

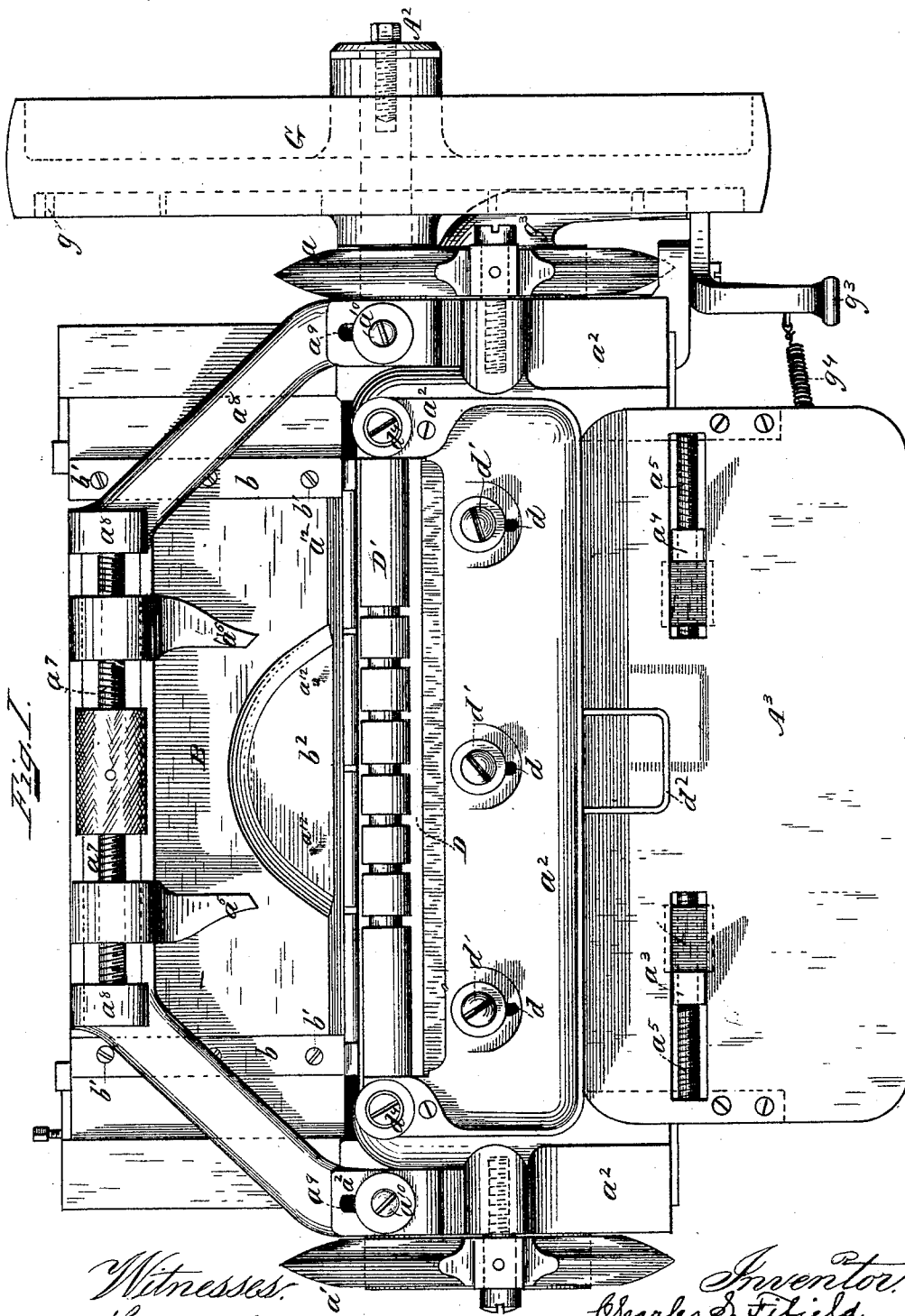
(No Model.)

6 Sheets—Sheet 1.

C. S. FIFIELD.
SKIVING MACHINE.

No. 459,231.

Patented Sept. 8, 1891.



Witnesses:
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Inventor:
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by his attorneys,
Magnusson & Bush

(No Model.)

6 Sheets—Sheet 2.

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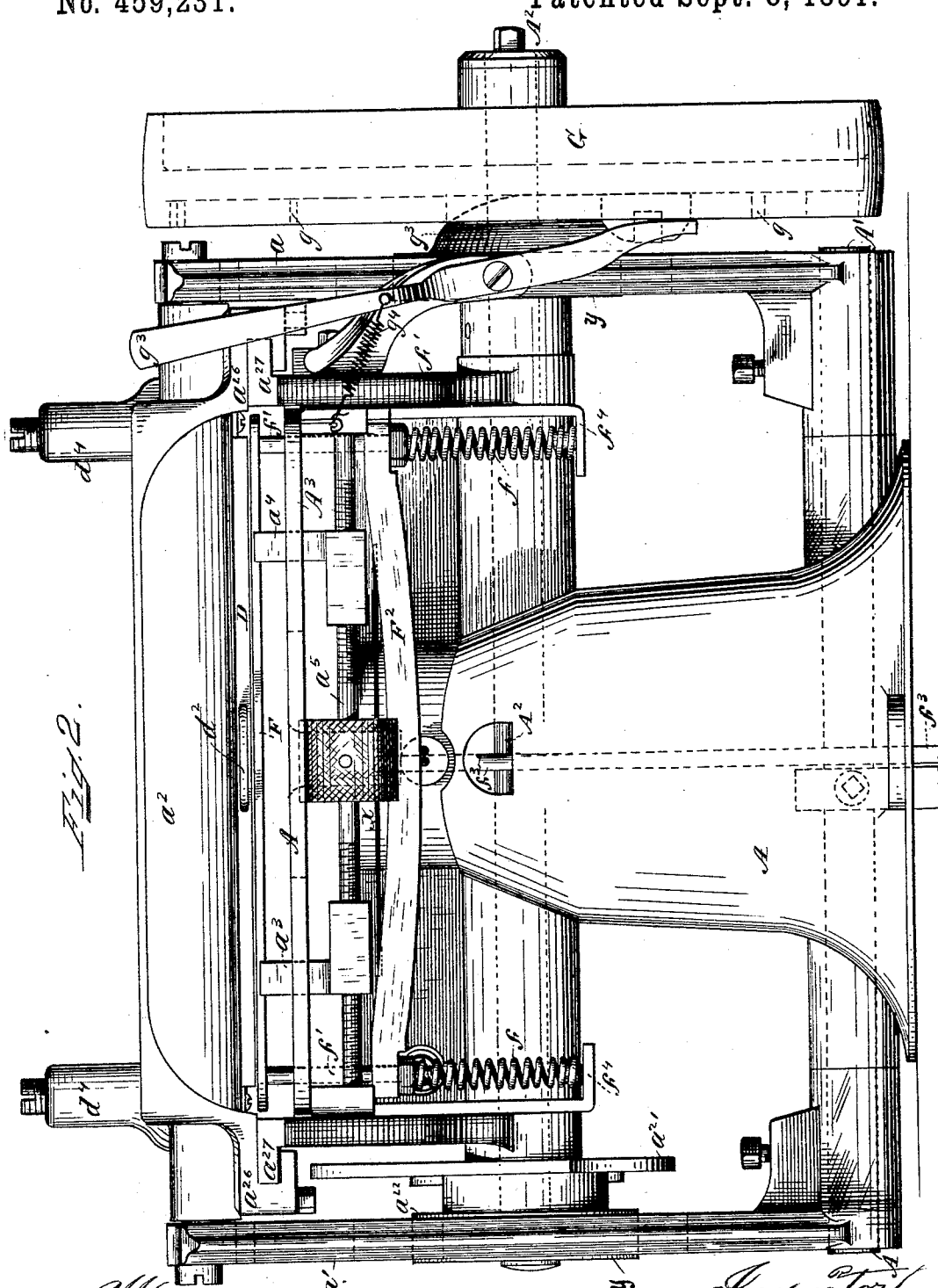


Fig. 2.

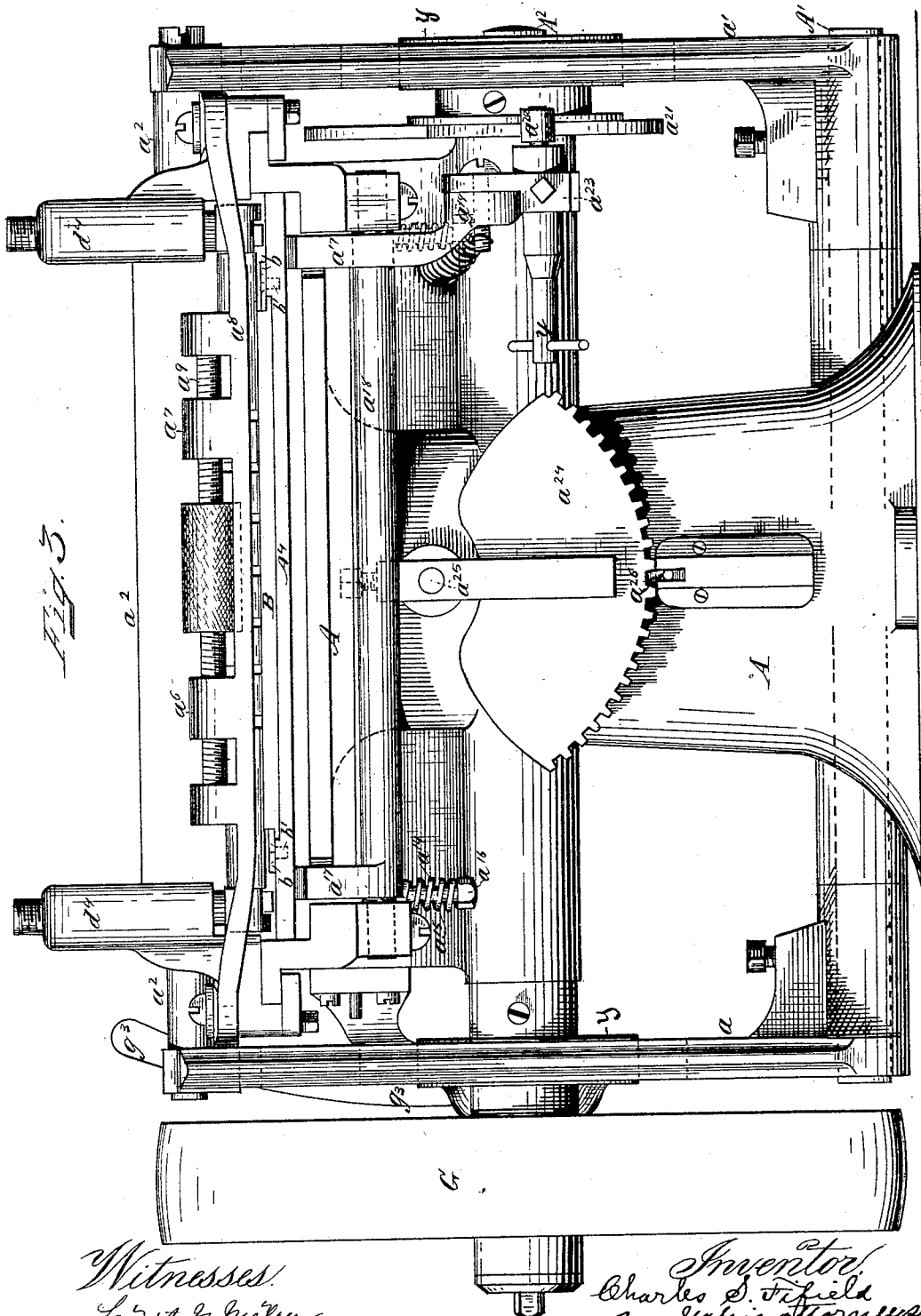
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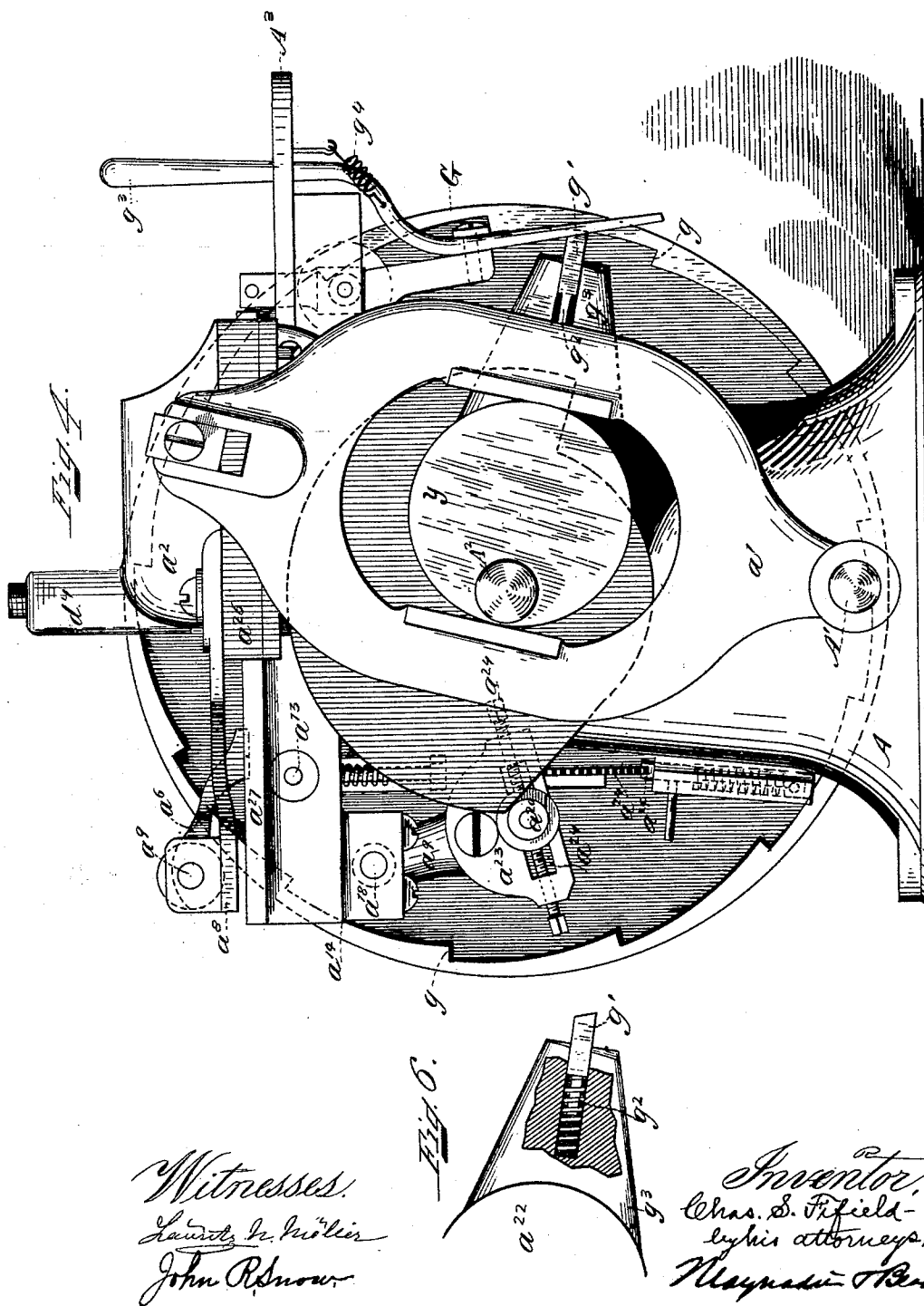
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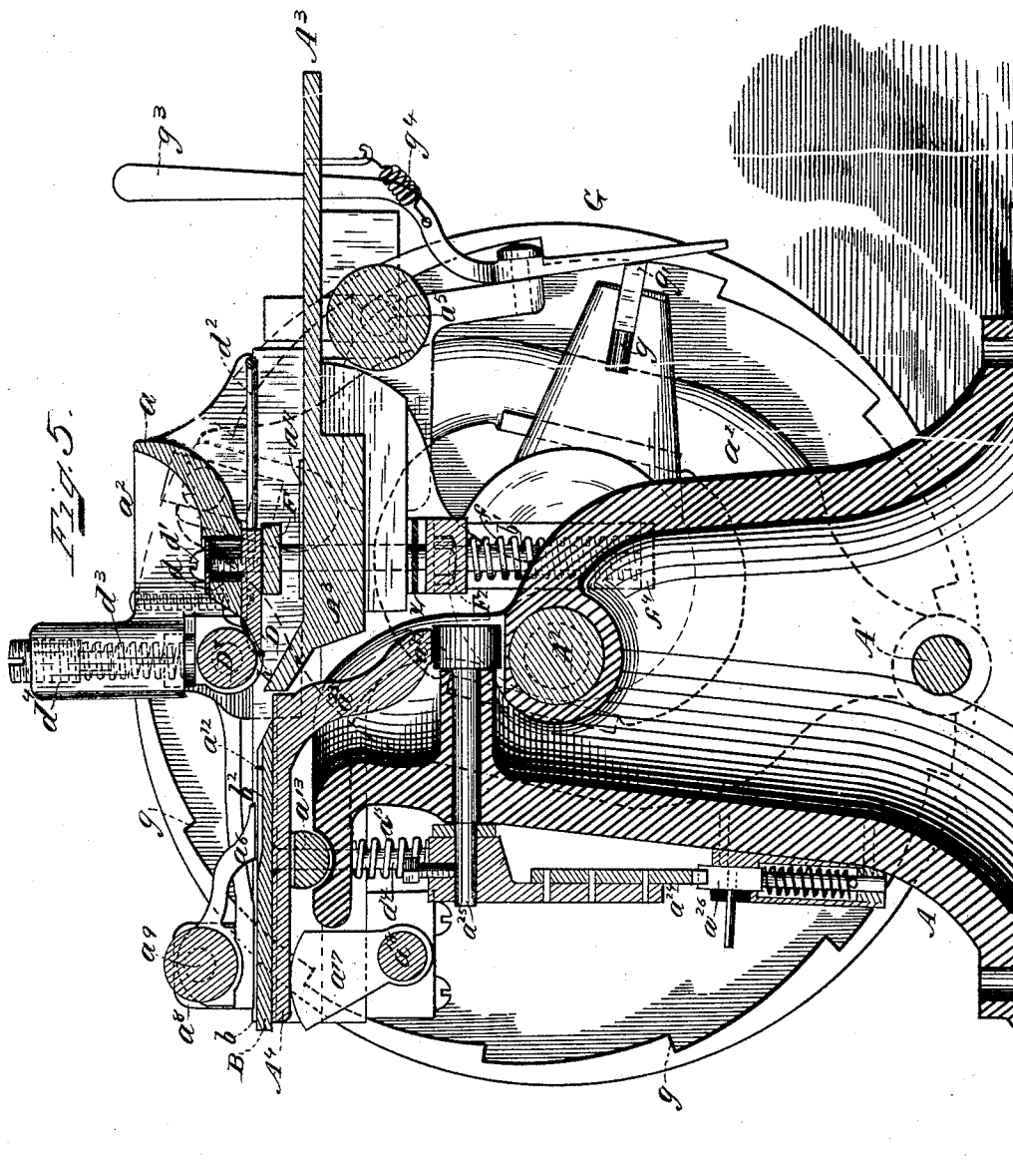
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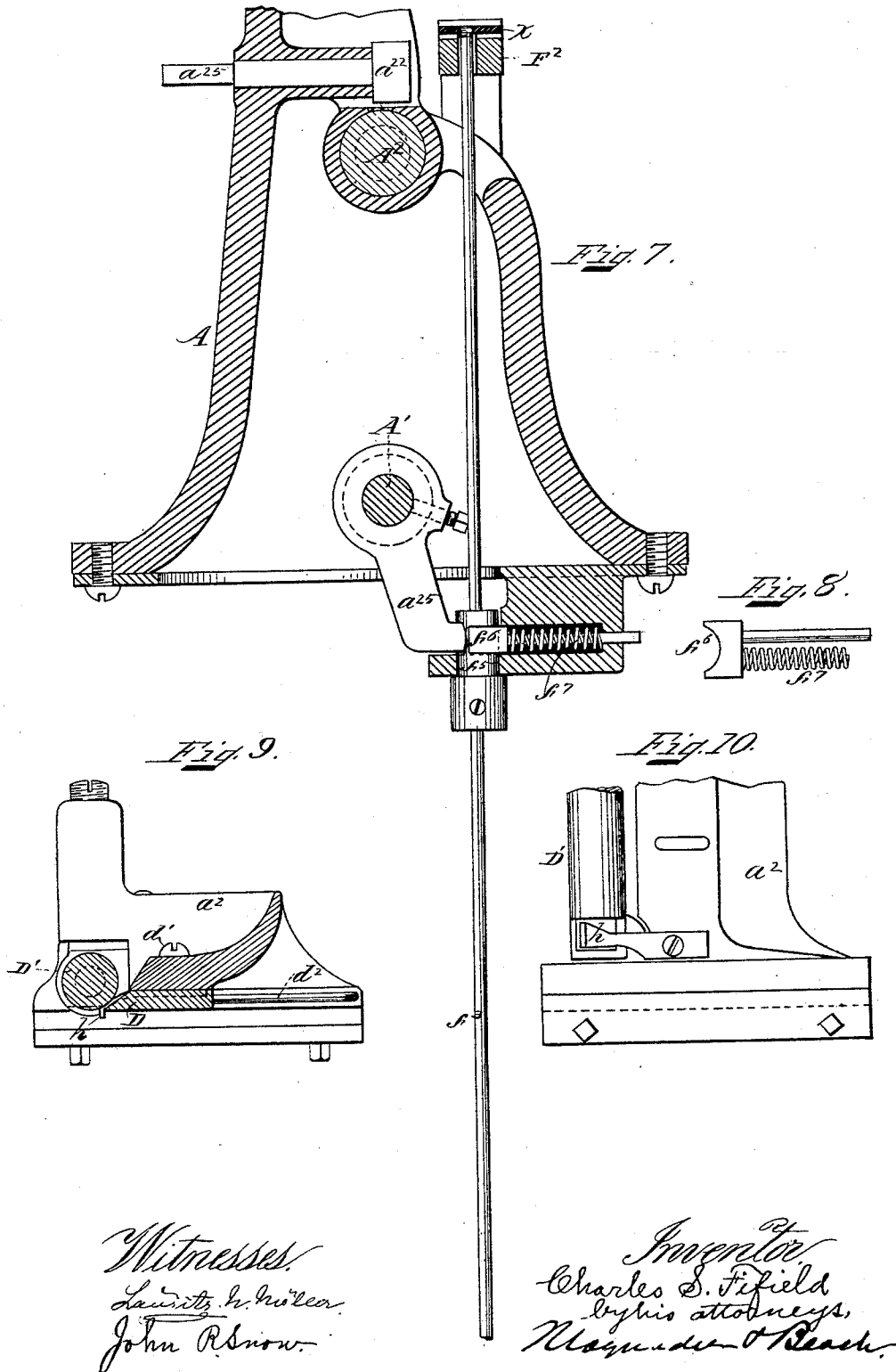
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UNITED STATES PATENT OFFICE.

CHARLES S. FIFIELD, OF REVERE, MASSACHUSETTS.

SKIVING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 459,231, dated September 8, 1891.

Application filed August 4, 1890. Serial No. 360,950. (No model.)

To all whom it may concern:

Be it known that I, CHARLES S. FIFIELD, of Revere, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Skiving-Machines, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a top plan; Fig. 2, a front elevation; Fig. 3, a rear elevation; Fig. 4, an elevation; and Fig. 5, a sectional elevation on line 5 5 of Fig. 1, looking to the right. Fig. 6 shows a part of the clutch for the driving-pulley. Fig. 7 is a sectional view illustrating one form of contrivance for locking the work-clamp in the stock. Fig. 8 is a detail of part of the lock. Fig. 9 is a sectional view on line 9 9 of Fig. 7, showing stops for the knife. Fig. 10 is a fragmentary view, also showing the stops for the knife.

My invention relates to machines for skiving uppers; and it consists, mainly, in the combination of a reciprocating knife with a work-support and adjusting mechanism for the work-support, as more particularly set forth below.

Various other features of my invention will be pointed out hereinafter.

In the drawings, which show the preferred of several contemplated forms of machine embodying my invention, A is the frame, A' a rocker-shaft, A² the main shaft, A³ the work-table, A⁴ one form of bed-support, and B the removable bed. Shafts A' A² are journaled in frame A, which supports work-table A³. That form of bed-support A⁴ shown in the drawings is a flat piece of metal having a downward projection at its inner edge, as shown in Fig. 5 and hereinafter explained. Rocker-shaft A' is provided with arms a a', connected by the knife-carrier a², which extends across the machine above the work-table and bed and moves to and fro over the work-table and bed from the front of machine toward the rear, and vice versa, the arms a a' being at the sides of the machine. (See Fig. 2.) Table A³ is provided with guides a³ a⁴ for the rear portion of the upper, and these guides are conveniently adjusted by a right and left screw a⁵, which connects them, the guides being studs which project through slots in the table above that surface of the table upon which the work is laid.

The screw a⁵ is mounted in brackets on the other side of the table and passes through lower portions of the studs or guides a³ a⁴, which have threaded holes to receive the screw. Guides a⁶ for the toe portion of the upper project over bed B and are also conveniently adjusted by a right and left screw a⁷, these guides and their adjusting-screw being conveniently mounted in a bracket a⁸, mounted on frame A. The guides a⁶ have at their outer ends threaded holes, through which passes the screw a⁷, the guides sliding, when the screw is turned, upon the opposed surface of a part of bracket a⁸, which extends from across the machine from side to side. This bracket is best made adjustable, so that the inner ends of the guides a⁶ may be readily moved toward or away from the operator. For this reason the ends of the bracket are formed with slots a⁹, through which pass screws a¹⁰, holding it in place. This construction is a feature of my invention.

In order to crease the upper and prick for the toe-caps while the stock is in the machine for skiving, thus combining the functions of several machines in one machine, I mount a creaser a'' on table A³, that is preferably a piece of thin metal projecting slightly above that surface of the table upon which the upper is placed, and toe-cap pricks a¹² on bed B, and as the knife moves toward the rear of the machine the stock is pressed against the creaser and pricks for the toe-caps. The toe-cap pricks a¹² are conveniently formed of sharp pins set in the upper surface of bed B.

F is a work-clamp moving toward and away from table A³ and supported by springs f, in this case surrounding its posts b' through cross-piece F², to which the treadle-rod f³ is secured. The clamp F is a bar which extends over table A³ from side to side thereof. The cross-piece F² is on the other side of table A³, and the posts or pins f'', secured to clamp F, pass through holes in table A³ and through holes in cross-piece F², to which they are secured in this case by nuts, between which and bracket f⁴, mounted on frame A, the springs f are secured. (See Fig. 5.) The treadle-rod f³, being secured to cross-piece F², serves, when depressed, to move the clamp F toward the opposed surface of the table A³ against the force of springs f, which, when pressure

is taken from the treadle-rod, return the clamp F to its higher position. (Shown in Fig. 5. See also Fig. 2.) The bed-support A⁴ has a tilting motion, for a purpose herein-
 5 after explained, and is best mounted on a rocker-shaft a¹³, journaled in frame A, (see Figs. 4 and 5,) posts a¹⁴ passing through the frame A and being provided with springs a¹⁵ between frame A and nuts a¹⁶ on posts a¹⁴.
 10 The rear of the bed-carrier is raised by cams a¹⁷ on rocker-shaft a¹⁸, journaled in frame A and provided with an arm a¹⁹, having a roll a²⁰, which works with cam a²¹ on main shaft A². The front of the bed-carrier is raised or
 15 lowered, if desired, by a cam a²², mounted in frame A (see Fig. 2) and working with a projection a²³ on table-support A⁴. This cam is kept in any desired position by a suitable locking device, preferably a graduated locking
 20 device, made up of a toothed segment a²⁴ on the spindle a²⁵ of cam a²² and a spring-controlled tooth a²⁶. Spindle a²⁵ is journaled in frame A, and the cam a²² on said spindle is directly under the projection a²³ from the
 25 inner side of the table-support A⁴, so as to engage with that projection and keep the inner edge of the table-support A⁴ at the desired elevation. The spring-controlled tooth a²⁶ is conveniently supported by frame A and is
 30 pressed by its spring against the toothed edge of the segment a²⁴. The tooth a²⁶ is moved away from the segment to allow the cam a²² to be turned. By moving the toothed segment the cam a²² is turned and the front of
 35 the bed-support adjusted in any desired relation to the knife. The cam being locked in a desired position the machine is ready for a given grade of material, provision being made, as hereinafter described, for variations in the
 40 grade.

The other parts of the machine will be best understood from a description of its operation, which is as follows: The front of the bed B being adjusted for the given grade of stock
 45 to be skived, as already explained, and the knife-carrier being in its forward position, as shown in Fig. 1, the upper is placed on the table A³, under the knife and over the bed, being kept in the desired position by adjustment of the guides a³ a⁴ a⁶, according to the
 50 size of upper to be skived. The clamp F is then moved against the upper by depressing the treadle-rod, which it is desirable to lock in its lower position. The form of lock
 55 shown is an excellent one for the purpose, and is made up of a projection f⁵ on the treadle-rod and a spring-slide f⁶. As the treadle-rod is moved down, the projection is carried out of the path of the slide, which is moved over
 60 the projection f⁵ by its spring f⁷, so that the clamp is locked against the work. The main shaft A² is now set in motion and the cams γ thereon engage the rocker-arms a a' (which are preferably formed with openings to receive
 65 the cams γ , as shown in Fig. 4) and cause them to move toward the rear of the machine, thus carrying the knife over the upper and

into engagement with it from near the front edge of the bed toward the rear thereof. The rear edge of the bed is in a raised position
 70 during the skiving movement of the knife, and its position may be adjusted for the production of skived margins of any desired thinness. The bed is best raised and lowered
 75 by cams a¹⁷, the motion or range of motion of which is conveniently varied by adjustment of roll a²⁰ in bracket a²³ on arm a¹⁹ of rocker-shaft a¹⁸, the roll a²⁰ being mounted in a slot a²⁴ in bracket a²³ and held therein by screws a²⁴. The cams a¹⁷ are so timed that when the cut
 80 is completed the bed drops away from the knife, and at this time the dog a²⁵ on the rocker-shaft A' strikes the spring-controlled slide f⁶ and pushes it back against the force
 85 of spring f⁷ out of the path of the projection f⁵ on the treadle-rod, so that the clamp F is unlocked and moved away from the work by its spring f. The work is now readily removed, and it is at this time in the form of
 90 machine shown that the knife moves back to its normal position. The knife D is preferably adjustably connected to its carrier a², and one convenient way of making this connection is to form carrier a² with transverse
 95 slots d, through which screws d' pass to clamp the knife to the carrier. A handle or extension d² on the knife is convenient for adjusting or removing the knife.

It is desirable to provide the knife-carrier with a roll D' near the edge of the knife, so
 100 as to hold down the leather ahead of the knife as the knife moves forward. The roll is best backed up by springs d³ in chamber d⁴, formed in frame. The bed B is preferably secured in its support by clamps b,
 105 mounted on the bed-support A⁴. By loosening the screws b' which secure the clamps in place the bed is easily removed and another replaced. The bed is formed with a depression b², the configuration of which depends
 110 upon the style and size of the boot or shoe uppers for which are to be herein skived at the margins.

I usually provide each machine with a variety of beds having depressions b² of varying
 115 configuration, and prefer to make the bed B of some soft metal, such as type metal, so that the depression b² may be easily formed or varied in its configuration, according to the nature of the work. In many cases users
 120 will desire plain beds, and will work out the depressions b² according to their own needs.

It is highly desirable to provide the knife-carrier with stops h, by which the knife is arrested at the proper place when put into the
 125 machine, and knife-carrier a² is best formed with lips a²⁶, which engage flanges a²⁷, Fig. 4, forming tracks for carrier a² on frame.

The form of my machine shown is formed with one of numerous clutch arrangements. In
 130 this case the flange of driving-wheel G is provided with a series of teeth g, with which a slide g', backed up by a spring g², Fig. 6, engages. A hand-lever g³, backed up by a

spring g^4 , is provided for conveniently clutching and unclutching the pulley G and shaft A^2 , the slide g' and spring g^2 being mounted in a projection g^3 from a cam γ .

5 The spring X, interposed between cross-piece F^2 and table A^3 , is a convenient means of providing for the variations in thickness of stock referred to.

What I claim is—

10 1. In a skiving-machine, the combination of a work-table, a bed, and a knife with means substantially such as described—that is, cams a^{17} , rocker-shaft a^{18} , and connected parts—for lifting the rear edge of the bed, all combined
15 and operating substantially as and for the purpose set forth.

2. In a skiving-machine, the combination of a bed and a knife with means for adjusting one of the edges of the bed in any desired position, and means substantially such as described—that is, cams a^{17} , rocker-shaft a^{18} , and
20 connected parts—for lifting its opposite edge, all combined and operating substantially as and for the purpose set forth.

25 3. In a skiving-machine, the combination of rocking bed B with a cam a^{22} , toothed segment a^{24} , connected to the cam, and a catch a^{26} to engage the segment and hold the cam in its adjusted position; the cam engaging the
30 bed A^4 to tilt it, substantially as and for the purpose set forth.

4. In a skiving-machine, a knife-carrier a^2 , in combination with rocker-arms a' , rocker-shaft A' , and cams γ , substantially as and for the purpose set forth. 35

5. In a skiving-machine, the combination of a table and a work-clamp with rod f^3 , projection f^5 thereon, spring-controlled slide f^6 , mounted on the frame of the machine, dog
40 a^{25} , and shaft A' , the dog being carried by the shaft and pushing the slide f^6 out of engagement with projection f^5 on rod f^3 , which is secured to the clamp, substantially as and for the purpose set forth.

6. In a skiving-machine, the combination of 45 table A^3 , work-clamp F, cross-piece F^2 , and spring X, the work-clamp and cross-piece being connected together and the spring being interposed between the table and cross-piece, substantially as shown, and for the purpose 50 set forth.

7. In a skiving-machine, an automatically-tilting bed, combined with means for securing one of its edges in an adjusted position, said means being provided with a graduated plate 55 a^{24} and locking device a^{26} , substantially as and for the purpose set forth.

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Witnesses:

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