

P. A. HOFFMAN.
 CLAMPING DEVICE.
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1,395,825.

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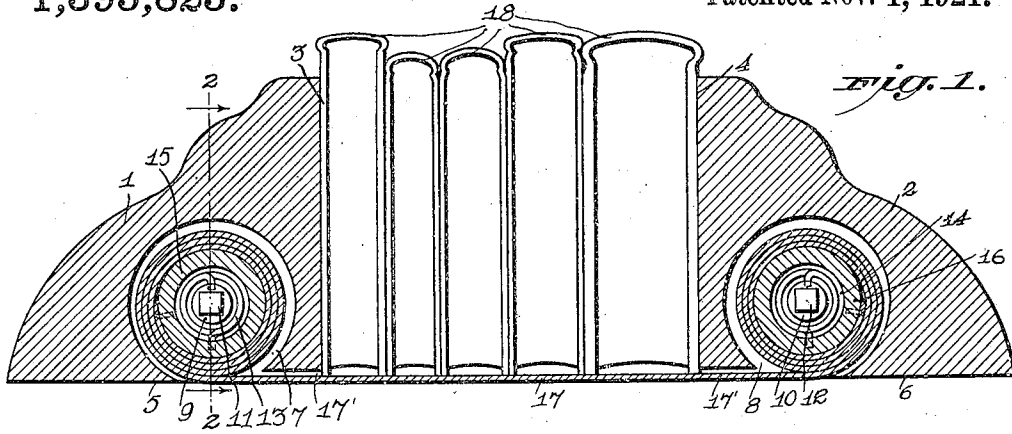


Fig. 1.

Fig. 2.

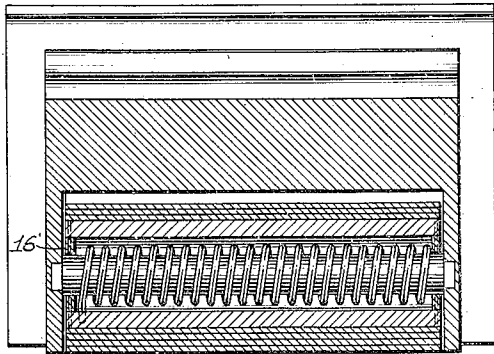


Fig. 3.

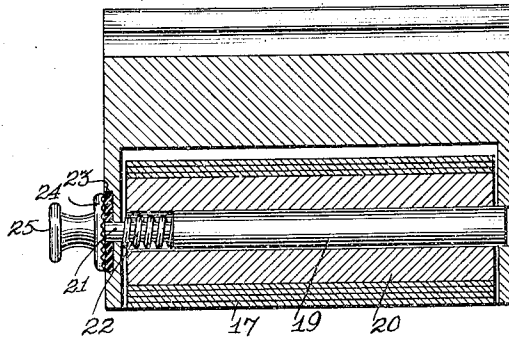
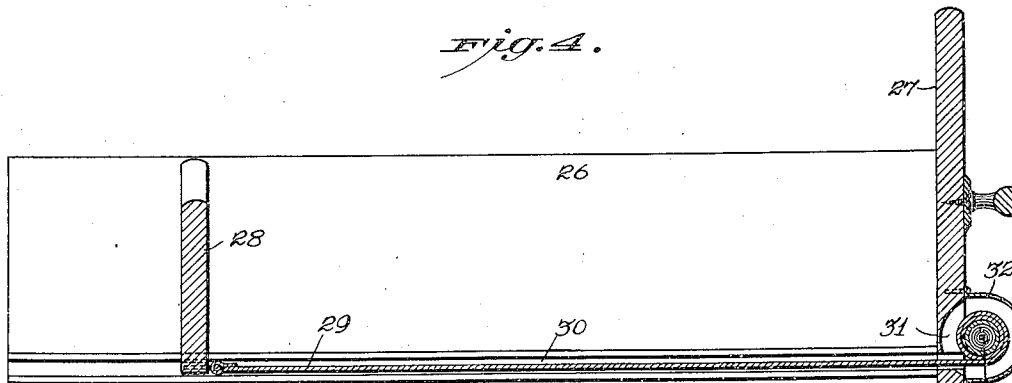


Fig. 4.



WITNESSES

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CLAMPING DEVICE.

1,395,825.

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To all whom it may concern:

Be it known that I, PETER A. HOFFMAN, a citizen of the United States, and a resident of Hastings, in the county of Dakota and State of Minnesota, have invented a new and Improved Clamping Device, of which the following is a full, clear, and exact description.

This invention relates to clamping devices, and has particular reference to a device for clamping material such as papers or books together in any desired position.

An object of the invention is to provide a clamping device in which the books are constantly subjected to a predetermined pressure between the parts of the clamping device so that their assembled condition is maintained.

Another object resides in the provision of means whereby a plurality of clamping elements are connected by a tension member to produce between them the force necessary to subject the article to be held to a definite pressure.

A further object resides in the provision of means which can be applied either to elements used on a table to support books or can be applied to the modern filing cabinet to hold correspondence and other papers without any material modification in the features of the invention.

A still further object resides in the provision of means whereby the required tension is produced in the device automatically and uniformly without the need of any adjustment on the part of the person using the device.

Another object resides in the particular construction and arrangement of parts which will be hereinafter set forth and claimed and are shown in the accompanying drawings.

Hitherto in using devices adapted to support books on tables or to hold papers or correspondence in modern filing cabinets, the books or correspondence become disarranged, due to the fact that there has been no definite pressure maintained between the elements for holding the articles in the desired position, and also due to the fact that any temporary adjustments provided have been of such nature as to be easily disturbed, whereby the articles held in position have become readily disarranged. My invention aims to overcome these objections by providing a plurality of elements between

which articles such as books or correspondence are to be held, and to provide a means extending between and cooperating with the gripping elements whereby uniform tension or pull is exerted between them at all times to achieve the desired pressure on the articles so gripped.

The invention is illustrated in the drawings, of which—

Figure 1 is a vertical longitudinal partial section through the device as applied to a plurality of books;

Fig. 2 is a section taken on the line 2—2 of Fig. 1;

Fig. 3 is a sectional view of a modified form of adjusting means for the device; and

Fig. 4 is a sectional view of a modification showing the device applied to a modern type of filing-cabinet drawer.

As shown in Fig. 1 of the drawings, the invention is adapted to be embodied in the form of a plurality of gripping elements or blocks 1 and 2 which are provided with parallel adjacent faces 3 and 4 and bottom faces 5 and 6 adapted to lie along and on a surface such as a table top. These blocks are provided with cylindrical openings 7 and 8, one portion of which is open along part of the bottom edges 5 and 6, and in these apertures are mounted shafts 9 and 10 having squared ends 11 and 12 which bear suitably in the end walls of the blocks 1 and 2, as shown in Fig. 2. One end of springs 13 and 14 are respectively connected to the shafts 9 and 10. The other ends are connected respectively to hollow drums 15 and 16 which surround the shafts 9 and 10. These hollow drums at each end are provided with annular ring portions 16' which are pinned thereto, and at their inner ends are adapted to bear loosely against the shafts 9 and 10. These rings 16' provide means whereby the drums 15 and 16 are definitely and rotatably spaced from the shafts 9 and 10.

As shown in Fig. 1, a flat band 17 of any suitable material, such as sheet brass or fabric, is connected at its ends to and wrapped around the hollow drums 15 and 16. The particular means of connecting this sheet of material 17 to the drums is made in any suitable manner. As shown in Fig. 1, the front walls 3 and 4 at their lower ends, adjacent the edges 5 and 6, are cut away to form grooves 17' through which the sheet

material 17 extends, and which grooves permit the blocks 1 and 2 to lie flat on the supporting surfaces and aligns the bottom of the sheet material 17 with the bottom edges 5 and 6. This material 17 is of the proper minimum thickness so that it is not and cannot be disturbed by sliding books or other articles thereon or therefrom along the table.

The springs 13 and 14 are so connected 10 to their respective cooperating parts as to cause the blocks 1 and 2 to be drawn together through the force exerted in the sheet 17. In Fig. 1 the books are represented by the numeral 18. In the form shown in Fig. 15 1, to insert the desired number of books between the blocks 1 and 2, it is necessary to pull these blocks apart the desired distance against the tension of the springs 13 and 14 and then place the books between the blocks, 20 whereupon the blocks will be pulled tightly against the outer edges of the end books and exert thereon the pressure of the springs.

In Fig. 3, a slightly modified form is shown in which a shaft 19 is journaled at 25 one end in the side walls of the blocks and is rigidly connected to a hollow drum 20 along which the sheet material 17 is wound in the manner above described. The other end of the shaft 19 is reduced in diameter, as indicated by the numeral 21, and between 30 the wall of the block and the shoulder thereof formed on the shaft 19, a spring 22 is disposed which tends to force the shaft 19 to the right, as shown in Fig. 3. The outer 35 end of the reduced portion 21, outside of the block, is provided with a handle portion 25 having an inner knurled surface 24 adapted to engage with a correspondingly knurled, rough surface 23. This surface 23 may be 40 of any suitable material, such as metal or rubber, as desired. The effect of the spring 22 is to force the roughened surface 24 against the roughened surface 23 to hold the shaft 19, the drum 20 and the connecting 45 sheet 17 under the desired tension merely by turning the handle portion 25.

As shown in Fig. 4, my invention is illustrated as embodied in a modern filing cabinet drawer having side walls 26 and a front 50 wall 27. Within the drawer a plate 28 is adapted to slide, between which and the front wall 27 books or correspondence or papers of any sort may be held. The lower 55 end of the plate 28 is connected by a sheet of material 29 of the character above described which is adapted along its lateral edges to slide in grooves 30 provided in the walls of the cabinet or the drawer. The front lower end of the plate 28 is cut away, 60 as at 31, and disposed thereagainst is a casing 32 containing therewithin a shaft 33. This shaft 33 is mounted in the ends of the casing 32 and may be related with cooperating

springs and drums and therethrough with the sheet 29 in the same manner as 65 above described with respect to the previous figure. In this fashion, therefore, I can provide a device for filing-cabinet drawers whereby the materials held between the cooperating plates thereof are subject to a 70 constant and uniform pressure to hold them compactly in place.

What I claim is:

1. A clamping device comprising a plurality of gripping elements between which 75 articles are to be clamped, a connecting element extending between said gripping elements and forming a support for the articles, and means for causing a tension in said connecting element tending to draw the 80 gripping elements together.

2. A clamping device comprising a pair of blocks adapted to be placed on a support and to clamp articles therebetween, a sheet 85 of flexible material extending between said blocks and connected at each end thereto, said sheet forming a support for the articles, and means for causing tension to be set up in said sheet tending to draw the blocks together. 90

3. A clamping device comprising a pair of blocks adapted to be placed on a suitable support and to grip articles therebetween, a sheet of flexible material extending along 95 the support between the blocks, a drum in each block over which the end of the flexible material is wound, and means cooperating with the drums constantly tending to wind the material thereon whereby the blocks are under a constant tendency to 100 move toward each other.

4. A clamping device comprising a plurality of gripping elements between which 105 articles are to be clamped, a sheet of flexible material extending between the gripping elements on which articles to be clamped are supported, a drum on one of said elements on which the sheet is adapted to be wound, and means cooperating with said drum and exerting thereon a constant force tending to 110 wind the sheet on the drum, whereby the gripping elements tend to move toward each other.

5. A device for gripping or clamping books or the like, which comprises a pair of 115 blocks disposed on opposite sides of the books or articles to be gripped, a sheet of flexible material extending between the blocks beneath the books, a drum in each of said blocks to which the ends of the flexible 120 material are connected, and resilient means cooperating with each drum and tending to wind the flexible material on each drum, whereby the blocks can be moved toward each other.

PETER A. HOFFMAN.