

H. C. GAMMETER.
PAPER FEEDING DEVICE.
APPLICATION FILED JULY 27, 1906.

998,964.

Patented July 25, 1911.

2 SHEETS-SHEET 1.

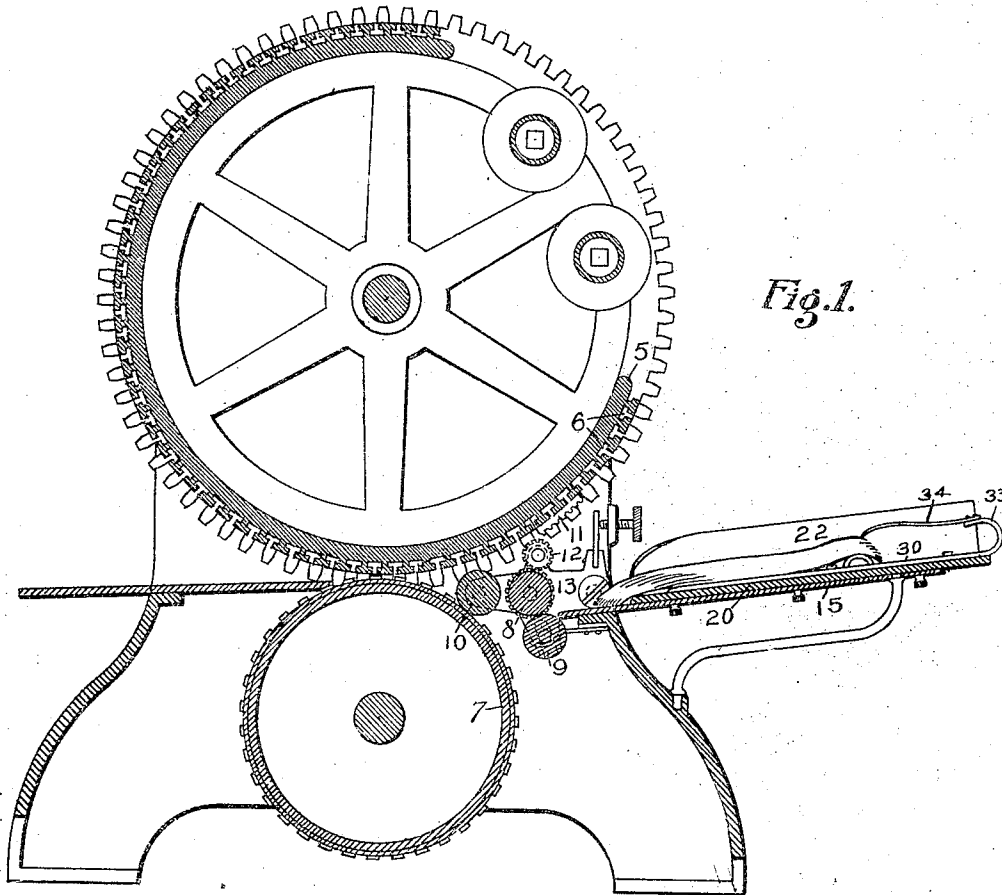


Fig. 1.

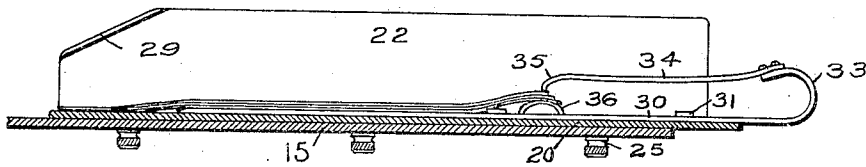


Fig. 2.

Witnesses

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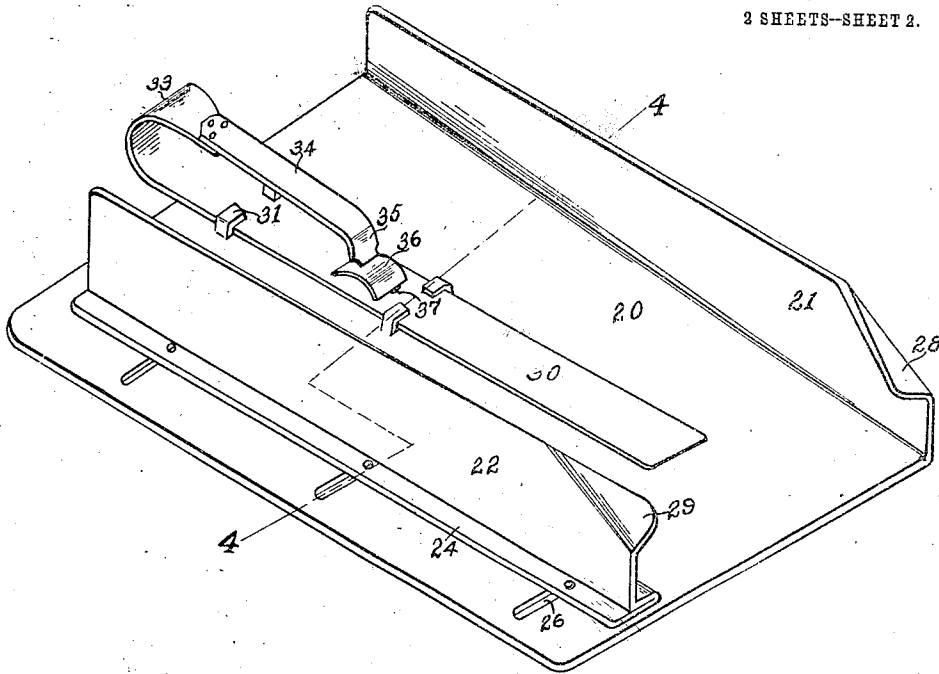


Fig. 3

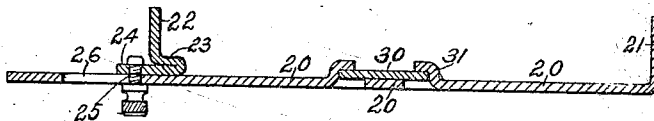


Fig. 4

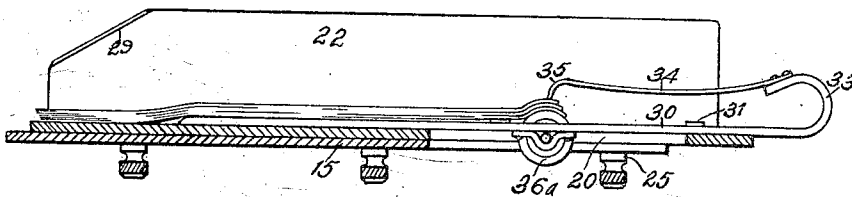


Fig. 5

WITNESSES:

Brennan West.
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INVENTOR,

BY Harry C. Gammeter,
Baker, Fords & Hull,
ATTYS

UNITED STATES PATENT OFFICE.

HARRY C. GAMMETER, OF CLEVELAND, OHIO, ASSIGNOR TO THE AMERICAN MULTIGRAPH COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

PAPER-FEEDING DEVICE.

998,964.

Specification of Letters Patent. Patented July 25, 1911.

Application filed July 27, 1906. Serial No. 328,066.

To all whom it may concern:

Be it known that I, HARRY C. GAMMETER, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Paper-Feeding Devices, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

The object of this invention is to provide a simple attachment for printing machines to enable the paper to be fed thereto very rapidly in single sheets.

The invention is well adapted for use with a hand operated rotary printing mechanism of the type known commercially as the multigraph.

The invention comprises essentially an adjustable clamp and guiding members so arranged as to hold the paper so that it may be conveniently shoved forward *en masse* until the top sheet is released and then that sheet fed to the machine.

The invention is more particularly hereinafter described and its essential characteristics are set out in the claims.

In the drawings, Figure 1 is a sectional side elevation of a multigraph equipped with my paper feeding device; Fig. 2 is a section through the paper feeding device proper; Fig. 3 is a perspective of such feeding device; Fig. 4 is a cross section on the line 4-4 of Fig. 3, and Fig. 5 is a section similar to Fig. 2 but showing a modified form of paper supporting saddle.

Fig. 1 shows a printing drum 5 having longitudinal channels 6 adapted to carry type, there being a rotary impression platen 7 geared with the printing drum. 8 and 9 designate paper feed rolls which are adapted to grasp a sheet of paper and feed it between the roller 10 and the impression platen when the feed rolls are revolving. This revolution takes place at the proper time by reason of a segmental rack 11 on the printing drum engaging a pinion 12 which meshes with a gear 13 on the feed roll 8. The machine thus described is that shown in Patent No. 812,735 granted Feb. 13, 1906 to H. C. Gammeter. As shown in that patent, there is a table 15 on which the paper to be printed lies, it being shoved forward by hand into the grasp of the rolls 8 and 9.

Practice has demonstrated that it is diffi-

cult to feed the paper rapidly a sheet at a time, and to enable this to be done, I have devised the attachment which is the subject of this invention, this attachment being adapted to rest on and be removably carried by the table 15.

As shown, my attachment comprises a sheet metal base 20 having one upturned guiding edge 21. The other guiding wall 22 is a separate sheet of metal which has its lower portion flanged first inwardly at 23, and then outwardly, at 24, to make a suitable stiff support for the wall. Through the outward extension 24 of this flange are clamping screws 25 which pass through slots 26 in the base 20, whereby the wall 22 may be adjusted in or out and clamped in desired position. These clamping screws may pass through slots in the table 15 and form also the means for holding my attachment to the table. The inner ends of the walls 21 and 22 are preferably turned over, as shown at 28 and 29 to insure the paper being held down on the plate.

The adjustably positioned clamping device for the paper comprises parts carried by a bar 30 slidably mounted on the plate 20 by extending beneath lugs 31 turned upward from the plate. At its outer end this bar is turned backward toward itself in a U-shape as shown at 33 and at the extreme left of this U is fastened a steel spring or clip 34. The inner end of the spring or clip is bent downwardly, as shown at 35, and tends to bear against a curved saddle mounted on the bar, being either a curved plate 36 secured thereto (as by lugs 37 occupying recesses in the bar) or a roller 36" carried by the bar, as shown in Fig. 5.

The several sheets of paper before they are placed in the feeding device are fanned out by being bent back and forth to cause each sheet to slightly overhang the one below it, and then the spring 34 is raised and paper placed between the end 35 and the saddle 36, with the top sheet extending only slightly beneath the spring. Now in the operation of the printing mechanism, the paper is periodically shoved forward by suitable means, which may be the hand of the operator. The friction between the different sheets of paper being greater than that between the paper and the smooth saddle and the spring 35, the whole pile of paper feeds forward as

a unit until the top sheet passes from beneath spring 34. Thereupon this top sheet being free is alone fed forward by a continuation of the same pushing action which shoves forward the whole pile, the spring holding all the other sheets. This movement takes place for each forward pressure on the paper. For each sheet the whole pile of paper moves forward *en masse*, until the top sheet is free, when it moves independently, the rest of the paper remaining stationary. Practice has demonstrated that this feeding operation may be carried on with great rapidity and with invariable satisfactory results.

I claim:—

1. A paper feeding device comprising a support with an unrestricted front, and a friction clamp adapted to retard the clamped paper with less grip than exists between the successive sheets of paper, said clamp including means for holding paper at the clamp out of engagement with the main paper support.

2. The combination, of means for supporting a pile of paper, a saddle materially narrower than the support for holding a portion of the paper at the bottom of the pile away from said support, and a spring bearing on the paper over said saddle.

3. In a paper feeding device, the combination with a supporting plate along which paper may be fed and a guiding wall for the edge of the paper, of a spring clip adapted to hold the paper with a frictional grip, and a saddle materially smaller than the support and located directly opposite the spring clip for giving an abrupt deflection to the pile of paper at that point.

4. In a paper feeding device, the combination of a suitable support, a pair of guiding walls, one of which is adjustable toward or from the other, a flat bar adjacent to the plane of the support and slidable longitudinally thereof, and a spring clip carried by said bar and adapted to frictionally hold the paper.

5. A paper feeding device comprising, in combination, a supporting plate for the paper, a slidable bar mounted thereon, and a saddle and cooperating clip both carried by said bar.

6. In a paper feeding device, the combination of a bed and a pair of guiding walls, one wall being adjustable toward or from the other, a flat bar slidably mounted substantially in the plane of said bed, and a spring clip carried by said bar and adapted to frictionally hold the paper.

7. The combination, of a support for paper to be fed, a spring clip for frictionally holding the paper on said support and allowing it to be fed, a sheet at a time, and a longitudinally slidable bar carried by said support and carrying said clip, said bar be-

ing flat and adjustably resting substantially on the upper surface of said support.

8. The combination of feed rolls for conveying paper, a supporting table in front of the feed rolls, a spring clip, a saddle adapted to stand beneath the paper and beneath the engaging portion of said clip, said clip and saddle being movable as a unit to preserve their presentation to each other irrespective of their position.

9. A mechanism for feeding paper, a sheet at a time, which has been fanned out to cause the successive sheets to overhang comprising a holder for the pile of papers so positioned, said holder having an open front, and retaining means which hold the pile with less grip than exists between successive sheets, said retaining means comprising a spring and a saddle movable as a unit.

10. A paper feeding device comprising means for holding a pile of paper with such friction that force applied to the paper may feed the pile forward *en masse* until the top sheet is released and then feed that sheet alone, said device having an open front and guiding walls, and including a spring and a saddle movable as a unit.

11. In a paper feeding device, the combination, with a plate adapted to support a pile of papers and a pair of guiding walls, of a bar slidably mounted on said plate, and a downwardly acting leaf spring carried by said bar and extending over it.

12. A paper feeding device comprising a sheet metal base with guiding walls, a flat bar longitudinally guided on the upper surface of said base, a saddle carried by said bar, and a leaf spring carried at one end of said bar and having its front end bearing downwardly directly over the saddle.

13. A paper feeding device comprising a sheet metal base, upturned lugs thereon, a flat bar resting on the upper surface of the base and slidable beneath said lugs, a saddle carried by said bar, and a spring carried by the bar bearing downwardly over the saddle.

14. A paper feeding device comprising a base, a bar slidable on the same, a saddle carried by said bar, and a spring carried by said bar and pressing toward the saddle.

15. A paper feeding device comprising a base, a flat bar slidably mounted on the upper surface of the base, a saddle carried by said bar, and a leaf spring carried by the bar and having its free end bearing downwardly directly over the saddle.

16. In a paper feeding device, in combination, a base, a bar slidable thereon, said bar having its outer end bent upward, and a leaf spring secured to such end of the bar and bearing downwardly toward the intermediate portion of the bar.

17. In a paper feeding device, the combination of a base, a bar carried thereon and having its end bent over in a substantially

U-shape, and a leaf spring secured at its outer end to the end of such U, the other end of the spring bearing downwardly over the bar.

18. In a paper feeding device, the combination of a base, a bar carried thereon and having its end bent over in a substantially U-shape, and a leaf spring secured at its outer end to the end of such U, the other end of the spring bearing downwardly over the bar, and a saddle carried by the bar directly beneath the end of such spring.

19. In a paper feeding device, the combination of a base, a bar slidable thereon, a saddle comprising a piece having a curved smooth upper surface carried by said bar, a spring carried by the bar and bearing at its free end toward said saddle.

20. In a paper feeding device, the combination of a base, a bar slidable thereon, a saddle carried by said bar, and a leaf spring carried by said bar and bending downwardly toward the saddle.

21. In a paper holder, the combination of a base, a flat bar slidable thereon, a saddle having a curved upper surface and rigidly secured to the bar, the bar having its end bent over, and a leaf spring secured at one end to said bent over end of the bar, and having its other end bent downwardly toward the saddle.

22. In a paper holder, the combination of a base, a flat bar slidable thereon, a saddle having a curved upper surface and rigidly secured to the bar, the bar having its end bent over, and a leaf spring secured at one end to said bent over end of the bar and having its other end bent downwardly toward the saddle, said base having a sheet metal plate having upturned lugs which guide the bar, the bar resting on the upper surface of the plate and slidable beneath said lugs.

23. In a paper feeding device, the combination of a flat sheet metal plate having one edge turned to form a guiding wall, another guiding wall made of a separate piece of metal adjustably carried by said plate, a flat bar slidably mounted on said plate, and a spring clip carried by said flat bar and adapted to engage paper on said plate.

24. A paper feeding device adapted to rest on a plane surface, comprising a sheet metal plate having a flat bottom and an upturned wall at its edge, an adjustable wall mounted on the upper surface of the plate, a flat bar slidably mounted on the upper surface of the plate, between said walls, and a

spring carried by said bar and bearing downwardly toward the bar.

25. A paper feeding device adapted to rest on a plane surface, comprising a sheet metal plate having a flat bottom and an upturned wall at its edge, an adjustable wall mounted on the upper surface of the plate, a flat bar slidably mounted on the upper surface of the plate, between said walls, a saddle carried by said bar and projecting above its upper surface, and a leaf spring carried by the outer end of said bar and bearing downwardly at its free end directly over said saddle.

26. A paper feeding attachment for printing presses having flat paper tables, comprising a base and having a flat bottom, a pair of guiding walls carried by the base, one of said walls being adjustable, a flat bar carried by the base and slidable parallel with said walls, an upwardly projecting smooth surfaced saddle carried by the bar, and a spring carried by the bar and having its end bearing downwardly over said saddle.

27. In a paper feeding device, the combination with a spring clip, of a saddle opposite the clip, and a unitary movable member on which said clip and saddle are mounted, whereby the clip and saddle may be adjusted simultaneously without changing their presentation to each other.

28. The combination, in a paper feeding device, of a plate against which a pile of paper may bear, a saddle carried adjacent to the surface of said plate for abruptly deflecting the paper from the plate, and a spring clip adapted to bear on the paper opposite the saddle.

29. In a paper feeding device, the combination of a plate against which a pile of paper may bear, a saddle for deflecting the pile away from said plate, a spring adapted to bear on such pile opposite the saddle, and adjustable means for holding the spring and saddle.

30. The combination, in a paper feeding device, of a plate against which the block of papers may bear, a small narrow saddle adapted to hold said block of sheets near their free ends away from said plate, and a spring clip bearing on such block of sheets opposite the saddle.

In testimony whereof, I hereunto affix my signature in the presence of two witnesses.

HARRY C. GAMMETER.

Witnesses:

ALBERT H. BATES,
S. E. FOUTS.