

E. R. STORM.
PRINTING PLATE HOLDER.
APPLICATION FILED JAN. 21, 1904.

Fig. 1.

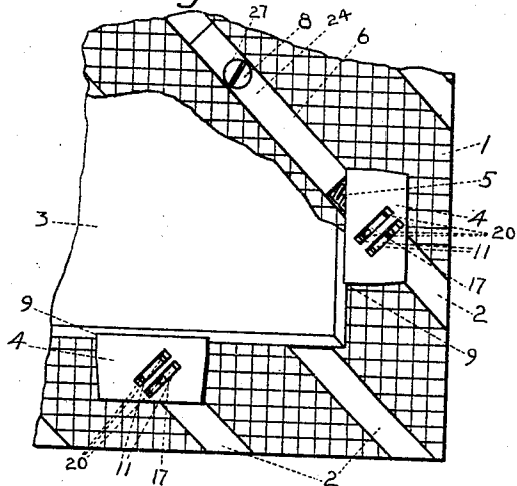


Fig. 2.

Fig. 3.

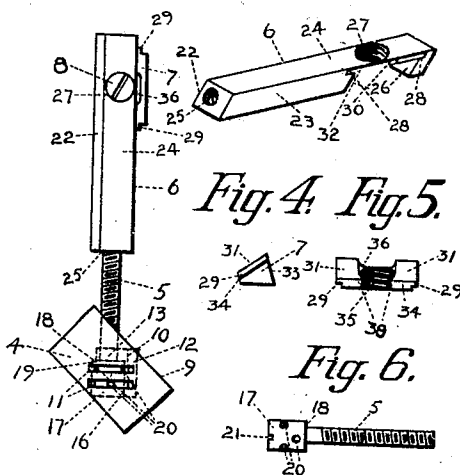


Fig. 4. Fig. 5.

Fig. 6.

Fig. 8.

Fig. 10.

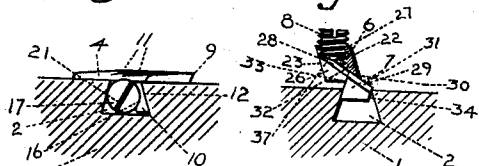


Fig. 9.

Fig. 11.

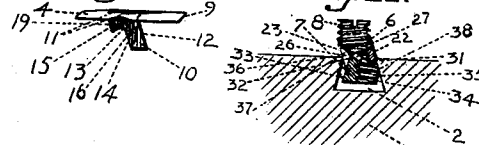


Fig. 15.

Fig. 12.

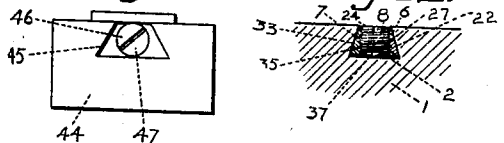


Fig. 7.

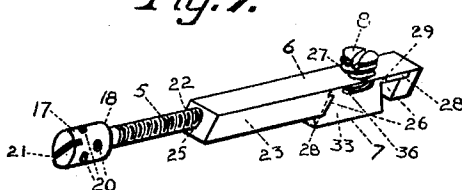


Fig. 13.

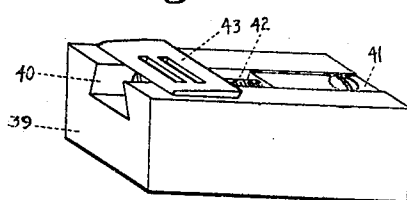
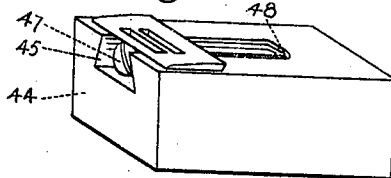


Fig. 14.



Witnesses:

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UNITED STATES PATENT OFFICE.

EDWIN R. STORM, OF NEW YORK, N. Y.

PRINTING-PLATE HOLDER.

No. 809,229.

Specification of Letters Patent.

Patented Jan. 2, 1906.

Application filed January 21, 1904. Serial No. 190,059.

To all whom it may concern:

Be it known that I, EDWIN R. STORM, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Printing-Plate Holders, of which the following is a specification.

This invention relates to improvements in holders for printing-plates in which plate-clamps are used in conjunction with grooved blocks; and the objects of my invention are, first, to provide a plate-clamp that may be inserted at any point of the groove and be quickly and reliably secured thereto; second, to provide a plate-clamp that will accurately move the plate any small distance to bring it to perfect register; third, to provide a plate-clamp that will hold the plates to the grooved block when a sufficient number of the clamps have been inserted in the grooves and have had their holding edges brought to bear on the edges of the plates, and, fourth, to provide a means for removing the plates after printing. I attain these objects by means of the devices illustrated in the accompanying drawings, in which—

Figure 1 is a top view of a portion of a grooved block with a printing-plate thereon and plate-clamps in position in the grooves, the printing-plate being broken away over the base of one of the clamps to show how it may extend under the plate. Fig. 2 is a top view of one of the plate-clamps, showing the different parts in their relative positions. Fig. 3 is a perspective view of the base-piece of the plate-clamp, showing the ways for the sliding member, the hole for the set-screw, and the hole for the adjusting-screw. Fig. 4 is an end view of the sliding member adapted to act in conjunction with the base-piece to fill the groove in the block. Fig. 5 is a face view of the sliding member, showing the lugs by which it is held to the base-piece, the threaded portion which enables it to be operated upon by the set-screw, and the depressed portion formed to allow the sliding member to pass the end of the set-screw when inserting the base-piece in the groove. Fig. 6 is a view of the adjusting-screw, showing the holes for the insertion of the end of the turning bar and the usual slot for a screw-driver. Fig. 7 is a perspective view of the base-piece with the sliding member and the set-screw in place and the adjusting-screw inserted in its hole. Fig. 8 is an end view of the plate-clamp inserted in a

groove, showing the face-piece on the block, the adjusting-screw within the groove, and the member on the face-piece extending below the head of the adjusting-screw and forming a lock to hold the face-piece to the block. Fig. 9 is a view of the face-piece, showing the member which extends into the groove and in conjunction with the adjusting-screw holds the face-piece to the block. Fig. 10 is a sectional view of the base-piece, showing the manner of inserting it in the grooved block. Fig. 11 is a sectional view of the base-piece and sliding member, showing the base-piece partly inserted in the grooved block. Fig. 12 is a sectional view of the base-piece and sliding member, showing the base-piece within the groove of the block and the set-screw in place. Fig. 13 is a modified form in which the plate-clamp is secured in a separate grooved block that may be locked in conjunction with other blocks in a printers' chase. Fig. 14 is a modified form in which the base-piece is formed integrally with a grooved block that may be locked in conjunction with other blocks in a printer's chase. Fig. 15 is an end view of the modification shown in Fig. 14, showing the face-piece on the block, the member extending in the groove, and the adjusting-screw.

Similar numbers of reference indicate corresponding parts throughout the several views.

The block 1 of any desired size is of the same construction as is now in common use and consists of a block having grooves 2 of greater width at the lower than at the upper part. The printing-plate 3 (shown in Fig. 1) is held to the block 1 by the plate-clamps, which consist of a face-piece 4, an adjusting-screw 5, a base-piece 6, a sliding member 7, and a set-screw 8. The base-piece 4 is formed with a holding edge 9, a member 10, and the slots 11. (See Figs. 1, 2, 8, and 9.) The holding edge 9 is adapted to fit against the beveled edge of the printing-plate 3 to hold the plate to the block. (See Figs. 1, 8, and 9.) The member 10 is formed with the face 12, adapted to fit against one side of the groove 2, the portion 13, adapted to fit over the stem of the adjusting-screw 5, the surface 14, adapted to pass the stem of the adjusting-screw 5 when the said adjusting-screw is in the groove 2 and the face-piece is being placed in position on the block 1, the surface 15, formed approximately parallel to the face 12 to facilitate the placing of the face-piece in position on the grooved block and the removing of the face-

piece from the block, and the recessed portion 16, formed to receive the head 17 of the adjusting-screw 5 and allow the shoulder 18 to bear against the surface 19. (See Figs. 2, 8, and 9.) The slots 11 are formed to afford access to the holes 20 in the head 17 of the adjusting-screw 5 and may be formed as a single slot or any number of slots requisite to permit the end of a bar commonly known as a "Tommy" bar to enter a hole 20 and turn the adjusting-screw 5 until another hole 20 is fully exposed. (See Figs. 1 and 2.)

The adjusting-screw 5 is formed with a head 17, fitted to the recessed portion 16 of the face-piece 4. The head 17 is formed with a shoulder 18, adapted to bear against the surface 19. The holes 20, formed in the head 17, are so disposed that when the end of the bar used to operate the adjusting-screw comes against the side of the groove 2 another hole 20 will be fully exposed to view and in position to receive the end of the operating-bar, so the adjusting-screw may be rotated any number of complete revolutions or any portion of one revolution by means of a bar when the adjusting-screw is held by the base-piece 6 within a groove 2. The head 17 also contains an ordinary slot 21, such as is commonly formed in screw-heads. (See Figs. 2, 6, and 7.)

The base-piece 6 is of a width to enable it to enter the groove 2 and is formed with a face 22, adapted to fit against one side of the said groove, and a face 23, approximately parallel to the face 22 and of such thickness that the top surface 24 will be below the top surface of the block 1 when the base-piece 6 is secured in the groove 2. (See Figs. 1, 2, 3, 7, 10, 11, and 12.)

In one end of the base-piece 6, running lengthwise therewith, is formed the threaded hole 25, adapted to receive the adjusting-screw 5. At the other end is formed the recessed portion 26 and the threaded hole 27. The recessed portion 26 is formed with the ways 28, adapted to receive the lugs 29 of the sliding member 7. The ways 28 are inclined toward each other, being farther apart at the points 28 than at the points 30, so the sliding member 7 may enter freely at 28, but will not pass out at 30. The threaded hole 27 is adapted to receive the set-screw 8. (See Figs. 3 and 7.)

The sliding member 7 is formed with the lugs 29, fitted to the ways 28, the surface 31, adapted to pass along the surface 32, the surface 33, adapted to fit against one side of the groove 2, and the surface 34, formed approximately parallel to the surface 33 at a distance from the said surface 33 to permit the sliding member 7 to enter the top of the groove 2, as shown in Fig. 10. In the sliding member 7 is formed a portion of a threaded hole 35, adapted to supplement the threaded hole 27 and help hold the set-screw 8 when the said set-screw is securing the base-piece 6 within the groove 2. (See Figs. 5, 11, and 12.) The

depression 36 is formed to permit the sliding member 7 to pass under the end 37 of the set-screw 8 when it is desired to have the sliding member in the position shown in Fig. 10, and to permit the set-screw 8 to be so far within the threaded hole 27 that its end 37 will strike the ends 38 and prevent the sliding member 7 from being separated from the base-piece 6. (See Figs. 5, 7, and 11.)

The set-screw 8 is fitted to the threaded hole 27 and has its end 37 adapted to bear against and, if need be, indent the bottom surface of the groove 2 and is formed of a length so that when its extremity 37 is in contact with the bottom surface of the groove the top of the set-screw will be below the upper surface of the block 1. (See Fig. 12.)

The manner of securing the plate-clamps in the grooves is as follows: A base-piece 6 with the adjusting-screw 5 run a convenient distance in the threaded hole 25, the sliding member 7 in place with the lugs 29, sliding in the ways 28, and the set-screw 8, placed far enough within the hole 27 to serve as a handle in placing the base-piece within the groove 2, all as indicated in Fig. 7, is held by the set-screw 8 over a groove 2 and the sliding member 7 allowed to enter the groove, as shown in Fig. 10. On lowering the base-piece 6 the sliding member 7 moves so the surface 31 passes along the surface 32, allowing the face 22 of the base-piece 6 to enter the groove and slide along one of its sides, as shown in Fig. 11. When the base-piece 6 has fully entered the groove, the sliding member 7 will be pushed to one side by the surface 32 bearing against the surface 31, and the lower surface of the sliding member resting on the bottom of the groove until the surface 33 fits against one side of the groove 2, while the face 22 fits against the other side of the groove, and the portion of the threaded hole 35 will be in line with and supplement the threaded hole 27, so the set-screw 8 may be turned until it passes into the threaded holes 27 and 35 and bears on the bottom surface of the groove 2 and forces the face 22 and the surface 33 against the sides of the groove with a force sufficient to hold the base-piece 6 securely and rigidly to place. (See Fig. 12.) The face-piece 4 is now held above the groove 2 with the member 10 over the stem of the adjusting-screw 5 and the face 12 of the member 10 against the top edge of the groove. Lowering the face-piece 4 the face 12 slides along one side of the groove 2, the surface 14 passing the stem of the adjusting-screw 5 until the face-piece rests upon the top surface of the block 1, and the surface 13 fits over the stem of the adjusting-screw 5. The face-piece 4 is now held to the top surface of the block 1, and moved toward the head 17 of the adjusting-screw 5 until the surface 19 bears against the shoulder 18, when the recessed portion 16 will be found to have received the head 17 and held the head

17 firmly against one side of the groove 2 and the face 12 firmly against the other side of the said groove 2, thus holding the face-piece 4 securely to the block 1. (See Fig. 8.)

5 When it is desired to secure a printing-plate upon the grooved block, the position of the plate upon the block is first determined and a sufficient number of plate-clamps are secured to the block, preferably with the base-
10 pieces so disposed that they will be under the printing-plate. The printing-plate being now placed upon the block, the face-pieces 4 are advanced toward the beveled edges of the printing-plate by passing the end of a suit-
15 able bar through the slots 11 into the holes 20, formed in the head 17 of the adjusting-screw 5, and turning the screw so as to cause it to rotate within the threaded hole 25 and draw the head of the adjusting-screw toward the
20 base-piece 6. This forces the shoulder 18 against the surface 19. The surface 19 being a part of the member 10 and the member 10 being formed integrally with the face-piece 4 the shoulder 18, through the surface 19 and
25 the member 10, carries the face-piece along with the head of the screw until the holding edge 9 bears against the beveled edge of the printing-plate 3. When each of the face-
30 pieces have been so moved as to bring the holding edge to bear against the beveled edge of the printing-plate 3, the printing-plate will be securely held to the block 1. (See Fig. 1.) To adjust the printing-plate upon the block, it will only be necessary to note the di-
35 rection toward which the plate should be moved and the distance required to bring it to register, when the clamps along the side and end toward which the printing-plate should be moved may be loosened by un-
40 screwing the adjusting-screws the required distance. Then by moving the face-pieces on the opposite sides the required distance forward by properly rotating the adjusting-
45 screws the required number of revolutions or fraction of a complete revolution the printing-plate will be moved quickly and accurately to register and securely held to place on the grooved block by the pressure of the holding edges against the beveled edges of
50 the printing-plate.

In Fig. 13 I have shown a modified form of the plate-clamp in which the grooved block 39 is formed as a block capable of locking with other blocks in a printer's chase to form
55 a bed upon which a printing-plate or printing-plates may be placed, the groove 40 being adapted to receive the base-piece 41 and the adjusting-screw 42, which controls the movement of the face-piece 43.

60 In Figs. 14 and 15 I have shown a modified form in which a grooved block 44, adapted to be locked with other blocks in a printer's chase to form a bed upon which printing-plates may be placed, is formed integrally
65 with the base-piece, the groove 45 being

adapted to retain the member 46, which holds the face-piece to the top surface of the block and the adjusting-screw 47, which works in the threaded hole 48.

Having described my invention, I claim and 70 desire to secure by Letters Patent—

1. In a holder for printing-plates the combination of a block having grooves adapted to receive and hold one or more plate-clamps and adjustable plate-clamps held in the grooves, 75 each of said plate-clamps consisting of a base-piece adapted to be held in the grooves, a face-piece having a member extending into the groove and adapted to act with the head of a screw to hold the face-piece to position on the 80 grooved block, and an adjusting-screw adapted to move the face-piece and the printing-plate over limited distances and hold the face-piece and printing-plate securely to the block at any point of such limited distances. 85

2. In a holder for printing-plates the combination of a block having grooves adapted to receive and hold one or more plate-clamps, a base-piece adapted to be secured within one 90 of the grooves, an adjusting-screw held by the base-piece a member formed to extend into the grooves and engage with the adjusting-screw, and a movable face-piece formed integrally with the said member controlled by and moving with the adjusting-screw. 95

3. In a holder for printing-plates the combination of a block having grooves adapted to receive one or more plate-clamps, a base-piece adapted to be inserted at any point of the 100 groove, a sliding member working within said base-piece, a set-screw adapted to act with the sliding member and hold the base-piece securely to any point of the groove, an adjusting-screw working within the base-piece and a face-piece with a holding edge thereon, controlled by the adjusting-screw. 105

4. In a holder for printing-plates, the combination of a grooved block, an adjusting-screw working within a threaded hole, a shoulder 110 formed on the adjusting-screw, a face-piece working on the top surface of the grooved block, a member on the face-piece extending into the groove formed in the block, a surface adapted to receive the shoulder formed on the adjusting-screw, one or more 115 slots in the face-piece adapted to admit the passage of an operating-bar and holes in the head of the adjusting-screw adapted to receive the end of an operating-bar.

5. In a holder for printing-plates the combination of a grooved block, a face-piece working on the top surface of the grooved block, a holding edge on the face-piece, a member on the face-piece extending into the groove 120 formed in the block, a surface formed on the member extending into the groove, a shoulder formed on an adjusting-screw said shoulder being adapted to work against the surface formed on the member extending into the groove and an adjusting-screw having a shoul- 125 130

der thereon adapted to work against the face-piece and carry it along the lineal distance traversed by the head of the screw.

6. In a holder for printing-plates the combination of a grooved block, a face-piece working on the surface of the grooved block, a member on the face-piece extending into and fitted to the groove, a recessed portion in the said member adapted to receive the head of an adjusting-screw, a surface in the recessed portion adapted to receive the shoulder formed at the head of the adjusting-screw, an adjusting-screw formed with a shoulder at the head adapted to fit against the surface formed in the recessed portion, a member having a threaded hole adapted to receive and hold the adjusting-screw and holes in the head of the adjusting-screw adapted to receive the end of an operating-bar.

7. In a holder for printing-plates the combination of a grooved block, a face-piece working on the surface of the grooved block, an adjusting-screw held rotatably within the groove and working in a threaded hole, a base-piece having a threaded hole adapted to receive the adjusting-screw, a head on the adjusting-screw and a member on the face-piece extending into the groove and adapted to act in conjunction with the head of the adjusting-screw to hold the face-piece to the groove.

8. In a holder for printing-plates the combination of a grooved block, a face-piece working on the surface of the grooved block, a base-piece having a threaded hole therein secured within the groove, an adjusting-screw held rotatably within the groove and working in the said threaded hole in the base-piece, a head on the adjusting-screw, a member on the face-piece extending into the groove, a face on the said member fitted to the side of the groove, a recessed portion adapted to receive the head of the adjusting-screw and hold the head of the said adjusting-screw against the side of the groove causing it to act in conjunction with the said member to hold the face-piece to the surface of the block.

9. In a holder for printing-plates the combination of a grooved block, a face-piece working on the surface of the grooved block, a base-piece with a threaded hole therein secured within the groove, adapted to receive an adjusting-screw, an adjusting-screw working in the threaded hole, a head on the adjusting-screw adapted to pass into and work against one side of the groove, a member on the face-piece extending into the groove and adapted to pass freely to one side of the stem of the adjusting-screw in entering or leaving the groove, and a wedge-shaped portion on the member extending into the groove adapted to pass between the head of the adjusting-screw and a side of the groove and act in conjunction with the head of the adjusting-screw to hold the face-piece to the grooved block.

10. In a holder for printing-plates the com-

bination of a grooved block, a face-piece working on the surface of the grooved block, a base-piece with one side conforming to a side of the groove and its opposite side formed to admit the insertion of the base-piece in the groove, a sliding member working in the base-piece, a set-screw working in the base-piece and the sliding member, and an adjusting-screw connecting the face-piece to the base-piece.

11. In a holder for printing-plates the combination of a grooved block, a face-piece working on the surface of the grooved block, a base-piece with one side conforming to a side of the groove and its opposite side formed to admit the insertion of the base-piece at any point of the groove, a recessed portion in the base-piece adapted to receive a sliding member, ways formed in the recessed portion, a sliding member within the recessed portion, lugs on the sliding member fitted to the said ways and a set-screw adapted to act in cooperation with the sliding member to hold the base-piece rigidly within the groove.

12. In a holder for printing-plates the combination of a grooved block, a face-piece working on the surface of the grooved block, a base-piece with a threaded hole therein adapted to enter and partly fill the groove, a recessed portion in the base-piece connecting with the threaded hole, an inclined face on the recessed portion, a sliding member working within the recessed portion provided with a threaded surface corresponding to the said threaded hole, an inclined face on the sliding member adapted to work against the inclined face on the recessed portion, and a set-screw working within the threaded hole in the base-piece and connecting the sliding member to the base-piece.

13. In a holder for printing-plates the combination of a grooved block, a face-piece working on the surface of the grooved block, a base-piece provided with a threaded hole and adapted to enter and partly fill the groove, a set-screw in the threaded hole, a recessed portion in the base-piece, a sliding member within the recessed portion provided with a threaded surface adapted to receive the set-screw, an inclined face on the sliding member and an inclined face on the recessed portion adapted to bear against the inclined face on the sliding member and force it to slide until the threaded surface can be engaged by the set-screw as and for the purposes described.

14. In a holder for printing-plates the combination of a grooved block, a face-piece working on the surface of the grooved block, a base-piece with one side conforming to a side of the groove and its opposite side formed to admit the insertion of the base-piece at any point of the groove, a recessed portion in the base-piece, a sliding member within the recessed portion having one side conforming to a side of the groove, an inclined face on the

sliding member, an inclined face on the base-piece adapted to fit against the inclined face on the sliding member to force the sliding member to one side of the groove and the base-piece to the other side of the groove and a set-screw connecting the sliding member and the base-piece and adapted to force and hold the base-piece and sliding member against the sides of the groove.

15. In a holder for printing-plates the combination of a grooved block, a face-piece working on the surface of the grooved block, a base-piece adapted to enter and partly fill the groove, a side on the base-piece conforming to one side of the groove, a sliding member with a side conforming to the opposite side of the groove, a screw connecting the base-piece and the sliding member adapted to bring the sliding member in coöperation with the base-piece and hold the base-piece fixedly in the groove, said base-piece having a threaded hole adapted to receive an adjusting-screw, and an adjusting-screw connecting the face-piece and the base-piece.

16. In a holder for printing-plates the combination of a grooved block, a base-piece adapted to enter and partly fill the groove, having one side conforming to a side of the groove and its opposite side formed to admit the insertion of the base-piece at any point of the groove, and provided with a recessed portion having ways therein, said base-piece being provided with a threaded hole adapted to receive an adjusting-screw and with a threaded hole partly cut away leading to the recessed portion and adapted to receive a set-screw, an inclined plane formed in the recessed portion, a sliding member within the recessed portion formed with an inclined face adapted to bear against the said inclined plane and provided with a threaded surface adapted to engage with a set-screw, lugs on the sliding member fitted to the said ways, a set-screw working partly in the base-piece and partly in the sliding member, an adjusting-screw provided with

a head having a slot formed in the end and furnished with holes adapted to receive the end of an operating-bar, a face-piece working on the surface of the grooved block provided with one or more slots adapted to admit the passage of an operating-bar, a member on the face-piece extending into and fitted to one side of the groove, said member being provided with a recessed portion adapted to receive the head of the adjusting-screw and having a surface formed in the recessed portion adapted to receive the shoulder formed at the head of the adjusting-screw, a shoulder formed on the adjusting-screw between the head and the shank, and a holding edge formed on the face-piece adapted to bear against and hold the plate securely to the block.

17. In a holder for printing-plates the combination of a grooved block, a face-piece working on the surface of the grooved block, an adjusting-screw held rotatably within the groove, a member on the face-piece extending in the groove, a head on the screw adapted to bear against the said member to move the face-piece, a holding edge on the face-piece and one or more slots in the face-piece adapted to admit the passage of an operating-bar.

18. In a holder for printing-plates the combination of a grooved block, a face-piece working on the surface of the grooved block, an adjusting-screw held rotatably within the groove and working in a threaded hole, a member in the groove having a threaded hole, a member on the face-piece extending in the groove, a head on the adjusting-screw adapted to engage with the member on the face-piece to control the movement of the said face-piece, a holding edge on the face-piece and one or more slots in the face-piece adapted to admit the passage of an operating-bar.

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Witnesses:

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