C. HENDERSON AND B. D. STEVENS.

GRIPPER PAD ADJUSTMENT.

APPLICATION FILED MAY 4, 1917.

1,303,793.

Patented May 13, 1919.

2 SHEETS—SHEET 1.

Fig. 1

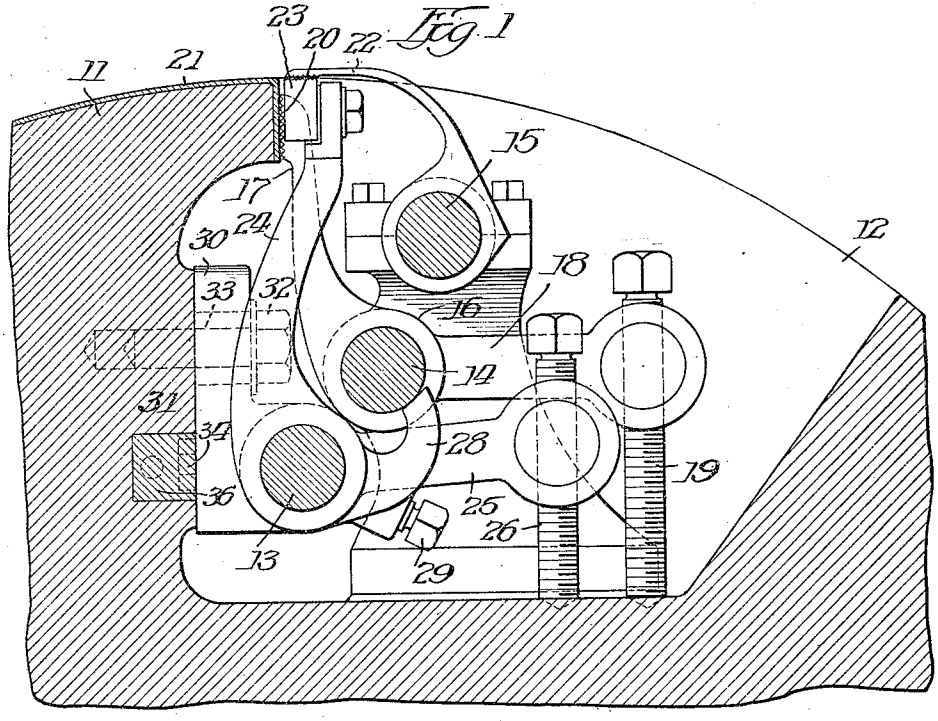


Fig. 2.

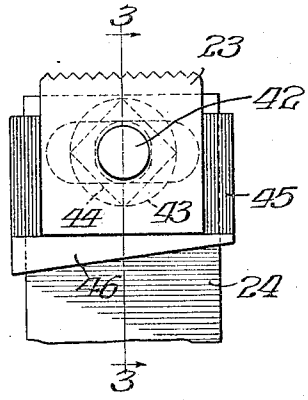
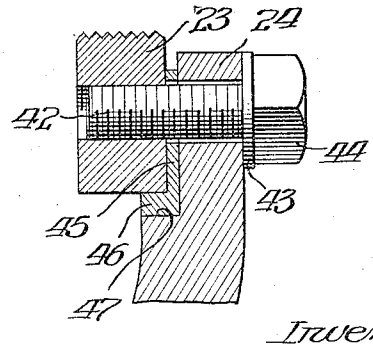


Fig. 3.



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2 SHEETS—SHEET 2.

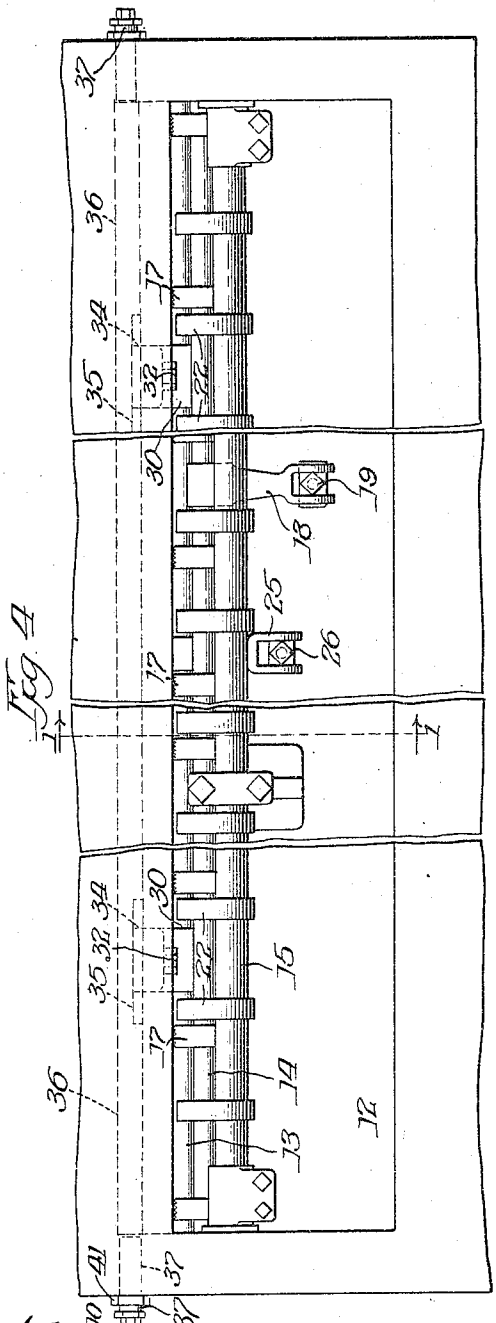


Fig. 4

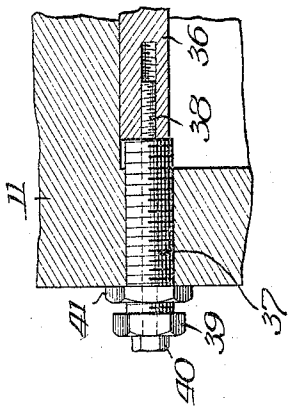


Fig. 6

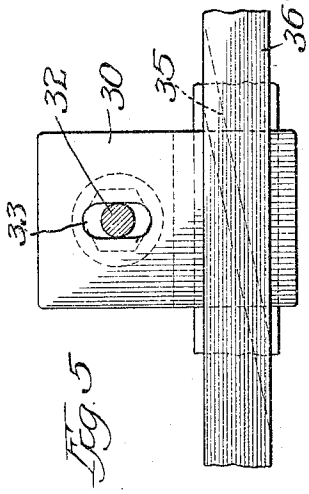


Fig. 5

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UNITED STATES PATENT OFFICE.

CARL HENDERSON, OF OAK PARK, AND BURT D. STEVENS, OF EVANSTON, ILLINOIS, ASSIGNORS TO MIEHLE PRINTING PRESS & MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

GRIPPER-PAD ADJUSTMENT.

1,303,793. Specification of Letters Patent. Patented May 13, 1919.

Application filed May 4, 1917. Serial No. 166,294.

To all whom it may concern:

Be it known that we, CARL HENDERSON and BURT D. STEVENS, citizens of the United States, residing at Oak Park and Evanston respectively, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Gripper-Pad Adjustments, of which the following is a specification.

The object of the invention is the provision of improved means for leveling and clamping in position the gripper pads of a printing press, said means comprising a series of local elevating and clamping devices arranged at intervals longitudinally of the cylinder and a further device acting upon the local devices in unison whereby to simultaneously and uniformly raise or lower the gripper pads throughout the length of the cylinder in order to adapt them to varying thicknesses of paper.

In order that the invention may be readily understood a preferred embodiment of the same is set forth in the accompanying drawings and in the description based thereon. As, however, the invention is susceptible of embodiment in other and varied constructional forms without departure from the essence of the invention, the drawings and description are to be taken in an illustrative and not in an unnecessarily limiting sense.

In the drawings—

Figure 1 is a transverse sectional view on the line 1—1 of Fig. 4 showing in side elevation the arrangement of the grippers, gripper pads and the blanket clamping device;

Fig. 2 is a detail front elevation of the gripper pads;

Fig. 3 is a vertical section through the gripper pad on the line 3—3 of Fig. 2;

Fig. 4 is a top plan view of the part shown in Fig. 1;

Fig. 5 is a fragmentary rear elevational view of the connection between the shifting bar and the gripper pad; and

Fig. 6 is a fragmentary section through the end of the adjusting bar showing the means whereby the adjustment is secured.

In the drawings the cylinder is indicated at 11, mounted in the usual manner in the side frame of the press and cut away at 12 to provide for the mounting of the various devices by means of which the blanket or plate is clamped in position and the gripper pads are held in proper adjustable position for coöperation with the grippers themselves.

Between the end walls of the cut away portion 12 of the cylinder extend three shafts numbered consecutively 13, 14 and 15. The shaft 14 has mounted thereon by means of bosses 16, arms 17 and also an arm 18 the extremity of which latter is provided with the adjusting screw 19 while the extremity of the arm 17 carries the clamp 20 by means of which the blanket or plate 21 is firmly clamped in position upon the cylinder. The shaft 15 carries the grippers 22 arranged to be operated in the usual manner and to coöperate with the gripper pads 23 to clamp therebetween the sheet of paper which is being acted upon by the press.

It is important that the upper roughened face of the gripper pads 23 shall bear an exact relation to the upper surface of the plate or blanket 21 and that they shall be uniform as to such relation. It is also important that provision be made for adjusting the elevation of the gripper pads not only individually but also collectively in order to accord with changing conditions of use. This invention, therefore, has to do with the provision of means for individually and collectively adjusting the gripper pads.

Upon the shaft 13 are mounted arms 24 upon the extremity of which the gripper pads 23 are carried, and also another arm 25, the extremity of which is provided with the adjusting screw 26. Between the arms 24 and upon the shaft 13 is mounted a tail piece 28 arranged to be clamped to said shaft by means of the set screw 29, the end of the tail piece 28 bearing upon the shaft 14 as clearly shown in Fig. 1. The shaft 13 is mounted in two or more bearing brackets 30 which are clamped to the rear wall 31 of the cylinder cut away portion 12 by means of the bolts 32 extending through

elongated slots 33 of said brackets. These brackets 30 are also provided on their rear faces with obliquely arranged lugs or ribs 34 which are received within oblique grooves 35 formed in the outer face of the adjusting bar 36 which is seated within a recess in the back wall 31 as clearly shown in Fig. 1. In the cylinder 11 and projecting beyond the end walls thereof are mounted adjusting set screws 37, 37, having threaded engagement with the cylinder and bearing at their inner ends upon the ends of the adjusting rod or bar 36. These adjusting set screws 37 are interiorly threaded for the reception of screws 38 which likewise enter into threaded engagement with the ends of the adjusting bar 36 as clearly shown in Fig. 6. Both the screws 37 and 38 are provided with squared ends or heads 39 and 40 by means of which they may be turned while the screw 37 is likewise provided with a lock nut 41. It will be readily understood that by loosening the lock nut 41 and rotating the screw 37 by means of its head 39 the adjusting bar 36 can be adjusted longitudinally within the wall 31 of the cylinder recess and the set screws 29 and 32 having been loosened such longitudinal movement of the adjusting bar will cause the brackets 30 and with them the shaft 13 to be adjusted vertically by the coöperation of the oblique rib 34 within the oblique recess 35 of the adjusting bar.

The gripper pad 23 is mounted upon the upper extremity of the arm 24 by means of a set screw 42 threaded therein and passing loosely through the upper extremity of said arm 24 and provided with a washer 43 and a squared head 44. Between the gripper pad 23 and the upper end of the arm 24 is disposed a plate 45 having a lower wedge flange 46 disposed between the gripper pad and a shoulder 47 of the arm 24. This wedge plate 45 is slotted to embrace the set screw 42.

The operation of the device is as follows: The set screw 44 having been loosened the position of the wedge plate 45 with reference to the gripper pads and arm 24 is adjusted by tapping upon the left hand end of the same (Fig. 2) so as to raise or lower the gripper pad 23 in its relation to the arm 24. Such adjustment of the individual gripper pad having been secured the screw 42 is tightened so as to hold the pad and arm in adjusted relation. The same procedure is followed with reference to all of the gripper pads so as to bring the same to a common level. The several gripper pads having been leveled they are simultaneously and uniformly raised and lowered by the operation of the set screw 37, previously described, whereby the adjusting bar 36 is shifted longitudinally and the shaft 13 with the arms 24 and their several parts simultaneously raised or lowered as the case may be to a uniform extent.

We claim:

1. The combination with a printing press cylinder, the grippers, the gripper pads, and pad supports, of means to adjustably position the gripper pads radially of the cylinder, said means comprising a radially acting member bearing on the pad and also upon its support, and means to clamp the pad and support together in adjusted position.

2. The combination with a printing press cylinder, the grippers, the gripper pads, and pad supports, of means to adjustably position the gripper pads radially of the cylinder, said means comprising a transversely movable wedge member bearing on the pad and a portion of the support, and means to clamp the pad and support together in adjusted position.

3. The combination with a printing press cylinder, the grippers, the gripper pads, and pad supports, of means to adjustably position the gripper pads radially of the cylinder, said means comprising a transversely movable wedge member bearing on the pad and a portion of the support, and means to clamp the pad and support together in adjusted position, said clamping means comprising a set screw passing loosely through the wedge member and support and threaded into the pad.

4. The combination with a printing press cylinder, and the grippers, of a shaft, arms projecting from said shaft, a gripper pad carried by each of said arms, and means to adjustably position the pads on said arms radially of the cylinder, said means comprising a radially acting member bearing on the pad and a portion of the arm, and means to clamp the pad and arm together in adjusted position.

5. The combination with a printing press cylinder, and the grippers, of a shaft, arms projecting from said shaft, a gripper pad carried by each of said arms, and means to adjustably position the pads on said arms radially of the cylinder, said means comprising a transversely movable wedge member bearing on the pad and a portion of the arm, and means to clamp the pad and arm together in adjusted position.

6. The combination with a printing press cylinder, and the grippers, of a shaft, arms projecting from said shaft, a gripper carried by each of said arms, and means to adjustably position the pads on said arms radially of the cylinder, said means comprising a transversely movable wedge member bearing on the pad and a portion of the arm, and means to clamp the pad and arm together in adjusted position, said clamping means comprising a set screw passing loosely

through the wedge member and arm and threaded into the pad.

7. The combination with a printing press cylinder, the grippers, the gripper pads, and pad supports, of means to individually adjust the position of the gripper pads with reference to their supports radially of the cylinder, and means to collectively adjust the gripper pad supports.

8. The combination with a printing press cylinder, and the grippers, of a shaft, arms projecting from said shaft, a gripper pad carried by each of said arms, and means to individually adjust the position of the pads on said arms radially of the cylinder, and means to collectively adjust the position of the arms.

9. The combination with a printing press cylinder, and the grippers, of a shaft, arms projecting from said shaft, a gripper pad carried by each of said arms, and means to adjustably position the pads on said arms radially of the cylinder, and means to adjustably position the shaft with the arms and pads bodily in a radial direction.

10. The combination with a printing press cylinder, and the grippers, of a shaft, arms projecting from said shaft, a gripper pad carried by each of said arms, and means to adjustably position the pads on said arms radially of the cylinder, said means comprising a transversely movable wedge member bearing on the pads and a portion of the arm, and means to clamp the pad and arm together in adjusted position, said clamping means comprising a set screw passing loosely through the wedge member and arm and threaded into the pad, and means to adjustably position the shaft with the arms and pads bodily in a radial direction whereby to simultaneously and collectively position all of the gripper pads.

11. The combination with a printing press cylinder, and the grippers, a shaft having arms, gripper pads carried by the arms, and means to adjust the position of the pads individually in a direction radial of the cylinder, of means to radially adjust the pads collectively comprising shaft-bearing brackets, means to permit of movement of the brackets on their supports transversely of the shaft, an adjusting bar shiftable parallel to the shaft, means to shift the bar longitudinally, and a connection between the bar and bracket whereby to translate the longitudinal movement of the bar into a transverse movement of the bracket, and means to clamp the bracket in adjusted position.

12. The combination with a printing press cylinder, and the grippers, a shaft having arms, gripper pads carried by the arms, and means to adjust the position of the pads individually in a direction radially of the cylinder, of means to radially adjust the pads collectively comprising shaft-bearing brackets, means to permit of movement of the brackets on their supports transversely of the shaft, an adjusting bar shiftable parallel to the shaft, an oblique pin and slot connection between the bracket and bar, means to shift the bar, and means to clamp the bracket in adjusted position.

13. The combination with a printing press cylinder, and the grippers, a shaft having arms, gripper pads carried by the arms, and means to adjust the position of the pads individually in a direction radial of the cylinder, of means to radially adjust the pads collectively comprising shaft-bearing brackets, means to permit of movement of the brackets on their supports transversely of the shaft, an adjusting bar shiftable parallel to the shaft, an oblique pin and slot connection between the bracket and bar, means to shift the bar comprising an adjusting set screw threaded into the cylinder and connected to the bar, and means to clamp the bracket in adjusted position.

14. The combination with a printing press cylinder, and the grippers, a shaft having arms, gripper pads carried by the arms, and means to adjust the position of the pads individually in a direction radial of the cylinder, of means to radially adjust the pads collectively comprising shaft bearing brackets, means to permit of movement of the brackets on their supports transversely of the shaft, an adjusting bar shiftable parallel to the shaft, an oblique pin and slot connection between the bracket and bar, means to shift the bar comprising an adjusting set screw threaded into the cylinder and connected to the bar, and means to clamp the bracket in adjusted position, said means comprising a set screw passing through the bracket and threaded into the cylinder.

15. The combination with a printing press cylinder, a shaft mounted for bodily movement radially of the cylinder in a peripheral recess thereof and having arms, gripper pads carried by the arms, and means to adjust the position of the pads individually in a direction radially of the cylinder, of means to radially adjust the pads collectively comprising shaft-bearing brackets, means to permit of movement of the brackets on their support transversely of the shaft, an adjusting bar shiftable parallel to the shaft, means to shift the bar longitudinally and a connection between the bar and bracket whereby to translate the longitudinal movement of the bar into a transverse movement of the bracket, and means to clamp the bracket in adjusted position.

16. The combination with a printing press cylinder, a shaft mounted for bodily movement radially of the cylinder in a peripheral recess thereof and having arms, gripper pads

carried by the arms, and means to adjust the position of the pads individually in a direction radially of the cylinder, of means to radially adjust the pads collectively comprising shaft-bearing brackets, means to permit of movement of the brackets on their support transversely of the shaft, an adjusting bar shiftable parallel to the shaft, an oblique pin and slot connection between the bracket and bar, means to shift the bar, and means to clamp the bracket in adjusted position.

In testimony whereof we have hereunto signed our names in the presence of two subscribing witnesses.

CARL HENDERSON.
BURT D. STEVENS.

Witnesses:
A. G. FISCHER,
R. M. MARKEL.

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