J. A. ENGEL.

STACKING MECHANISM FOR PRINTING PRESSES AND LIKE MACHINES.

APPLICATION FILED AUG. 5, 1912.

1,067,475.

Patented July 15, 1913.

2 SHEETS—SHEET 1.

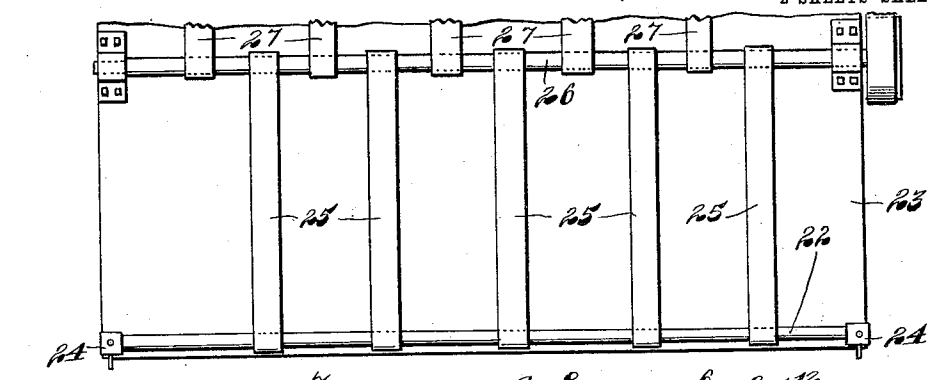


Fig. 1.

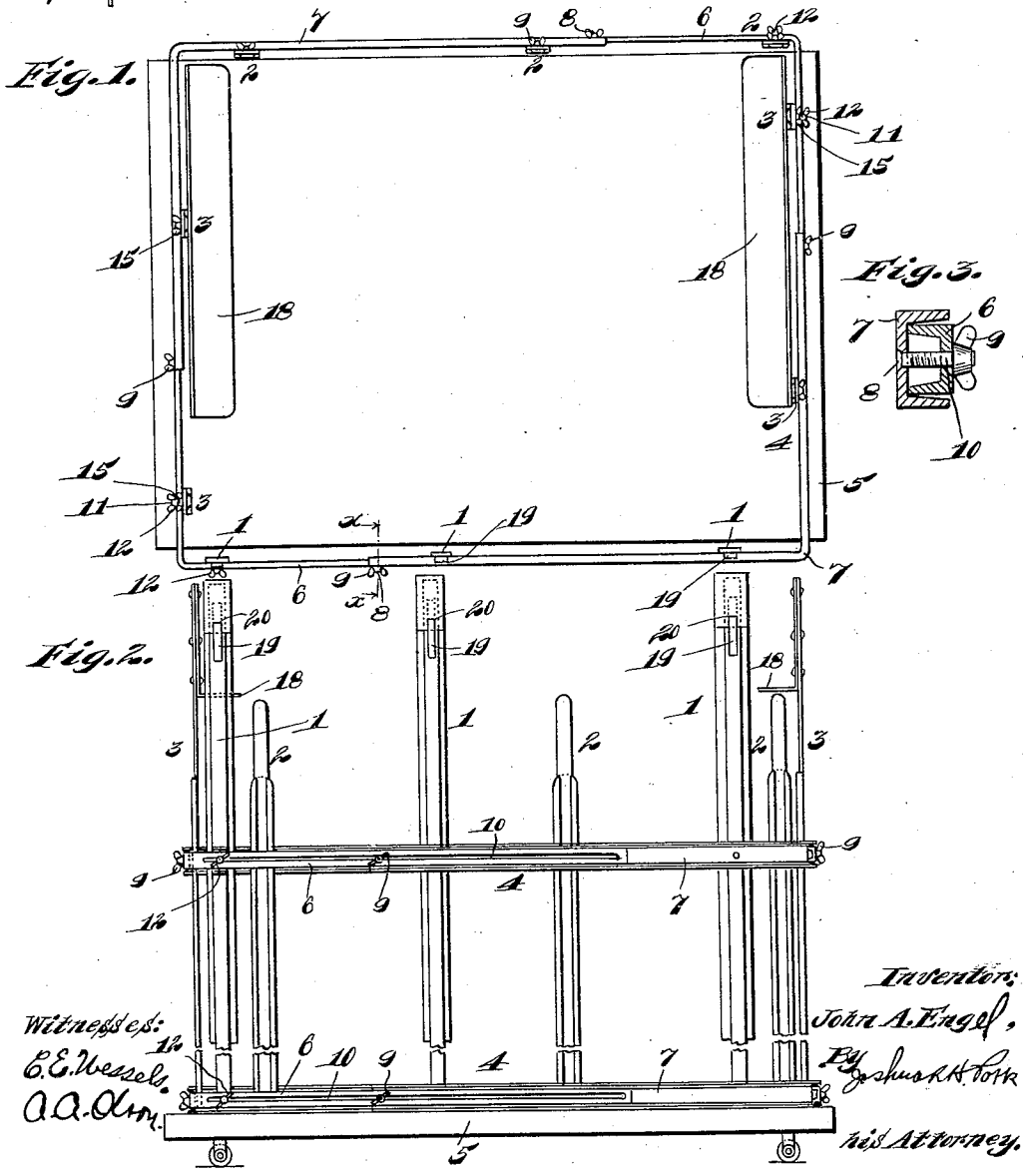


Fig. 2.

Fig. 3.

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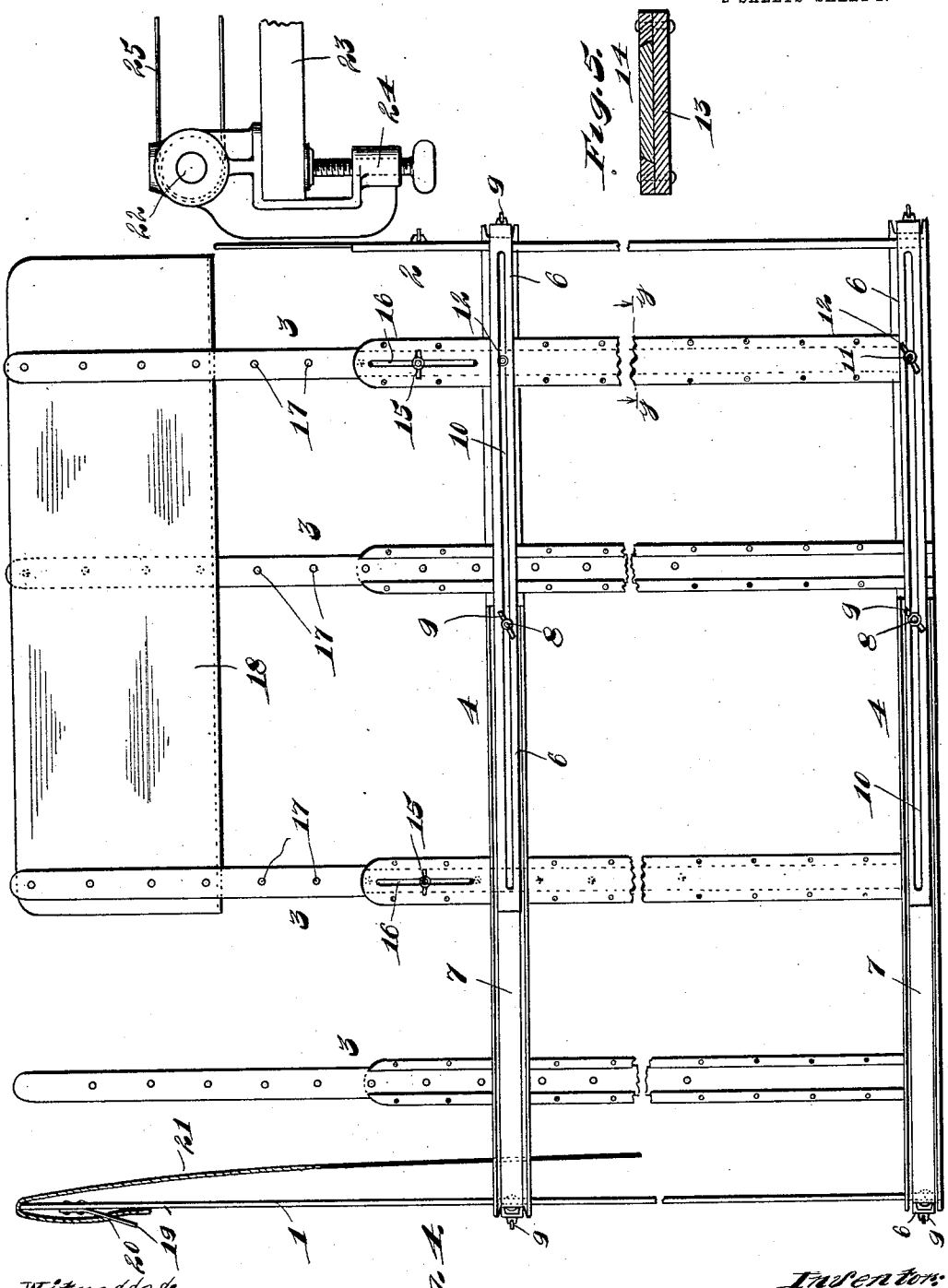


Fig. 4.

Fig. 5.

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UNITED STATES PATENT OFFICE.

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STACKING MECHANISM FOR PRINTING-PRESSES AND LIKE MACHINES.

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Application filed August 5, 1912. Serial No. 713,383.

To all whom it may concern:

Be it known that I, JOHN A. ENGEL, a citizen of the United States, and a resident of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Stacking Mechanism for Printing-Presses and Like Machines, of which the following is a specification.

My invention relates to stacking mechanism and more particularly to improvements in a stacker adapted for use in conjunction with printing presses and like machines, adapted to receive the sheets or cards discharged from the printing press or other machine and stack the same automatically in vertical alinement upon a truck or other support therefor.

The object of my invention is the production of a stacker of the character mentioned which will be durable and economical in construction, one which will be of an adjustable nature so as to adapt the same for use in conjunction with sheets or cards of various sizes, and one which will be efficient in operation.

Other objects will appear hereinafter.

The invention consists in the combinations and arrangements of parts hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings forming a part of this specification, and in which,

Figure 1 is a top plan view of a stacker embodying my invention, the same being shown arranged in proximity with the discharge end of a printing press, Fig. 2 is a rear elevation of the stacker, Fig. 3 is an enlarged detail section taken on substantially line *x*—*x* of Fig. 1, Fig. 4 is a side elevation of the stacker, showing the same arranged in operative proximity with the discharge end of the printing press, and Fig. 5 is an enlarged detail section taken on line *y*—*y* of Fig. 4.

The preferred form of construction, as illustrated in the drawings comprises a frame substantially rectangular in form consisting of a plurality of upright bars 1, 2 and 3, the bars 1 being arranged at the rear side of the device, the bars 2 at the front side of the device, and the bars 3 at the sides of the frame. Said bars are held in upright position by means of circumferentially extending horizontally disposed frame members or bands 4. In use the frame thus formed is mounted upon the usual truck 5 or other support upon which it is desired to stack the sheets or cards as the same are discharged from the machine in conjunction with which the stacker is employed. Each of the bands 4 consists of angular members 6 and 7 which are of channel construction, as shown in Fig. 3, the adjacent ends of said members 6 and 7 overlapping and slidably engaging each other, as shown in said figure, so as to permit of sliding adjustment thereof to adjust the device, accommodating sheets or cards of various dimensions, as will be readily understood. The members 6 and 7 are secured together in positions of adjustment by means of screws 8 and thumb nuts 9, the rearward ends of said screws being secured in member 7, the same passing through elongated slots 10 provided in member 6, as clearly shown in Fig. 3, and so that by tightening or loosening nuts 9, said members 6 and 7 may be locked or released, as desired. The upright bars engaging against the members 7 are rigidly secured to the latter as by riveting. The upright members engaging against the members 6 are adjustably secured to the latter by means of screws 11 which engage the slots 10 provided in said members 6, thumb nuts 12 threaded upon said screws, as a means of fastening said upright members securely in position. With this arrangement it will be seen that the last mentioned upright members may be adjusted horizontally relative to the members 6 in order to properly position the same for engagement with the sheets or cards delivered to the device, this provision being made in order to adapt the stacker to better accommodate sheets or cards of various dimensions.

Each of the upright members 2 and 3 is of a vertically adjustable construction, the same being formed of a lower section 13 of channel construction, as shown in Fig. 5 and an upper section 14 which is dove-tailed in the section 13 and adapted for vertical sliding therein. The member 14 is locked in its positions of adjustment by means of a thumb screw 15 which engages an elongated slot 16 provided in the section 13, the inner end of said screw being adapted to engage any one of a plurality of threaded openings 17 which are spaced along each of the sec-

tions 14 as clearly shown in Fig. 4. Secured to the upper ends of sections 14 of the uprights 3 at the front end of the stacker are inwardly extending flanges 18 which are adapted to contact with the lateral edges of the sheets deposited into the stacker, said flanges being provided in order to deflect the downwardly perforated lower edge of the sheet so as to position the latter horizontally before the same descends in the stacker between the upright members which serve as guides. The flanges 18 serve simply to momentarily support the sheet, the latter buckling in the center by its own weight in order to pass said flanges under the rearward edge of the sheet as lowered to position the latter in a horizontal plane.

The upright members 1 are provided at their upper ends with clips 19 adapted for engagement with slots 20 in paper or cardboard strips 21, the latter being adapted to extend over the upper ends of the members 1, the free ends thereof descending into the stacker, as clearly shown in Fig. 4, projecting or bellying into the stacker in order to serve as a cushion for the forward edge of the sheets as the same are deposited into the stacker. Said strips 21 will serve to absorb the shock which otherwise would be incidental to the contact thereof with the members 1 and thus serve to prevent injury to the sheet.

The stacker is designed for use especially in conjunction with a printing press, the discharge end of a conventional printing press being illustrated in the drawing. In using the device in this connection a supplemental roller 22 is employed which is mounted at the discharge end of the bed 23 of the printing press, said roller being mounted upon said bed by means of bearings 24 adapted to be clamped over the edge of said bed, as clearly shown in Fig. 4. Supplemental belts 25 are also employed which travel around the roller 22, said belts travel also around the usual roller 26 of the printing press around which travel the usual delivery belts 27 thereof. The belts 25 serve simply as a means of conveying the sheets from the belts 27 which at the present time carry the sheet, after printing, toward the discharge end of the press, the former thus completing the conveyance of the sheet to the edge of the machine. The stacker is arranged adjacent the outer ends of belts 25, as clearly shown in Figs. 1 and 4 so that the sheets as the same are discharged from said belts will be deposited into the upper end of the stacker between the upright members 1 and 3 in conjunction with the flanges 18. The sheets after being deflected to horizontal position by said flanges will drop by gravity downward between the bars 1, 2 and 3 which will serve to stack the same in vertical alinement upon the track 5 or other support upon which the stacker is arranged. After the stack of sheets has been completed, the device may be readily and easily removed from the support or from engagement with the stack and arranged for use immediately upon another truck or support. By reason of the adjustable nature of the device, the same may be arranged to accommodate sheets of various dimensions and by reason of the simplicity of the construction the device is not susceptible to readily becoming inoperative.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having described my invention what I claim as new and desire to secure by Letters Patent is:

1. A stacker of the class described comprising a plurality of spaced vertically extending front, rear and side bars, having lower channel members and upper adjustable members dovetailed therein, and circumferentially extending angle-shaped members adapted for slidable engagement with each other and connected with said vertically extending bars, and cushion means provided at the inner sides of said rear bar at the upper ends thereof, substantially as described.

2. A stacker of the class described comprising a plurality of spaced vertically extending front, rear and side bars, having upper and lower interengaging adjustable members and circumferentially extending angular adjustable members connected with said vertically extending bars, and inwardly extending flanges secured to the upper members of said rear bars, substantially as described.

3. A stacker of the class described comprising a plurality of spaced vertically extending front, rear and side bars, having lower channel members and upper adjustable members dovetailed therein and circumferentially extending members angle-shaped in cross section, adapted for slidable engagement with each other and connected with the vertically extending bars, and elongated flexible strips provided at the inner sides of said rear bars, the upper ends of said strips being connected with the corresponding ends of said rear bars, so that the lower end portions thereof belly inwardly, substantially as described.

4. A stacker adapted for attachment to a truck and comprising a plurality of spaced vertically extending front, rear and side bars,

having upper and lower interengaging adjustable members, and circumferentially extending angular adjustable members connected with the vertically extending bars and having inwardly extending flanges secured to the upper members of said rear bars, substantially as described.

5. A stacker adapted for horizontal and vertical adjustment on a truck and comprising a plurality of spaced vertically extending front, rear and side bars, having lower channel members and upper adjustable members dovetailed therein, and circumferentially extending members angle-shaped in cross section, adapted for slidable engagement with each other and connected with the vertically extending bars, and elongated flexible strips provided at the inner sides of said rear bars, the upper ends of said strips being connected with the corresponding ends of said rear bars, so that the lower end portions thereof belly inwardly, substantially as described.

6. The combination with a truck, of a stacker comprising a plurality of spaced vertically extending front, rear and side bars, having upper and lower interengaging adjustable members connected with the vertically extending bars, and circumferentially extending angular adjustable members, and inwardly extending flanges secured to the upper members of said rear bars, substantially as described.

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

JOHN A. ENGEL.

Witnesses:

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B. G. RICHARDS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."