P. VOLKMERE.

SHEET STRAIGHTENING APPARATUS.

APPLICATION FILED OCT. 21, 1920.

1,421,868. **Patented July 4, 1922.**

FIG. I.

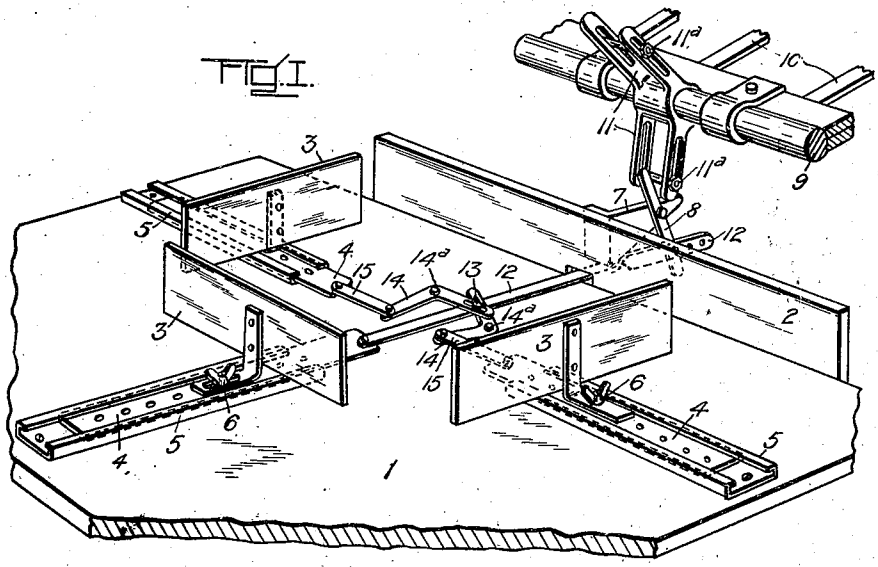


FIG. IV.

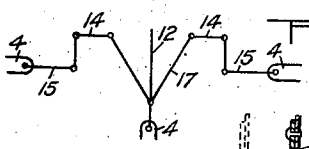


FIG. II.

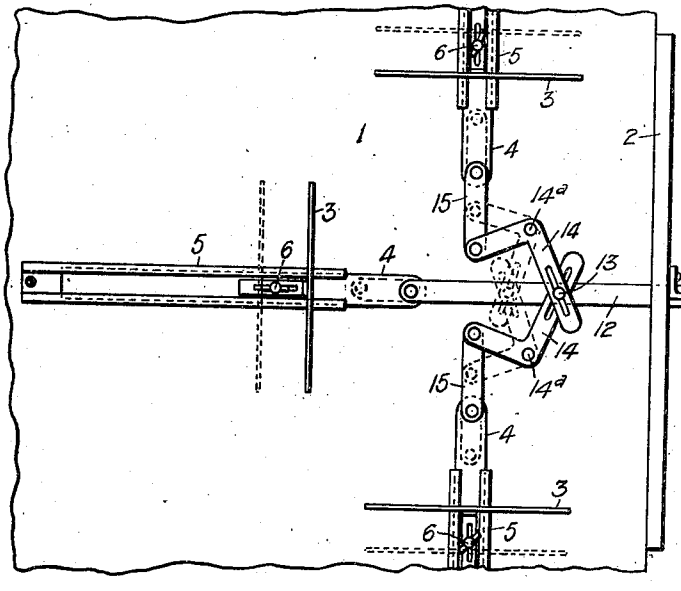
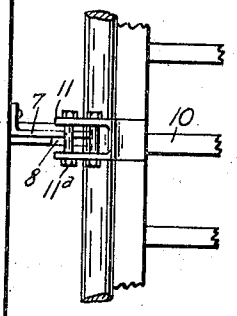


FIG. III.



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UNITED STATES PATENT OFFICE.

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SHEET-STRAIGHTENING APPARATUS.

1,421,868. Specification of Letters Patent. Patented July 4, 1922.

Application filed October 21, 1920. Serial No. 418,365.

To all whom it may concern:

Be it known that PAUL VOLKMERE, a subject of the King of Belgium, residing at No. 456 Queen Street, Auckland, in the Dominion of New Zealand, has invented certain new and useful Improvements in Sheet-Straightening Apparatus, of which the following is a specification.

This invention relates to means for straightening sheets from those printing, waxing, cutting and the like machines in which a flyer delivers the sheet on to a table, which means are usually termed "joggers," "gages" or "knockers-up." This invention has been specially devised in order to provide means whereby the delivered sheets shall be packed and squared synchronously with each delivery from the flyer, the means employed being of simple construction, positive in their operations, readily adjustable and adapted to be affixed to any delivery table without cutting or destroying the table.

In giving effect to this invention upright plates are mounted so that they shall be adapted to be reciprocated to just make contact with any delivered sheets when the flyer is at its foremost position (that is when it is receiving a new sheet) and be moved outwardly clear of the pile when the flyer is delivering a new sheet.

But in order that this invention may be more readily understood it will now be described with reference to the accompanying drawings in which:—

Figure 1 is a perspective view of portion of a delivery table supporting the means for giving effect to this invention.

Figure 2 is a central sectional elevation of the same, and

Figure 3 is a plan thereof while

Figure 4 is a diagrammatic plan of a slightly modified arrangement.

Affixed to the end of the delivery table 1 is a vertical plate 2 which constitutes a stationary gage and upon the delivery table are three sliding plates 3 which form movable gage elements. Each sliding plate 3 is secured vertically to a horizontal bar 4 that slides in guides 5. Each vertical plate 3 is adjustably secured to its horizontal plate 4 by adjusting means such as 6.

Projecting from the rear side of the vertical plate 2 is a bracket 7 on which is pivoted a rocking bar 8. Secured upon the axis 9 of the flyer 10 is a double armed bell crank 11 having transverse bolts 11^a adjustably mounted between the double arms of each member of the bell crank. Adjustably connected to the lower member of the rocking arm 8 is a horizontal sliding bar 12 the inner end of which is connected to the horizontal sliding bar 4 of the vertical plate 3 that is directly opposite the fixed plate 2. Intermediate the ends of the sliding bar 12 is a pin 13 that engages with two bell cranks 14 that are pivoted to the delivery table at 14^a and the free ends of which are connected by connecting rods 15 to the sliding bars 4 of the lateral sliding plates 3. The operatable parts of the apparatus that lie above the upper surface of the delivery table 1 within the plate 3 will be covered by a lid or false bottom 16 that will constitute the floor upon which the loose sheets from the flyer 10 will be delivered.

The mode of operation will be as follows: After the flyer 10 receives a new sheet the axis 9 of the flyer is rotated as ordinarily the flyer carrying the sheet upon its fingers to deliver it upon the floor 16 or on top of the pile that is being stacked thereon. But before the sheet is actually delivered on to the pile the transverse bolts 11^a between the upper arms of the bell crank 11 will have struck the upper member of the rocking bar 8, causing the lower member of the said rocking bar to force inwards the sliding bar 2, the effect being that the sliding plates 3, 3, 3, will be forced outwards thus allowing room for the free delivery of the sheets on to the floor 16. The axis 9 will then be rotated in the opposite direction when the lower transverse bolt 11^a will impinge upon the opposite side of the upper end of the rocking bar 8 thus causing the sliding bar 12 to be pulled outwards and consequently pull in the three upright plates 3, 3, 3, which will be caused to pat the pile or stack of sheets that is lying upon the floor 16. The effect will, practically, be only upon the last delivered sheet.

Diagram, Figure 4, shows a slight modification of the above described appliances wherein the bell cranks 14 are connected to the bar 12 by links 17. This construction may be preferred for certain descriptions of machines.

It will be noticed that the connections throughout are rigid and there is an absence of spring appliances.

What I claim is:—

1. In apparatus of the class described, movable gage elements and means for operating said movable gage elements consisting in a reciprocable main bar arranged at right angles to the axis of the flyer, one of the movable gage elements being connected to said main bar, pivoted crank arms operated directly by the said main bar and to each of which one of the side movable gage elements is connected, a pivoted lever connected to the main bar, and a double armed bell crank mounted on the flyer axis and arranged to positively strike said lever in each direction of rotation.

2. A construction as claimed in claim 1 in which each movable gage element comprises a plate, and a perforated bar to which it is removably fixed by a thumb screw so that the plates are relatively adjustable.

3. Improved apparatus for squaring sheets that are delivered from the flyer of a printing or the like machine comprising a delivery table, vertical sliding plates thereupon, a rotating flyer for delivering the sheets, a rocking lever secured to the delivery table, an adjustable bar rigidly connecting the rocking arm mediately or immediately with the sliding plates upon the delivery table and means on the axis of the flyer for automatically causing the rocking bar to work in either direction according to the direction of rotation of the axis of the flyer as herein set forth.

In testimony whereof I affix my signature.

PAUL VOLKMERE.