

(No Model.)

4 Sheets—Sheet 1.

J. A. SAFFORD.
LEATHER SKIVING MACHINE.

No. 477,459.

Patented June 21, 1892.

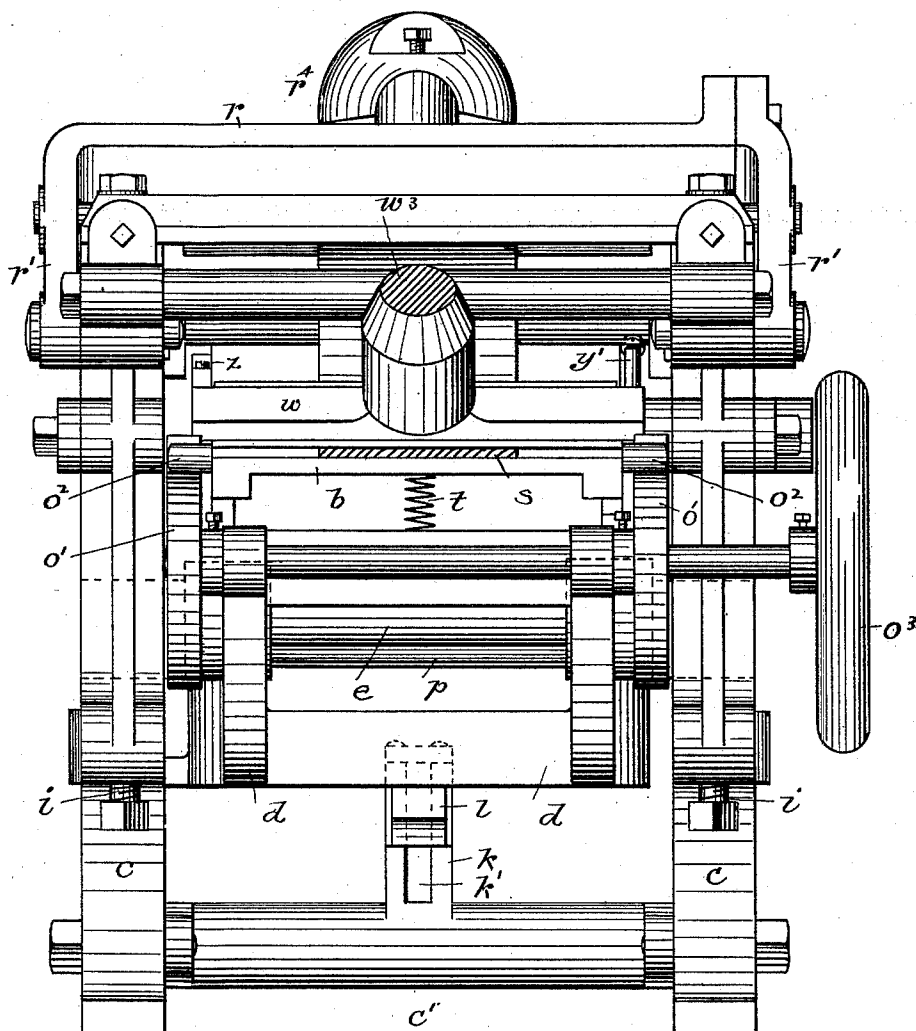


Fig. 1.

WITNESSES.

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(No Model.)

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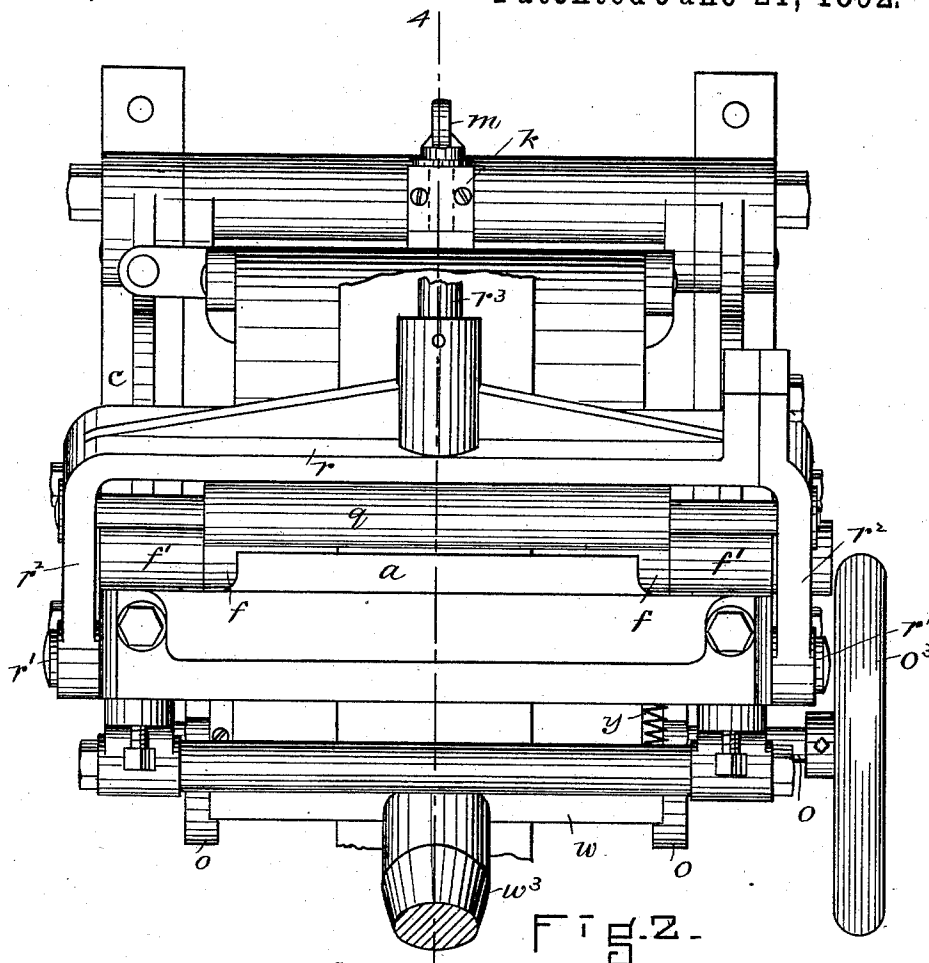


Fig. 2.

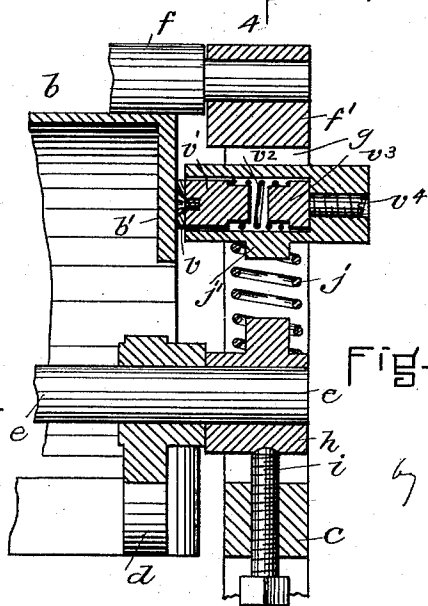


Fig. 5.

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(No Model.)

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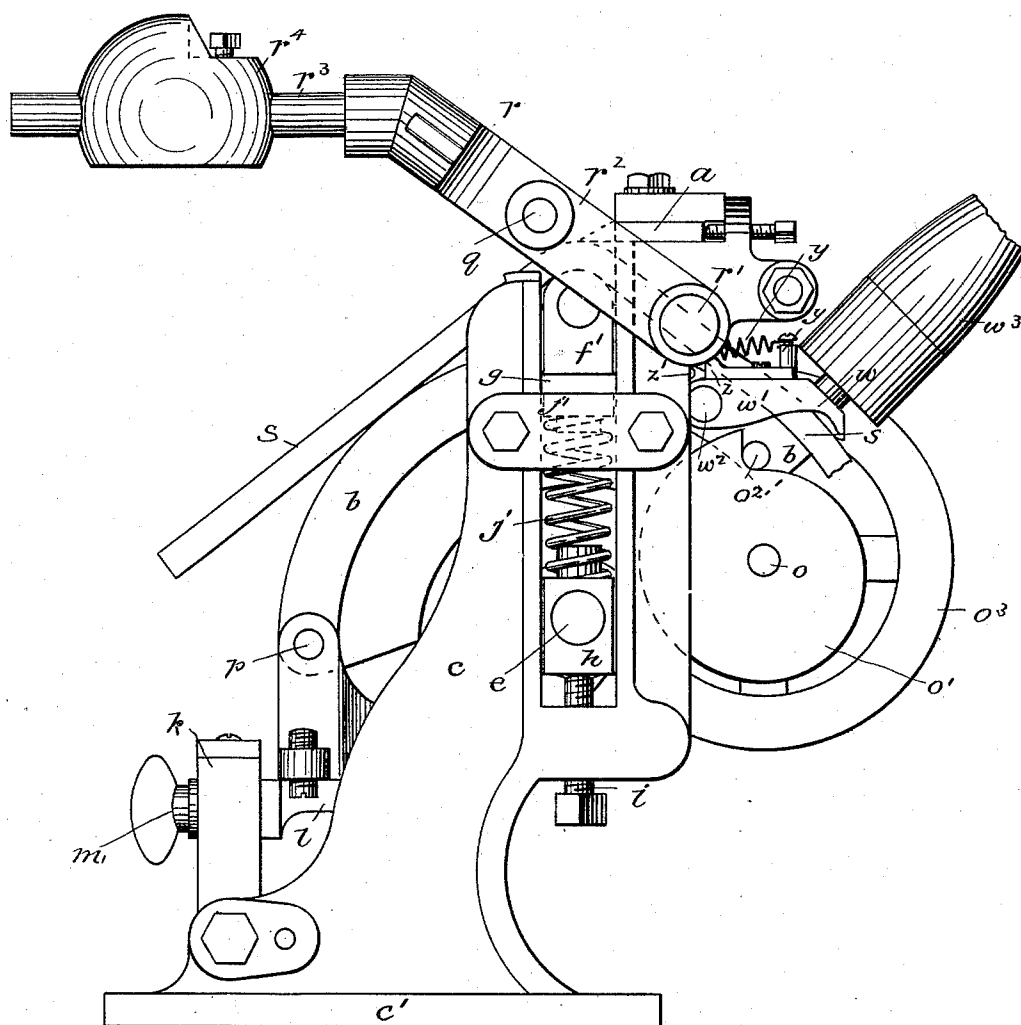


Fig. 3.

WITNESSES

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(No Model.)

4 Sheets—Sheet 4.

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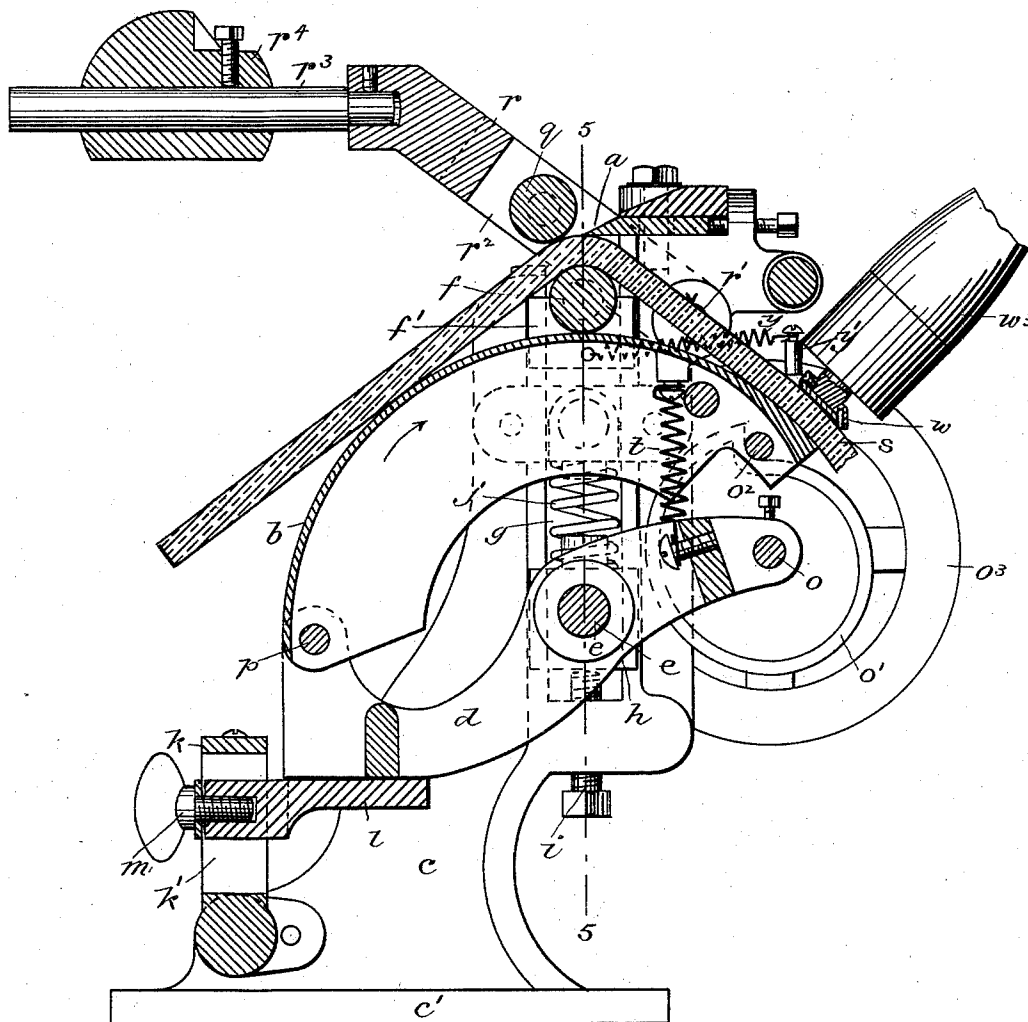


Fig. 4.

WITNESSES.

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UNITED STATES PATENT OFFICE.

JOSEPH A. SAFFORD, OF MALDEN, MASSACHUSETTS.

LEATHER-SKIVING MACHINE.

SPECIFICATION forming part of Letters Patent No. 477,459, dated June 21, 1892.

Application filed June 6, 1891. Serial No. 395,324. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH A. SAFFORD, of Malden, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Leather-Skiving Machines, of which the following is a specification.

This invention relates to the type of leather-skiving machines shown in Letters Patent of the United States No. 442,399, granted to me December 9, 1890, said machine being designed to cut diagonally through or into a strip of leather from one side to the other or to the end of the strip to produce a skived or beveled surface of any desired taper, and including a splitting or skiving knife and a segmental leather supporting-bed, which is adapted to oscillate under the knife and is adjustable, so that its surface will be more or less eccentric to the center on which it oscillates, the eccentricity of said surface causing the space between it and the knife to gradually decrease in width when the bed is moved in one direction, so that the under side of a piece of leather mounted on the bed will be caused to gradually approach the knife, a skiving of gradually-increasing thickness being thus removed by the knife from the piece.

The present invention has for its object to provide certain improvements looking to the more effective and satisfactory operation of a machine having the elements above named; and to this end it consists in the improvements which I will now proceed to describe and claim.

In the accompanying drawings, forming a part of this specification, Figure 1 represents a front elevation of my improved skiving-machine. Fig. 2 represents a top view of the same. Fig. 3 represents an end view. Fig. 4 represents a section on line 4 4, Fig. 2; and Fig. 5, Sheet 2, is a section on line 5 5, Fig. 4. The same letters of reference indicate the same parts in all of the figures.

In the drawings, *a* represents the splitting or skiving knife, which is suitably affixed to a supporting-frame comprising, in this instance, two vertical standards or side pieces *c c*, a supporting-base *c'*, and suitable transverse bars or connections between the side pieces.

b represents the segmental bed, which is adapted to support a strip *s* of leather while it is being skived, one end of said bed being pivoted at *p* to one end of a swinging frame or holder *d*, which is mounted to oscillate on a supporting shaft or rod *e*, the latter being supported by the frame of the machine.

The parts above described are in their general construction and arrangement like the parts similarly designated in my above-named patent, the novel features of my present invention being those hereinafter described.

The adjustment of the bed *b* is such that its outer surface is eccentric to the shaft *e*, (the bed being adjustable to vary the eccentricity,) so that when the bed is moved in the direction of the arrow in Fig. 4 the distance between the knife *a* and the adjacent portion of said surface will gradually diminish, so that the under side of the strip *s*, which is moved by the bed, is caused to gradually approach the knife, the latter being thus caused to cut a gradually-increasing skiving from the strip, as described in my above-named patent.

One of my improvements is the loose roll *f*, interposed between the knife and bed and constituting a support for the leather corresponding in position to the gage-roll of an ordinary leather-splitting machine. Said roll *f* rests loosely on the upper surface of the bed *b*, and has its ends journaled in boxes *f' f'*, which are fitted to slide vertically in slots *g* in the supporting-frame, the roll *f* being kept by said slots under the knife and permitted to rise and fall with the bed. The roll *f*, by giving the leather an abrupt curvature at the point where the knife first enters it, as shown in Fig. 4, facilitates the entrance of the knife into the outer surface of the leather and prevents the tendency of the leather to slip on the under surface of the knife for a considerable distance without being cut, which tendency is found to exist when the leather under the knife bears directly on the bed *b*, as in my former patent. The roll *f* would perform the same function if it were held from rotating. Hence this feature of my invention is not limited to a rolling support.

Another improvement resides in the pro-

vision of means for vertically adjusting the shaft *e*, on which the frame *d* and bed *b* oscillate, and thereby varying the height of the bed, so that its pivoted end when brought to its highest point may be at any desired distance from the knife, the thickness of the end of the skived portion being thus determined. The means employed for this purpose are boxes *h h*, which are vertically movable in the slots *g g*, and adjusting-screws *i i*, supporting said boxes. The boxes are held closely against said screws by springs *j*, interposed between the boxes, and fixed abutments *j'* in the slots *g*, said springs preventing loose upward movement of the boxes *h*. If desired, set-screws may be substituted for the springs *j*.

Another improvement consists in an adjustable stop *l* for regulating the movement of the pivoted end of the bed *b* away from the knife, and thus determining the length of the skived or beveled surface. Said stop is here shown as affixed to a vertical post *k*, attached to the supporting-frame and provided with a slot *k'*, in which said arm is vertically movable, the stop being provided with a clamping-screw *m*, adapted to affix the stop to the standard in any position to which the stop may be adjusted. The stop *l* is arranged to arrest the downward movement of the frame *d*, as shown in Fig. 4. It will be seen that when the stop *l* is in its lowest position the pivoted end of the bed *b* will be permitted at the commencement of the skiving operation to stand at the maximum distance from the knife, thus giving the maximum length of skived or beveled surface, the length of said surface being decreased by the upward adjustment of the stop *l*. Said stop may be constructed and adjusted in any other suitable way.

Another improvement is the means for adjusting the swinging end (as distinguished from the pivoted end) of the bed *b* to vary the eccentricity of the bed, said means comprising a shaft *o*, journaled in bearings in the bed-carrying frame *d*, and cams *o' o'*, affixed to said shaft, the perimeters of said cams supporting studs *o² o²*, affixed to the bed *b*. The shaft *o* is provided with a hand-wheel *o³*, by which it may be turned to cause the cams *o'* to raise and lower the swinging end of the bed. A spring *t*, Fig. 4, connected at one end to the bed and at the other end to the frame *d*, holds the studs *o²* down upon the perimeters of the cams *o'*. The cams *o'*, as adjusting devices to vary the eccentricity of the bed, are more quickly operated than the screw used for the same purpose in the machine shown in my former patent and afford a firmer support for the bed. I may use but one adjusting-cam instead of two, if preferred, and said cam or cams may be mounted on the shaft *e* or other part of the frame *d*.

Another improvement is the means for supporting and applying pressure to the pressure-roll *q*, which bears yieldingly on the upper surface of the leather in advance of the

knife. Said means include a yoke or frame *r*, having arms *r² r²*, which are pivoted at *r'* to fixed bearings on the supporting-frame and are provided with bearings which receive the journals of the roll *q*. The frame *r* has at its central portion an arm *r³*, provided with an adjustable weight *r⁴*, which gives the desired downward pressure to the roll *q*, the frame *r* being adapted to swing freely, so that the roll *q* can conform to the thickness of the leather and the adjustment of the bed *b*. The arrangement of the pivots of the swinging frame is such that the pressure-roll moves crosswise of the knife and cannot come in contact with the edge thereof.

Another improvement is a brake or friction device to retain the bed *b* by friction at any point in its movement, so that the bed will not drop loosely and abruptly when released by the operator at a point above its lowest position. Said brake is shown in Fig. 5 as a shoe *v*, which may be of leather or other suitable material, attached to a plunger *v'*, which is movable in a socket formed on the fixed abutment *j'* and is pressed by a spring *v²* against a flange *b'* on the bed *b*, said spring being adjustable by means of a movable abutment *v³* and an adjusting-screw *v⁴*.

The machine is provided with a clamp *w*, adapted to secure the strip *s* to the forward end of the bed, said clamp being here shown as a bar having ears *w' w'*, pivoted at *w²* to the bed *b*, and a handle *w³*, whereby the clamp may be pressed upon the strip *s* or raised therefrom, said handle also serving as the means whereby the operator oscillates the bed *b*. Said clamp does not differ materially in construction and operation from the clamp shown in my former patent. I have, however, provided one or more springs *y*, connected at one end with the bed and at the other end with a stud *y'* on the clamp, said springs acting to normally raise the clamp from the strip *s*, so that as soon as the operator releases the handle *w³* the clamp is automatically disengaged from the leather, which may therefore be readily removed. The extent to which the clamp is raised by the springs *y* is determined by lugs *z* on the ears *w'* and stops *z'* on the bed arranged to arrest said lugs when the clamp has been sufficiently raised. It will be seen that the eccentric-bed *b* does not directly support the leather at the point where it is presented to the knife and is not, therefore, a bed in the sense of a direct support for the leather like the bed shown in my former patent, the chief function of said bed being to support and guide the gage roll or bar. Hence in larger machines requiring to be operated by power the gage-roll *f* may be suitably geared or otherwise connected to a driving-shaft, in which event the bed *b* would serve only as a guide or support for the gage-roll and would be more properly termed a "guide."

I claim—

1. In a leather-skiving machine, the combi-

nation of a fixed knife, a supporting-frame therefor, a holder or support pivotally connected to the knife-supporting frame and having an axis movable toward and from the knife, a segmental bed pivotally connected at one end to said holder or support, means for adjusting said bed to make its surface more or less eccentric to the axis of said holder or support, and means for adjusting the axis of said holder toward and from the knife to determine the thickness of the end of the part skived by the action of the machine, as set forth.

2. In a leather-skiving machine, the combination of a fixed knife, a supporting-frame therefor, a holder or support pivotally connected to the knife-supporting frame, a segmental bed pivotally connected at one end to said holder or support, means for adjusting said bed to make its surface more or less eccentric to the axis of said holder or support, boxes receiving the journals of the shaft or rod that pivotally connects said holder to the supporting-frame, adjusting-screws supporting said boxes and adapted to be raised and lowered, and springs which press the boxes against said screws, as set forth.

3. In a leather-skiving machine, the combination of a fixed knife, a supporting-frame therefor, a holder or support pivotally con-

nected to the knife-supporting frame, a segmental bed pivotally connected at one end to said holder or support, a shaft journaled in said holder, and cams on said shaft, having their perimeters arranged to support the swinging end of the bed, as set forth.

4. The combination, with the supporting-frame, the knife, the oscillatory segmental bed, and the gage roll or bar supported by said bed, of the weighted swinging frame, mounted to swing in fixed bearings on the supporting-frame, and the pressure-roll journaled in bearings in said frame and arranged to hold the leather down upon the gage-roll, as set forth.

5. The combination of the knife, the supporting-frame, the oscillatory segmental bed having an end flange b' , a socket affixed to the supporting-frame opposite said flange, and a spring-pressed brake-shoe in said socket adapted to bear yieldingly on said flange, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 22d day of May, A. D. 1891.

JOSEPH A. SAFFORD.

Witnesses:

C. F. BROWN,

A. D. HARRISON.