to be used, as indicated in dotted lines, the formers are replaced and the rolls 14 and 15 are adjusted nearer together to the positions shown in dotted lines. In this case the webs run down through in the dotted line position.

In accordance with the present invention the folder frames 10, each in a single unit, are placed on a bed plate 19 which may support several of them. The bottoms of all the units are provided with finished surfaces and guideways 17 resting on ways 18 on the bed plate 19. The bed plate is provided with fixed projection 20 through which adjusting screws 21 pass. Each adjusting screw is threaded into an opening in a frame 10. As these folder frames 10 are properly guided by the parts 17 and 18 they can be adjusted by a single screw.

For the purpose of cutting and folding a narrow web the frames 10 are moved inwardly from the full to the dotted line position. This avoids the entry of the web into the folding couple at too great an angle from the side opposite the protruding blade and insures that the blade will clear the web, whether wide or narrow webs are being run.

It also avoids the provision on a single press of a compromise between the proper position for a wide web and the proper position for a narrow web. In other words with the two extreme widths of webs the folder can operate with the greatest efficiency in each case instead of the usual system of having to compromise. Also the units can be adjusted exactly right for webs of intermediate widths.

With this invention, I obtain the most advantageous arrangement of folders possible, at the same time permitting the most economical design of the machine, as the unit method of constructing machinery is acknowledged to be the most modern and practical method today.

Although I have illustrated and described only a single form of the invention I am aware of the fact that modifications can be made therein without departing from the scope of the invention as expressed in the claims.

Therefore I do not wish to be limited to all the details herein shown and described, but what I claim is:—

1. In a folder, the combination with the former arranged for use with either a narrow or a wide web, of a folding machine comprising a folding couple in fixed bearings on the frame of the folding unit, and means for adjusting the unit of the folding machine with the folding couple to register with the delivery from the former.

2. In a folding mechanism, the combination with a pair of formers and their forming and nipping rolls adjustable to provide for feeding either a wide or a narrow web through each of them, of a pair of folding units each comprising a frame and a folding couple mounted in bearings on each frame, and means for independently adjusting said folding couples laterally to register with the nipping rolls of the formers as adjusted.

3. The combination with a pair of formers, folding rolls, and nipping rolls adapted to be adjusted as a whole toward each other for receiving a pair of narrow webs, of two separate folding units arranged with their folding couples in position to receive a wide product from the two sets of nipping rolls, and means whereby said folding units can be adjusted bodily toward each other to space them the proper distance apart to receive the narrow folded products from the nipping rolls when narrow webs are used, in such a manner as to lead the webs into the folding couples without touching the folding blades and without necessitating the web entering the folding couples at too great an angle from the opposite side.

4. The combination with a former, folding rolls, and nipping rolls adapted to be adjusted as a whole for receiving a narrow web, of a folding unit arranged with its folding couple in position to receive a wide product from the nipping rolls, and means whereby said folding unit can be adjusted bodily to receive the narrow folded product from the nipping rolls, in such a manner as to lead the web into the folding couple without touching the folding blades and without necessitating the web entering the folding couple at too great an angle from the opposite side.

In testimony whereof I have hereunto affixed my signature.

HANS C. JORDHOY.