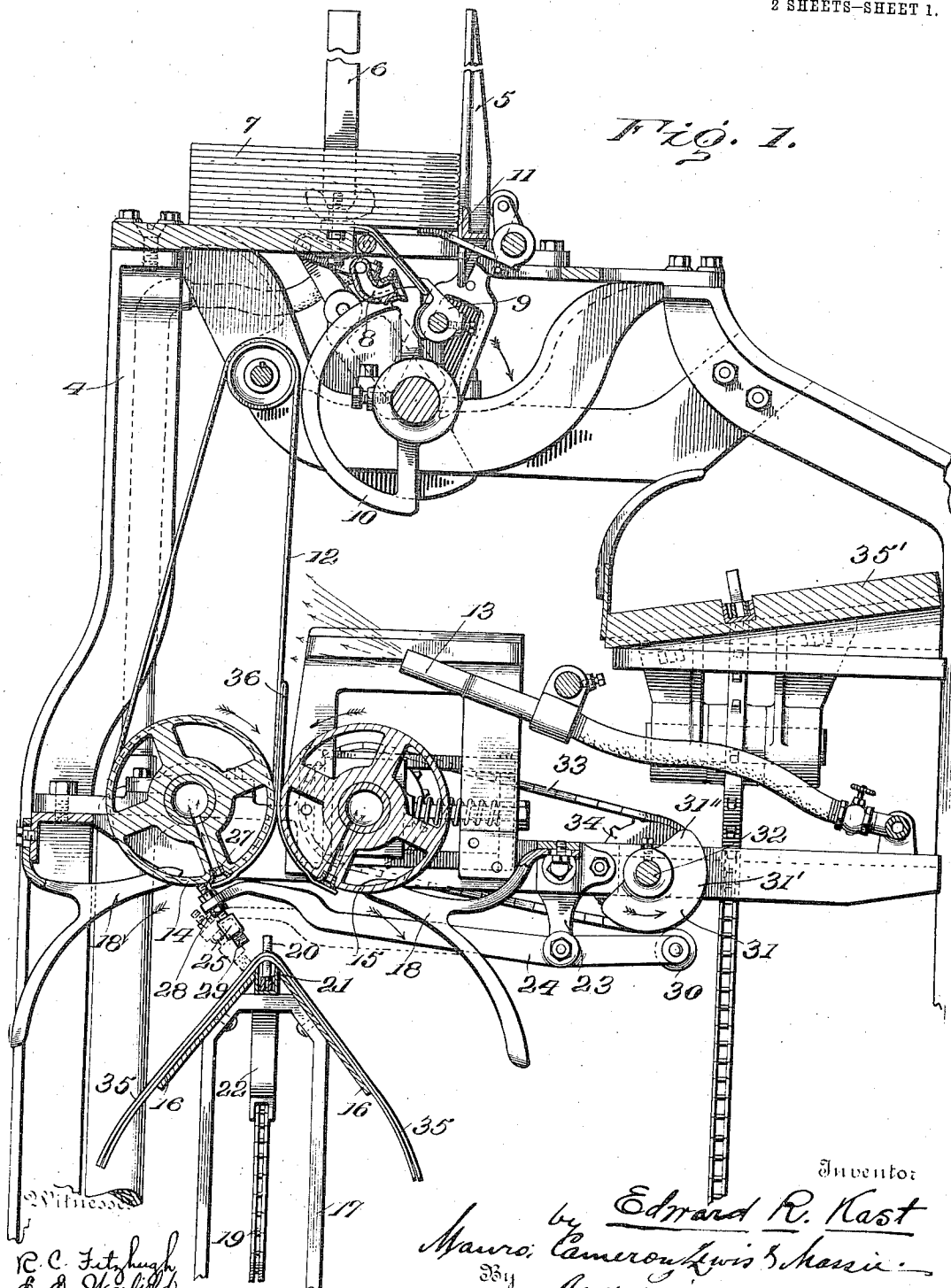


E. R. KAST.
 ALINING DEVICE FOR SIGNATURE GATHERING MACHINES.
 APPLICATION FILED DEC. 7, 1910.

1,030,891.

Patented July 2, 1912.

2 SHEETS—SHEET 1.



Witneses
 R. C. Fitzhugh
 & C. Hayfield

Inventor
 by Edward R. Kast
 Mauro, Cameron, Lewis & Kassie
 Attorneys

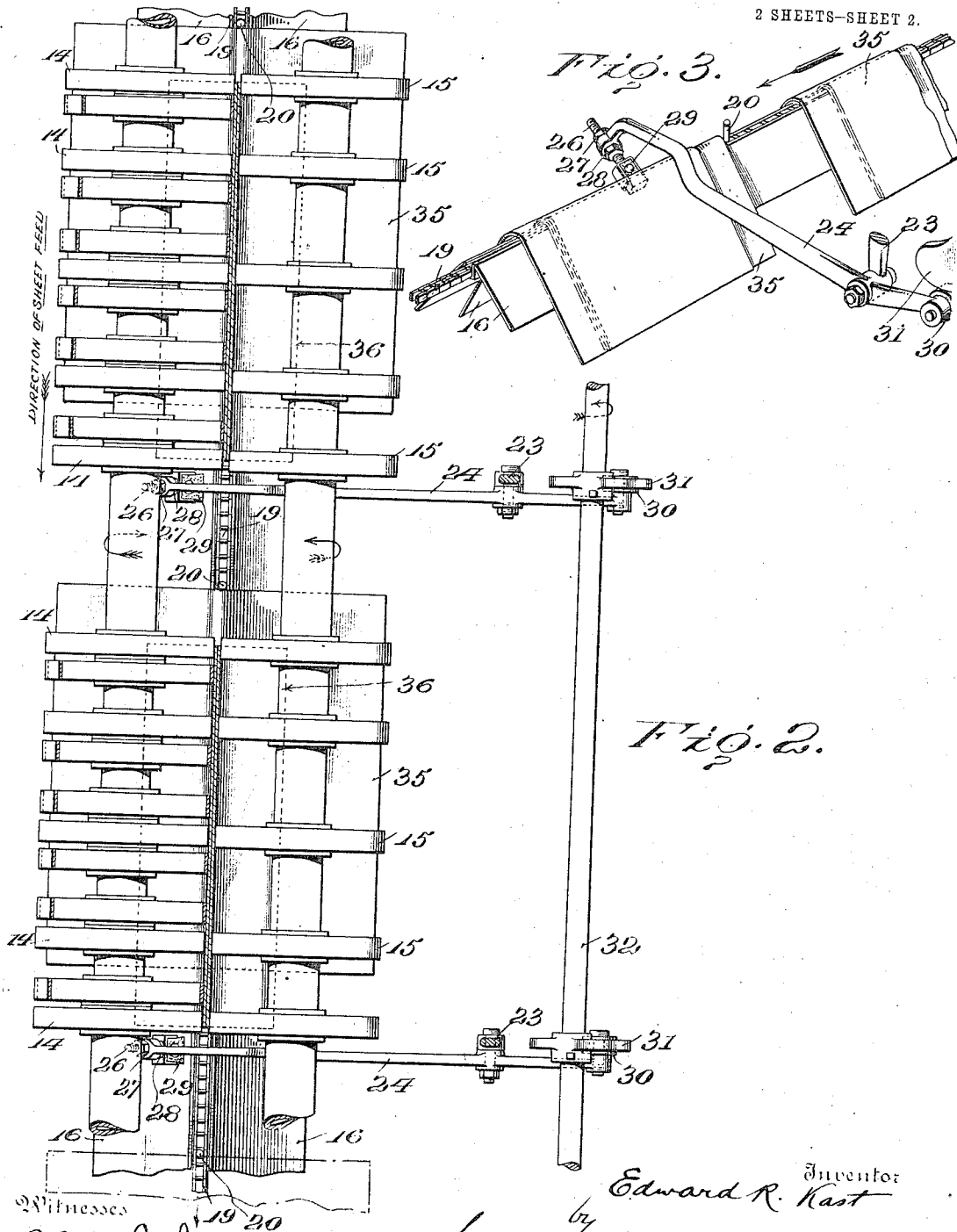
Attorneys

E. R. KAST.
 ALINING DEVICE FOR SIGNATURE GATHERING MACHINES.
 APPLICATION FILED DEC. 7, 1910.

1,030,891.

Patented July 2, 1912.

2 SHEETS—SHEET 2.



Witnesses
 R. C. Fitzhugh
 & E. Warfield

Inventor
 Edward R. Kast
 by
 Mauro. Cameron Lewis & Harris
 Ruel Lewis
 Attorneys

UNITED STATES PATENT OFFICE.

EDWARD R. KAST, OF BALTIMORE, MARYLAND.

ALINING DEVICE FOR SIGNATURE-GATHERING MACHINES.

1,030,891.

Specification of Letters Patent.

Patented July 2, 1912.

Application filed December 7, 1910. Serial No. 596,013.

To all whom it may concern:

Be it known that I, EDWARD R. KAST, of Baltimore, Maryland, have invented a new and useful Improvement in Alining Devices for Signature-Gathering Machines, which invention is fully set forth in the following specification.

This invention relates to the art of assembling printing sheets or "signatures" in the order desired for binding. In this art the act of assembling "signatures" one within the other is technically known as "insetting" and if the signatures are assembled one on top of the other the act will be herein referred to as "piling".

The present invention is a mechanism for alining the signatures one upon the other whether the same are deposited on the "piling" table or on the "insetting" saddle or table, and is adapted to be employed in connection with any suitable gathering machine. It is herein shown as associated with the gathering machine of the kind disclosed in my application Serial No. 508,160, filed July 17, 1909. In machines of the character described, a plurality of hoppers are provided from which the signatures are fed onto either the "piling" table or the "insetting" saddle or table; and it is desirable that the signatures should be accurately alined one upon the other in being conveyed along the saddle or table from one hopper to the next; and that, when the assembled signatures are delivered from the insetting or piling table, they shall be accurately placed one upon the other and in condition to be acted upon by a stitching machine, or delivered to a suitable off-bearing carrier without further attention or labor on the part of an attendant.

The invention will be better understood by reference to the accompanying drawings, showing one expression of the inventive idea, and in which—

Figure 1 is a vertical sectional view, partly in elevation, showing my alining attachment in place on a signature gatherer; Fig. 2 is a plan view, partly in section, showing my improved device in position; and Fig. 3 is a perspective view showing my alining device, and the insetting saddle and signatures carried thereby.

Referring to the drawings, 4 indicates the framework of the machine, 5 indicates one of the front members and 6 one of the side members of one of the hoppers which

are mounted on the machine, and which contain a supply of signatures 7. The end piece of a suction device is indicated by 8, and 9 indicates one of a series of clamping fingers and 10 one of a series of semi-cylindrical surfaces which form part of the clamping and withdrawing mechanism for removing the signatures from the hoppers.

11 indicates a supporting finger which sustains the pile of signatures after the end of the lowermost one has reached the position indicated in Fig. 1. The sheets in passing from the hopper to the insetting table are held against a plurality of belts 12, as by the air blast from a suitable nozzle 13, and these belts pass around suction rolls 14. Similar suction rolls 15 are associated with said suction rolls 14, and these rolls act to open the folded signature as it is fed between said rolls by the belt 12, so that it is in proper position to be deposited on the insetting saddle or table 16. This table is composed of two surfaces inclined upward and inward toward each other and is supported on a suitable part of the frame-work 17. When the signatures are stripped from the rollers 14 and 15 by the fingers 18 and delivered to the insetting table 16, they are advanced along said table by an endless carrier 19 having lugs 20, the chain moving in a depressed slot 21 in the top of the table. The endless carrier chain 19 for the insetting table passes over suitably curved guides 22 at the ends of the saddle or insetting table, and is driven by any suitable means.

The mechanism above set forth may be and preferably is similar to that described and claimed in my application Serial No. 508,160, filed July 17, 1909.

When the signatures are delivered from the several hoppers to the gathering table, they frequently are not perfectly alined with the signatures on which they are deposited, and it is desirable that the alinement be automatically effected by the machine. The alining means hereinafter described are preferably duplicated under each of the hoppers provided on the machine and accordingly only one need be described. Pivoted in a bracket 23 suitably mounted on the frame of the machine is a lever 24, one end of which carries a socket 25 having a screw-threaded stem 26, which stem is adjustable in the end of said arm 24 by means of nuts 27 and 28. A pad of suitable material 29, preferably rubber, is secured in said socket

25 in any suitable or desired manner. The other end of said lever 24 carries a roller 30 which is engaged by a cam 31 mounted on a shaft 32 driven by means of a belt 33 and sprocket 34 from any suitable source of power. The shaft extends throughout the length of the machine, and is preferably mounted in any suitable manner in the side frame thereof.

10 The roller 30 on the short arm of the lever 24 is kept in constant engagement with the cam 31 by reason of the fact that said short arm is overbalanced by the weight of the long arm of said lever, and when the roller 30 is in engagement with the curved surface 31', which is concentric with the axis of said cam, the rubber pad carried in the socket 25 is maintained in the raised position indicated in Fig. 1; and when the cut-away surface portion 31'' is in engagement with the roller 30, the rubber pad in the socket 25 is permitted to descend lightly upon the upper surface of the last signature deposited upon the table. As the signatures 25 beneath it are advanced by the action of the lug 20 on the chain 19, the uppermost or last signature deposited is prevented from moving forward until it in turn is also engaged by the lug 20, when all of the signatures will be thus brought in actual alignment and accurately piled one immediately upon the other. When this engagement of the lug 20 with the topmost signature takes place, the pile is moved along the table, notwithstanding the frictional contact of pad 29 with the topmost signature. Immediately following the contacting of lug 20 with the edge of the last deposited signature, however, the concentric surface 31' of cam 31 rocks said lever 24 removing pad 29 from contact with said signature, and the signature feeding means move the pile forward and bring the next pile of signatures on the table under the succeeding hopper.

45 A new signature is then deposited on the pile, when the operation described is repeated.

It will therefore be understood that immediately after a signature is deposited on the table from each of the hoppers, the whole series of levers 24 is operated, as indicated, to engage pads 29 with the signatures just deposited; and that, immediately after the lugs 20 have contacted with the edge of said last deposited signatures and alined the same with others of their respective piles, the pads 29 are raised from said signatures.

In Figs. 1 and 2, 35 illustrates signatures that have been deposited on the table and

are being carried along the same by reason of the engagement of lugs 20; and 36 indicate signatures (shown in section and dotted lines in Fig. 2) being fed through suction rollers 14 and 15, one of said signatures being shown in full lines in Fig. 1.

While the alining mechanism herein described is illustrated as associated only with the inseting saddle or table 16, it will be readily understood that the same is adapted for use with the gathering table 35', which table is fully shown and described in my application Serial No. 508,160, filed July 17, 1909.

What is claimed is:—

1. A signature gatherer having in combination a signature-receiving table, means depositing the signatures one by one in piles on said table, signature advancing means for advancing the piles of signatures along said table, a pivoted lever, a pad carried by one end thereof movable into engagement with a signature to restrain the same from movement until engaged by said advancing means and then movable out of engagement therewith and means controlling the movement of said pad through said lever.

2. A signature-gatherer having in combination a signature-receiving table, means depositing the signatures one by one in piles on said table, signature-advancing means for advancing the piles of signatures along said table, and a cam-operated lever one end of which is provided with friction means to move into contact with each signature as deposited and restrain the same from movement until engaged by said advancing means.

3. A signature gatherer having in combination a signature-receiving table, means depositing the signatures one by one in piles on said table, signature-advancing means for advancing the piles of signatures along said table and a pivoted lever one arm of which overbalances the other arm thereof, friction means carried by the heavier arm of said lever adapted to engage with each signature as deposited and restrain the same from movement until engaged by said advancing means, and a cam intermittently acting on the lighter arm of said lever to move said friction means out of engagement with the signature.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

EDWARD R. KAST.

Witnesses:

JOHN W. HEWES,
M. E. WILLENER.