

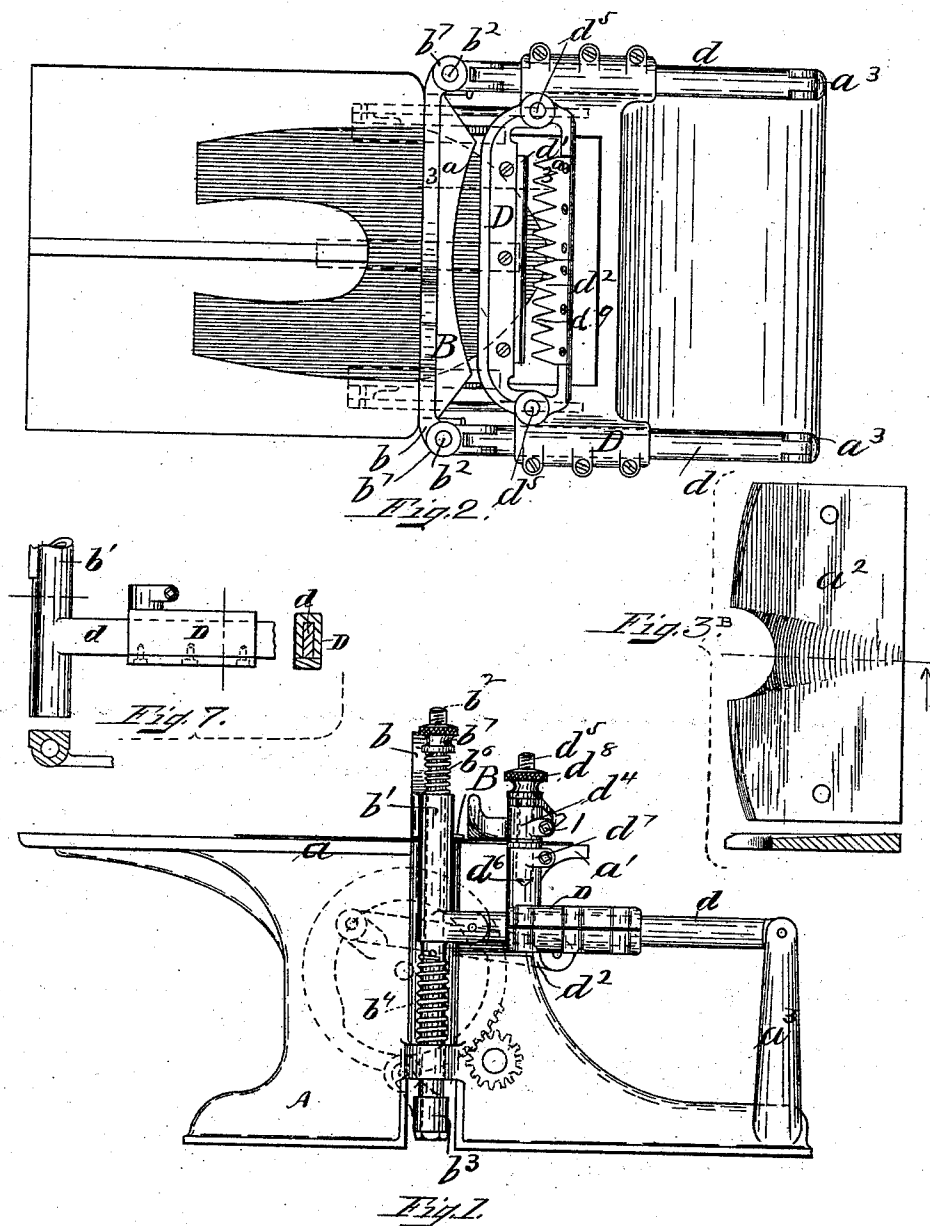
(No Model.)

C. S. FIFIELD.
SKIVING MACHINE.

3 Sheets—Sheet 1.

No. 505,198.

Patented Sept. 19, 1893.



WITNESSES.

INVENTOR.

John R. Snow.
H. E. Runick.

Charles S. Fifield
by his attorneys,
Maynader & Beach.

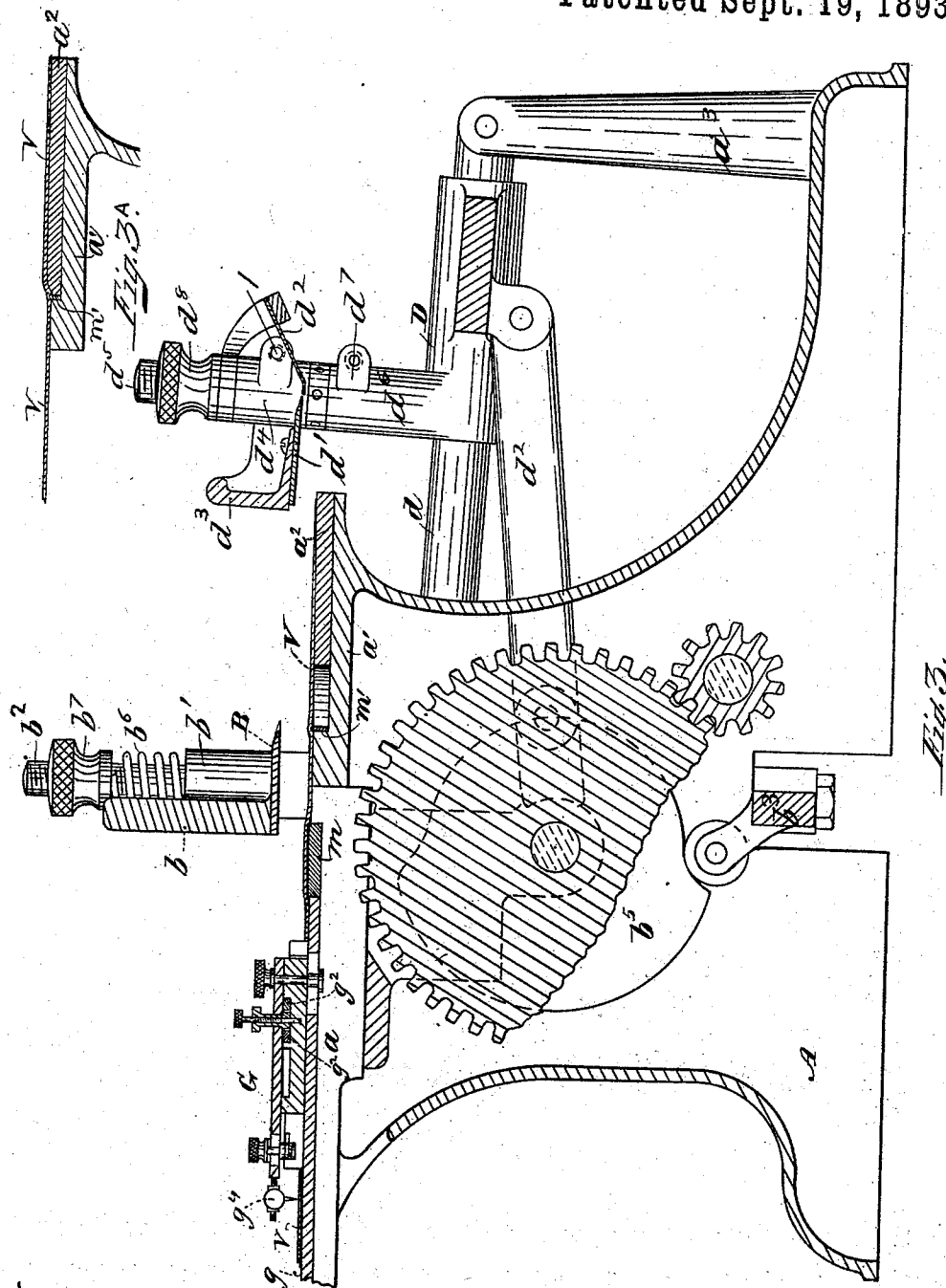
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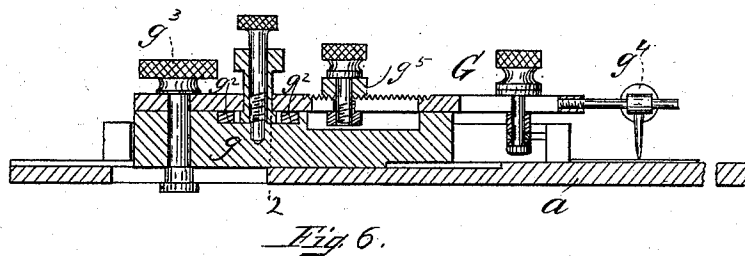
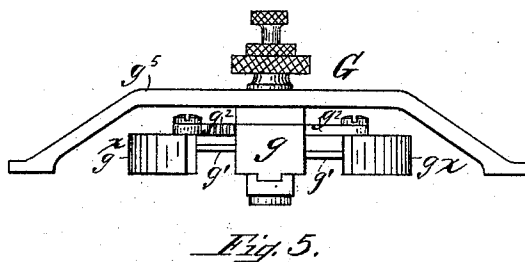
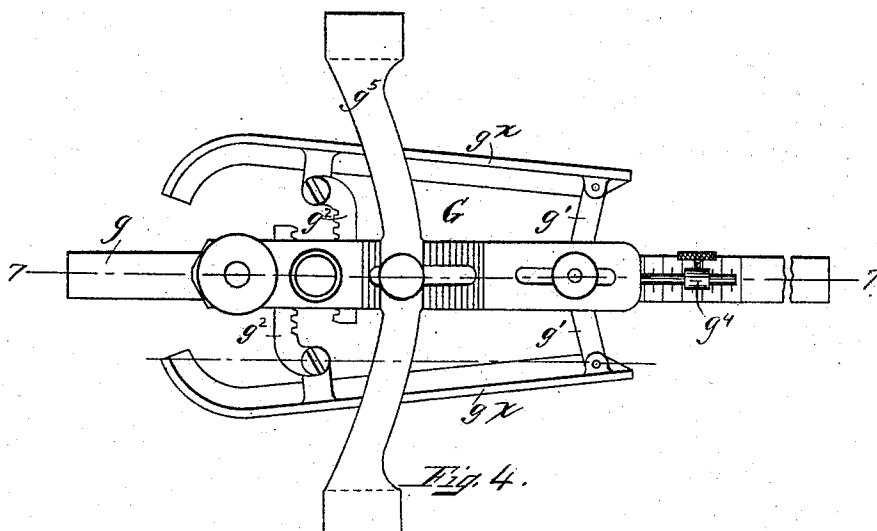
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UNITED STATES PATENT OFFICE.

CHARLES STEVEANS FIFIELD, OF REVERE, MASSACHUSETTS.

SKIVING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 505,198, dated September 19, 1893.

Application filed June 13, 1891. Serial No. 396,210. (No model.)

To all whom it may concern:

Be it known that I, CHARLES STEVEANS 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 side elevation of one form of machine embodying my invention, the vamp gage being omitted. Fig. 2 is a plan of what is shown in Fig. 1. Fig. 3 is a vertical central section on a larger scale. Fig. 3^A is a sectional detail illustrating the unskived vamp on the skiving bed. Fig. 3^B shows a removable bed plate in plan and cross section. Figs. 4, 5 and 6 illustrate the vamp-gage. Fig. 7 is a detail of a modification.

My invention relates to machines for skiving vamps, and for marking them; and consists primarily in the combination of a presser bar with a knife carrier which move up and down together, the knife carrier also moving to carry the knife over the stock while the stock is clamped by the presser bar, and rising when the presser bar is raised so that the knife makes its return stroke clear of the stock. Still other features consist in certain improvements in the vamp gage which are also described below.

In the drawings A represents a stout frame with a bed piece *a* *a'* on which the vamp is clamped by a presser bar B. The part *a* of the bed is slotted to receive the bar *g* of the gage G, and the straight marking strip *m* for marking the middle line on the vamp. The part *a'* of the bed is recessed to receive the detachable skiving bed *a*²; and the curved marking strip *m'*, is held between the skiving bed *a*² and the shoulder on bed *a'*. These marking strips *m* and *m'* are pieces of sheet metal which stand edgewise and project slightly above the level of the bed so that when the vamp V is forced down upon them by the presser bar B they will mark the vamp. In practice the presser bar also carries a wheel with the proper numbering dies projecting from its periphery, so arranged that when the bar B is forced down the proper die is pressed into the vamp; but as this is a matter well understood, it is not shown in the drawings.

The presser bar B is fast to the cross-piece *b* of a frame made up of the cross-piece *b* and two side pieces *b'*; and these side pieces *b'* receive rods *b*² which with cross piece *b*³ constitute the cam frame. The rods *b*² pass through ears on bed-piece A, and also through springs *b*⁴; so that the action of cam *b*⁵ will force cam frame downward while the springs *b*⁴ will move it upward when cam *b*⁵ permits. The rods *b*² are provided with springs *b*⁶ above the side pieces *b'*, and adjusting nuts *b*⁷ in order to allow presser bar B to adjust itself to different thicknesses of leather.

The rods *b*² of the cam frame carry the ways *d* of the knife carriage D, so that when the presser bar is forced down by cam frame to clamp the stock, the knife *d'* on carriage D is brought into position for skiving; but when the presser bar is lifted by cam frame the knife-carriage is also lifted. The knife carriage is reciprocated by the connecting rod *d*² and its wrist pin on cam *b*⁵. Were the ways *d* of knife carriage D parallel with the surface of the skiving bed *a*² the cut of the knife *d'* would, of course be parallel with that surface; and the skiving would in that case be effected wholly by making portions of the surface of bed *a*² not parallel with the ways *d*.

In Figs. 1, 2, and 3, the ways *d* are hinged to the side pieces *b'*, and supported at their outer ends by posts *a*³ fast to bed-piece A; and in this form when the ways *d* and presser bar B are once adjusted for stock of medium thickness with a skiving bed having the proper surface; this adjustment will vary automatically to suit thicker or thinner stock; for with thicker stock the ways *d* will not move down so far at their inner ends as with medium stock; while with thinner stock they will move down farther at their inner ends than with medium stock; but at that part of the ways *d* occupied by the knife carriage when the knife leaves the edge of the stock the difference will be too small to take into account. This combination of presser bar and its frame with the knife carriage and its ways, so that the ways move up and down, as the presser bar is moved up and down, constitutes one feature of my invention; and is of great practical importance in skiving leather; and particularly so in skiving vamps.

The vamp is pressed close down upon the

upper surface of the skiving bed a^2 by the fingers d^9 which are carried by the knife carriage D, and which press upon the leather just in advance of the knife edge.

5 The knife holder d^3 is supported by the collars d^4 and the studs d^5 . These studs at their lower ends enter the posts d^6 , and each post d^6 is provided with a clamping screw through the ear d^7 so that when the studs d^5 are adjusted, the adjustment will be preserved by tightening the clamping screws and clamping the studs d^5 in their proper place. The upper parts of studs d^5 extend through the collars d^4 and also through the ends of the cross bar carrying fingers d^9 and the nuts d^8 clamp both in place.

The skiving bed a^2 rises sharply just beyond the marker m' as clearly shown in Fig. 3^A; and this is in order that the knife may engage the stock immediately after leaving the presser bar B by which the stock is forced upon the marker m' ; and this also constitutes a feature of my invention; namely the combination of the presser bar B the marker m' , and the bed a^2 with its upper surface sloping upward from the machine.

In a machine for skiving and marking vamps it is essential to provide a gage by which the vamps can be readily and accurately brought into position for skiving and marking; and as vamps vary largely in style as well as size the gage must be capable of accurate adjustment to suit different vamps.

The gage G has two arms g^x supported by two links g' and two racks g^2 . The two links are secured at their inner ends to a stud which slides in a slot to adjust the distance apart of the rear ends of the arms, as clearly shown in Figs. 4 and 6. The two racks engage with the same pinion 2, but on opposite sides of it so that when the pinion is turned the racks move in opposite directions and thus adjust the distance apart of the front ends of the arms g^x .

45 The point in the front end of the arm most distant from the axis of the pin which connects the arm with the rack, and the axis of that pin, and the axis of the pin connecting the arm with the link are best made in line, as clearly shown in Fig. 4. Its advantage is that the arms may be adjusted for the size of the vamp after the gage has been once set for one size, without re-setting the gage. In Dunn's patent No. 426,251, dated April 22, 1890, the axes of the pins connecting the arms with the racks and links are out of line with the extreme outer front end of the arms; and consequently the gage must be reset whenever the adjustment of the arms is varied.

60 The gage bar g slides in a slot in the bed a and when in its forward position the front end of the bar brings up against a stop, commonly the front end of the slot. A vamp of any style and size is then placed properly in the machine and the gage slid forward on its bar g , (the clamp screw g^3 being loosened to

allow the gage to slide on its bar g) until the front end of the gage arms are in contact with the throat of the vamp; the arms are then adjusted to fit the throat of the vamp. The gage is in this way set for all vamps of that style and size, and when thus set is clamped to its bar g by tightening the clamp screw g^3 . After having been thus set for one size and style the gage G and its bar g can be slid back, the bar g sliding in its slot, the skived and marked vamp taken off and another of the same size and style be put in place on bed a so that when the gage and vamp are slid forward both will be brought into exact position as soon as the end of bar g brings up against its stop. The index finger g^4 is also set to the scale mark indicating that size; and in order to set the gage for a size larger the gage is drawn back and re-clamped on the bar g until the pointer stands at the scale mark indicating a size larger; and so on for changes of size. As vamps vary in the cut of the throat, (being medium, high and low cut) the pointer is made movable, as otherwise confusion would arise when changing from one size of a high cut vamp to the same size of low or medium vamp. It would in fact be a difficult task to set the gage on its bar for variations of size if the pointer were not made variable, for the operator would then be obliged to recollect that the pointer did not indicate the size, but was placed arbitrarily, in one place for a given size of a low cut vamp; in a different plane for the same size of high cut vamp, and in a third place for the same size of a medium cut vamp.

Another feature of my invention adapts the gage to machines for skiving short vamps and consists in a cross piece g^5 whose ends form stops for the rear ends of the short vamp, and which is held upon the gage by notches and a set screw so that it can readily be changed by loosening the set screw and moving the cross piece to the proper notches. When this is done for a given size and style of short vamp it is readily changed for the next lower or higher size of that style by moving the cross piece one notch forward or back. As the styles of short vamps vary largely, I make the cross-piece g^5 , curved, not only to bring its ends close to the bed, as shown in Fig. 5, but also as shown in Fig. 4, thereby adapting a single cross piece to a far larger variety of styles than would be possible if the cross-piece were not so curved; for when the cross piece is used with its ends curving toward the front of the gage as in Fig. 4, it will take a range of sizes of very short vamps; but when changed end for end, so that its ends curve away from the front of the gage, it will take a range of sizes of vamps, which while they are what is called short vamps still have longer throats than other styles of short vamps.

The room for adjusting the cross piece is limited and it is for this reason that I curve the cross piece, both in plan and in elevation,

see Figs. 4 and 5, and provide for its change end to end, as above described.

Vamps vary largely in style, and all the sizes of each style are graded; moreover, while long vamps can be accurately gaged by their throats, those styles known as short vamps, must also be gaged by their rearends. These three facts must always be borne in mind, for a full understanding of these features of my invention, and in addition, it should be remembered that it is highly desirable in all machines of this class, whether for skiving or marking, or both, that the gage should be drawn well back from the presser bar when one vamp is to be removed and another put in. My gage must of course be set for each style; and to do this any size of that style is first properly placed in the machine; the gage bar g is then slid forward until its end brings up; and the gage G is then slid on the gage bar until the front ends of its arms g^x are in contact with the throat of the vamp; when the arms g^x are adjusted to fit the throat; the gage being of course made fast to its bar by clamp screw g^3 , when the bars g^x are adjusted. The pointer g^4 is also moved on the scale to indicate the size number. The machine is then ready for all vamps of that size and style, but after the presser bar B rises the operator draws back the gage G and its bar g , and the vamp which has been marked and skived, in order more readily to remove the finished vamp and put in another; and while the gage and its bar are thus drawn back, the next vamp to be operated upon is placed on the table a , and gaged; then the gage G , and the vamp are slid forward until the bar g brings up, when the machine, which comes to a stop as soon as the presser bar and knife carriage return to position, is started; whereupon the presser bar B and the knife carriage are moved downward by the cam frame; the presser bar clamping the vamp, which is in its exact position owing to the gage G being in its exact position; and the vamp being thus clamped, the knife carriage moves away from the presser bar B , on its ways, skiving the vamp; then the presser bar and the knife carriage are raised by cam frame; leaving the vamp free to be drawn back with the gage and its bar by the attendant while the presser bar and knife carriage are completing their return movements; when the machine comes to a stop. After thus operating upon a number of vamps of a given size of one style, all that is necessary in order to shift the gage for another

size of that style is to loosen the clamp screw g^3 and move the gage G on its bar g until the pointer indicates the desired size number, when the clamp screw g^3 is tightened; when the machine is ready for skiving that number of that style of vamps.

In Fig. 7, illustrating a modification, the ways d are rigidly connected with the side-pieces b' which are moved up and down with presser-bar frame, by the cam frame and while this answers well, yet the other form shown in Figs. 1, 2 and 3, and above described is preferable.

What I claim as my invention is—

1. In a skiving machine, the combination of the presser bar; the knife carriage; movable ways on which the knife carriage is supported and reciprocates; connection between the movable ways and the presser-bar; mechanism substantially such as is described by which the presser-bar and the movable ways for the knife carriage are elevated and depressed simultaneously and mechanism substantially such as is described by which the knife carriage is moved on its ways toward and from the presser bar, all as and for the purposes set forth.

2. In a skiving machine the combination of a knife carriage, a knife holder, and a cross-bar, provided with spring fingers to press upon the stock near the knife edge, the fingers slanting upward and away from the knife, and their ends arranged to move past, but so that they cannot strike the knife edge, all substantially as described.

3. In a skiving machine the combination with bed a^2 sloping upward from the marker; of marker m' and presser bar B as and for the purposes set forth.

4. In a skiving machine a gage, consisting of two adjustable curved arms for the throat of the vamp, and an adjustable cross-piece curved in plan and in elevation for the ends of the vamp, and a support for the arms and cross piece substantially as described.

5. In a skiving machine, a gage consisting of two adjustable curved arms for the throat of the vamp; a support for the arms; a gage bar on which the support is adjustable; a pointer adjustable on the support and a scale on the gage bar, all substantially as described.

CHARLES STEVEANS FIFIELD.

Witnesses:

EDWARD S. BEACH,
JOHN R. SNOW.