June 26, 1951 L. W. EVANS 2,558,212

PAPER COUNTER

Filed July 14, 1945 2 Sheets-Sheet 1

Fig. 1.

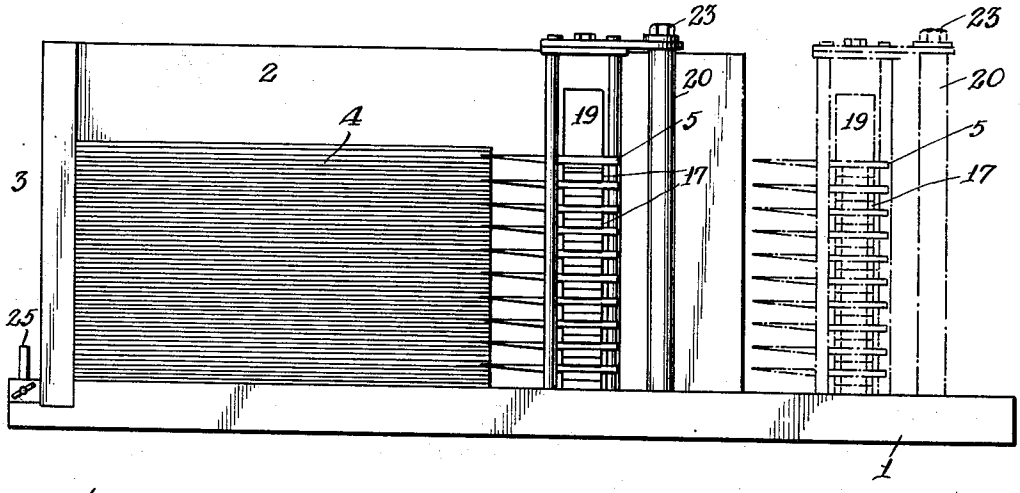


Fig. 7.

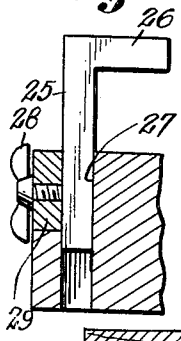


Fig. 5.

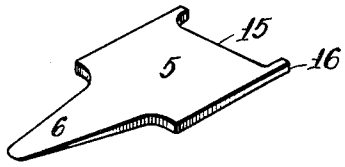


Fig. 6.

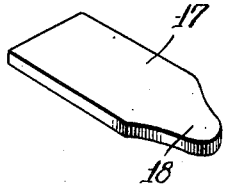
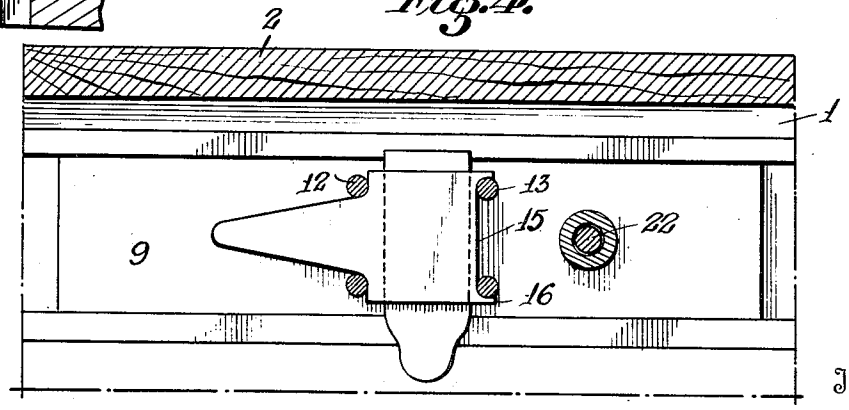


Fig. 4.



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PAPER COUNTER

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Fig. 2.

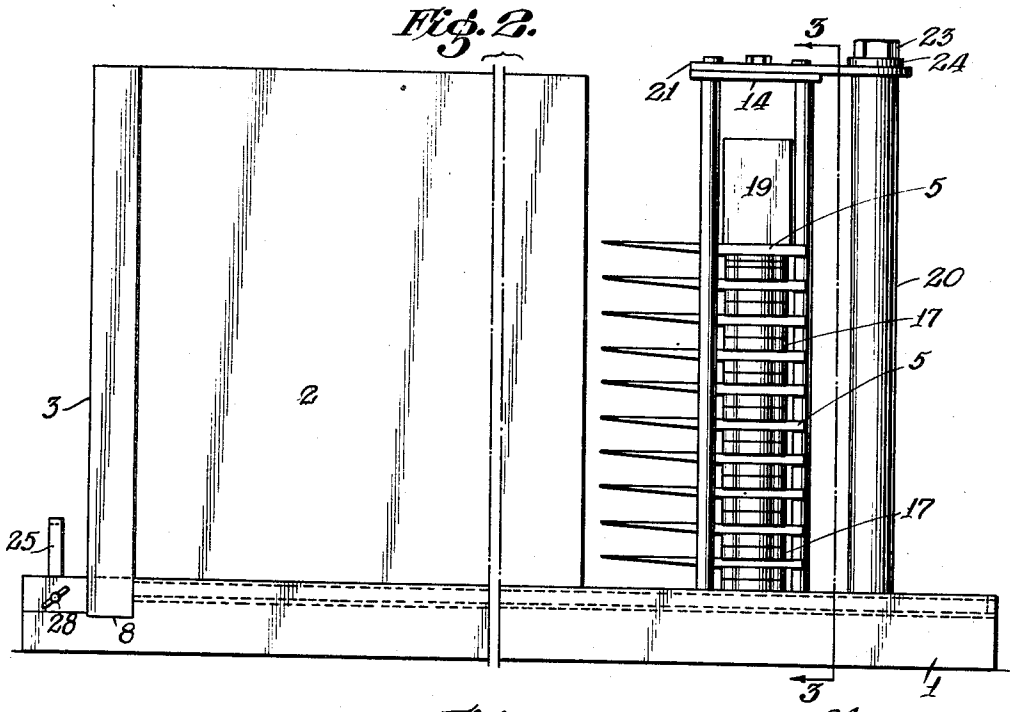
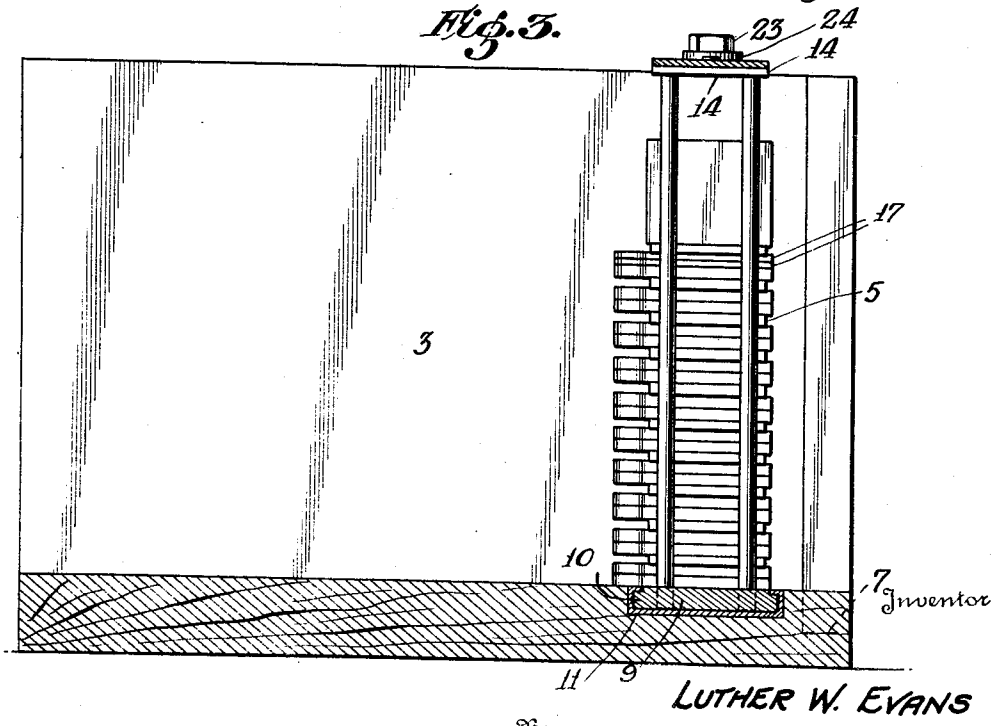


Fig. 3.



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PAPER COUNTER

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12 Claims. (Cl. 33—174)

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The invention relates to a paper counter.

It is customary in the printing trade to pad sheets of paper, such as bill heads and other printed sheets. This operation requires cardboard backs to be attached to the manifold sets of sheets padded.

An object of the present invention is to provide a simple, practical, and comparatively inexpensive paper counter provided with means for supporting a pile or stack of sheets of paper in a vertical position and equipped with a sheet counting and batch spacing unit provided with counters and movable to insert the counters simultaneously into the pile or stack of sheets for dividing the same into separate batches and for spacing the batches sufficiently to enable cardboard backs to be readily inserted so that a cardboard back may be placed beneath each of the batches for subsequent binding or fastening the sheets to the back.

A further object of the invention is to provide a paper counter of this character having a sheet counting and batch forming unit slidably mounted on the base and manually movable into engagement with a stack or pile of sheets for dividing the same into batches of the required number of sheets and for separating the batches for the insertion of the cardboard backs.

Another object of the invention is to provide a paper counter provided with vertically adjustable and detachably mounted counters and having gaging means for uniformly spacing the counters from one another so that the batches will contain the desired or required number of sheets.

With these and other objects in view, the invention consists in the novel constructions, combination, and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended, it being understood that various changes in the form, proportion, and minor details of construction within the scope of the claims may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:

Fig. 1 is a side elevation of a paper counter constructed in accordance with this invention and showing in full lines the counters of the paper counter and separating unit entering a stack or pile of sheets, and illustrating in dotted lines said unit in a retracted position.

Fig. 2 is an enlarged side elevation of the paper counter, the stack or pile of sheets being omitted and the sheet counting and batch spacing unit being retracted.

Fig. 3 is a transverse sectional view taken on the line 3—3 of Fig. 2.

Fig. 4 is a horizontal sectional view, the base being broken away in advance and in rear of the sheet counting and batch spacing unit.

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Fig. 5 is a detailed perspective view of one of the counters.

Fig. 6 is a detailed perspective view of one of the spacing members.

Fig. 7 is a detailed sectional view illustrating the construction of the gage.

In the accompanying drawings, in which is illustrated the preferred embodiment of the invention, the paper counter comprises in its construction a rectangular base 1 provided at one side and one end with vertical walls 2 and 3 arranged at right angles to each other and forming a pocket or recess to receive a stack or pile of sheets 4 of paper for enabling the same to be firmly supported in a vertical position upon the base 1 while a plurality of uniformly spaced counters 5 are simultaneously inserted into the stack or pile as illustrated in Fig. 1 of the drawings for enabling the stack or pile to be divided into separate batches of the required number of sheets.

The counters 5 which are arranged in a vertical series are provided with projecting fingers 6 which are tapered in thickness as clearly illustrated in detail in Fig. 5 of the drawings so that when the fingers are substantially fully introduced into the pile or stack of sheets the divided batches will be separated to enable a cardboard back such as is employed in ordinary pads of paper to be arranged beneath each of the batches.

The base 1 and the side and end walls 2 and 3 may be constructed of wood or any other suitable material and when constructed of wood the lower edges of the side and end walls 2 and 3 are arranged in longitudinal and transverse recesses 7 and 8 formed in the base but the walls may be firmly secured to the base in any other desired manner.

The sheet counting and batch separating unit which is slidably mounted on the base for movement toward and from the stack of paper comprises in its construction a horizontal slide 9 consisting of a plate of metal or other suitable material having rabbeted side edges 10 and arranged in and slidably interlocked with a channel guide 11 constructed of sheet metal or other suitable material and let into the base and arranged in flush relation with the upper face thereof, as clearly illustrated in Fig. 3 of the drawings.

The slide 9 is movable along the guide 11 for insertion of the counters into a stack of paper and for withdrawing the counters therefrom after the stack has been divided into batches and the batches separated for the introduction of the cardboard backs.

The counters are arranged in a vertical guide consisting of front and rear vertical rods 12 and 13 spaced apart and rigidly secured at their lower ends to the slide and at their upper ends to a connecting plate 14. The rods form an open guide and the fingers, which are tapered transversely as clearly shown in Figs. 4 and 5 of the drawings, extend between the front pair of rods

12 and at their inner ends are of a width to fit snugly between the front guide rods.

The counters are provided at their rear ends with recesses 15 receiving the rear guide rods 13 and forming spaced lugs 16 which snugly embrace the rear guide rods at the side faces thereof as clearly shown in Fig. 4 of the drawings. The counters are slidably mounted in the guide and may be readily placed in the guide and removed therefrom when arranged in an inclined position with respect to the vertical guide.

The counters are gaged or set at a uniform distance apart to provide the desired number of sheets of paper in each batch by means of spacing members 17 consisting of substantially oblong plates of a width to extend between the front and rear guide rods and provided at one end with a handle portion or grip 18 to enable the spacing members to be readily placed between the counters. The spacing members are designed to be of various thicknesses, two different thicknesses of spacing members being shown in the drawings for purpose of illustration, but in practice spacing members of three different thicknesses will generally be ample.

The finger 6 of the counter 5 is tapered transversely and is beveled at the lower face to provide the tapering thickness and the outer end edge is relatively thin to enable it to enter readily between two sheets of paper. The inner end of the finger and the body portion of the counter are of a thickness to separate the batches of sheets sufficiently to enable a cardboard back to be readily inserted beneath each batch and while the counter may be of any desired thickness, one-eighth of an inch will be ample for this purpose.

In order to maintain the counters and the spacing members firmly in position within the vertical guide, a weight 19 is provided. The weight 19, which is of a width to fit between the front and rear vertical guide rods, rests upon the top counter and forms a convenient means for maintaining the counters and the spacing members in their assembled gaged position but any other suitable means may be employed for this purpose. The weight is readily removable when it becomes necessary to rearrange or adjust the counters and the spacing members.

The sheet counting and batch forming unit is provided at the back with a vertical post 20 rigidly mounted on the slide 9 and connected at the upper end with the vertical guide by a horizontal plate 21 and spaced from the vertical guide a sufficient distance to enable the hand to readily grasp the post for sliding the sheet counting and batch forming unit along the base in the operation of the device.

The post 20, which may be of any desired construction, is preferably tubular and is secured to the slide by means of a rod 22 extending through the tubular post and rigidly secured at its lower end to the slide and having its upper terminal portion extending through the plate 21 and provided with a nut 23 which has a threaded connection with the upper end of the rod, a spring locking washer 24 being preferably interposed between the nut and the plate 21 which is suitably secured to the connecting plate 14 of the guide rods.

As clearly illustrated in Figs. 1 and 2 of the drawings, the upper faces of the fingers are horizontal and the lower faces are inclined and when the fingers are fully inserted into the stack or pile of sheets, the lower sheet of each batch rests upon a horizontal surface and is spaced from the upper sheet of the next lower batch sufficiently to enable a cardboard back to be readily inserted beneath each batch. The weight 19 exerts sufficient pressure upon the assembled gaged counters to maintain the same firmly in their gaged position during the operation of the paper counter.

The number of spacing members required for a particular count is determined by the use of a vertically adjustable, substantially inverted L-shaped gage 25 having its arm 26 at the upper end located above the base 1 and arranged in parallelism with the upper face of the same. The gage 25 is mounted in a recess 27 in the base for vertical adjustment and is secured in such adjustment by a set screw 28 which may be conveniently mounted in a threaded opening in a plate 29 spanning the recess 27 and suitably secured to the base with its exterior face in flush relation with the side edge of the base. The gage may be mounted in any other suitable manner on the base to provide such vertical adjustment.

If the padding of one hundred sheets is required, a count would be made and these one hundred sheets would be placed under the gage to determine the spacing for the counters on the unit. Assuming that three spacing members of different thicknesses are required to set the counters for this job, a set of three spacing members is placed under each counter.

What is claimed is:

1. A paper counter including means for supporting sheets of paper in a vertical stack, a sheet counting and batch forming unit comprising a vertical series of spaced counters and spacing members interposed between and gaging the counters for dividing the stack into batches of a substantially predetermined number of sheets, said unit being movable to insert the counters simultaneously into a stack or pile of sheets to divide the same into said batches, said spacing members being of various thicknesses for gaging the counters the desired distance apart.

2. A paper counter including means for supporting sheets of paper in a vertical stack, a sheet counting and batch forming unit comprising a vertical series of counters and interposed spacing members separating and gaging the counters for dividing a stack or pile of sheets into batches of substantially the required number of sheets, and means for exerting pressure on the assembled counters and spacing members for maintaining the same in their assembled positions, said unit being movable to insert the counters simultaneously into a stack or pile of sheets for dividing the same into batches.

3. A paper counter including means for supporting sheets of paper in a vertical stack, a sheet counting and batch forming unit provided with a vertical guide, a vertical series of counters slidably mounted in the guide and having projecting fingers adapted to be inserted in a stack or pile of sheets for dividing the stack into batches, and spacing members interposed between and gaging the counters, said unit being movable to insert the fingers simultaneously into a stack or pile of sheets to divide the same into said batches.

4. A paper counter including means for supporting sheets of paper in a vertical stack, a sheet counting and batch forming unit provided with a vertical guide, a vertical series of counters slidably mounted in the guide and having projecting fingers adapted to be inserted in a stack or pile of sheets for dividing the stack into batches, and spacing members interposed be-

tween and gaging the counters, said fingers being tapered in thickness and presenting horizontal upper faces and inclined lower faces and said unit being movable to insert the fingers simultaneously into a stack or pile of sheets.

5. In a paper counter a sheet counting and batch forming unit comprising a vertical guide composed of spaced front and rear vertical rods, a vertical series of counters provided at the front with tapered fingers extending between the front guide rods, said counters being provided at the back with recesses receiving the rear guide rods, and spacing members interposed between the counters and gaging the same for dividing a stack or pile of sheets into batches of the desired size, said sheet counting and batch forming unit being movable to insert the counters simultaneously into a vertical stack of sheets.

6. In a paper counter a sheet counting and batch forming unit comprising a vertical guide composed of spaced front and rear vertical rods, a vertical series of counters provided at the front with tapered fingers extending between the front guide rods, said counters being provided at the back with recesses receiving the rear guide rods, spacing members interposed between the counters and gaging the same for dividing a stack or pile of sheets into batches of the desired size, and a weight arranged within the guide and exerting a pressure on the counters and spacing members to maintain the same in their assembled positions, said sheet counting and batch forming unit being movable to insert the counters simultaneously into a vertical stack of sheets.

7. A paper counter including a base provided with means for supporting a stack or pile of sheets and having a guide, and a sheet counting and batch forming unit comprising a slide mounted in the guide of the base, spaced vertical rods forming a vertical guide and secured at their lower ends to said slide, a vertical post mounted on the slide and forming a handle for said unit, means for rigidly connecting the upper ends of the rods with the post, a vertical series of counters slidably mounted in the vertical guide and having projecting fingers, spacing members interposed between and gaging the counters, said unit being slidable along the guide to insert the fingers of the counters simultaneously into a stack or pile of sheets.

8. For use in a paper counter having a sheet counting and batch forming unit with a vertical series of spaced counter fingers and spacing members and movable to insert the counter fingers simultaneously into a vertical stack of sheets for dividing the stack into batches of the same number of sheets, said spacing members being removable for gauging the distance between the counter fingers, a base, a vertically adjustable substantially inverted L-shaped gauge mounted on the base and adapted to receive counted sheets for determining the number of said spacing members for gauging the counter fingers, and means for rigidly securing the L-shaped gauge to the base in its adjusted position.

9. A paper counter comprising a base provided at one end with means forming a pocket for receiving a stack of sheets of paper, vertically disposed supporting means extending upwardly from the base, a vertical series of spaced counters carried by said supporting means and projecting therefrom in the direction of said pocket, and means for slidably mounting the vertical supporting means in a rigid upright position for movement toward and from said pocket to insert the counters into the stack of sheets for dividing the sheets into separate batches and for spacing the same and maintaining said batches of sheets in spaced relation while cardboard backs are inserted between the batches.

10. A paper counter comprising a substantially oblong base provided at one end with a vertical end wall and a vertical side wall forming a pocket for receiving a stack of sheets of paper, vertically disposed supporting means extending upwardly from the base, a vertical series of spaced counters carried by said supporting means and projecting therefrom in the direction of said pocket, and means for slidably mounting the vertical supporting means in a rigid upright position for movement toward and from said pocket to insert the counters into the stack of sheets for dividing the sheets into separate batches and for spacing the same and maintaining said batches of sheets in spaced relation while cardboard backs are inserted between the batches.

11. A paper counter comprising a base provided at one end with means forming a pocket for receiving a stack of sheets of paper, vertically disposed supporting means extending upwardly from the base, a vertical series of spaced counters carried by said supporting means and projecting therefrom in the direction of said pocket, means for slidably mounting the vertical supporting means in a rigid upright position for movement toward and from said pocket to insert the counters into the stack of sheets for dividing the sheets into separate batches and for spacing the same and maintaining said batches of sheets in spaced relation while cardboard backs are inserted between the batches, and removable spacing members interposed between and gauging the counters and adapted to vary the distance between the same.

12. A paper counter comprising a base provided at one end with means forming a pocket for receiving a stack of sheets of paper, vertically disposed supporting means extending upwardly from the base, and vertical series of spaced counters carried by said suporting means and projecting therefrom in the direction of said pocket, said base being provided with a horizontal guide slidably mounting the vertical supporting means in a rigid upright position for movement toward and from said pocket to insert the counters into the stack of sheets for dividing the sheets into separate batches and for spacing the same and maintaining said batches of sheets in spaced relation while cardboard backs are inserted between the batches.

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