

(No Model.)

3 Sheets—Sheet 1.

C. HAMMELMANN.
WOOD PLANING MACHINE.

No. 427,860.

Patented May 13, 1890.

Fig. 1.

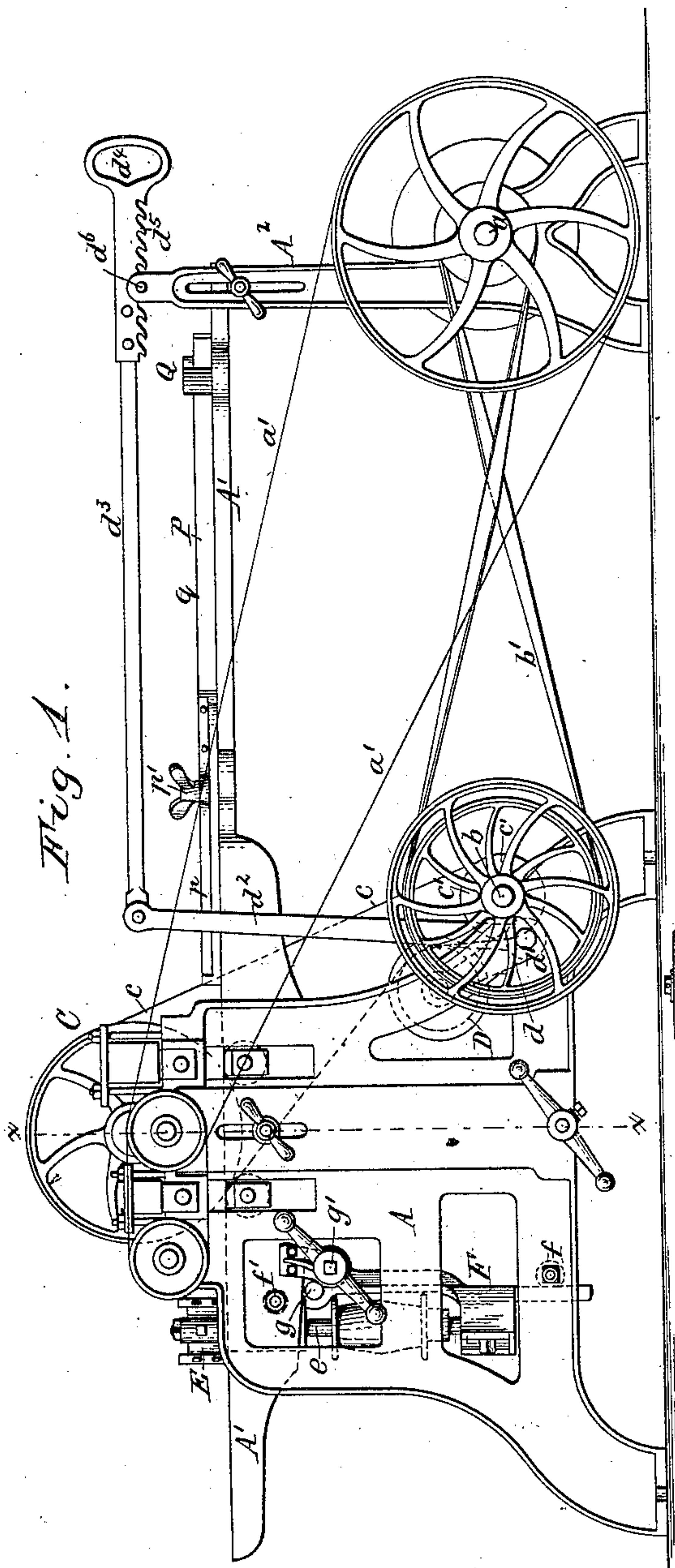
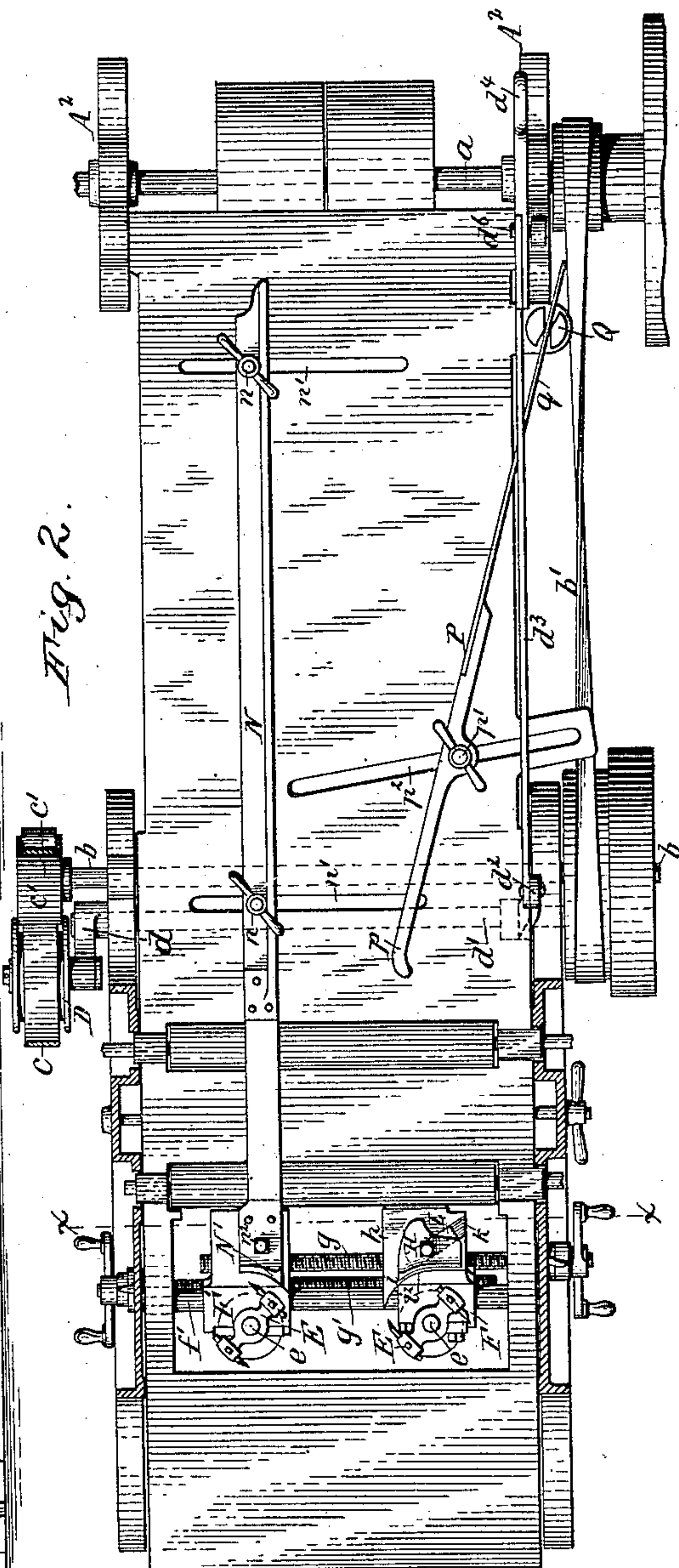


Fig. 2.



Chas. J. Buchheit.
Theodore L. Popp } Witnesses.

C. Hammelmann Inventor.
By Wilhelm Bonner.
Attorneys.

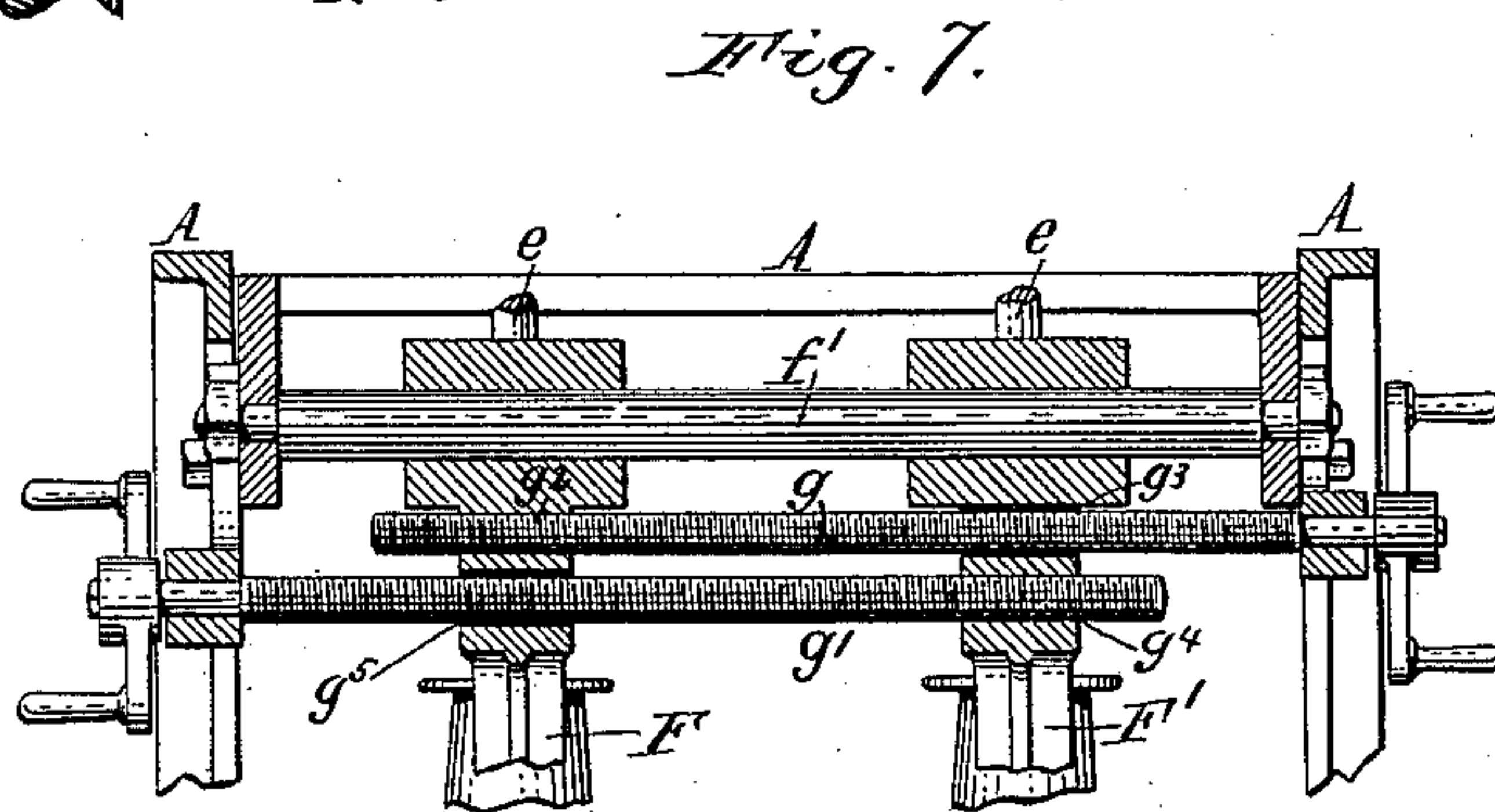
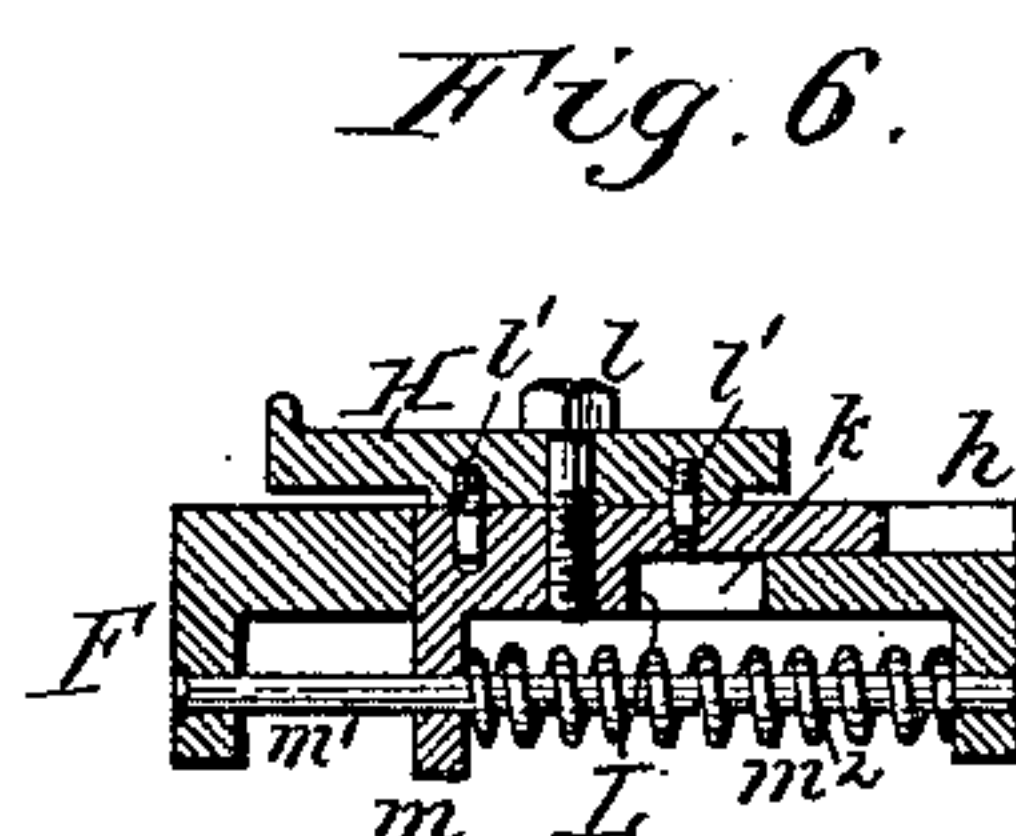
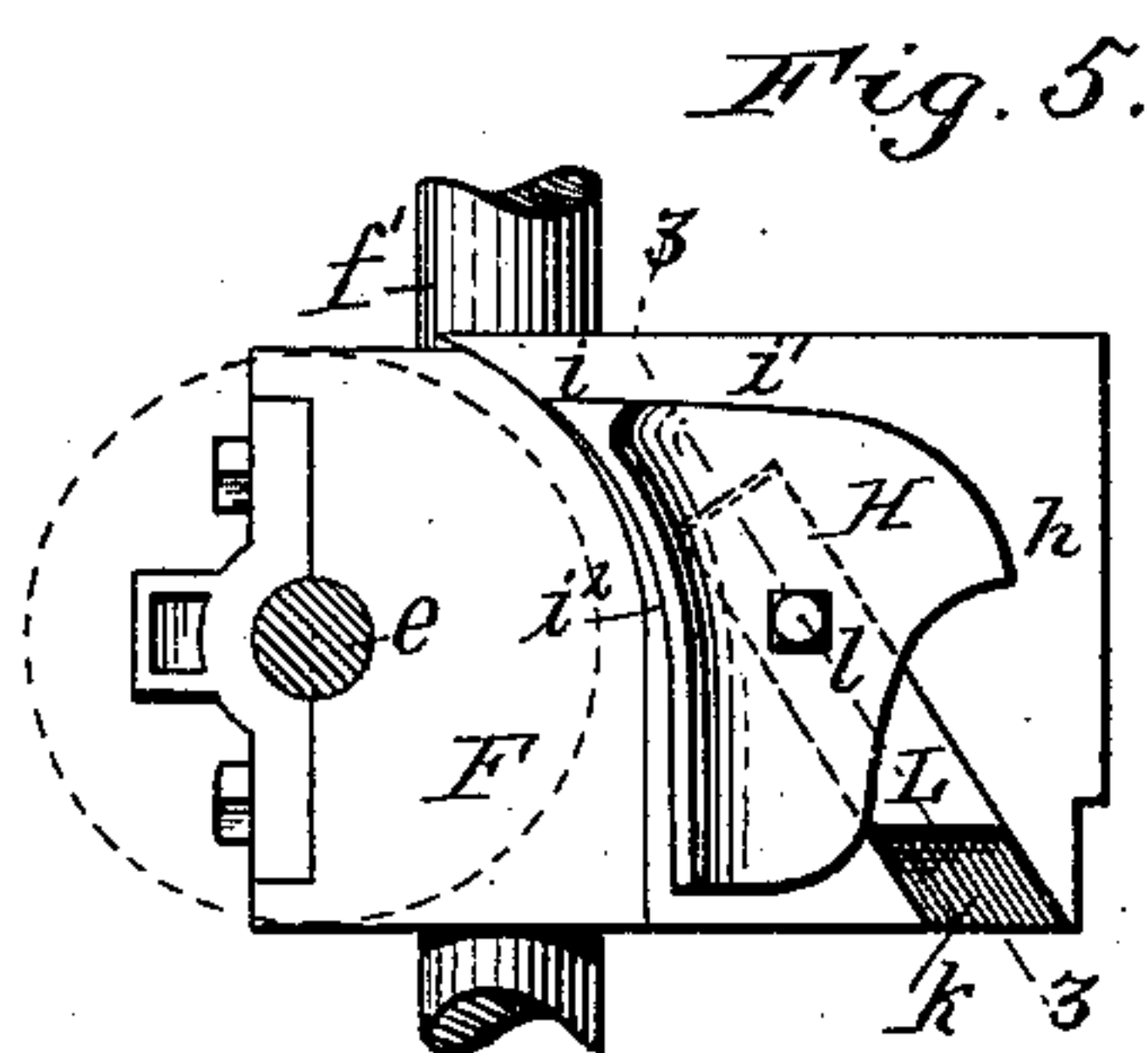
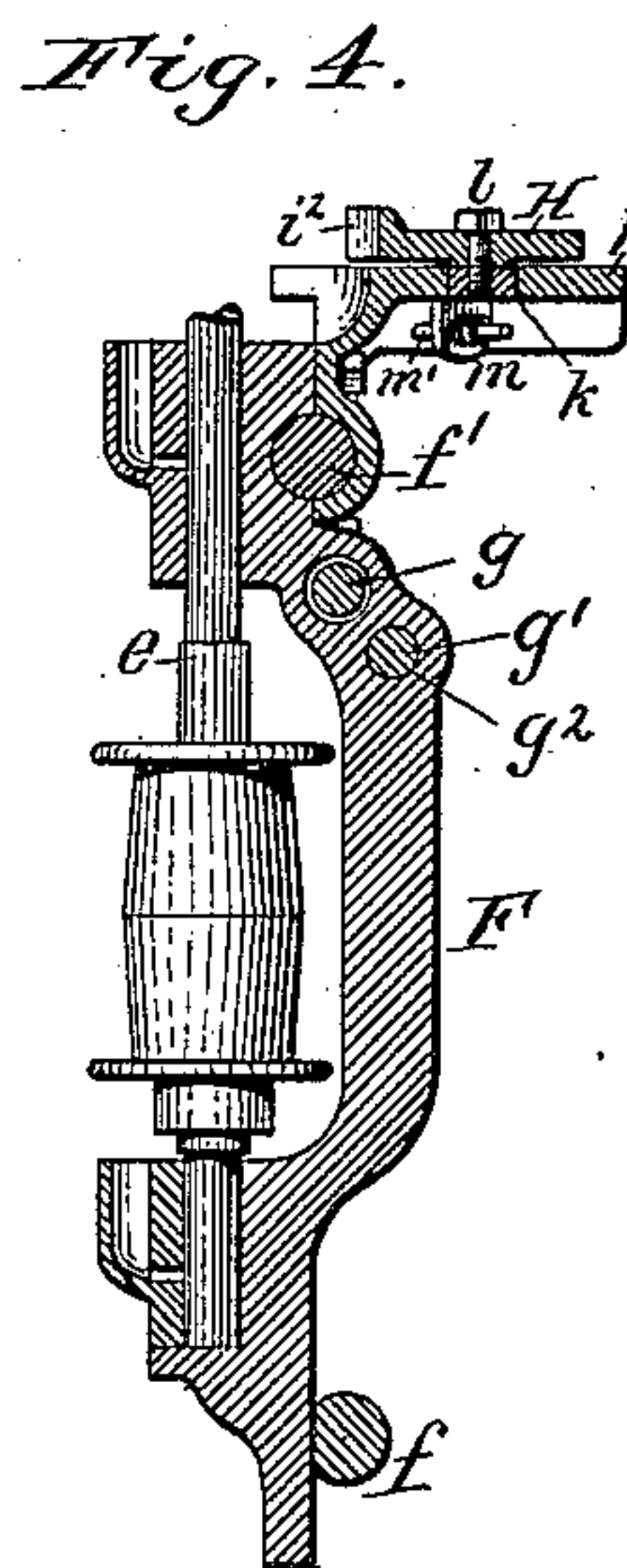
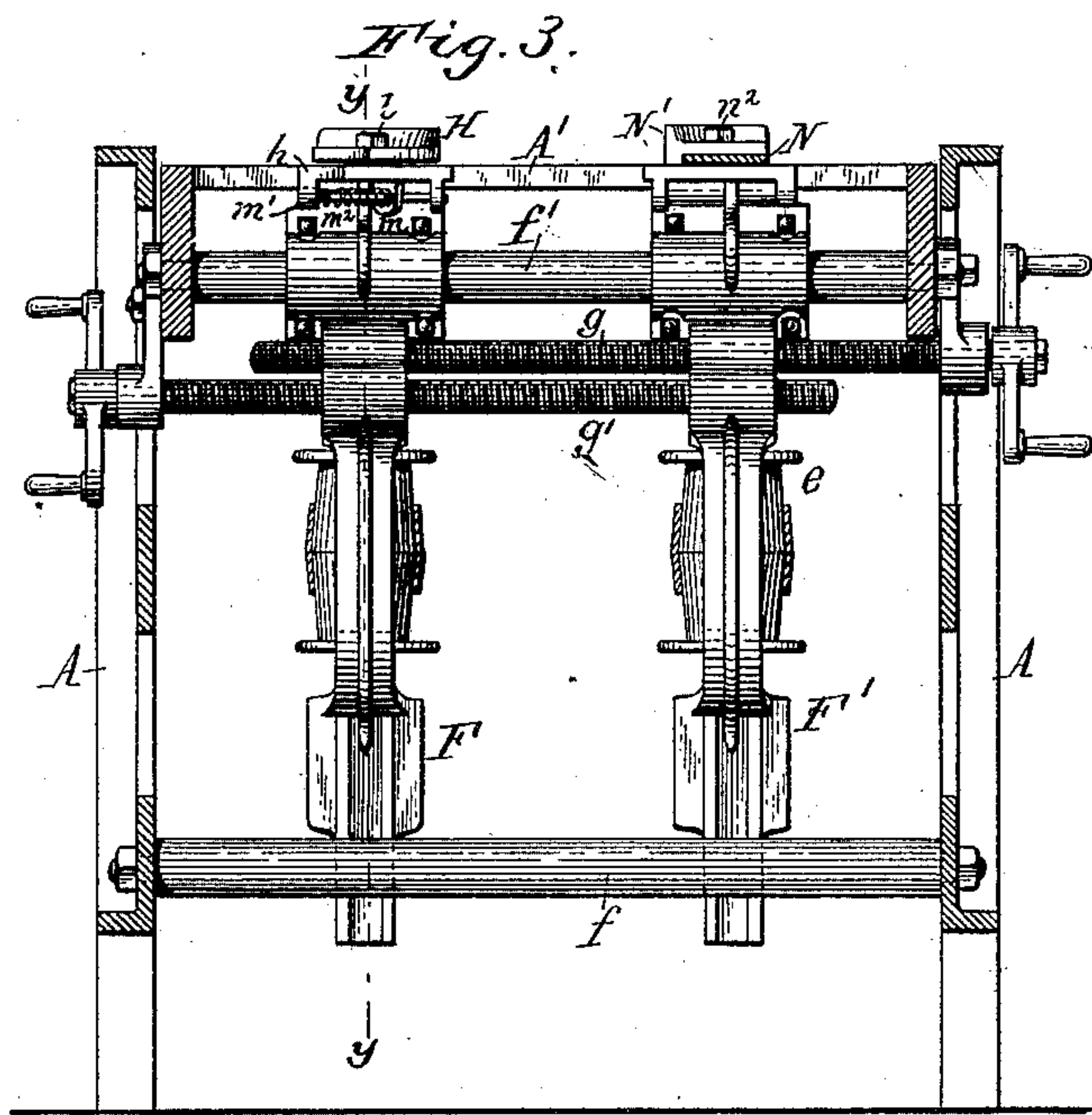
(No Model.)

3 Sheets—Sheet 2.

C. HAMMELMANN.
WOOD PLANING MACHINE.

No. 427,860.

Patented May 13, 1890.



Chas. Buchheit.
Theodore L. Popp. } Witnesses.

C. Hammelmann Inventor.
By Wilhelm H. Bonner
Attorneys.

(No Model.)

3 Sheets—Sheet 3.

C. HAMMELMANN.
WOOD PLANING MACHINE.

No. 427,860.

Patented May 13, 1890.

Fig. 8.

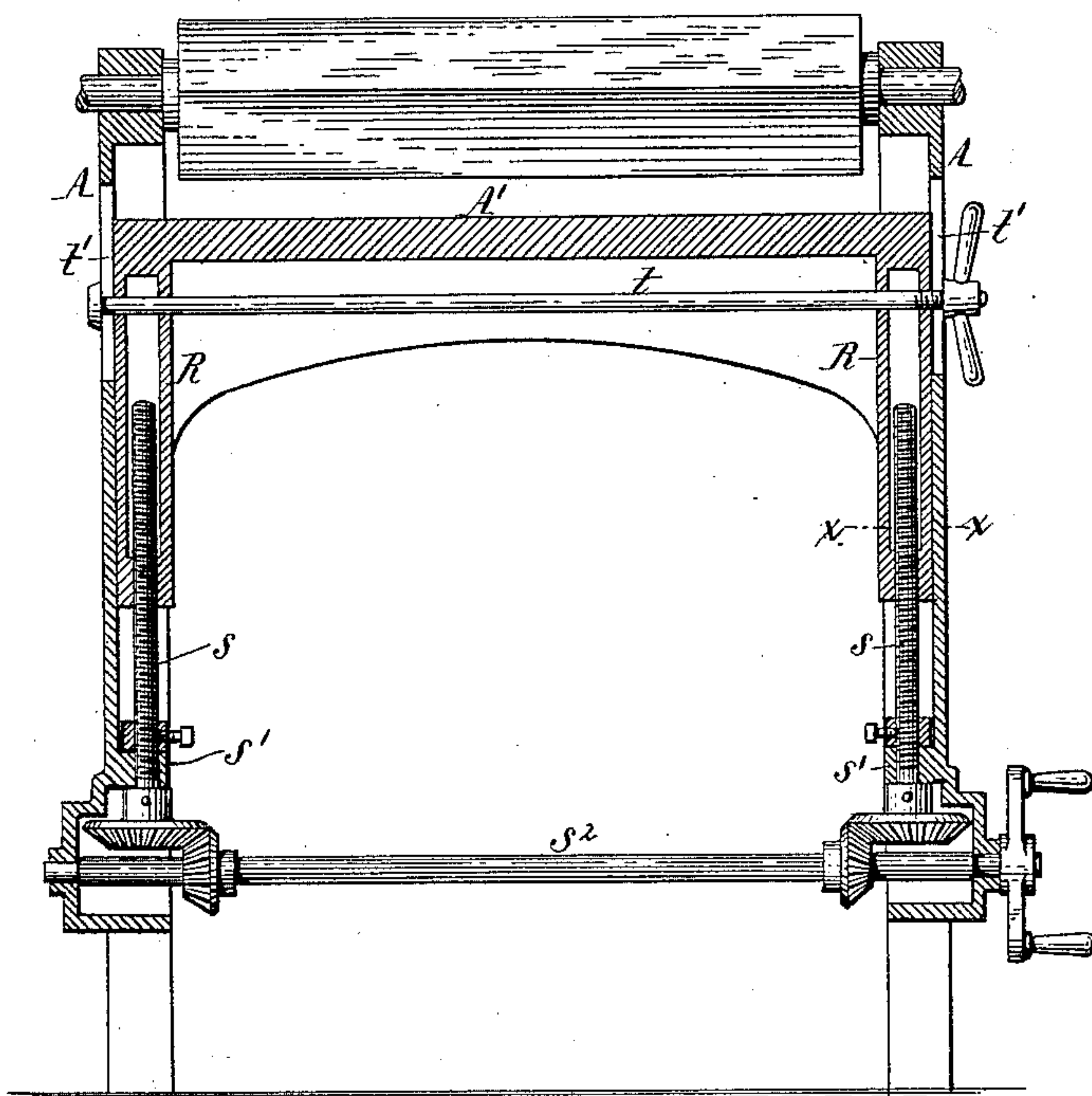
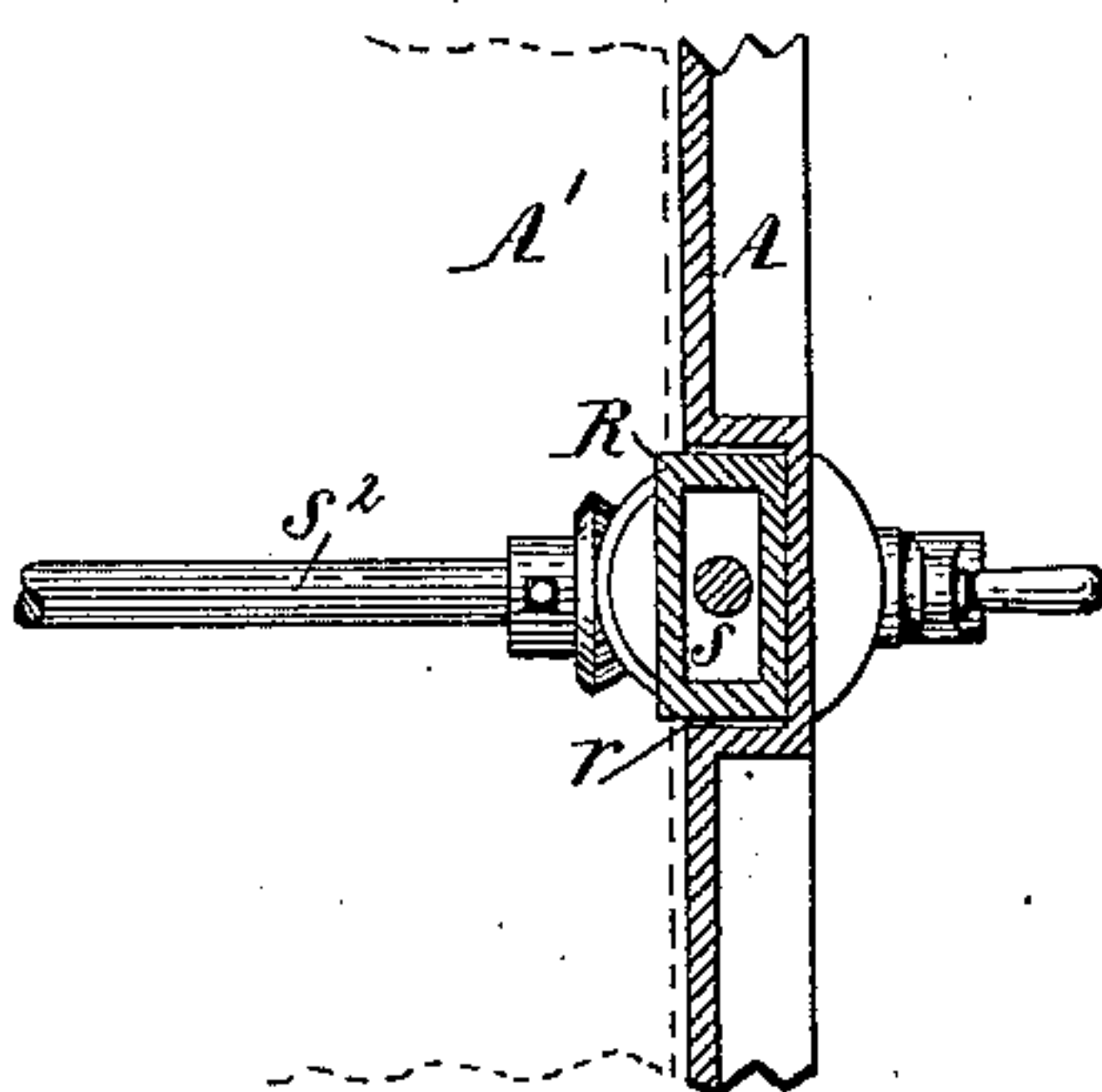


Fig. 9.



Chas. J. Buchheit.
Theodore L. Popp. } Witnesses.

C. Hammelmann Inventor.
By Wilhelm Boerger.
Attorneys

UNITED STATES PATENT OFFICE.

CHARLES HAMMELMANN, OF BUFFALO, NEW YORK.

WOOD-PLANING MACHINE.

SPECIFICATION forming part of Letters Patent No. 427,860, dated May 13, 1890.

Application filed September 1, 1885. Serial No. 175,944. (No model.)

To all whom it may concern:

Be it known that I, CHARLES HAMMELMANN, of the city of Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Wood-Planing Machines, of which the following is a specification.

This invention relates to an improvement in that class of wood-planing machines which are provided with upright cutter-heads for matching or planing the edges of the boards.

The object of my invention is to improve the construction and operation of the machine in various respects; and my invention consists of the improvements which will be hereinafter fully set forth, and pointed out in the claims.

In the accompanying drawings, consisting of three sheets, Figure 1 is a side elevation of a planing-machine provided with my improvements. Fig. 2 is a top plan view of the same. Fig. 3 is a cross-section in line $x x$, Fig. 2, on an enlarged scale. Fig. 4 is a vertical section in line $y y$, Fig. 3. Fig. 5 is a top plan view of the sliding chip-breaker on an enlarged scale. Fig. 6 is a vertical section in line $z z$, Fig. 5. Fig. 7 is a cross-section of the upper portions of the matcher-frames. Fig. 8 is a cross-section in line $x x$, Fig. 1. Fig. 9 is a horizontal section in line $x x$, Fig. 8.

Like letters of reference refer to like parts in the several figures.

A A represent the side frames of the machine; A', the bed upon which the boards to be planed are placed; A², the standards supporting the front end of said bed, and a the horizontal driving-shaft, journaled in bearings attached to the lower portions of said standards.

a' is the endless belt whereby the horizontal cutter-head is driven directly from the driving-shaft a .

b is the counter-shaft, journaled in bearings attached to the lower portions of the side frames A and driven from the driving-shaft a by a crossed belt b' .

c is an endless belt running around a pulley c' on the shaft b and around a pulley C,

the shaft of which is geared with the feed-rollers in any suitable manner.

D is a tightener-pulley bearing against one side of the belt c and attached to an arm d , which is secured to one end of a horizontal shaft d' , journaled in bearings on the lower portion of the side frames A.

d^2 is an upright arm secured to the opposite end of the shaft d' , and d^3 is a horizontal hand-rod attached to the upper end of the arm d^2 and extending to the front end of the machine, where the rod is provided with a handle d^4 . The front portion of the rod d^3 is provided on its under side with notches d^5 , either of which can be engaged with a laterally-projecting pin d^6 , attached to the upper end of one of the standards A², whereby the pulley D can be tightened more or less against the belt c , as may be desired.

e represents the upright spindles, and E the matcher-heads secured to the upper ends thereof. The matcher-spindles are driven from the driving-shaft a in the usual manner.

F F' represent the upright frames in which the matcher-spindles are journaled, and which rest with their lower ends against a cross-bar f , secured to the side frames A A, and slide near their upper end upon a cross-bar f' , secured to the bed A'.

$g g'$ represent two horizontal screws whereby the matcher-frames F F' are adjusted laterally in the machine. These adjusting-screws turn in sockets formed in hangers G G', secured to the bed A', in which sockets they are held against longitudinal movement. The screw g works in a threaded opening g^2 in the matcher-frame F and passes loosely through an opening g^3 in the matcher-frame F', and the screw g' works in a threaded opening g^4 in the matcher-frame F' and passes loosely through an opening g^5 in the matcher-frame F. By means of the screws $g g'$ each matcher-head can be adjusted independently of the other, thereby increasing or decreasing the distance between the two heads to correspond with the width of the boards, and both matcher-heads can be adjusted together lat-

erally to one side of the machine, so as to bring the board under different portions of the horizontal cutter-head, thereby enabling the operator to use all parts of the horizontal cutter-head successively and equalize the wear of the knives of the same.

H represents a sliding chip-breaker attached to the upper end of the matcher-frame F. This chip-breaker slides horizontally upon a plate *h*, which is secured to the upper end of the matcher-frame F, as clearly represented in Fig. 3. The point *i* of the chip-breaker is bounded by a straight face *i'*, which rests against the board, and a concave face *i''*, which is approximately concentric with the matcher-head and is turned toward the same.

k is a slot formed in the plate *h* at an angle to the face *i'* of the chip-breaker and approximately tangential to the concave face *i''*.

L is a block which slides in the slot *k* and to which the chip-breaker is secured by a screw-bolt *l* and studs *l'*. The latter are secured to the chip-breaker and enter sockets in the plate L, thereby preventing the chip-breaker from turning on the bolt *l*. The block L is provided with a depending lug *m*, through which passes a horizontal rod *m'*, which is secured to the plate *h*, and which carries a coiled spring *m''*, whereby the chip-breaker is pressed against the board. The spring *m''* permits the chip-breaker to yield and holds it constantly in contact with the edge of the board. Upon removing the bolt *l* the chip-breaker can be detached from the block L, leaving the plate *h* unobstructed on its upper surface and in line with or below the bed A', thereby adapting the machine for wide surface planing upon removing the matcher-heads.

N represents the longitudinal guide-bar, which is secured to the bed A', and against which one edge of the board is placed. The bar N is secured to the bed by screws *n*, which are adjustable in transverse slots *n'*. The rear end of the guide-bar N is constructed with a chip-breaker N', which is secured to the upper end of the matcher-frame F' by a screw *n''*, so that upon loosening the screws *n* the rear end of the guide-bar N is adjusted with the matcher-frame F'.

P represents a spring presser-bar, which bears with its rear end against the opposite edge of the board and holds the latter against the guide-bar N. The rear portion *p* of the presser-bar P is rigid and pivoted to the bed A' by a bolt *p'*, which is laterally adjustable on the bed in a slot *p''*. The front portion of the presser-bar is composed of a spring or elastic bar *q*, which is held near its front end in a slotted support Q. The spring *q* permits the rigid rear portion of the presser-bar to yield to the inequalities in the width of the boards, and at the same time holds the rear end of the presser-bar constantly against the

edge of the board and the latter against the guide-bar N. By adjusting the bolt *p'* on the bed the position of the presser-bar is adjusted to the width of the board.

The side frames A are provided on their inner sides with vertical recesses or depressed ways *r*, and the bed A' is provided with depending legs R, which are arranged in the recesses *r* and are capable of vertical movement in the same.

s represents the vertical screws whereby the bed A' is vertically adjusted between the side frames A. These screws turn in sockets *s'*, formed on the inner sides of the lower portions of the side frames, and work in threaded openings in the lower portions of the legs R. The latter are hollow and inclose the upper portions of the adjusting-screws *s*, whereby the latter are protected against chips, dust, &c. The screws *s* are rotated by means of a horizontal shaft *s''*, geared with the screws in the usual manner. The bed is clamped in position after being adjusted by a screw-rod *t*, passing through vertical slots *t'* in the side frames A, as usual. The recesses *r* receive the legs R and adjusting-screws *s*, whereby the space between the side frames remains practically unobstructed, thereby enabling the driving-belts to be run closely to the side frames.

I do not desire to claim in this application the construction of the belt-tightening device shown and described herein, but reserve the right to claim said feature in a separate application to be filed therefor.

I claim as my invention—

1. The combination, with the planer-bed, matcher-frame, and matcher-head, of a slotted plate *h*, secured to the matcher-frame, a block L, capable of sliding in the slot of said plate, a spring *m''*, applied to the block L, and a chip-breaker H, detachably secured to the block L, substantially as set forth.

2. The combination, with the main frame, cutter-head, bed A', and the laterally-adjustable matcher-frame F', of the guide-bar N, adjustably secured to the bed, and a chip-breaker N', formed on the guide-bar N at its rear end and secured to the frame F', substantially as set forth.

3. In a planing-machine, the combination, with the bed A' and cutter-head, of the presser-bar P, composed of a rigid rear portion *p*, pivoted to the bed A', and an elastic front portion *q*, substantially as set forth.

4. In a planing-machine, the combination, with the bed A' and cutter-head, of the presser-bar P, composed of a rigid rear portion *p* and an elastic front portion *q*, a pivot *p'*, whereby the rigid rear portion is attached to the bed, and a slotted support Q, whereby the elastic front portion is attached to the bed, substantially as set forth.

5. In a planing-machine, the combination,

with the side frames A A, supporting the
cutter-head and provided with vertical re-
cesses *r* on their inner sides, of the bed A';
constructed with hollow depending legs R,
5 which are arranged in said recesses, vertical
adjusting-screws *s*, entering said legs and
having their upper portions protected by
said legs, and a horizontal shaft *s*², geared
with said screws, whereby the bed A' is ad-

justed toward and from the cutter-head, sub- 10
stantially as set forth.

Witness my hand this 18th day of August,
1885.

CHARLES HAMMELMANN.

Witnesses:

JNO. J. BONNER,
E. E. BLOOMFIELD.