

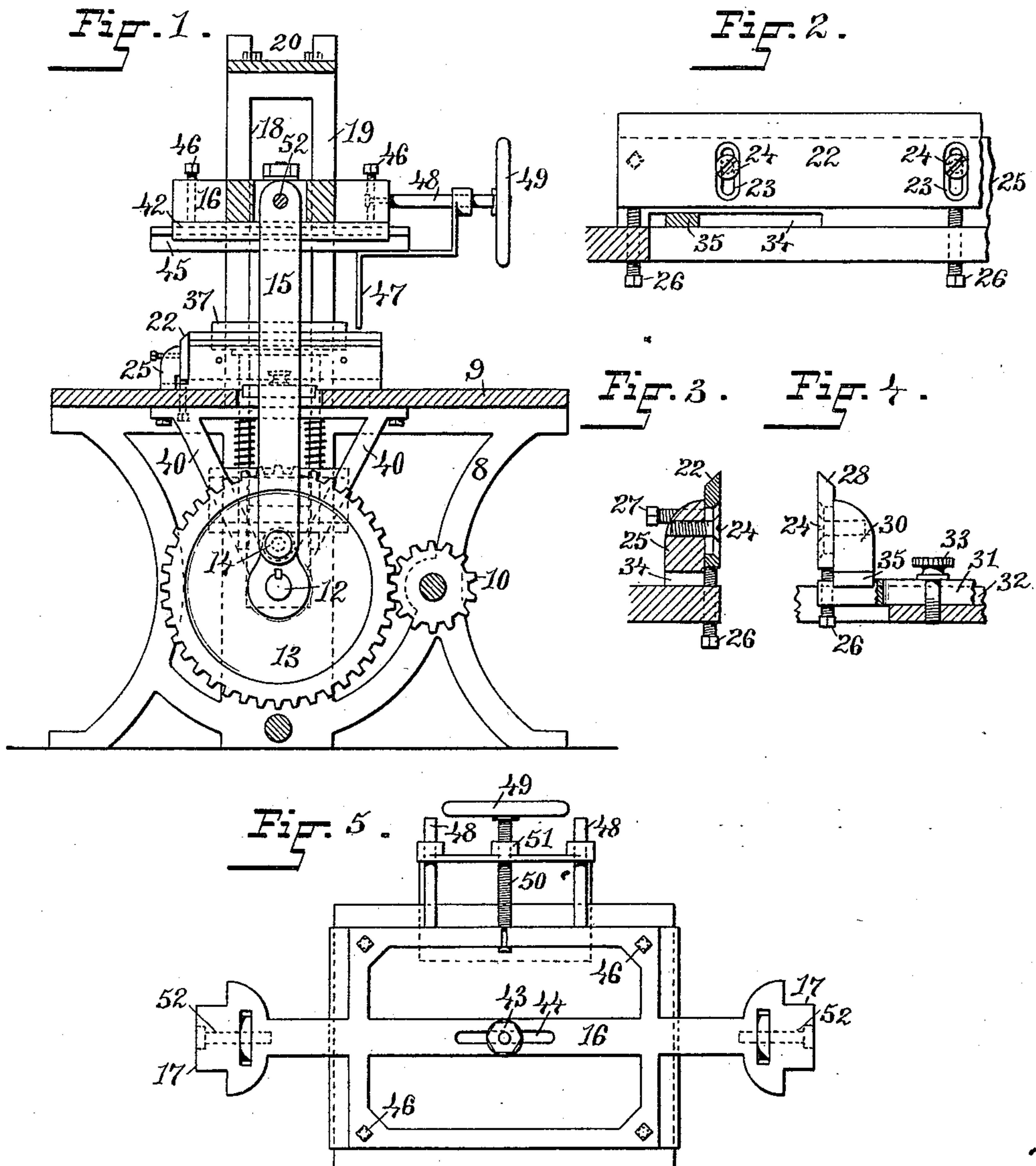
(No Model.)

2 Sheets—Sheet 1.

A. M. SAFFORD.
MACHINE FOR TRIMMING BOOK PADS.

No. 426,685.

Patented Apr. 29, 1890.



WITNESSES:

Chas. H. Luther Jr.
M. F. Bligh.

INVENTOR:

Albert M. Safford
by Joseph A. Miller & Co.
Attys

(No Model.)

2 Sheets—Sheet 2.

A. M. SAFFORD.
MACHINE FOR TRIMMING BOOK PADS.

No. 426,685.

Patented Apr. 29, 1890.

Fig. 6.

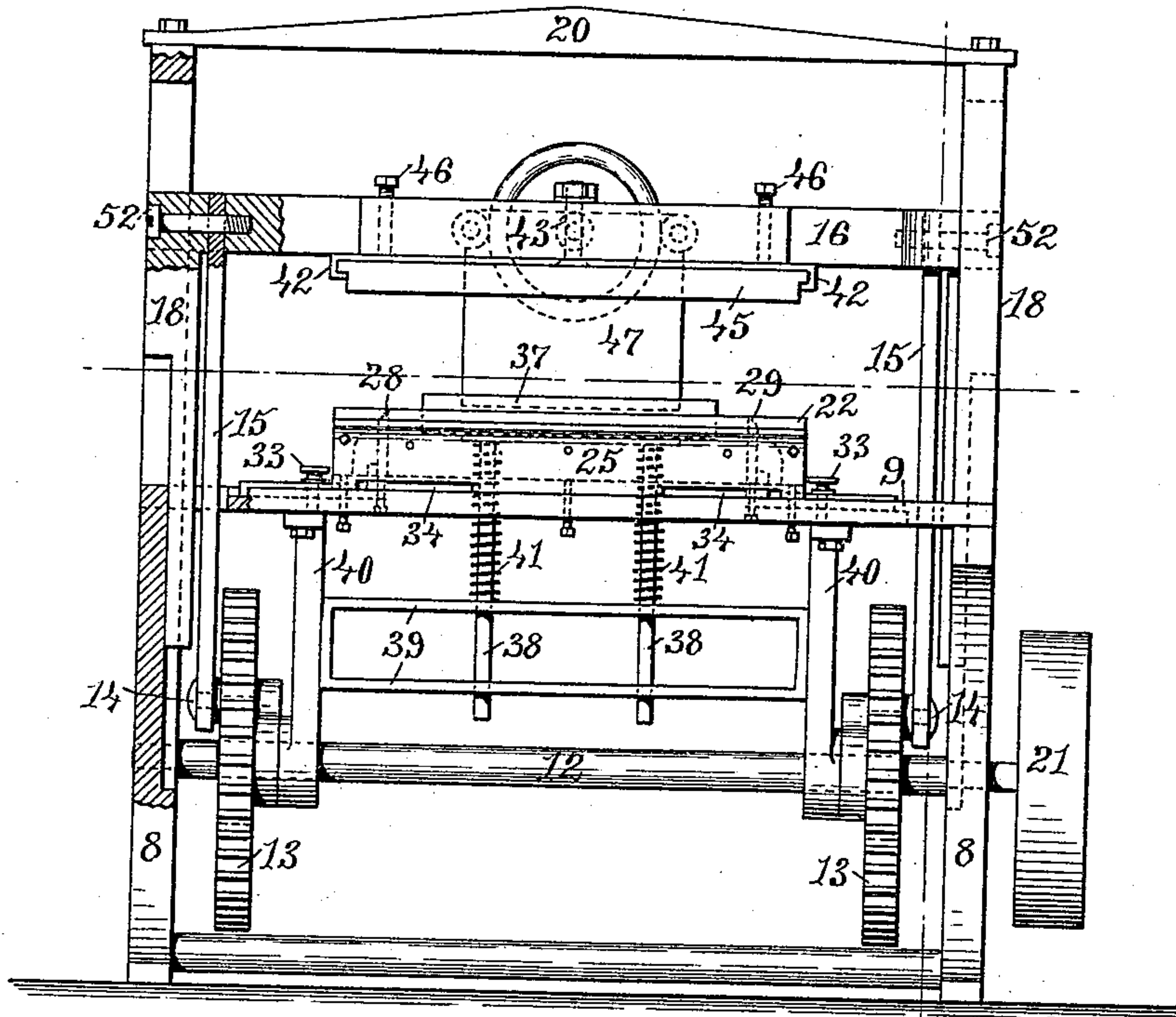
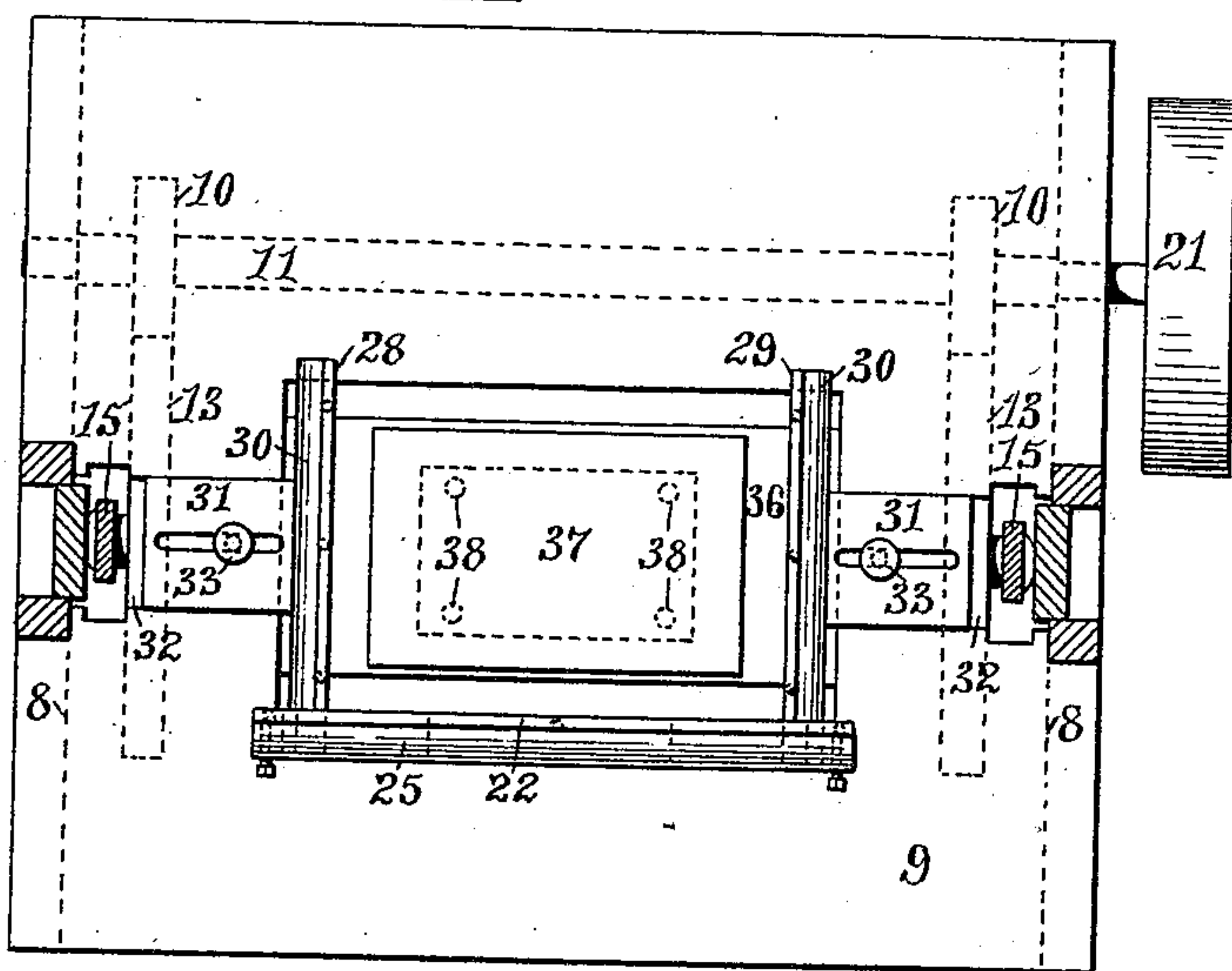


Fig. 7.



WITNESSES:

Chas. H. Luther Jr.
M. F. Bligh.

INVENTOR:

Albert M. Safford
by Joseph A. Miller & Co.
Attys.

UNITED STATES PATENT OFFICE.

ALBERT M. SAFFORD, OF PROVIDENCE, RHODE ISLAND.

MACHINE FOR TRIMMING BOOK-PADS.

SPECIFICATION forming part of Letters Patent No. 426,685, dated April 29, 1890.

Application filed August 17, 1889. Serial No. 321,122. (No model.)

To all whom it may concern:

Be it known that I, ALBERT M. SAFFORD, of the city and county of Providence, and State of Rhode Island, have invented a new and
5 useful Improvement in Machines for Trimming Book-Pads; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of
10 this specification.

This invention has reference to improvements in machines for cutting the three sides of the sheets of paper secured together to form a book or pad; and it consists in the
15 peculiar and novel construction and arrangement of the cutting-knives and the cutting-board by which the same are readily adjustable to each other and to the size of the pad, as will be more fully set forth hereinafter.

20 Figure 1 is a vertical cross-sectional view of the machine. Fig. 2 is a side view of the longitudinal knife, showing the means of adjustment. Fig. 3 is a cross-section of the longitudinal knife. Fig. 4 is an end view of the
25 adjustable cross-cutting knife. Fig. 5 is a top view of the vertically-reciprocating frame by which the adjustable cutting-board is carried. Fig. 6 is a longitudinal sectional view of the machine, and Fig. 7 is a horizontal sectional view on a horizontal line above the cut-
30 ters.

Similar numerals of reference indicate corresponding parts in all the figures.

35 The object of this invention is to so construct a machine for cutting the three edges of the pad of sheets that the knives may be adjusted so as to cut the three edges of books of varying size simultaneously.

40 In the drawings, the number 8 indicates the end frames of the machine.

9 is the table.

10 are the pinions, secured to the driving-shaft 11, which shaft is driven from any source of power. The driving-shaft 11 is journaled
45 in the end frames 8. The shaft 12, also journaled in the end frames 8, is provided near the end frames with the gear-wheels 13, provided with the studs 14, forming crank-pins by being placed outside of the centers of the
50 gear-wheels 13. The connecting-rods 15 connect the studs 14 with the cross-frame 16, con-

sisting of a strong metal frame, from the two ends of which the slides 17 project. These slides 17 move in the ways 18, formed in the vertical frames 19, extending above the table 55 9, and are firmly braced by the horizontal beam 20, secured to the upper ends of the frames 19. By imparting rotary motion to the shaft 11 by a belt connecting the pulley 21, secured to the shaft 11, with some driven 60 pulley, or in any other manner, the pinions 10, meshing with the gear-wheels 13, rotate the gear-wheels and with the same the studs 14. The connecting-rods 15, pivoted to the studs 14 and by means of the pins 52 to the 65 cross-frame 16, impart vertical reciprocating motion toward and from the table 9 to the cross-frame 16.

The longitudinal knife 22 is provided with two or more recessed slots 23, and is secured 70 by means of the screws 24 to the base 25, projecting upward from the table 9, of which the base 25 forms part or to which the same is firmly secured. The knife 22 is adjustable vertically by slightly loosening the screws 24 75 and adjusting the knife by the screws 26, bearing against the lower blunt edge of the knife. The cutting-edge of the knife 22 is also adjustable inward or outward by means of the stop-screws 27, threaded in the base 25 80 and bearing with their ends against the side of the knife, so that by loosening the screws 24 in the slots 23 and turning the stop-screws outward the edge of the knife is moved inward, and can be secured in this position by 85 tightening the screws 24, so that the knife rests against the ends of the stop-screws 27.

The knives 28 and 29 are placed at right angles to the longitudinal knife 22. These knives 28 29 are secured to the bases 30 by 90 screws 24, passing through slots 23, formed in the knives in the same manner as the knife 22 is secured, and these knives are adjustable vertically by means of the screws 26 in the same manner as is the knife 22. 95

The bases 30 are secured to or form part of the sliding beds 31, moving in the ways 32, formed in the table 9. The sliding beds 31 are each provided with a slot. The clamp-screws 33 extend through the slots and secure 100 the sliding beds with the bases 30 and knives 28 29 in any desired position. The knives 28

and 29 may therefore be adjusted to any size of book-pad within the length of the fixed knife 22, and any size may be cut simultaneously on three sides by the knives 22, 28, and 29.

Into the table 9 an oblong rectangular opening is made large enough to permit the passage through this opening of the largest size of book-pads. The knife 22 is secured on one of the long sides of this opening and the knives 28 29 across the narrow portions of the opening, the bases 30 being longer than the width of the opening, so as to firmly rest at their ends on the table 9.

The base 25 is provided with the slots 34, into which the tenon 35 on the ends of the bases 30 enter, the opposite ends extending beyond the opening.

Within the opening in the table 9 is placed the platform 36, and on the platform is placed the block 37 of the size of the book-pad when cut.

The platform 36 is provided with the rods 38, four of which are used. These rods 38 pass through holes in the shelves 39, which shelves are firmly secured to the brackets 40, which brackets are secured to and pendent from the under side of the table 9. The brackets 40 also form journals for the shaft 12. The coiled springs 41 surround the rods 38 and bear at their ends against the upper shelf 39 and the platform. These springs support the platform 36 in the raised position on a level with the table 9. The block 37 is of such thickness that when in the raised position the upper surface is slightly above the cutting-edges of the knives 22, 28, and 29.

The cross-frame 16 is provided with the platen 42, secured to the cross-frame by the bolt 43, which passes through the slot 44 in the central arm of the cross-frame 16, so that the platen 42 can be adjusted longitudinally in the slot 44.

The platen 42 is provided with a groove in which the cutting-board 45 is supported, as is clearly shown in Fig. 6, and in which the cutting-board can slide laterally, so that the cutting-board can be adjusted in all directions and new surfaces may be presented from time to time to the cutting-edges of the knives. The screws 46 are threaded in the cross-frame 16 and bear against the platen 42, so as to enable the platen and the cutting-board to be adjusted with great nicety to the cutting-edges of the knives.

The book-pad is placed with the edge along which the sheets are secured together, which edge is not to be cut, against the stop 47. This stop is supported on the rods 48 so as to slide inward and outward, and is operated by the hand-wheel 49, secured to the screw-threaded spindle 50, the end opposite the hand-wheel being swiveled in the cross-frame 16. The screw-threaded spindle 50 engages with the threaded nut 51 on the cross-bar connecting the sleeves of the stop sliding on the rods 48, so that by turning the hand-wheel 49 the stop

47 is moved toward or from the knife 22. When, now, a book-pad is placed on the block 37, the descending cross-frame 16 and cutting-board 45 force the same on the knives 22, 28, and 29. The springs 41 yield to this force. The three knives cut the book-pad simultaneously on three sides. On the upward reciprocation of the cross-frame 16 the book-pad and the platform 36 follow the cross-frame until by the force exerted by the coiled springs 41 the platform is stopped by contact with the bases 30 on a level with the table 9. During the continued upward movement of the cross-frame and cutting-board the cut book-pad is removed and another book-pad to be cut is placed on the block 37, and the operation repeated.

To secure clean-cut corners, the knife 22 is adjusted so as to bear firmly against the knives 28 and 29 by means of the screws 24 and 27, as has been heretofore described.

It is evident that one of the two cross-knives, either 28 or the knife 29, may be a fixed knife and the other adjustable, as herein shown and described, and also that one adjustable cross-knife, either the knife 28 or the knife 29, may be used in connection with the knife 22 when only one side and one end of the book-pad are to be cut.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent—

1. In a machine for cutting the edges of book-pads, the combination, with the table and the reciprocating cutting-board, of a yielding platform, a block resting on the platform, and a fixed knife and two adjustable knives constructed to cut the three edges of a book-pad simultaneously, as described.

2. The combination, with the table of a machine for cutting the edges of book-blanks, of a yielding platform, a reciprocating cutting-board, a fixed base provided with a vertically-adjustable knife, and horizontally-adjustable bases provided with vertically-adjustable knives constructed to cut the three edges of a book-blank simultaneously, as described.

3. In a machine for cutting the edges of book-pads, the combination, with the reciprocating cross-frame carrying the cutter-board and the table provided with the three cutting-knives adjusted to cut the three sides of a book-pad, of the platform 36, the rods 38, the shelves 39, and springs 41, constructed to form a yielding support for the book-pad, as described.

4. The combination, with the table of a book-blank-cutting machine and the knives secured to the table on three sides, so as to cut the three edges of a book-pad simultaneously, of the reciprocating cross-frame 16, the adjustable platen 42, and the cutting-board 45, adjustable in the platen and carried by the same, as described.

5. The combination, with the driving-shaft of a machine for cutting book-pads, the table,

and the end frames, of the shaft 12, supported in the brackets 40, the pinions 10, the gear-wheels 13, provided with the studs 14, the reciprocating cross-frame 16, carrying the cutting-board, the connecting-rods 15, connecting the gears 13, with the cross-frame, and the cutter-knives secured to the table, constructed to cut the three sides of the book-pads, as described.

10 6. In a machine for trimming book-pads, the combination, with the reciprocating cutting-board, the yielding platform, and the

table 9, provided with the ways 32, of the fixed base 25, provided with the vertically-adjustable knife 22, and the horizontally-adjustable 15 knife-bases 30, having the beds 31 and the clamp-screws 33, constructed to adjust the knives with reference to the fixed knives to cut the three edges of a book-blank, as described.

ALBERT M. SAFFORD.

Witnesses:

J. A. MILLER, Jr.,
M. F. BLIGH.