

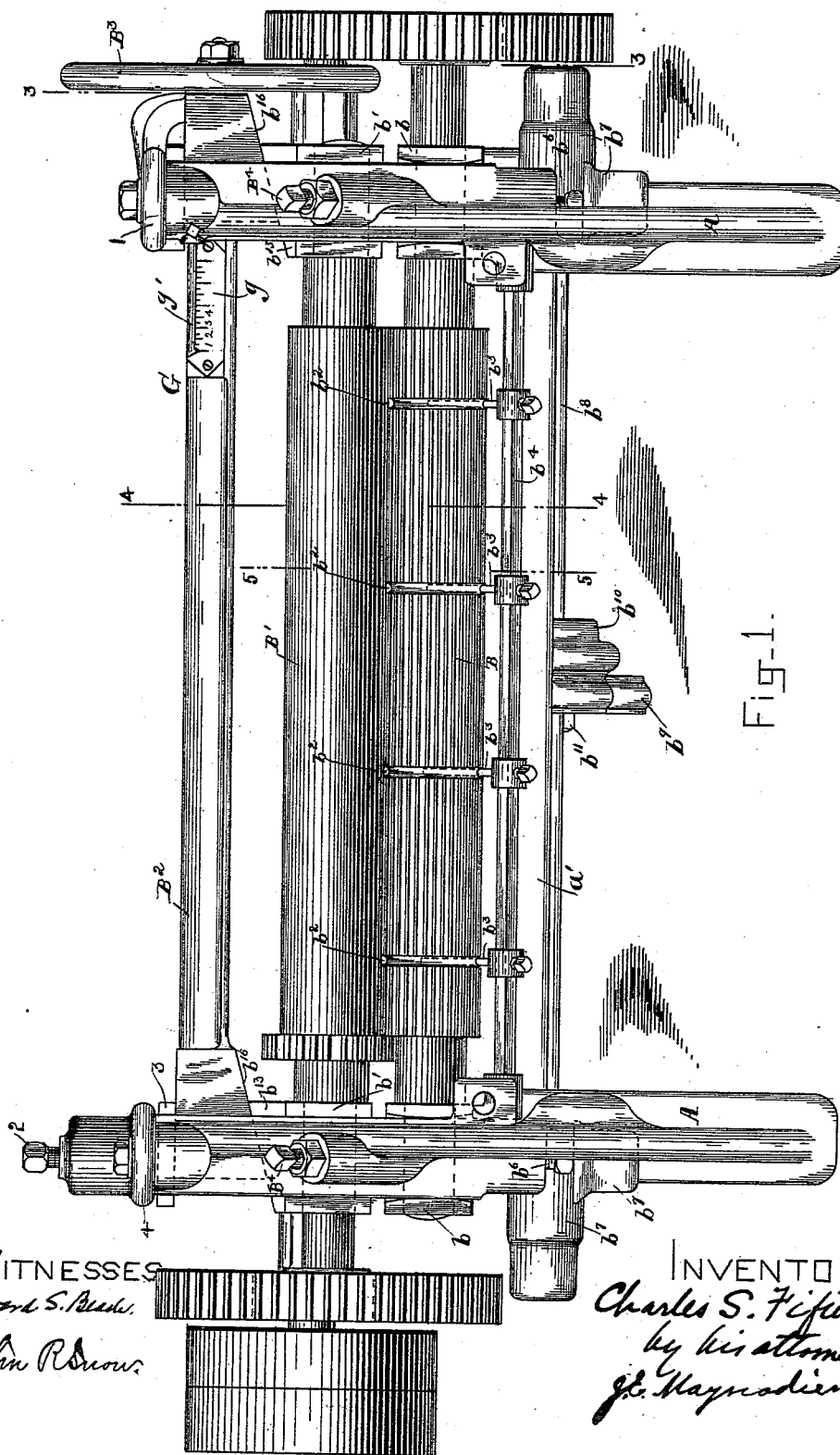
(No. Model.)

5 Sheets—Sheet 1.

C. S. FIFIELD.  
SPLITTING MACHINE.

No. 420,152.

Patented Jan. 28, 1890.



WITNESSES  
*Edward S. Beach.*  
*John R. Brown.*

INVENTOR:  
*Charles S. Fifield,*  
*by his attorney,*  
*J. H. Maynard.*

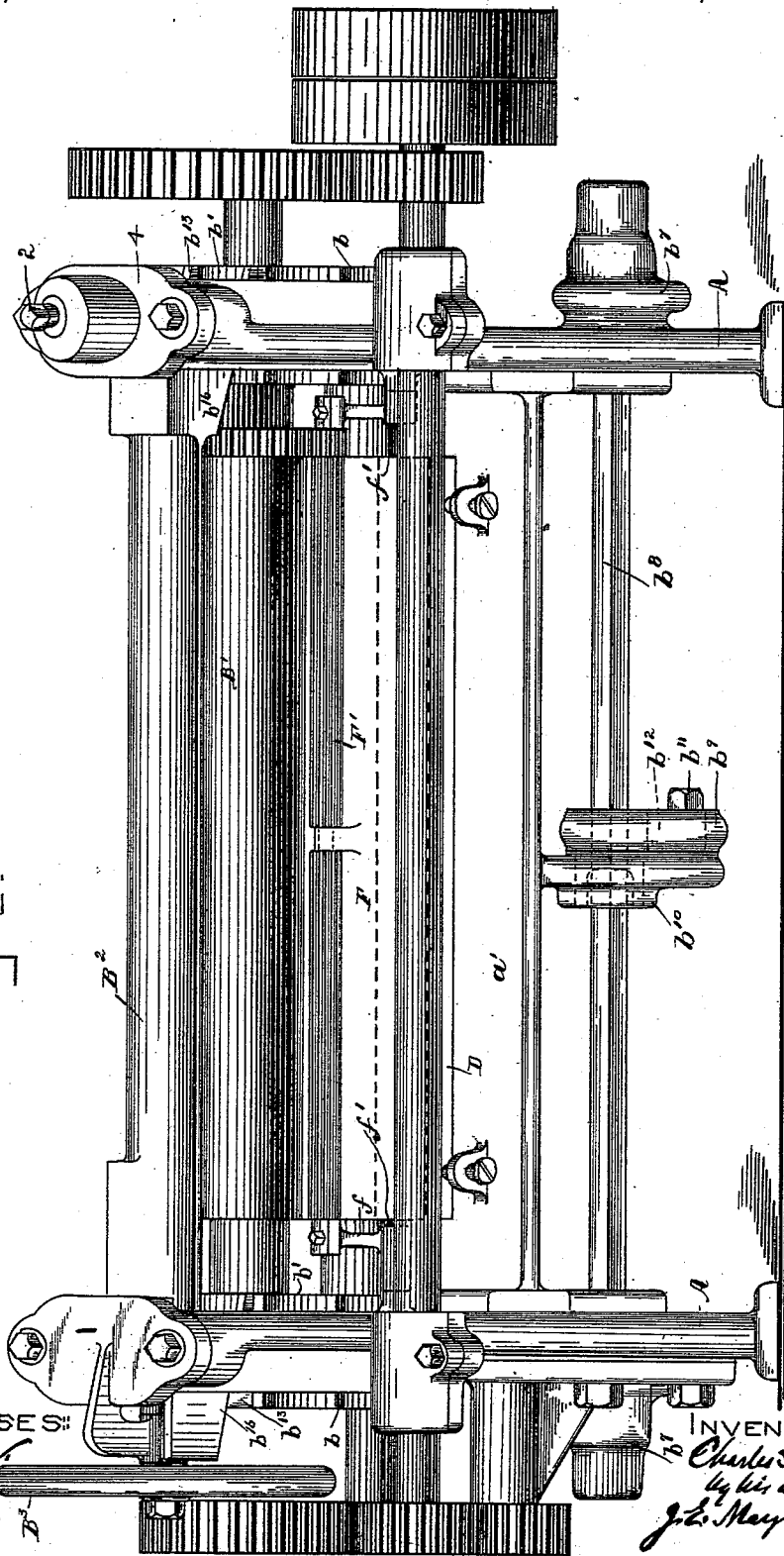
(No Model.)

5 Sheets—Sheet 2: .

C. S. FIFIELD.  
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WITNESSES:

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(No Model.)

5 Sheets—Sheet 3.

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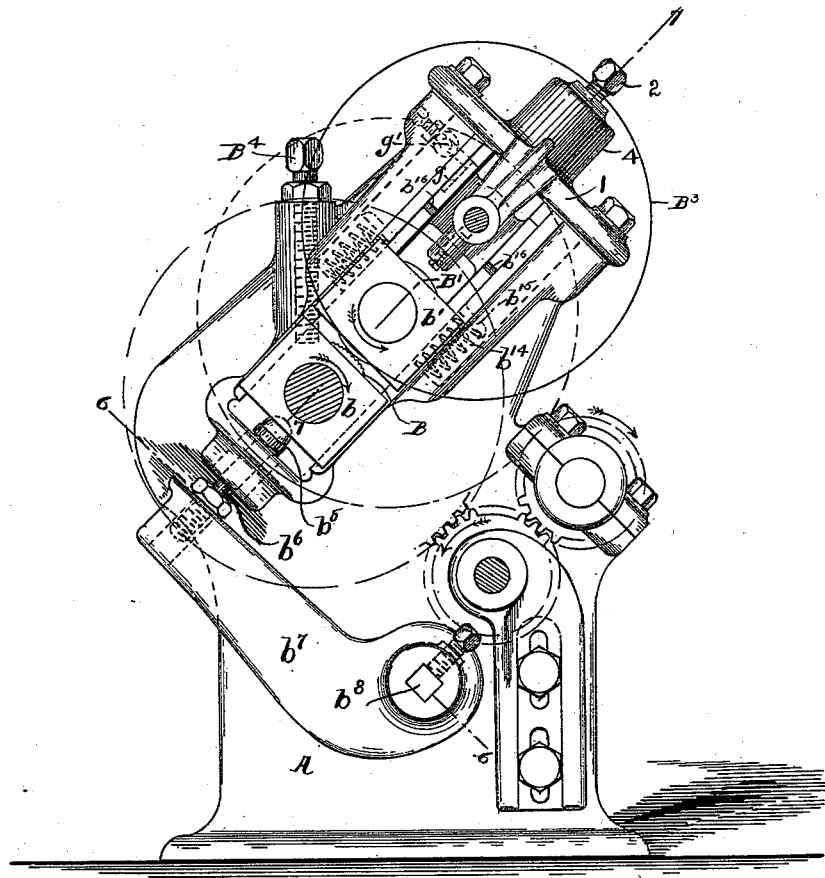


Fig. 3.

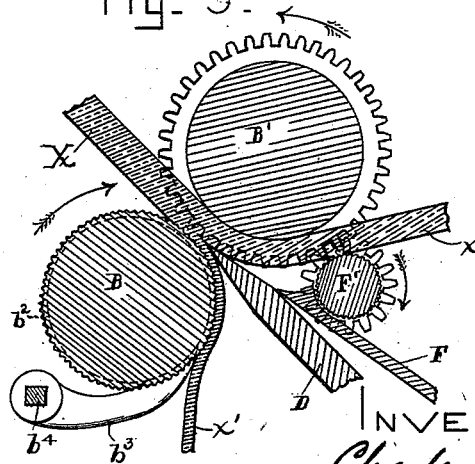


Fig. 5.

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(No Model.)

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Fig. 4.

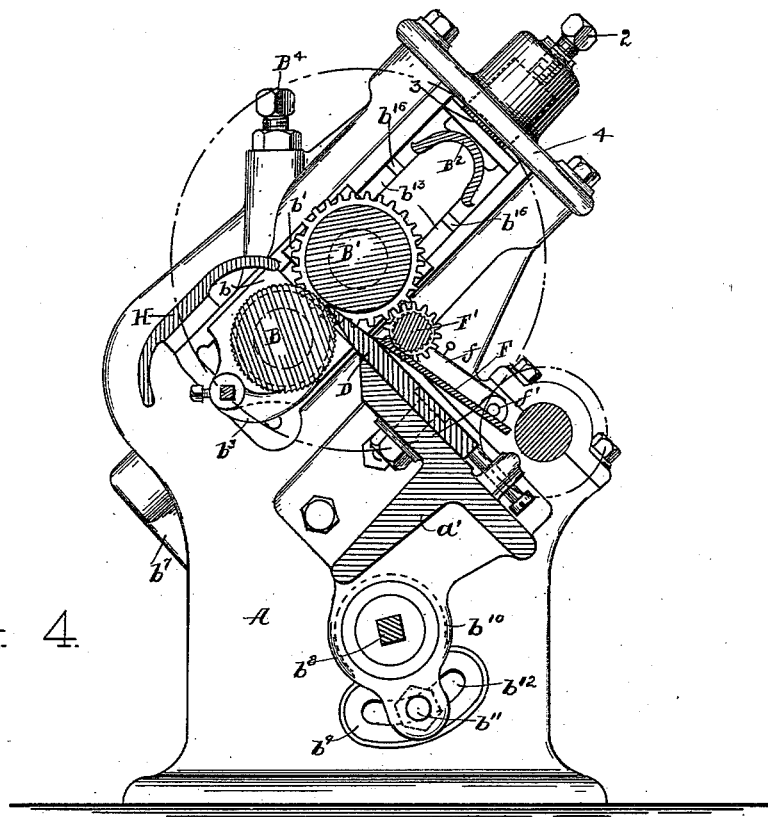
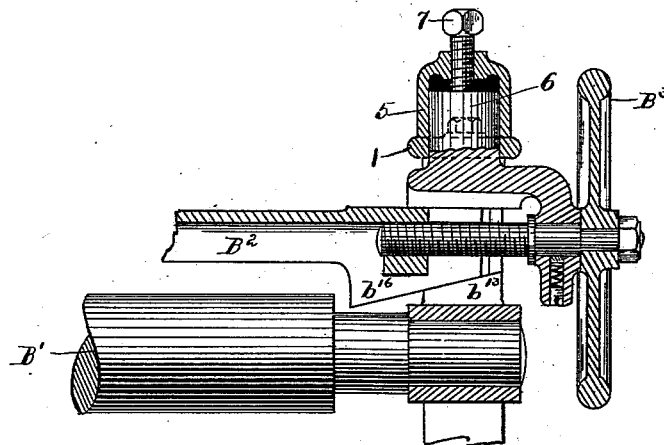


Fig. 8.



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*J. H. Maynard.*

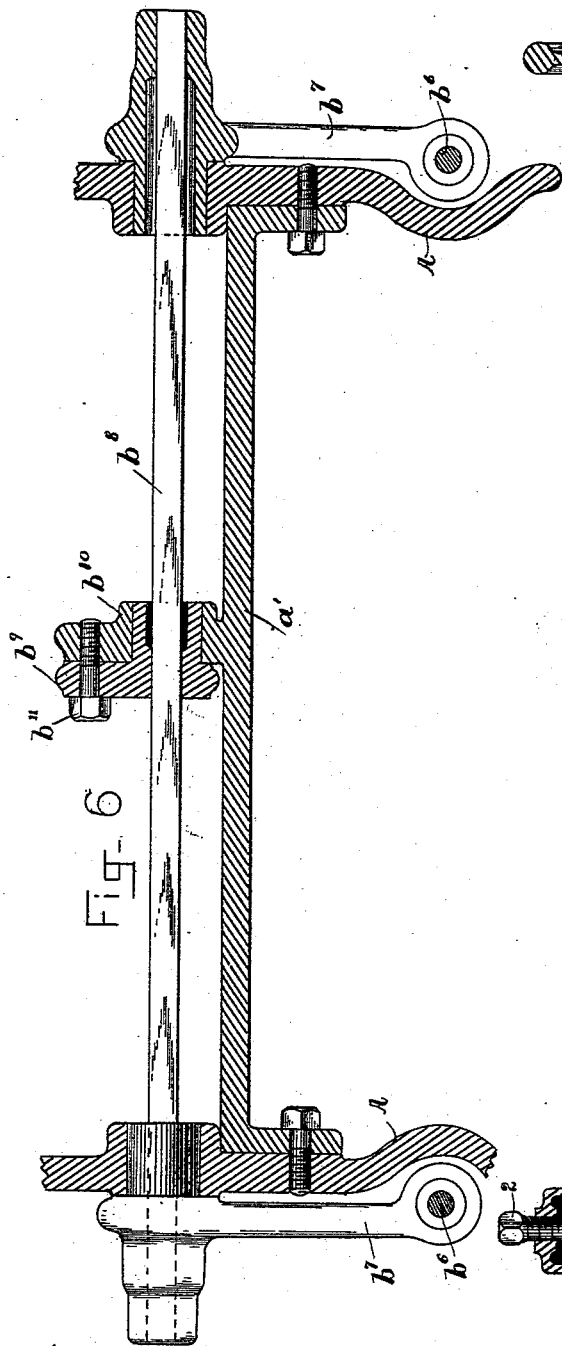
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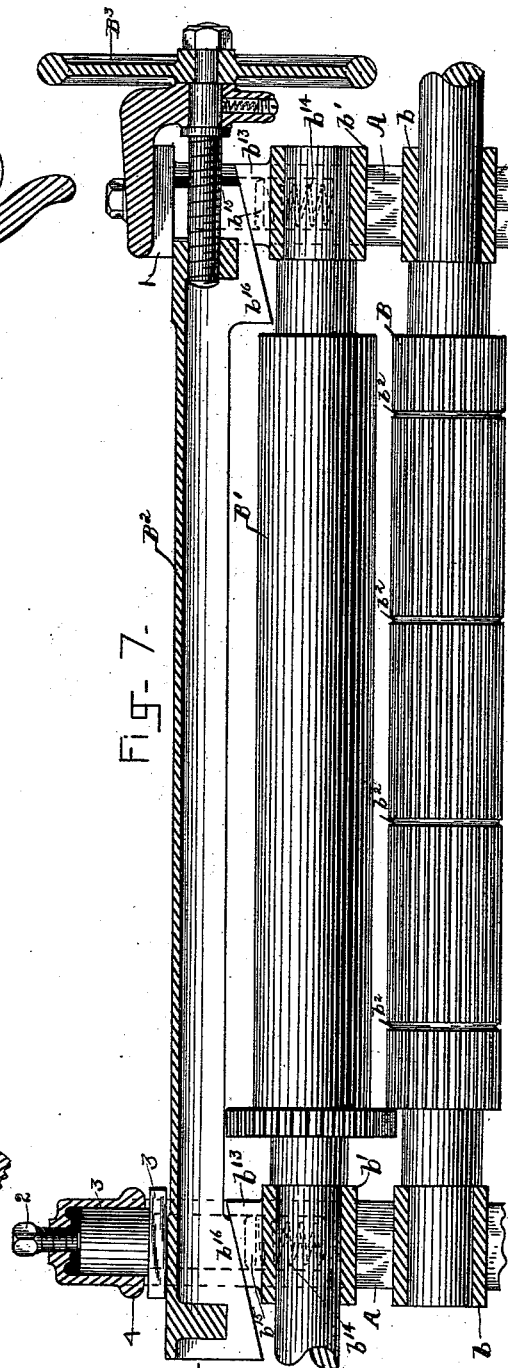
C. S. FIFIELD.  
SPLITTING MACHINE.

No. 420,152.

Patented Jan. 28, 1890.



WITNESSES:  
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INVENTOR:  
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# UNITED STATES PATENT OFFICE.

CHARLES S. FIFIELD, OF REVERE, MASSACHUSETTS.

## SPLITTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 420,152, dated January 28, 1890.

Application filed June 28, 1889. Serial No. 315,915. (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 Splitting-Machine, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation of a machine embodying my invention, the guard being removed for greater clearness. Fig. 2 is a rear elevation thereof; Fig. 3, an elevation thereof, partly in section, on line 3 3 of Fig. 1; Fig. 4, an elevation, partly in section, on line 4 4 of Fig. 1. Fig. 5 is a sectional view illustrating the feed-rolls, knife-deflector, and roll, and leather in process of splitting; Fig. 6, a view, partly in section, on line 6 6 of Fig. 3, showing a spring and parts connected therewith; Fig. 7, a sectional view on line 7 7 of Fig. 3, showing the feed-rolls, the hangers, and the slide for adjusting the boxes of one of the rolls. Fig. 8 shows a modified form of contrivance for regulating the position of the upper roll.

My invention consists, first, in the combination of a roll having peripheral grooves with fingers which work in the grooves; secondly, in the combination of feed-rolls, a deflector, and roughened roll which directs the split in one direction while the waste passes in another direction, and also increases the draft on the leather; thirdly, in the combination of the boxes of one of the feed-rolls with a spring to hold this roll in proper relation to the other roll and the knife; and, fourthly, the combination of a pair of feed-rolls and a knife and with a scale and pointer.

In the drawings, in which I show my invention embodied in the best way now known to me, A is the frame, B B' the feed-rolls, D the knife, and F the deflector. The roll B is mounted in boxes *b*, mounted in the guides *a*, which are inclined from the vertical, as described in my pending application, Serial No. 244,406, filed July 16, 1887. The roll B' is mounted in boxes *b'*, also mounted in the inclined guides *a*. The roll B is formed with peripheral grooves *b<sup>2</sup>*, and fingers *b<sup>3</sup>* are arranged to work in these grooves. Fingers *b<sup>3</sup>* are conveniently mounted on a cross-bar *b<sup>4</sup>*, mounted on the boxes *b*, and prevent the

leather from passing around on the roll, as it would be very likely to do when thin and wet. The knife D is mounted upon an inclined bed-piece *a'*, as in my said pending application, and is adjustable thereon. The deflector F causes the split to pass over the roll F', which is a roughened roll, preferably so geared as to have a somewhat greater surface speed than the feed-rolls and extending lengthwise of the machine, and is mounted in arms *f*, preferably pivoted, as shown at *f'*, to the frame of the machine. (See Figs. 2 and 4.) Arms *f* also support the deflector F, and both deflector and roll F' are readily swung on pivot *f'* to enable the workman to readily remove the knife. The boxes *b*, in which the roll B is mounted, move in the guides *a*, and are best mounted on balls *b<sup>5</sup>*, mounted in adjustable studs *b<sup>6</sup>*, supported by the arms *b<sup>7</sup>*, mounted on a spring *b<sup>8</sup>*, which is held between its ends in a rocker-arm *b<sup>9</sup>*, mounted in an arm *b<sup>10</sup>* of frame A, the rocker-arm being adjustable by means of a screw *b<sup>11</sup>*, working in a slot *b<sup>12</sup>* in arm *b<sup>9</sup>* to vary the tension of the spring, which, for the best results, should be a square spring, as shown. Boxes *b'* are formed with inclines *b<sup>13</sup>* and supported on springs *b<sup>14</sup>*, which lie between ears *b<sup>15</sup>* of boxes *b'* and a part of frame A, as in my said application. The boxes *b'* are moved against the force of spring *b<sup>14</sup>* to allow roll B' to approach the roll B by a slide B<sup>2</sup>, formed with inclines *b<sup>16</sup>*, this slide being conveniently provided with a hand-wheel B<sup>3</sup>, mounted in frame A, whereby the slide is readily moved into any desired position.

For convenience in adjusting the rolls in a definite relation to each other for splitting leather of a desired thickness, I combine with the rolls and knife a gage G, conveniently formed of a scale *g* on slide B<sup>2</sup> and a pointer *g'* on frame A, or vice versa. The boxes of the roll B are arrested in their movement toward the boxes of roll B' by set-screws B<sup>4</sup>, mounted in frame A and bearing against chamfered corners of the boxes *b*, as in my pending application. Sliding bar B<sup>2</sup> is limited in its upward movement by a positive stop, (formed by the cap 1,) and by a set-screw 2, against which gib 3, mounted in cap 4, bears, the bar B<sup>2</sup> being held up against the foot of

the gib by the tension of springs  $b^{14}$ , pushing box  $b'$  against the incline  $b^{16}$  on bar  $B^2$ . By this construction I am enabled to make very nice adjustment of the roll  $B'$  in relation to roll B and the knife—that is, if the rolls are not quite parallel or the upper roll is not in proper relation to the edge of the knife, I adjust the roll by turning the set-screw 2, which is a stop for the gib.

10 The operation of my machine is as follows: The roll  $B'$  being adjusted in proper relation to the edge of knife D to give a split of the desired thickness, (this position will, whatever it may be, of course, be indicated by gage G,) and the spring  $b^8$  being so adjusted that its tension will keep roll B in proper relation to the edge of knife D and to roll  $B'$ , leather X is inserted between the rolls  $B B'$ , which feed it to the knife D. The split  $x$  strikes against the deflector F and is directed over the fluted roll  $F'$ , which strains the split  $x$  away from the waste  $x'$ , passing between the knife and roll B, and being rotated, as indicated by the arrow in Fig. 5, increases the draft on the split  $x$  and enables the knife to cut freer.

In Fig. 8 I show cap 1, provided with a boss 5 to receive a gib 6 on the bracket, in which the hand-wheel  $B^3$  is mounted. A set-screw 7 is provided as a stop. I intend in a machine provided with this construction to employ a gib and set-screw at the other end of the bar  $B^2$ , as at the left of Fig. 7. By this arrangement great nicety of adjustment of the rolls in relation to each other and to the knife may be obtained, as will be clear from what has been said above.

I do not claim herein the contrivance for arresting the boxes of the roll B, as that contrivance is claimed by me in my said application, Serial No. 244,406.

What I claim as my invention is—

1. In a splitting-machine, the combination of roll B, having peripheral grooves  $b^2$ , with fingers  $b^3$ , which work in the grooves  $b^2$ , substantially as set forth. 45
2. In a splitting-machine, the combination of feed-rolls  $B B'$  with knife D, deflector F, and roll  $F'$ , roll  $F'$  co-operating with roll  $B'$  to draw the split, substantially as and for the purpose set forth. 50
3. In a splitting-machine, the combination of roll B and its boxes  $b$  with knife D, arms  $b^7$ , spring  $b^8$ , arms  $b^7$  being mounted on spring  $b^8$ , the tension of which keeps the roll B in proper relation to the edge of the knife, and means for connecting the boxes and arms, substantially as described. 55
4. The combination of feed-rolls  $B B'$  and knife D with slide  $B^2$  and gage G, slide  $B^2$  acting as a stop for the roll  $B'$  when it moves away from roll B, and the gage G serving to indicate the adjustment of the roll  $B'$  according to the position of the slide  $B^2$ , all substantially as and for the purpose set forth. 60
5. In a splitting-machine, the combination of roll B and its boxes  $b$  with arms  $b^7$ , spring  $b^8$ , means for connecting the arms and boxes, and means for adjusting the tension of spring  $b^8$ , arms  $b^7$  being mounted on spring  $b^8$ , substantially as and for the purpose set forth. 65
6. In a splitting-machine, the combination of roll B, its boxes  $b$ , arms  $b^7$ , and spring  $b^8$ , arms  $b^7$  being mounted on spring  $b^8$ , with adjustable studs connecting the arms and boxes, substantially as and for the purpose set forth. 70 75

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