No. 882,366. PATENTED MAR. 17, 1908.

P. ASHELM.

# DEVICE FOR ASSEMBLING PRINTED PAPER STRIPS IN TRUE REGISTER.

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Fig. 1.

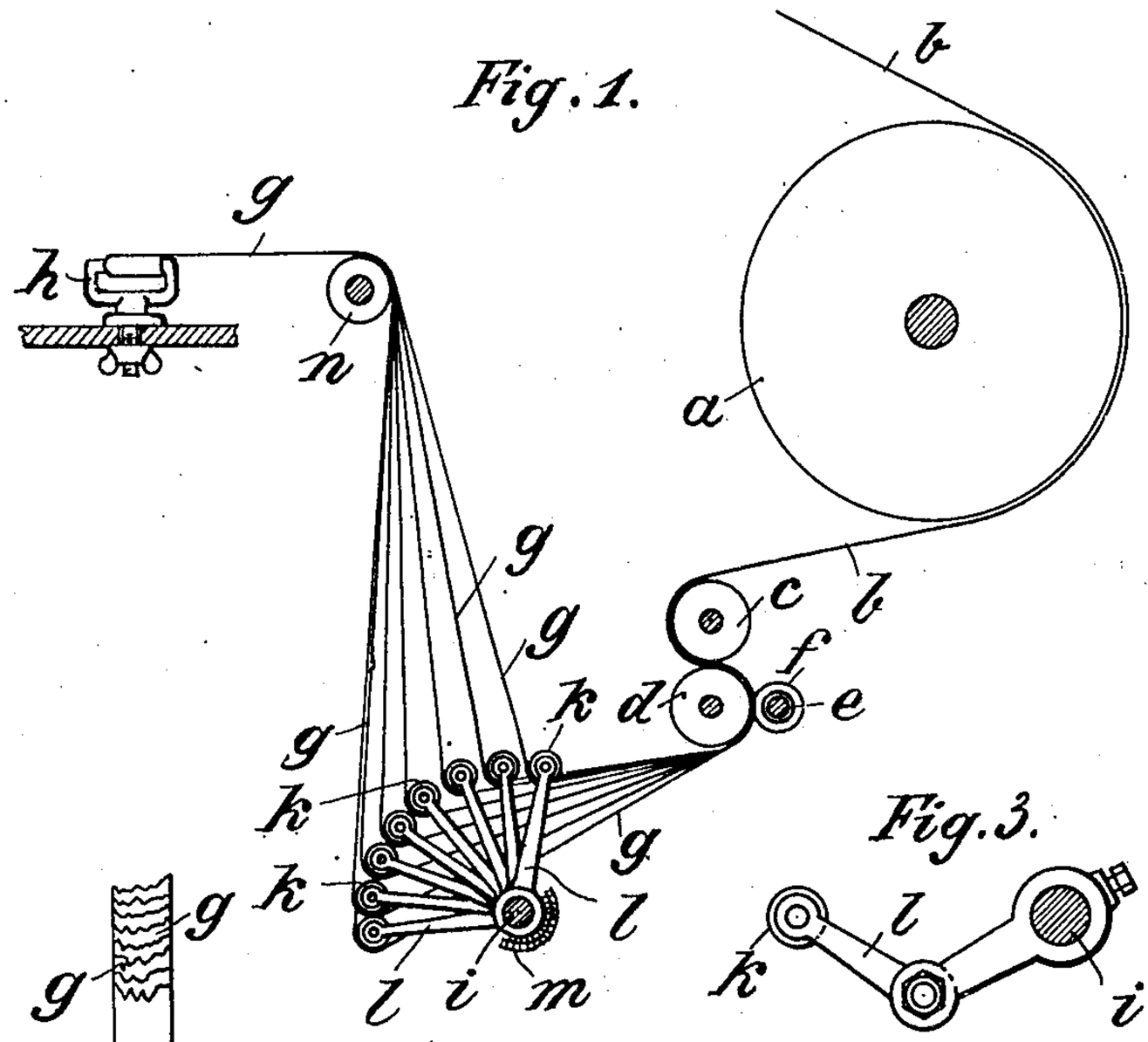


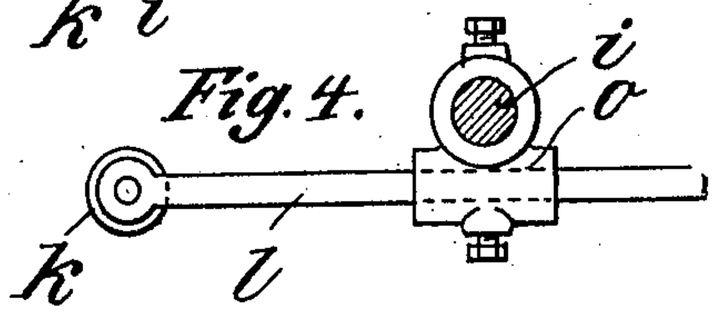

Fig. 3.




Fig. 2.




Fig. 4.

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# UNITED STATES PATENT OFFICE.

PAUL ASHELM, OF BERLIN, GERMANY.

## DEVICE FOR ASSEMBLING PRINTED-PAPER STRIPS IN TRUE REGISTER.

No. 882,366. Specification of Letters Patent. Patented March 17, 1908.

Application filed November 25, 1907. Serial No. 403,822.

*To all whom it may concern:*

Be it known that I, PAUL ASHELM, a subject of the Emperor of Germany, residing at Berlin, Germany, have invented certain new and useful Improvements in Devices for Assembling Printed-Paper Strips in True Register, of which the following is a full, clear, and exact specification.

In producing pads with a printed face, the letters and numerals of which should exactly register, as in block-calendars, check books or ticket-pads, generally, the printed sheet coming from the press in an endless band, has been cut into narrow strips, which are led over turning prongs, so as to bring the strips in line above each other, and to form a continuous strip from which the pads are cut. A machine of this kind is described in my U. S. Patent No. 846,716.

It is evident that the print, in order to register on the strips assembled above each other, must be applied to the sheet in the printing press in a diagonal line, under an angle of exactly 45° when the pads are square, and under a corresponding greater angle, when the pads are made longer than their width.

It is difficult to find the angle for the distribution of the type which answers exactly to the desired length of the pads and irregularities in the register of the letters and lines can be corrected only by the tedious work of shifting the type in the press, till the correct diagonal position is found.

But irregularities in the register are also produced by a variation of the tension in the individual strips, which are run together into the pads through the turning prongs and by defective adjustment of the position of these latter.

The present invention has for its object to facilitate the correction of irregularities in the register of the printed lines, the dates, numerals, etc. and to do away with the slow and tedious shifting of the type.

The new adjusting device is of such a nature, that it permits to set up the type under the angle of 45° and even less for all lengths of pads from square to the longest rectangular shape and the registering is obtained in the easiest possible manner. To this end an adjustable lever carrying a tension roller is provided for each individual paper strip, acting upon the loop between the press and the turning prongs, and by varying the length of this loop the register of all the strips is readily adjusted.

In the accompanying drawing forming part of this specification the new device is shown, Figure 1 being a diagrammatical side elevation and Fig. 2, a plan view. Figs. 3 and 4 illustrate modifications in the means to vary the distance of the tension rolls from the shaft forming the fulcrum of the levers.

From the press cylinder *a* the sheet *b* is conducted over rolls *c d* in order to be divided by circular cutters *f* on a shaft *e* into a number of narrow strips *g* which are led over the turning prongs *h*.

On the way to said prongs, a shaft *i* is secured immovably in suitable bearings, and a number of levers or arms *l* having sleeves or hubs on one end are shifted upon said shaft *i* on which they can be secured in a desired position by set screws *m*. On the outer or free end of the levers or arms *l* guide rolls *k* are mounted revolubly on pins projecting laterally from the levers. Each guide roll extends crosswise over one of the narrow strips going to the turning prongs. In order to bring them all to the same level with these prongs, a cylinder *n* is provided above the guide rolls *k* to which the strips *g* ascend in more or less convergent lines, and from which they pass in parallel lines and practically in one plane to the turning prongs. Here the strips are folded rectangularly in the well known manner and run out assembled to a thick continuous strip comprising the superposed individual strips *g* from which the pads and calendars are cut. Should the print on the strip *g* in this assembled thick strip not register conveniently it is only necessary to adjust the levers *l* on the shaft *i* with the guide rolls *k* correspondingly to lengthen or to shorten the loop as the case may require. This will be easily understood from Fig. 1.

Fig. 3 shows a modified form of lever *l*, being composed of two parts pivotally connected and provided with a clamp screw to set them fast at any desired angle. With levers of such construction the distance of the guide rolls *k* from the shaft *i* can be varied at will and in this way the loops *g* can be lengthened or shortened as necessity requires. Moreover the arms can be turned and set fast on the shaft *i* in the same manner as the arms *l* in Fig. 1.

Fig. 4 shows another modified construc-

tion which permits to vary the distance of the guide rolls from the shaft *i*. The arms *l* are slidably mounted in sleeves *o* wherein they can be secured by set screws as shown. The bore in the sleeve *o* is at right angles to the eye or hub, shifted on the shaft *i*.

Having thus described my invention, what I claim is:

1. In machines for assembling printed paper strips for block calendars, ticket pads and the like, a device for shifting the individual strips into true register of the print, composed of guide rolls, one for each strip, of levers carrying said guide rolls of a shaft upon which said levers are fulrcumed, and of means to set the levers fast in their adjusted position.

2. In machines for assembling printed paper strips for block-calendars, ticket pads and the like, cutters dividing the paper into a number of strips for the pad, and a device for shifting the individual strips into true register of the print arranged in front of said cutters, composed of guide rolls, one for each strip, of levers carrying said guide rolls of a shaft upon which said levers are fulcrumed, and of means to set the levers fast in their adjusted position, and of a guide roll and the turning prongs at a level therewith, substantially as described.

3. In machines for assembling printed paper strips for block-calendars, ticket pads, and the like, a device for shifting the individual strips into true register of the print, composed of guide rolls, one for each strip, of levers carrying said guide rolls, of a shaft upon which said levers are fulcrumed, means to vary the length of said levers and to adjust the distance of the guide rolls from the shaft, and of means to set the levers fast in their adjusted position.

In testimony whereof I affix my signature.

PAUL ASHELM.

In the presence of—

WOLDEMAR HAUPT,

HENRY HASPER.