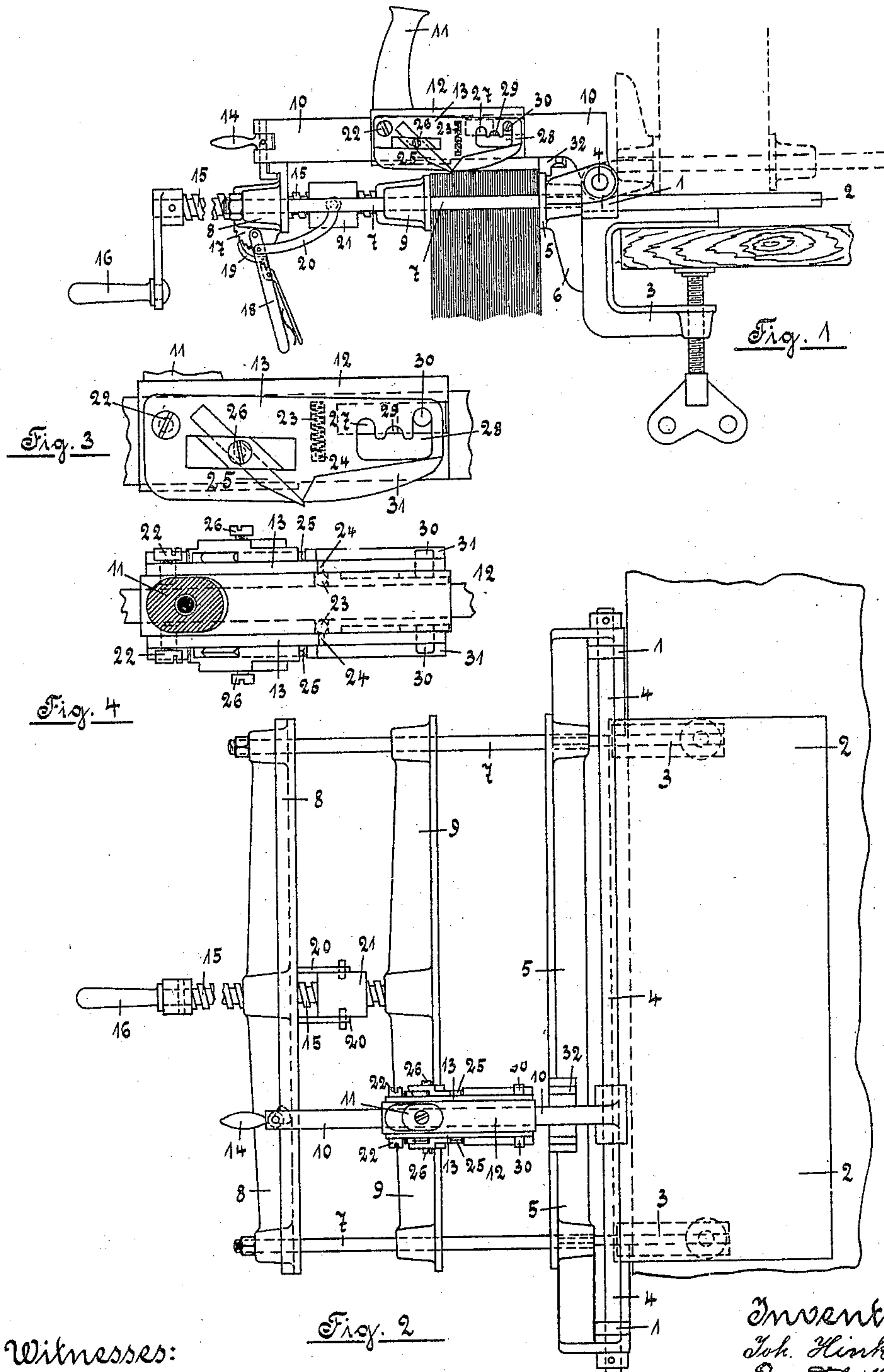


No. 812,998.

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J. HINKLEIN.
PLOW FOR BOOKBINDERS.
APPLICATION FILED MAY 11, 1904.



Witnesses:
Arthur Thiergart
Max Rensch.

Inventor:
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Attorney.

UNITED STATES PATENT OFFICE.

JOHANNES HINKLEIN, OF FRANKFORT-ON-THE-MAIN, GERMANY, ASSIGNOR
TO THE FIRM OF MASCHINENHANDLUNG VON MAX STERN & CO., OF
FRANKFORT-ON-THE-MAIN, BOCKENHEIM, GERMANY.

PLOW FOR BOOKBINDERS.

No. 812,998.

Specification of Letters Patent.

Patented Feb. 20, 1906.

Application filed May 11, 1904. Serial No. 207,486.

To all whom it may concern:

Be it known that I, JOHANNES HINKLEIN, manufacturer, a subject of the King of Prussia, German Emperor, residing at No. 56 Bornheimer Landstrasse, Frankfort-on-the-Main, in the Kingdom of Prussia, German Empire, have invented certain new and useful Improvements in Plows for Bookbinders, of which the following is a specification.

10 This invention relates to a plow as used by bookbinders for producing in the back of a book the grooves intended to receive the cords; and the first object of my invention is to construct the plow in such a manner that also
15 an unskilled assistant can produce perfectly correctly shaped and situated grooves. Another object is to simplify the construction and reduce the cost of the plow; and a third object consists in preventing the arising of
20 dust when using the same.

My invention is represented in the accompanying drawings, in which—

Figure 1 is a side view of the whole plowing device. Fig. 2 is a plan of the same. Fig.
25 3 is an enlarged side view of the cutter-slide, and Fig. 4 is a plan of the parts shown in the preceding figure.

A horizontal plate 1, having upwardly-extending lugs 2, is provided with screw-clamps
30 3 for fixing it to a work-bench or the like. The lugs 2 support an axle 4, which in its turn supports a cheek 5, adapted to be swung back upon and around said axle upon the plate or table. In order to hold the device in a hori-
35 zontal position, the cheek 5 has downwardly-extending projections 6, adapted to lie against the clamps 3. From the cheek 5 extend forward two guide-rods 7, the mutual distance of which depends upon the size of the
40 books to be bound. They are connected at their ends by a stationary traverse 8 and support a movable traverse 9, forming the other cheek. The axle 4 carries also a movable traverse 10, adapted to be horizontal as
45 well as vertical. The traverse 10 forms a guide for a slide 12, adapted to be moved to and fro by means of a handle 11. Each side of said slide carries a tool-holder 13. The slide 10 extends slightly above the traverse 8
50 and is provided at that end with a handle 14, having attached to it an eccentric-disk adapted to take below a ledge provided at the upper edge of said traverse, so as thereby to

connect the parts 8 and 10 with each other. The central portion of the traverse 8 may
55 form a nut for a screw-threaded spindle and crank 15 16 for displacing the traverse 9; but in order to allow of a quick actuation of this traverse I prefer to combine the parts in question with a known tensioning device, in which
60 a movable nut 21 is employed. In this case the central portion of the traverse 8 is provided with a toothed sector 17, to which is hinged a lever 18, having a pawl 19 taking
65 into the teeth of said sector. The lever 18 and the nut 21 are connected with each other by links 20, so that the nut, the spindle, and the traverse can be quickly displaced by means of said lever, as well as secured in any
70 position, by letting the pawl take between two teeth of the said sector. The necessary pressure is then produced by turning the spindle, the nut being secured in position by the means just described.

The tool-holders 13 are hinged to the slide
75 12 by screws 22, and the other end of each tool-holder is supported by a pin 30, adapted to be displaced in a horizontal slot of the slide. Springs 23, also located in slots or cavities of the slide, tend to press the tool-holders down,
80 each of the latter having a pin 24 reaching into the respective cavity and below the respective spring. The exchangeable knives
25 are secured to the holders 13 by screws 26, and in order to allow of adjusting the cutting
85 edges of the knives according to the depth of the groove or of raising the edges above the grooves each holder has for the reception of the pin 30 several recesses 27 28 29, of which
90 the last serves for raising the edge above the grooves, while the other two serve for adjusting the edge with respect to the desired depth of the same.

Of the two cutting-knives with which the device is provided only one is in use at a
95 given time, and to prevent that knife from getting deeper than required into the paper there are provided protective ledges 31, over which the edge or edges only slightly project.

The rear end of the slide 10 has a stop-
100 piece 32, having at its lower surface grooves just at those places where the cutting edges pass through the paper. Said stop-piece forms an abutment for the paper also just at those places—i. e., where the grooves are to
105 be formed.

The manner of operation of this device is as follows: First, the device is swung back around the axle 4 and upon the plate 1, as indicated in dotted lines in Fig. 1. Then the 5 folded sheets of paper to be corded are carefully adjusted so that none projects above the others, and after this the sheets are clamped in between the cheeks 5 and 9 in such a manner that their edges represent a 10 uniform and vertical surface. The device, with the paper, is then swung back into its former (horizontal) position, and one of the knives is raised above the back of the paper by turning the respective holder 13 upon its 15 pivot 22 and displacing the pin 30, so as to make it enter the recess 29 of the holder. The other knife is adjusted correspondingly to the depth of the groove to be produced, and after this the guide 10 is laterally dis- 20 placed upon the axle 4 until the adjusted knife arrives at the place where the groove is to be cut. In this position the guide is fixed by means of the eccentric operated by the handle 14, and the slide 12, with the adjusted 25 tool, is then moved to and fro upon the guide until the groove is finished. The handle 14 is then disconnected from the traverse 8, the guide is again adjusted, again fixed, and another groove is produced, and so on.

30 The particles of paper removed from the back of the book when producing the grooves form chips, there being not the slightest dust.

Having now described the nature of my said invention, what I desire to be secured by 35 a patent of the United States is—

1. In a plow for bookbinders, the combina-

tion with a stationary and a movable cheek adapted to clamp in the folded and collected sheets of paper; means for holding said cheeks; a slide adapted to be moved above 40 the back of the paper and across to the same; a laterally-displaceable guide for said slide; a knife-holder attached to said slide, and an exchangeable knife attached to said holder; a pivot upon which the said holder may turn; 45 a recess in the holder having upwardly-extending elongations of different heights; a horizontally-displaceable pin located in the slide and adapted to take in any of said elongations; and a spring adapted to keep the 50 holder and knife in working position, substantially and for the purpose as described.

2. In a plow for bookbinders, the combination with a stationary and a movable cheek adapted to clamp in the folded and collect- 55 ed sheets of paper; means for holding said cheeks; a slide adapted to be moved above the back of the paper and across to the same; a handle fixed to said slide; a laterally-dis- 60 placeable guide for said slide; a vertically-adjustable knife attached to the said slide, an abutment fixed to the guide and adapted to retain the paper at the place where the knife is pushed through the same, substantially and 65 for the purpose as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

JOHANNES HINKLEIN.

Witnesses:

MAX STERN,
JEAN GRUND.