No. 611,026. Patented Sept. 20, 1898.

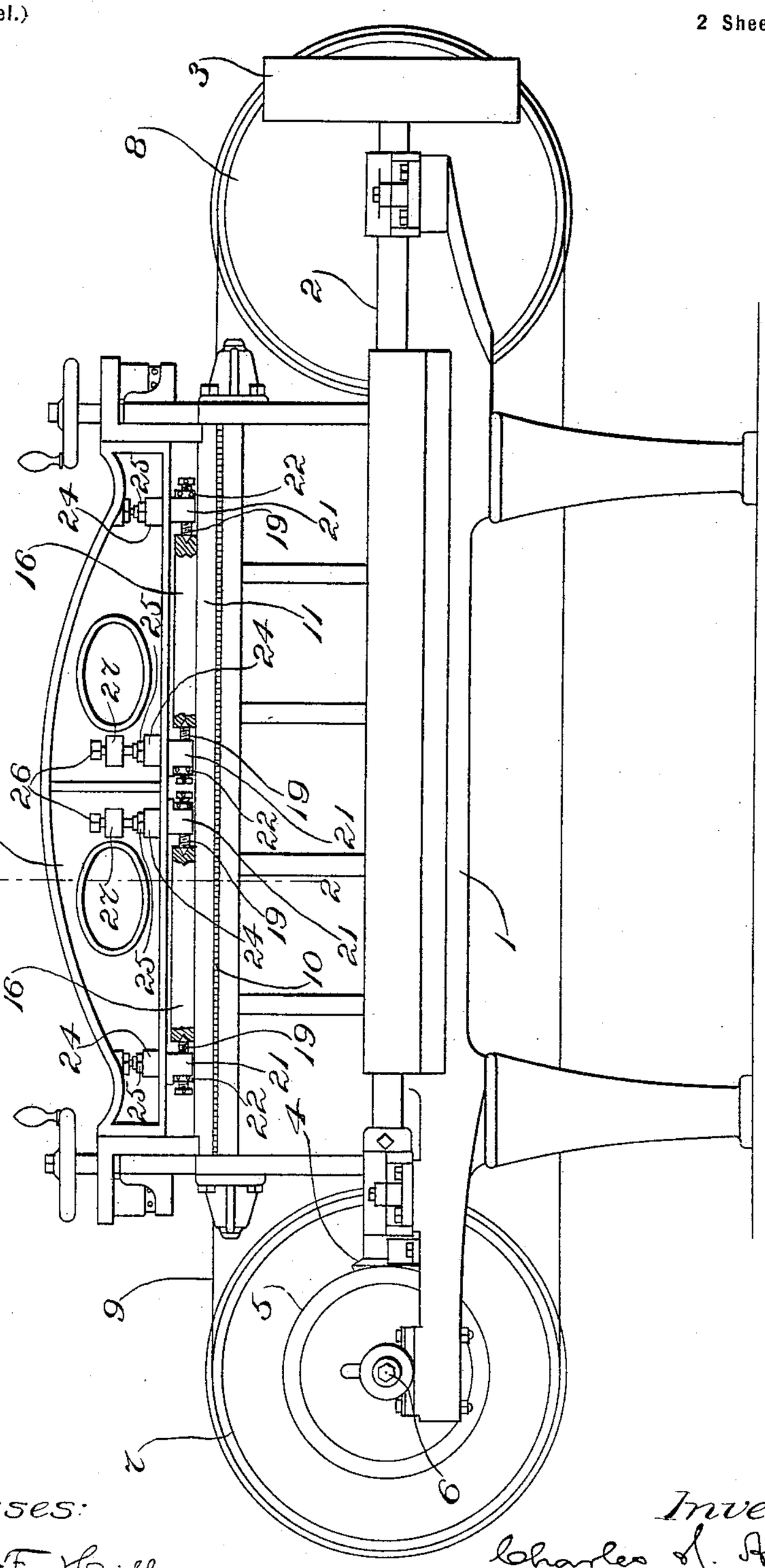
C. H. ALLEN.

LEATHER SPLITTING MACHINE.

(Application filed June 29, 1897.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.



Witnesses:
Oscar F. Hill
Edith J. Anderson.

Inventor:
Charles H. Allen
by Macleod Calver & Randall
Attorneys.

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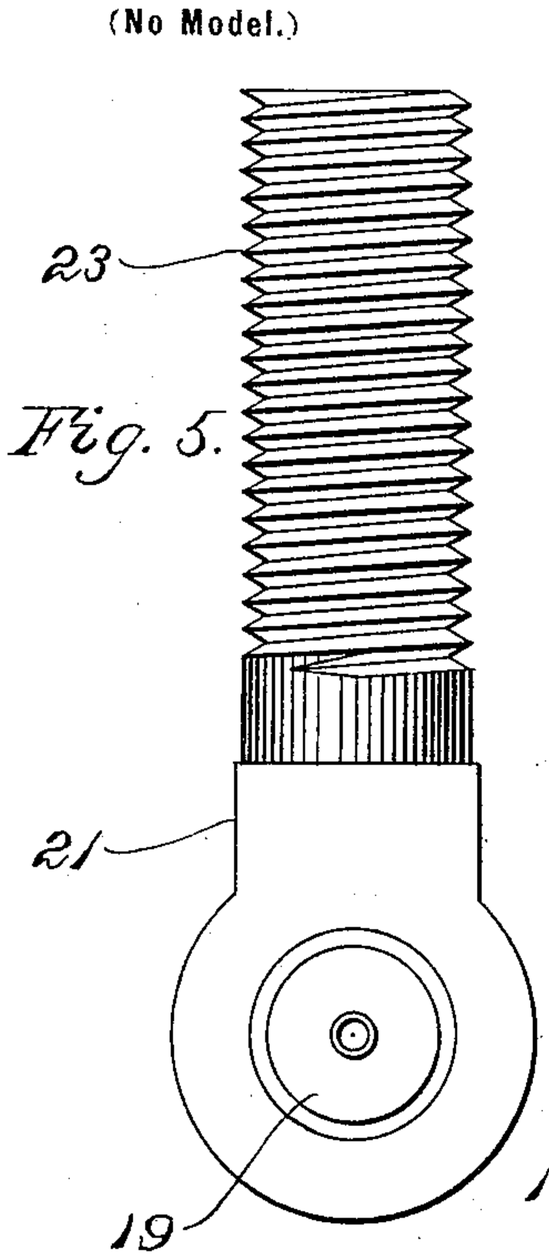

Fig. 5.

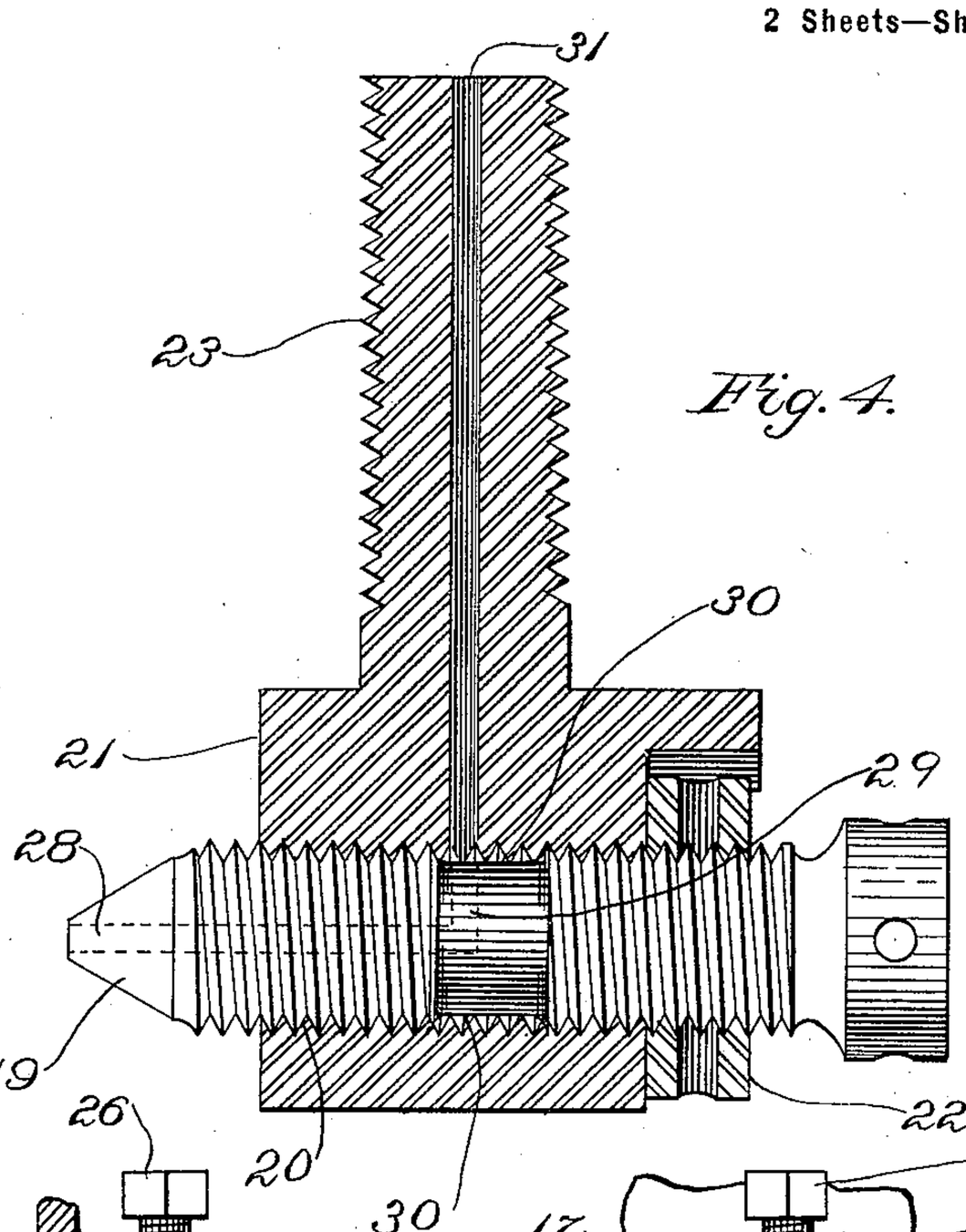

Fig. 4.

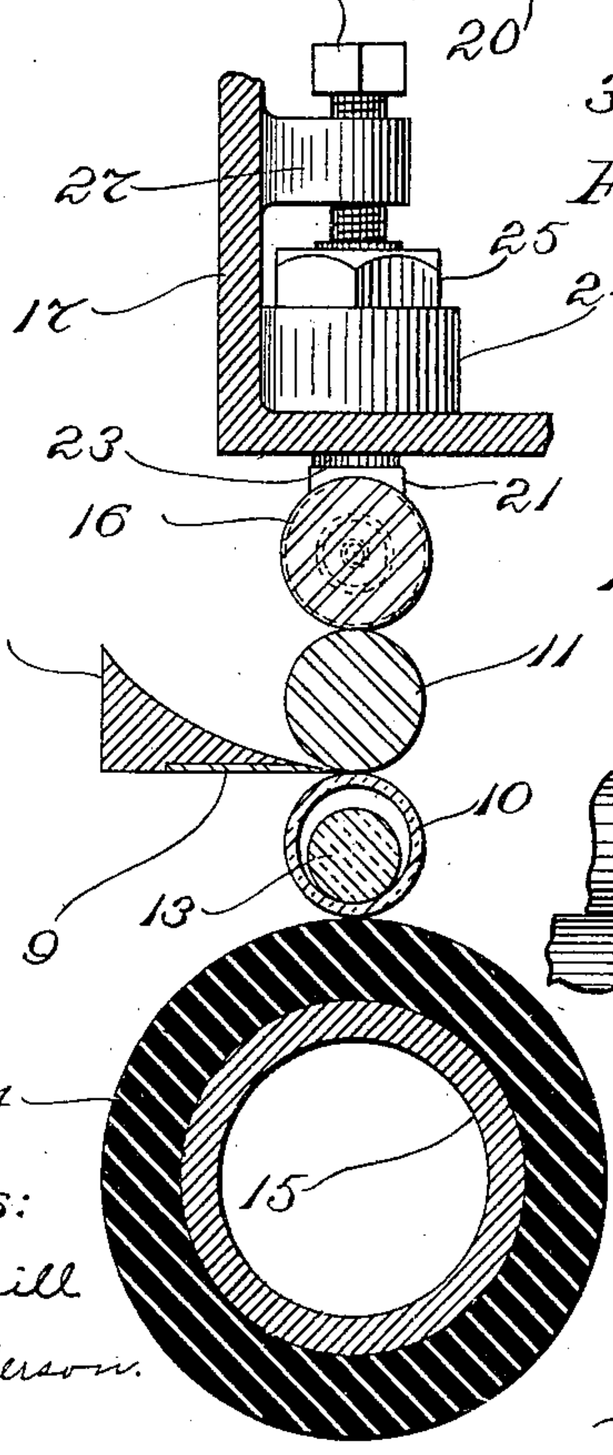

Fig. 2.

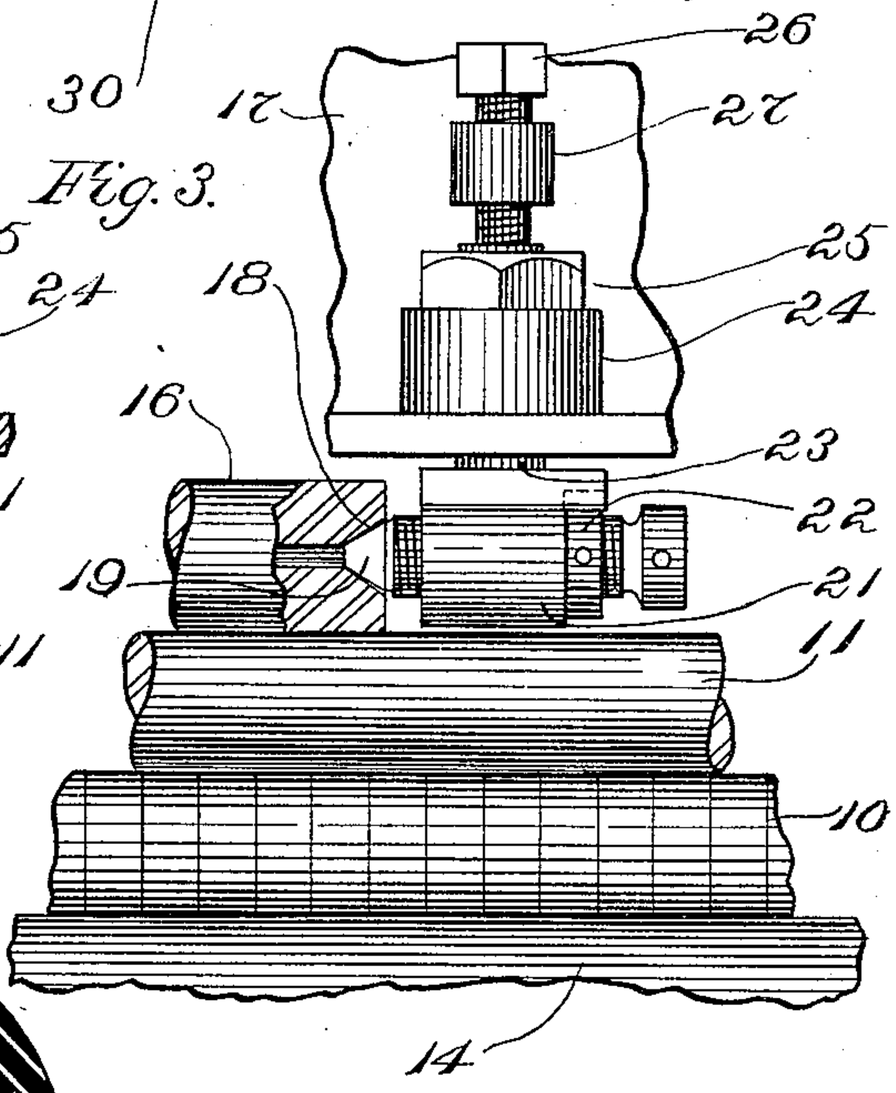

Fig. 3.

Witnesses:
Oscar F. Hill
Edith J. Anderson.

Inventor:
Charles H. Allen
by Macleod Baker & Randall
Attorneys.

UNITED STATES PATENT OFFICE.

CHARLES H. ALLEN, OF WOBURN, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO EUGENE E. WOOD, OF SAME PLACE.

LEATHER-SPLITTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 611,026, dated September 20, 1898.

Application filed June 29, 1897. Serial No. 642,810. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. ALLEN, a citizen of the United States, residing at Woburn, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Leather-Splitting Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention has reference more particularly to the means of supporting in proper position adjacent to the gage-roll the friction-rolls which are employed to hold the gage-roll to its work and prevent deflection thereof. Heretofore the said friction-rolls usually have been formed with journals, and the latter have been received in boxes of ordinary construction, the said boxes having been affixed to the top beam. The usual mode of supporting the friction-rolls has presented numerous disadvantages. The contacting portions or linings of the boxes wear, and hence occasion frequently arises for relining of the said boxes. If there is any want of alinement on the part of the boxes pertaining to a friction-roller, the journals of the said roller bind in the said boxes. The boxes are not easy to adjust vertically, as frequently becomes necessary in order to raise the ends of the friction-rolls to different heights, and difficulty arises when adjustment is effected, owing to the tendency which such adjustment has to throw the boxes out of proper alinement and thereby occasion binding. When relining of the boxes is necessary, it can be effected only by removing the entire top beam and its accessories from the machine and sending them all to the shop where the work of relining is performed.

My invention has for its objects to remedy the foregoing disadvantages.

More particularly it is the aim of the invention to provide supports for the friction-rolls which shall not be liable to excessive wear, which shall not be injuriously affected by wear, so as to interfere with the proper working of the friction-rolls, which shall be easy to adjust, so as to enable a friction-roll to be placed in whatever position may be required, which shall not occasion binding, and which shall be so constructed as to enable the friction-rolls alone to be disconnected and removed from the machine without disturbing the gage-roll, the top beam, or other adjacent parts.

Figure 1 of the drawings shows in elevation, with certain portions broken away for the sake of clearness in disclosing the nature of the invention, a band-knife leather-splitting machine having my invention applied thereto. Fig. 2 is a view in vertical section on the line 2 2 of Fig. 1, showing the parts with which my invention is most closely connected. Fig. 3 is a detail view in elevation of the parts which are represented in Fig. 2, omitting, however, the band-knife and its guide. Fig. 4 is a view mainly in section along a plane extending lengthwise of the friction-roller, showing one of the centers for the said roll and the supports therefor. Fig. 5 is a view of the parts which are shown in Fig. 4, representing them in elevation and as viewed from the left-hand side in Fig. 4.

1 is the framework of the machine and is or may be of any suitable and preferred construction.

2 is the driving-shaft, the same being suitably mounted in bearings on the machine-framework, and 3 is a band-pulley on the said shaft, it serving to receive the driving-band.

4 is a bevel gear or pinion on the said shaft 2, it meshing with and driving a bevel-gear 5 on the shaft 6, which latter is arranged transversely in suitable bearings on the framework at one end of the machine and has applied thereto the pulley or wheel 7. A similar pulley or wheel 8 is mounted in corresponding positions at the opposite end of the machine, and over the two pulleys or wheels 7 and 8 is passed the endless band-knife 9. As usual in similar machines, the material which is to be split passes on its way to the band-knife 9 between a pair of rolls 10 and 11, (see Figs. 1 and 3,) the roll 11 being known customarily as the "gage-roll."

12 is a guide adjacent to the band-knife and the rolls 10 and 11. (See Fig. 2.) As customary, the said roll 10 is composed of a series of separate rings mounted loosely on a rod 13 and upheld vertically, so as to present their upper surfaces in line against the under periphery of the gage-roll 11 or against

the under surface of the material being operated upon by the elastic covering 14 of the supporting-roll 15. (See Figs. 2 and 3.)

16 16 are the friction-rolls, bearing upon the upper periphery of the gage-roll 11 and operating to hold the gage-roll to its work and prevent deflection of the said roll from the desired position thereof. 17 is the top beam, on which the supports for the said gage-roll 11 and friction-rolls 16 16 are mounted. The opposite ends of each friction-roll 16 are formed with tapering or conical recesses centrally disposed within the ends of the said roll and constituting bearings for the reception of the tapering centers 19. The said centers 19 are applied to sockets 20, which are formed in brackets 21, and the said brackets are supported on the top beam 17. The shanks or stems of the said centers 19 are screw-threaded to fit the screw-threaded interiors of the sockets 20. This enables the centers to be moved or adjusted endwise in the direction of the length of the friction-roll, as will be found necessary in adjusting the parts into their proper operative relations and in disengaging the centers from the friction-roll in providing for the removal of the said roll.

22 is a lock or jam nut applied to the threaded stem or shank of each center 19. The bracket 21 has a threaded stem or shank 23, passing through a vertical hole in a lug 24 on the top beam 17 and receiving on its exposed upper end the nut 25, the said nut resting on the upper surface of the lug 24, and thereby serving to sustain support 21.

26 is a locking-screw which passes through a threaded hole in a lug 27 on the top beam 17 and contacts by its end with the end of the stem or shank 23 of the supporting-bracket 21, so as to lock the said bracket in the desired position of adjustment. For the purpose of lubricating the contacting surfaces of the center 19 and the corresponding bearing 18 in the end of the friction-roll I form a longitudinal passage 28 in the center 19, this passage 28 being centrally disposed and having at its inner end communication with a transverse passage 29, the latter opening into an annular groove 30 extending around the stem or shank of the center 19.

Centrally of the stem or shank 23 of the supporting-bracket 21 I form an oil-passage 31, which is open at the upper end of the said stem or shank, while at its lower end the said passage 31 opens into the socket 20 of the bracket 21. Oil poured into the upper end of the said passage 31 passes into the annular groove 30, around the stem or shank of the center 19, and finds its way through the oil-passages 29 and 28 in the said center to the bearing 18.

As will be obvious, the centers 19 19 pertaining to each friction-roll are capable of being adjusted so as to shift the said friction-roll in the direction of its length to any extent which may prove desirable, and each center is vertically adjustable, so that the friction-roll may be given any required position. No binding of the centers within the bearings can take place within the ordinary limits of the adjustment of the brackets 21 21 vertically. In order to insure against binding more effectually, I preferably form the bearings on a slightly-greater flare than the taper of the centers, as indicated most clearly in Fig. 3 of the drawings. As will be obvious, the removal of either friction-roll from the machine may be accomplished simply by loosening the engagement of the centers therewith.

What I claim is—

1. The combination with the band-knife, and the gage-roll bearing against the upper surface of the material, of the friction-roll in contact with the said gage-roll, the said friction-roll having the tapering bearings formed in its ends, the tapering centers entering the said bearings and serving for the support of the friction-roll, the brackets in which the said centers are adjustable in the direction of the length of the friction-roll, and means to effect independent adjustment of the respective brackets vertically, substantially as described.

2. The combination with the band-knife, and the gage-roll bearing against the upper surface of the material, of the friction-roll in contact with the said gage-roll, the said friction-roll having the tapering bearings formed in its ends, the tapering centers entering the said bearings and each formed with the central oil-passage leading to the said bearings, and also communicating with the exterior of the stem or shank of the respective center, and the supporting-brackets each having the socket in which the corresponding center is fitted with capacity for longitudinal adjustment, the said brackets each having an oil-passage delivering to that of the corresponding center, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES H. ALLEN.

Witnesses:
EUGENE E. WOOD,
CHAS. F. RANDALL.