C. A. SIGAFOOS.

PAPER FOLDING MACHINE.

APPLICATION FILED JULY 3, 1909.

1,128,537. Patented Feb. 16, 1915.

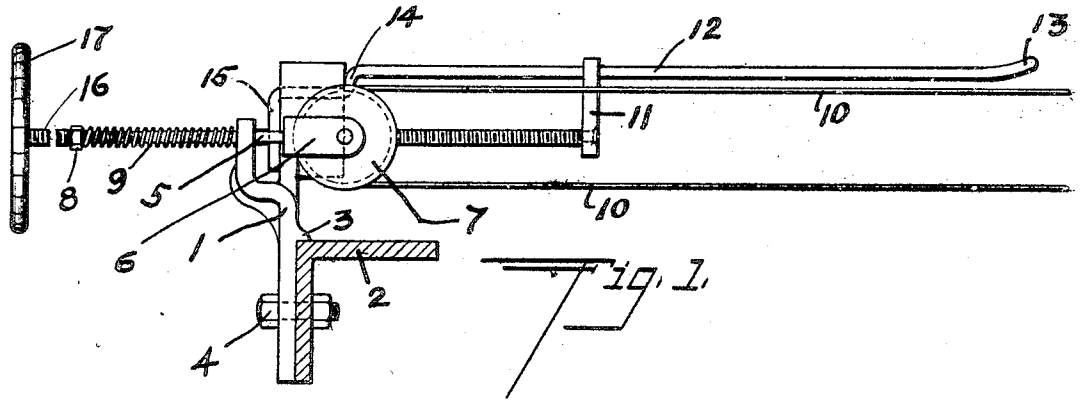


Fig. 1.

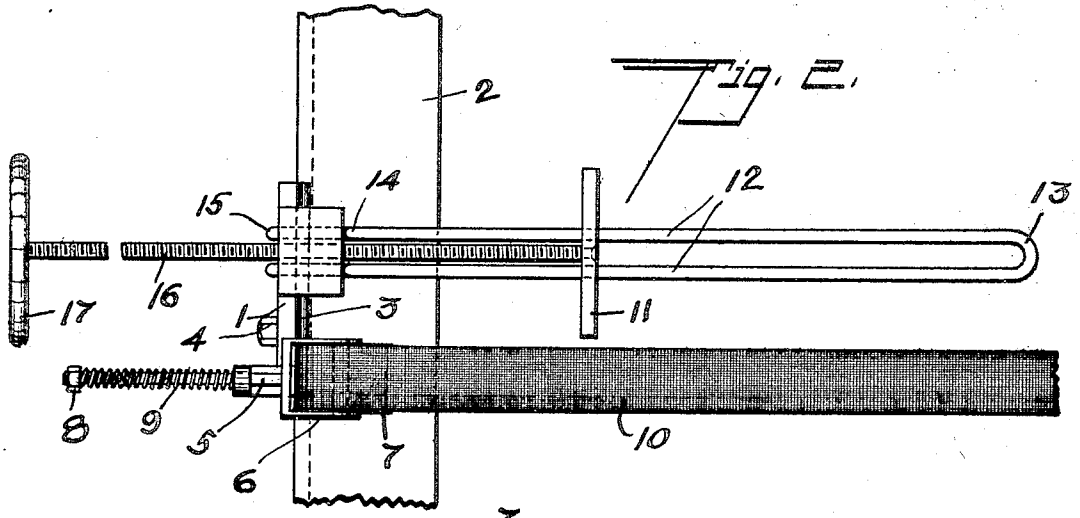


Fig. 2.

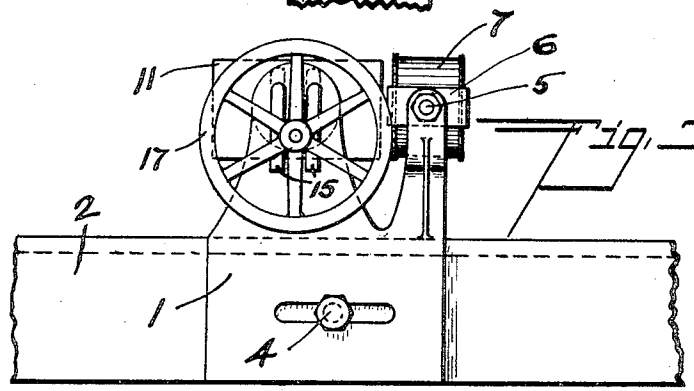


Fig. 3.

Witnesses:

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PAPER-FOLDING MACHINE.

1,128,537. Specification of Letters Patent. Patented Feb. 16, 1915.

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To all whom it may concern:

Be it known that I, CLARK A. SIGAFOOS, a citizen of the United States, residing at Omaha, in the county of Douglas and State of Nebraska, have invented certain new and useful Improvements in Paper-Folding Machines, of which the following is a specification.

My invention relates to machines for folding paper and it is the object thereof to provide in a machine of this class certain improvements in the tape-rollers and paper gages thereof.

In paper folding machines which employ tapes or fabric belts for conveying the paper, it is desirable that a uniform tension be maintained on the tapes in order that the paper may be carried forward uniformly thereby and kept in proper alinement with the machine without the use of an excessive number of guides for maintaining it in such alinement. In the usual construction of machines of this class, in which a series of tapes are passed over the same rollers, the maintenance of a uniform tension thereon is difficult by reason of the unequal expansion and contraction thereof due to changes of atmospheric moisture and temperature, and the unequal stretching of old and new tapes. It is also desirable that the transverse intervals between the tapes of each series may be adjustable in order that the tapes may be placed in the positions best adapted for handling any particular width of paper. It is also desirable that the gages for limiting the movement of the paper by any series of tapes be positioned adjacent to the tapes, and when the transverse positions of the tapes are adjusted that similar transverse adjustments of the gages be made simultaneously therewith.

My invention provides a simple, efficient and inexpensive device for attaining all of the above desirable effects.

Constructions embodying my invention are illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the device, Fig. 2 is a plan view thereof, and Fig. 3 is a front elevation of the same.

In carrying out my invention I provide brackets 1 each of a form adapted to fit over a horizontal member 2 of the machine frame, the lower portion of the bracket fitting against the face of the frame member and a flange 3 extending over the top thereof, as shown. In the lower part of the bracket is a horizontally extending slot through which is passed a bolt 4 extending also through the frame member 2. By means of said bolt the bracket is secured to the frame member so as to be adjustable longitudinally thereof, the flange 3 preserving the alinement of the parts. Through the upper part of the bracket at one side thereof a cylindrical rod 5 passes slidably and rotatably through the bracket, the rod having at its inner end a fork 6 in which is journaled a tape pulley 7. The outer end of the rod is threaded and provided with a nut 8, and around the rod between said nut and the bracket is disposed a coil spring 9 of which the tension may be adjusted by varying the position of the nut upon the rod. By means of said spring the tension upon the tape 10 which passes over the pulley 7 is maintained substantially the same even though the length of the tape may be varied slightly by stretching or by changes of atmospheric moisture or temperature, and if at any time the tape tension is not as desired it may be quickly adjusted by turning the nut upon the threaded rod 5 to change the tension of the spring 9.

As my device is to be applied to each of the tapes of the machine, I have shown but one of the same in the drawings, but it will be understood that each series of tapes in the machine is driven from a single roll in the usual manner and that each tape of the series is passed over one of the pulleys 7 at the end thereof opposite the driving roll, so that each tape is maintained at a constant tension independently of the other tapes of the same series.

A gage plate 11 is adjustably supported adjoining the tape 10, as follows: A rod 12 is bent at the center thereof so that it forms two parallel portions connected by a U-shaped bend 13. The parallel portions of the rod are passed through openings in the gage plate 11 which is thus slidably supported thereon, and the ends of the rod are passed through openings in the bracket 1 at the side thereof opposite the rod 5. At the inner side of the bracket shoulders 14 are made in the rod and the outer ends thereof 15 are bent down over the face of the bracket, as indicated, so that the rod is thereby retained in position in the bracket. The parallel guide portions of the rod are so arranged as to be slightly above the

upper side of the tape 10 and the inner ends of said portions are slightly upturned at the bend 13, so that the rod forms a guide to prevent upward buckling of the paper which is carried by the tape into engagement with the gage plate 11. The gage plate is adjustable longitudinally of the guide rod by means of the screw 16 which is threaded through the bracket 1, connected at the inner end to the gage plate, and carries at the outer end a small hand wheel 17 by which the screw may be turned. Since the bracket 1 carries both the tape pulley and gage plate, transverse adjustment of both, without changing the relative positions thereof, may be made by loosening the bolt 4, moving the bracket to the desired position, and then tightening the bolt.

It will be apparent that by the use of the device described, all the tapes of a folding machine may be adjusted to and automatically preserved at a substantially uniform tension, the gages for limiting the movement of the paper be positioned adjacent to the tapes, and the transverse positions of the tape pulleys and the paper gages adjusted simultaneously without changing the relative positions of tape and gage. It will also be noted that by the means employed for supporting the gage plate the said support also forms an upper guide for the paper.

Now, having described my invention, what I claim and desire to secure by Letters Patent is:

1. In a paper folding machine having carrier belts, a gage plate arranged adjacent to one of said belts, a rod bent to form portions parallel to each other, the plate being slidably supported upon said rod portions, a bracket supporting said rod portions so that the same are substantially parallel to the belt and are adapted to serve as a guide for paper carried by the belt, and means for adjusting the plate longitudinally of the parallel rod portions.

2. In a paper folding machine having carrier belts, a gage plate arranged adjacent to one of said belts, a rod bent to form portions parallel to each other, the plate being slidably supported upon said rod portions, a bracket supporting said rod portions so that the same are substantially parallel to the belt and are adapted to serve as a guide for paper carried by the belt, means for adjusting the position of the plate longitudinally of the parallel rod portions, and means for adjusting the bracket transversely thereto.

3. In a paper folding machine having carrier belts, a pulley engaging but one of said belts, a gage plate positioned adjacent to said belt, supporting means for said pulley adapted for movement longitudinally of the belt, means supporting the gage plate and extending substantially parallel to the belt, means for adjusting the position of the plate longitudinally of said supporting means, a bracket carrying said means for supporting the pulley and for supporting the gage plate, and means for adjusting the position of the bracket transversely of the belt.

In testimony whereof I have hereunto subscribed my name in the presence of two witnesses.

CLARK A. SIGAFOOS.

Witnesses:
D. O. BARNELL,
ROY G. KRATZ.