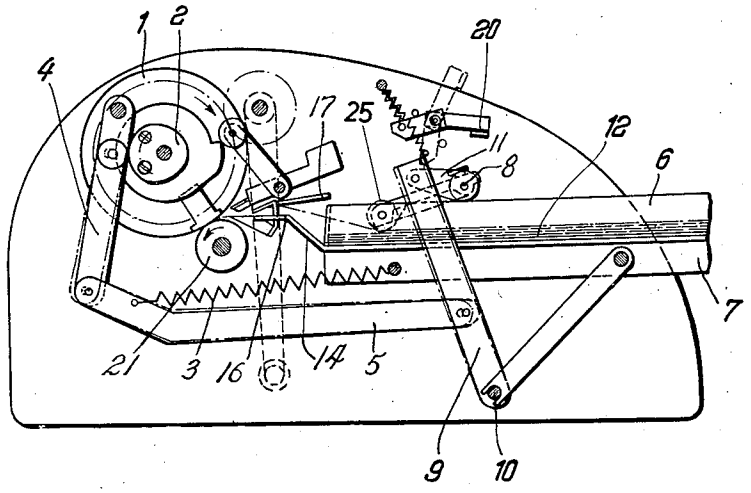
June 11, 1957 W. RITZERFELD ET AL 2,795,419

SHEET FEEDING DEVICE

Filed Sept. 20, 1954 4 Sheets-Sheet 1

Fig. 1



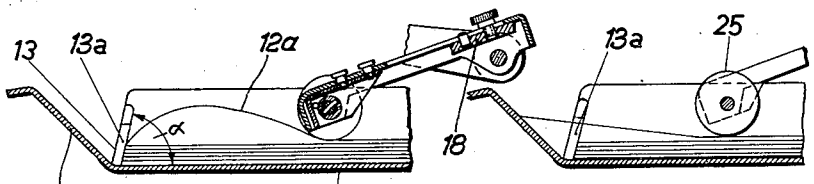


Fig. 2 Fig. 3

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SHEET FEEDING DEVICE

Filed Sept. 20, 1954 4 Sheets-Sheet 2

Fig. 4

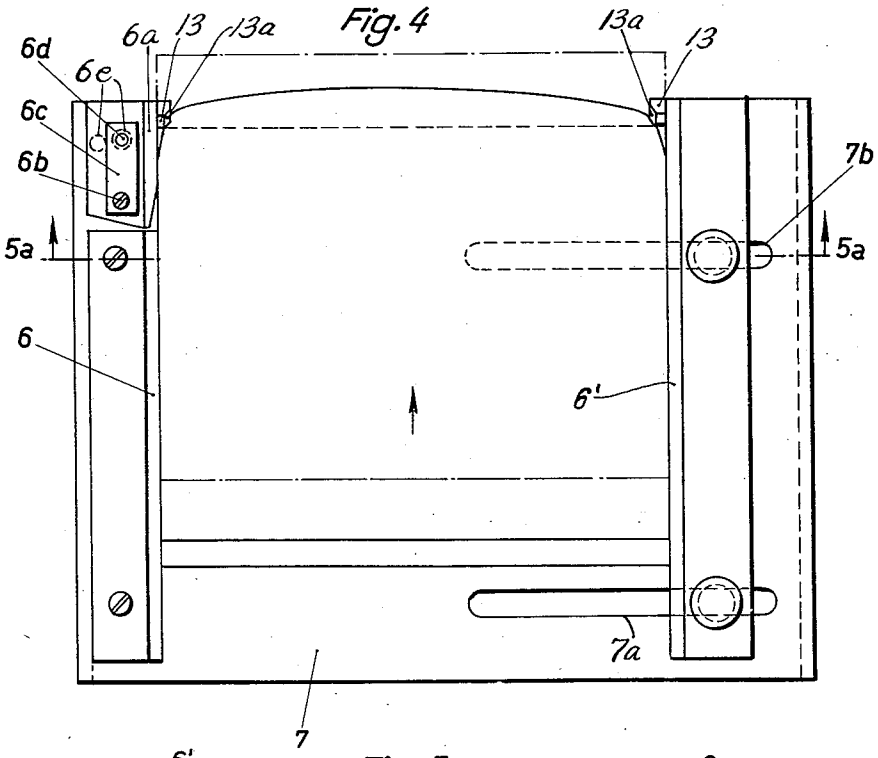


Fig. 5

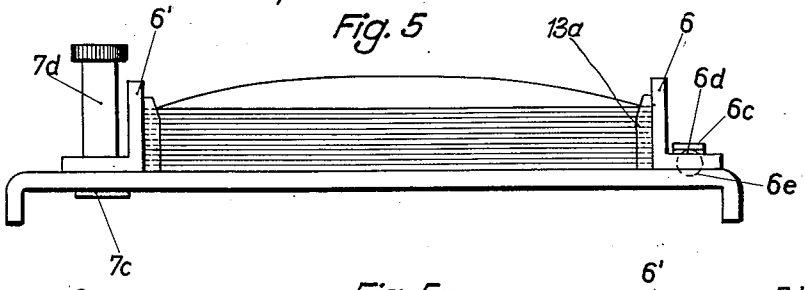
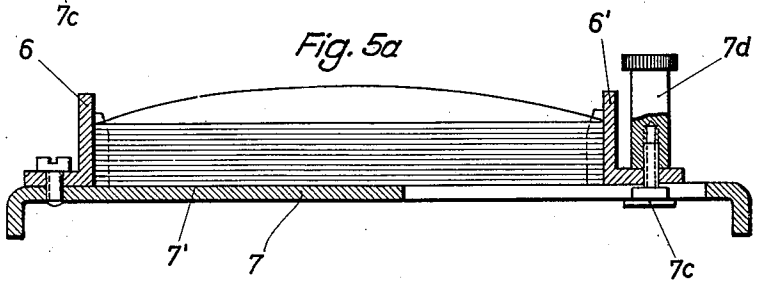


Fig. 5a



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SHEET FEEDING DEVICE

Filed Sept. 20, 1954 4 Sheets-Sheet 3

Fig. 7

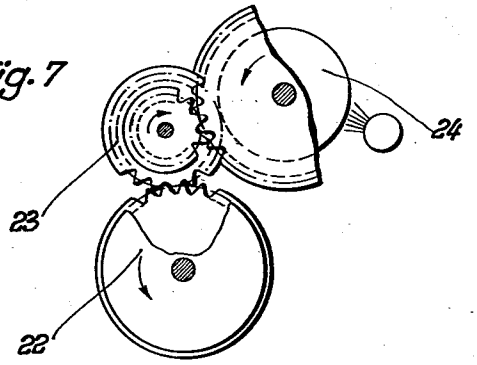


Fig. 6

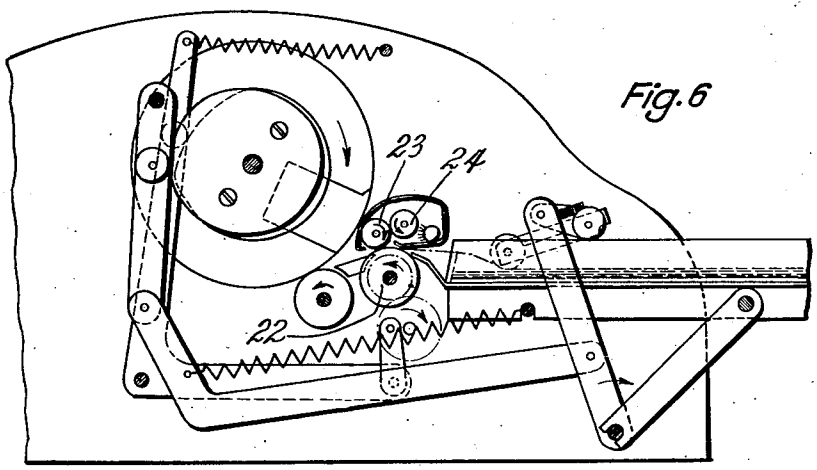
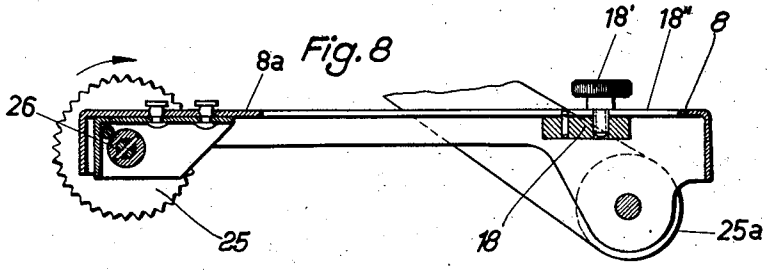


Fig. 8



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SHEET FEEDING DEVICE

Filed Sept. 20, 1954 4 Sheets-Sheet 4

Fig. 9

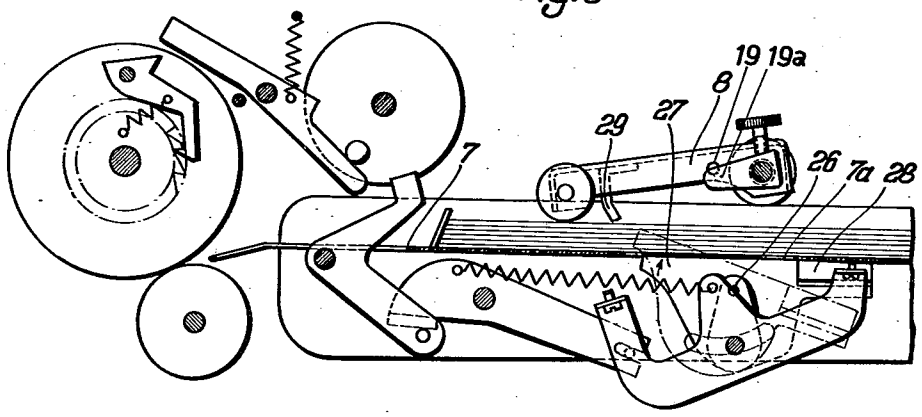


Fig. 10

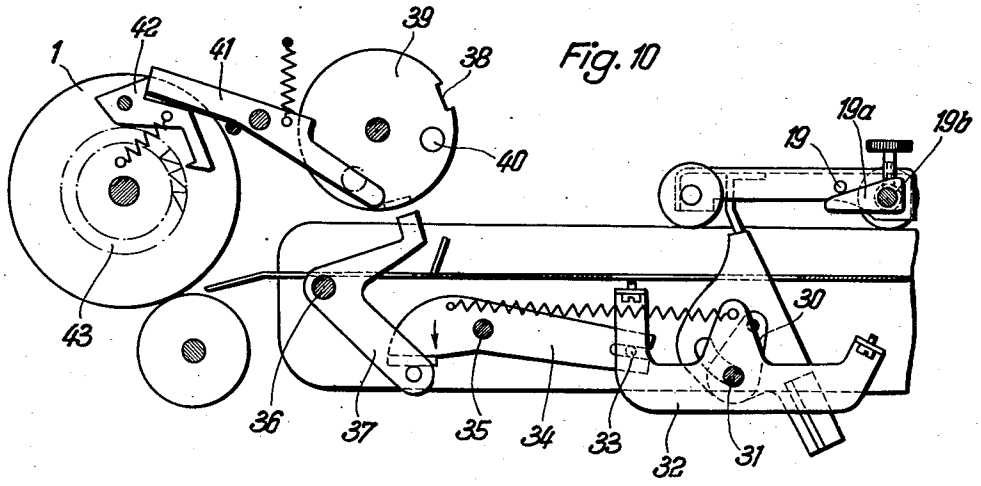


Fig. 12

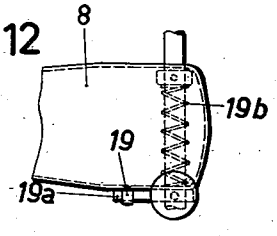
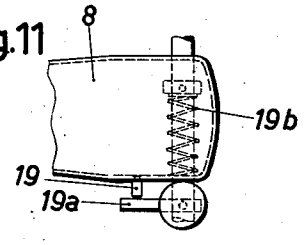


Fig. 11



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United States Patent Office 2,795,419 Patented June 11, 1957

2,795,419

SHEET FEEDING DEVICE

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Application September 20, 1954, Serial No. 457,212

Claims priority, application Germany September 25, 1953

11 Claims. (Cl. 271—19)

The present invention relates to sheet feeding devices, and more particularly to a sheet feeding device for supplying sheets to a rotary duplicating machine which requires a supply of approximately 150 sheets.

It is one object of the present invention to provide a sheet feeding device which reliably operates and automatically supplies single sheets.

It is another object of the present invention to provide a sheet feeding device which is independent of the skill of an operator.

It is a further object of the present invention to provide a sheet feeding device which, with the exception of a reciprocated feeding means, does not include any movable parts.

It is yet another object of the present invention to provide a means for automatically stopping the sheet feeding device when the last sheet of a stack of sheets has been fed.

It is an important object of the present invention to provide blocking means engaging the front edges of a stack of sheets which force a fed top sheet of the stack to bulge and thereby separate from the remaining sheets of the stack of sheets.

It is yet another object of the present invention to provide a pair of spaced blocking members engaging the end portions of the front edges of the stacked sheets so that the top sheet of the stack bulges during movement of the feeding means in feeding direction and passes between the blocking members.

With these objects in view, the present invention mainly consists in a sheet feeding device, and comprises, in combination, stationary supporting means having a supporting face for supporting a stack of superposed sheets having superposed front edges; fixed blocking means transversely projecting from the supporting face and adapted to engage the front edges of the sheets; feeding means tending to engage the supporting face and adapted to frictionally engage the uppermost sheet of the stack of sheets; and drive means for moving the feeding means at spaced time intervals from a position farther spaced from the blocking means to a position closer spaced from the blocking means so that the uppermost sheet engaged by the feeding means during movement of the same first forms a bulge between the blocking means and the feeding means and then passes over the blocking means so that further movement of the feding means moves the uppermost sheet into a position projecting beyond the blocking means.

According to a preferred embodiment of the present invention the feeding means is reciprocated and includes a roller rotatable only in one direction so that during the feeding stroke of the feeding means the top sheet is frictionally engaged and forms a bulge between the roller and the blocking means, while during the return stroke of the feeding means the roller rolls on the stack of sheets without displacing the uppermost sheet. Preferably the feeding means are reciprocated by lever means which

are actuated by a cam rotating with the printing roller of a duplicating machine.

An upwardly inclined guide plate is preferably arranged between the blocking means and the printing rollers for guiding the projecting top sheet to the printing rollers. Preferably, the blocking means include two blocking members provided at the upper end thereof with outwardly inclined opposite guide faces which facilitate the return of a sheet to a flat condition after the sheet has been fed in bulging condition between the blocking members.

The novel features which are considered as characteristic for the invention are set forth in particular in the appended claims. The invention itself, however, both as to its construction and its method of operation, together with additional objects and advantages thereof, will be best understood from the following description of specific embodiments when read in connection with the accompanying drawings, in which:

Fig. 1 is a side view of a sheet feeding device according to the present invention as used in a rotary duplicating machine;

Fig. 2 is a fragmentary sectional view on an enlarged scale illustrating the first part of the sheet feeding operation of the feeding means according to the present invention;

Fig. 3 is a fragmentary sectional view illustrating the second part of the sheet feeding operation;

Fig. 4 is a plan view of the sheet supporting means on an enlarged scale;

Fig. 5 is a front view of the sheet supporting means illustrated in Fig. 4;

Fig. 5*a* is a cross sectional view taken on line 5*a*—5*a* in Fig. 4;

Fig. 6 is a side view of a modified embodiment of the present invention including sheet transporting and moistening rollers;

Fig. 7 is a side view illustrating on an enlarged scale the sheet transporting and moistening device used in the embodiment of Fig. 6;

Fig. 8 is a sectional view of the feeding means;

Fig. 9 is a sectional view illustrating a device for stopping the apparatus after the last sheet of the stack of sheets has been fed;

Fig. 10 is a sectional view corresponding to Fig. 9 illustrating another operational position;

Fig. 11 is a fragmentary plan view showing a detail of the sheet feeding means in the first operational position; and

Fig. 12 is a fragmentary plan view showing the sheet feeding means in another operational position.

Referring now to the drawings, and more particularly to the embodiment of Figs. 1–5*a*, a cam **2** rotates with the printing drum **1** and actuates pivotally connected levers **4**, **5** to reciprocate the pivotally connected levers **9**, **11**. Lever **11** is pivotally connected to the feeding means **8**. A spring **3** urges the levers **4**, **5** to the right in Fig. 1, and is connected to the stationary supporting means **7**. The lever **9** is pivotable about the fixed pivoting pin **10**. The feeding means **8** includes reciprocable means namely the rollers **25***a* which roll on the upper edges of the rails **6** and **6'** which are best seen in Figs. 5 and 5*a*. Consequently, the feeding means **8** performs a rectilinear movement when reciprocated by lever means **4**, **5**, **9**, **11**.

A supporting means **7** has a supporting top face on which a stack of sheets **12** is arranged. The sheets **12** have side edges engaged by the rails **6**, **6'** which constitute lateral guide means for the sheets. In order to adapt the sheet supporting means to sheets of different width, slots **7***a* and **7***b* (Fig. 4), are provided through which screws **7***c* pass which cooperate with nut means **7***d* for clamping the lateral guide means **6'** to the supporting means **7**. It

will be apparent that when adjusting screws 7c, 7d are loosened, the guide means 6' can be shifted to engage the side edges of a stack of sheets whose other side edges engage the guide means 6, whereupon the movable guide means 6' is fixed by adjusting screws 7c, 7d.

A stack of sheets which are to be consecutively fed is placed on the supporting face 7' of the supporting means 7 and shifted until the superposed front edges of the sheets engage blocking means 13 which includes two spaced blocking members. The blocking members 13 engage the end portions of the front edges of the sheets adjacent the side edges, and are preferably inclined in rearward direction to define an angle α with the supporting face 7'. The upper ends of the blocking members 13 have outwardly and upwardly inclined guide faces 13a which facilitate the feeding of sheets as will be described hereinafter in more detail.

The blocking means 13 may be constructed in various manners but it is essential that the blocking means 13 transversely projects from the supporting face 7' and are so arranged as to engage the sheet front edges. In the illustrated embodiment the two blocking members 13 are combined with the lateral guide means 6, 6' so that when the lateral guide means 6' is adjusted to the width of a stack of sheets, the blocking members 13 are at the same time placed in a position engaging the end portions of the sheet front edges. During the placing of the stack of sheets on the supporting means 7, it is advantageous to retract the blocking member 13 which cooperates with the fixed lateral guide means 6. A preferred construction is illustrated in Fig. 4 which shows a blocking member 13 secured to a member 6a which has a rail portion forming a continuation of the rail portion of lateral guide means 6. However, the member 6a is pivotable about a screw 6b so that the member 6a, and thereby the blocking mmeber 13 which is connected thereto, can be pivoted into a position in which the blocking member 13 is laterally retracted. The screw 6b holds a leaf spring 6c which has a free end resiliently engaging a ball 6d constituting a catch located in a first recess 6e when member 6a is in the position illustrated in Fig. 4 and located in another recess 6e when the member 6a is pivoted into a position in which the associated blocking member 13 is retracted behind a guide line defined by the lateral guide means 6.

In order to guide sheets fed by the feeding means 8 between the blocking members 13, a guide member 14 having an inclined guiding face is provided which guides a fed sheet to the printing rollers 1, 21 in the embodiment illustrated in Fig. 1, and to the transporting rollers 22, 23 in the modified embodiment illustrated in Fig. 6. The guide plate 14 has an extension 16 which cooperates with an upper guide plate 17 to form a funnel-shaped guide for the fed sheets.

The feeding means 8 is best seen in Fig. 8 which shows a feeding roller 25 mounted in the front part of the feeding means 8 and connected to a one-way slip coupling means 26 which in a known manner, similar to a ratchet device, permits rotation of the feeding roller 25 in clockwise direction as viewed in Fig. 8, but prevents rotation in counterclockwise direction. Fig. 8 further shows a counterbalancing weight 18 which can be shifted in longitudinal direction of the feeding means 8, and secured in any position by the screw 18' passing through a slot 18'' in the frame 8a of the feeding 8.

When the weight means 18 is shifted toward the feeding roller 25, the pressure on the stack sheets is increased, while the pressure is reduced when the weight 18 is located above the axis of the supporting rollers 25a which roll on the rails 6 and 6'. In this manner, the pressure and the friction exerted on the uppermost sheet can be adjusted in accordance with the thickness and texture of the fed sheets so that only the uppermost sheet is fed by the feeding roller 25. The feeding roller 25 preferably consists of a plurality of rollers which can be shifted corresponding to the width of the paper.

In the above described embodiment of Figs. 1–5, the sheets are fed directly to the printing rollers 1 and 21. In the embodiment illustrated in Figs. 6 and 7, a pair of transporting rollers 22, 23 is provided which transport the sheet after it has been fed to a position projecting beyond the blocking members 13. Preferably the transporting roller 23 serves for moistening the sheets and co-operates with a moistening roller 24 which consists of a suction exerting, moisture transferring, resilient material, such as open cell rubber or synthetic plastic material. As best seen in Fig. 7, gear means connect the moistening roller 24 with the transporting roller 23 in such manner that the rotary speed of the moistening roller 24 is different from the rotary speed of the transporting roller 23 so that the moisture transferred from the moistening roller 24 to the transporting roller 23 is uniformly distributed about the surface of the latter from which the moisture is then transferred to the sheets.

Due to the fact that the moistening roller 24 moves at a different rotary speed, the transporting roller 23 which moistens the sheet is covered with a particularly uniform and thin layer of moisture producing a very uniform and light moistening of the sheets. A surplus of moisture is retained in the bight between the rollers in an axially extending accumulation of moisture so that no excess moisture can be transferred to the sheets by the transporting roller 23. A uniform moistening by the transporting rollers 23 is of greatest importance for the automatic feeding action according to the present invention, since otherwise the fed sheets stick to the moist transporting roller 23 and are not properly transported to the printing rollers. It has been found that open cell resilient material is particularly suitable for the moistening roller used in the construction of the present invention since due to its suction action such material is capable of holding a great deal of moisture, and of uniformly distributing the moisture. As is well known, sponge rubber is different from foam rubber due to the fact that sponge rubber has closed cells, while foam rubber has open cells so that it exerts a similar suction action as, for instance, felt. Particularly, foam rubber has a high degree of resiliency which is necessary for the purpose of the present invention. Preferably the moistening roller 24 consists of a plurality of rings.

The sheet feeding apparatus according to the present invention operates in the following manner:

When the printing roller 1 which constitutes rotary drive means is rotated together with the cam means 2, the lever system 4, 5, 9 and 11 reciprocates the feeding means 8 in a rectilinear movement along the rails 6, 6' parallel to the supporting face 7' of the supporting means 7. The feeding roller is urged by its own weight and by the weight 18 to pivot the frame 8a of the feeding means 8 downwardly about the axis of the supporting rollers 25a until the feeding roller 25 engages the uppermost sheet of the stack of sheets arranged between the lateral guide means 6 in a position in which the front edges of the sheets engage the blocking means 13, or more particularly in which each of the end portions of the front edges of the sheets engage one of the blocking members 13. During the forward reciprocating stroke of the feeding means 8, the one-way slip coupling 26 blocks rotation of the feeding roller 25 so that the same frictionally engages the uppermost sheet and forms between itself and the blocking means 13 a transverse bulge 12a, best seen in Fig. 2. During the first part of the motion the corners of the sheet are retained by the blocking members 13. As the movement of the feeding means is continued, the corners of the sheet are pressed inwardly by the opposite side faces of the blocking members 13 so that a second longitudinal bulge is formed, see Fig. 5, which reduces the width of the sheet so that the same passes between the blocking members 13 with the side edges of the sheet sliding on the opposite side faces of the blocking members. During further

movement the front edge of the fed sheet engages the guiding face of the guiding member **14** as illustrated in Fig. 3 so that the front portion of the fed sheet is raised and slides into a position in which the side edges of the sheet engage the outwardly inclined face portions **13***a* permitting the sheet to gradually assume a flat position. In this position the sheet is further fed until its front end is either engaged by the printing rollers **1** and **21** in the embodiment of Figs. 1–5, or engaged by the transporting rollers **22** and **23** in the embodiment of Fig. 6. In the embodiments of Fig. 1 the additional guide plates **16** and **17** guide the fed sheets to the printing rollers.

Since the feeding roller **25** only acts on the uppermost sheet **12***a*, and since the blocking means **13** block forward movement of the sheets which do not bulge, the sheet feeding device according to the present invention assures automatic feeding of single sheets. It is not necessary to extend the inclined faces **13***a* to the supporting face **7'**, since due to the bulge formed in the fed sheet, the sheet corners are moved upwardly along the blocking members **13** until the side edges engage the inclined face portions **13***a*. The acute angle between the blocking members **13** and the supporting face **7'** helps to retain the lower sheets since the front edges of the same are held in a wedge-like action so that only the uppermost sheet can pass in bulged condition between the blocking members **13**.

Figs. 9 and 10 illustrate means for stopping rotation of the printing rollers when the last sheet has been fed. An opening **7***a* is provided in the supporting table **7** and is located in the supporting face **7'** underneath the stack of sheets. A sensing member **27** which is pivotable about a pin **26** on a member **30** is urged by the weight **28** to move into a first operative position projecting through the opening **7***a*. However, the sheets **12** prevent such movement until the last sheet has been fed. The sensing member **27** is illustrated in Fig. 9 in full and broken lines in the position in which it is held when a stack of sheets prevents its movement to the first operative position. The first operative position is illustrated in dash-and-dot lines in Fig. 9.

During the reciprocating stroke of the feeding means **8** away from the blocking means **13**, a projecting member **29** which is fixed to the frame **8***a* of the feeding means **8**, engages the sensing member **27** if the same is in its first operative position. During the continued stroke, the position illustrated in Fig. 10 is reached in which sensing member **27** has turned the member **30** together with the shaft **31** into a position in which the sensing member raises the feeding roller **25** from the supporting face. At the same time the member **30** turns through the shaft **31** the member **32** into the position illustrated in Fig. 10. A pin **33** which is secured to the member **32** engages an actuating lever **34** and turns the same about the pin **35** so that the actuating lever **34** pivots the blocking lever **37** about its pivot pin **36** whereby the other end of the blocking lever **37** moves out of a recess **38** provided in a blocking disc **39**. While the releasing lever **41** is held in the position of Fig. 9 by a pin **40**, it is released in the position of Fig. 10 and moves under the action of a spring **41***a* into a position in which the catch **42** is lifted out of associated locking wheel **43**. The locking wheel **43** is driven, while the catch **42** is pivotally connected to the printing drum **1** and constitutes a coupling means during normal operation of the apparatus. When, however, the shifting means **32, 34, 37, 39** and **41** disconnect the members **42** and **43**, which takes place when the sensing member **27** is actuated by the feeding means **8**, the printing roller **21** stops. At the same time, the feeding roller **25** is raised from the supporting table, as previously described.

The feeding means **8** is provided with a locking means for holding the same in raised position. The arrangement is illustrated in Figs. 11 and 12 as well as in Figs. 9 and 10. A pin **19** and a lug **19***a* hold the feeding means

in raised position. The pin **19** is laterally shifted by a spring **19***b* so that the pin **19** engages the lug **19***a* and prevents dropping of the feeding roller onto the supporting face **7'**. This is necessary for moving the feeding roller out of the way while a new stack of sheets is placed on the supporting face, and also permits a manual adjustment and feeding of a single sheet.

As shown in Fig. 1, an arresting means **20** is preferably provided for locking the lever means **9** whereby a rearward stroke of the feeding means **8** is prevented, if desired.

It will be understood that each of the elements described above, or two or more together, may also find a useful application in other types of sheet feeding devices differing from the types described above.

While the invention has been illustrated and described as embodied in a sheet feeding device in which a reciprocating feeding means first forms a bulge in the uppermost sheet in the stack of sheets by urging the same against a blocking means and then pushes the sheet into a position projecting beyond the blocking means, it is not intended to be limited to the details shown, since various modifications and structural changes may be made without departing in any way from the spirit of the present invention.

Without further analysis, the foregoing will so fully reveal the gist of the present invention that others can by applying current knowledge readily adapt it for various applications without omitting features that, from the standpoint of prior art, fairly constitute essential characteristics of the generic or specific aspects of this invention and, therefore, such adaptations should and are intended to be comprehended within the meaning and range of equivalence of the following claims.

What is claimed as new and desired to be secured by Letters Patent is:

1. Sheet feeding device comprising, in combination, stationary supporting means having a supporting face for supporting a stack of superposed sheets having superposed front edges and side edges; a pair of spaced fixed blocking members transversely and upwardly projecting from said supporting face and adapted to engage the end portions of said front edges of said sheets adjacent said side edges, said blocking members having free ends spaced a constant distance from said supporting face and adapted to project beyond the uppermost sheet of said stack of sheets; feeding means having an engaging portion tending to move to a position below said free ends of said blocking members and tending to engage said supporting face and adapted to frictionally engage the uppermost sheet of said stack of sheets; drive means for moving said feeding means at spaced time intervals from a position farther spaced from said blocking members to a position closer spaced from said blocking members so that the uppermost sheet engaged by said feeding means during movement of the same first forms a bulge between said blocking members and said feeding means, and then slips into the space between said blocking members with the side edges thereof sliding on said blocking members so that further movement of said feeding means moves the uppermost sheet into a position projecting beyond said blocking members.

2. Sheet feeding device comprising, in combination, stationary supporting means having a supporting face for supporting a stack of superposed sheets having superposed front edges and side edges; a pair of spaced fixed blocking members transversely and upwardly projecting from said supporting face, said blocking members having free ends spaced a constant distance from said supporting face and adapted to project beyond the uppermost sheet of said stack of sheets, each of said blocking members having a face extending at an acute angle to said supporting face and adapted to engage the end portions of said front edges of said sheets adjacent said side edges; feeding means having an engaging portion tending to move

to a position below said free ends of said blocking members and tending to engage said supporting face and adapted to frictionally engage the uppermost sheet of said stack of sheets; drive means for moving said feeding means at spaced time intervals from a position farther spaced from said blocking members to a position closer spaced from said blocking members so that the uppermost sheet engaged by said feeding means during movement of the same first forms a bulge between said blocking members and said feeding means, and then slips into the space between said blocking members with the side edges thereof sliding on said blocking members so that further movement of said feeding means moves the uppermost sheet into a position projecting beyond said blocking members.

3. Sheet feeding device comprising, in combination, stationary supporting means having a supporting face for supporting a stack of superposed sheets having superposed front edges and side edges; a guide member having a guiding face projecting at an obtuse angle from said supporting face; a pair of spaced fixed blocking members located intermediate said guiding face and said supporting face, said blocking members projecting transversely from said supporting face and adapted to engage the end portions of said front edges of said sheets adjacent said side edges, said blocking members having free ends spaced a constant distance from said supporting face and adapted to project beyond the uppermost sheet of said stack of sheets; feeding means having an engaging portion tending to move to a position below said free ends of said blocking members and tending to engage said supporting face and adapted to frictionally engage the uppermost sheet of said stack of sheets; drive means for moving said feeding means at spaced time intervals from a position farther spaced from said blocking members to a position closer spaced from said blocking members so that the uppermost sheet engaged by said feeding means during movement of the same first forms a bulge between said blocking members and said feeding means, and then slips into the space between said blocking members with the side edges thereof sliding on said blocking members and with its front edge engaging said guiding face of said guide member so that further movement of said feeding means moves the uppermost sheet into a position projecting beyond said blocking members.

4. Sheet feeding device comprising, in combination, stationary supporting means having a supporting face for supporting a stack of superposed sheets having superposed front edges and side edges; a pair of spaced fixed blocking members transversely and upwardly projecting from said supporting face and adapted to engage the end portions of said front edges of said sheets adjacent said side edges, said blocking members having free ends spaced a constant distance from said supporting face and adapted to project beyond the uppermost sheet of said stack of sheets, said fixed blocking members having opposite side faces, each of said opposite side faces including an outwardly inclined face portion located spaced from said supporting face; feeding means having an engaging portion tending to move to a position below said free ends of said blocking members and tending to engage said supporting face and adapted to frictionally engage the uppermost sheet of said stack of sheets; drive means for moving said feeding means at spaced time intervals from a position farther spaced from said blocking members to a position closer spaced from said blocking members so that the uppermost sheet engaged by said feeding means during movement of the same first forms a bulge between said blocking members and said feeding means, and then slips into the space between said blocking members with the side edges thereof sliding on said opposite side faces of said blocking members so that further movement of said feeding means moves the uppermost sheet into a position projecting beyond said blocking members.

5. Sheet feeding device comprising, in combination, stationary supporting means having a supporting face for supporting a stack of superposed sheets having superposed front edges and side edges; a guide member having a guiding face projecting at an obtuse angle from said supporting face; a pair of spaced fixed blocking members located intermediate said guiding face and said supporting face, said blocking members projecting transversely and upwardly from said supporting face, said blocking members having free ends spaced a constant distance from said supporting face and adapted to project beyond the uppermost sheet of said stack of sheets, each of said blocking members having a face extending at an acute angle to said supporting face and adapted to engage the end portions of said front edges of said sheets adjacent said side edges, said fixed blocking members having opposite side faces, each of said opposite side faces including an outwardly inclined face portion located spaced from said supporting face; feeding means having an engaging portion tending to move to a position below said free ends of said blocking members and tending to engage said supporting face and adapted to frictionally engage the uppermost sheet of said stack of sheets; drive means for moving said feeding means at spaced time intervals from a position farther spaced from said blocking members to a position closer spaced from said blocking members so that the uppermost sheet engaged by said feeding means during movement of the same first forms a bulge between said blocking members and said feeding means, and then slips into the space between said blocking members with the side edges thereof sliding on said opposite side faces of said blocking members and with its front edge engaging said guiding face of said guide member so that further movement of said feeding means moves the uppermost sheet into a position projecting beyond said blocking members.

6. Sheet feeding device, comprising, in combination, stationary supporting means having a supporting face for supporting a stack of superposed sheets having superposed front edges and side edges; a pair of spaced lateral guide means transversely projecting from said supporting face and adapted to engage the side edges of the stack of sheets; a pair of spaced fixed blocking members transversely and upwardly projecting from said supporting face and being secured, respectively, to said pair of lateral guide means and adapted to engage the end portions of said front edges of said sheets adjacent said side edges, said blocking members having free ends spaced a constant distance from said supporting face and adapted to project beyond the uppermost sheet of said stack of sheets; feeding means having an engaging portion tending to move to a position below said free ends of said blocking members and tending to engage said supporting face and adapted to frictionally engage the uppermost sheet of said stack of sheets; drive means for moving said feeding means at spaced time intervals from a position farther spaced from said blocking members to a position closer spaced from said blocking members so that the uppermost sheet engaged by said feeding means during movement of the same first forms a bulge between said blocking members and said feeding means, and then slips into the space between said blocking members with the side edges thereof sliding on said blocking members so that further movement of said feeding means moves the uppermost sheet into a position projecting beyond said blocking members.

7. Sheet feeding device comprising, in combination, stationary supporting means having a supporting face for supporting a stack of superposed sheets having superposed front edges and side edges; a pair of spaced lateral guide means transversely and upwardly projecting from said supporting face and adapted to engage the side edges of the stack of sheets; a pair of spaced fixed blocking members transversely projecting from said supporting face and being secured, respectively, to said pair of lateral guide means, said blocking members having free ends

spaced a constant distance from said supporting face and adapted to project beyond the uppermost sheet of said stack of sheets each of said fixed blocking members having a face extending at an acute angle to said supporting face and transversely with respect to said lateral guide means and adapted to engage the end portions of said front edges of said sheets adjacent said side edges; feeding means having an engaging portion tending to move to a position below said free ends of said blocking members and tending to engage said supporting face and adapted to frictionally engage the uppermost sheet of said stack of sheets; drive means for moving said feeding means at spaced time intervals from a position farther spaced from said blocking members to a position closer spaced from said blocking members so that the uppermost sheet engaged by said feeding means during movement of the same first forms a bulge between said blocking members and said feeding means, and then slips into the space between said blocking members with the side edges thereof sliding on said blocking members so that further movement of said feeding means moves the uppermost sheet into a position projecting beyond said blocking members.

8. Sheet feeding device comprising, in combination, stationary supporting means having a supporting face for supporting a stack of superposed sheets having superposed front edges and side edges; a pair of spaced fixed blocking members transversely and upwardly projecting from said supporting face and adapted to engage the end portions of said front edges of said sheets adjacent said side edges, said blocking members having free ends spaced a constant distance from said supporting face and adapted to project beyond the uppermost sheet of said stack of sheets; feeding means including a feeding roller tending to move to a position below said free ends of said blocking members to engage said supporting face and adapted to frictionally engage the uppermost sheet of said stack of sheets; rail means extending parallel to said supporting face and supporting said feeding means for reciprocating movement toward and away from said blocking members; rotary drive means; lever means including at least one lever pivotally mounted on said supporting means and one lever pivotally connected to said feeding means, said lever means being connected to said drive means so that during rotation of said drive means said feeding means is reciprocated along said rail means in a rectilinear movement; one way slip coupling means connected to said feeding roller and blocking rotation thereof in a direction corresponding to movement of said feeding means toward said blocking members so that the uppermost sheet engaged by said feeding rollers forms during movement of said feeding means towards said blocking members a bulge between said blocking members and said feeding means, and then slips into the space between said blocking members with the side edges thereof sliding on said blocking members so that further movement of said feeding means moves the uppermost sheet into a position projecting beyond said blocking members.

9. Sheet feeding device comprising, in combination, stationary supporting means having a supporting face for supporting a stack of superposed sheets having superposed front edges and side edges; a pair of spaced fixed blocking members transversely and upwardly projecting from said supporting face and adapted to engage the end portions of said front edges of said sheets adjacent said side edges, said blocking members having free ends spaced a constant distance from said supporting face and adapted to project beyond the uppermost sheet of said stack of sheets; feeding means including a frame, supporting roller means turnably mounted at one end of said frame, feeding roller means mounted on the other end of said frame and tending to move to a position below said free ends of said blocking members to engage said supporting face and adapted to frictionally engage the uppermost sheet of said stack of sheets; rail means extending parallel to said supporting face and supporting said supporting roller means and thereby said feeding means for reciprocating movement toward and away from said blocking members; weight means movably mounted on said frame of said feeding means for movement between said supporting roller means and said feeding roller means for varying the pressure exerted by said feeding roller means on said stack of papers; rotary drive means; lever means including at least one lever pivotally mounted on said supporting means and one lever pivotally connected to said feeding means, said lever means being connected to said drive means so that during rotation of said drive means said feeding means is reciprocated along said rail means in a rectilinear movement; one way slip coupling means connected to said feeding roller and blocking rotation thereon in a direction corresponding to movement of said feeding means toward said blocking members so that the uppermost sheet engaged by said feeding rollers forms during movement of said feeding means towards said blocking members a bulge between said blocking members and said feeding means, and then slips into the space between said blocking members with the side edges thereof sliding on said blocking members so that further movement of said feeding means moves the uppermost sheet into a position projecting beyond said blocking members.

10. A sheet feeding device as claimed in claim 9 and including means for arresting said feeding means in a position in which said feeding roller is held spaced from said supporting surface and thereby from the stack of paper.

11. A sheet feeding device as claimed in claim 9 and including manually operated locking means movable to a position engaging and blocking said lever means for stopping movement of said feeding means.

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