

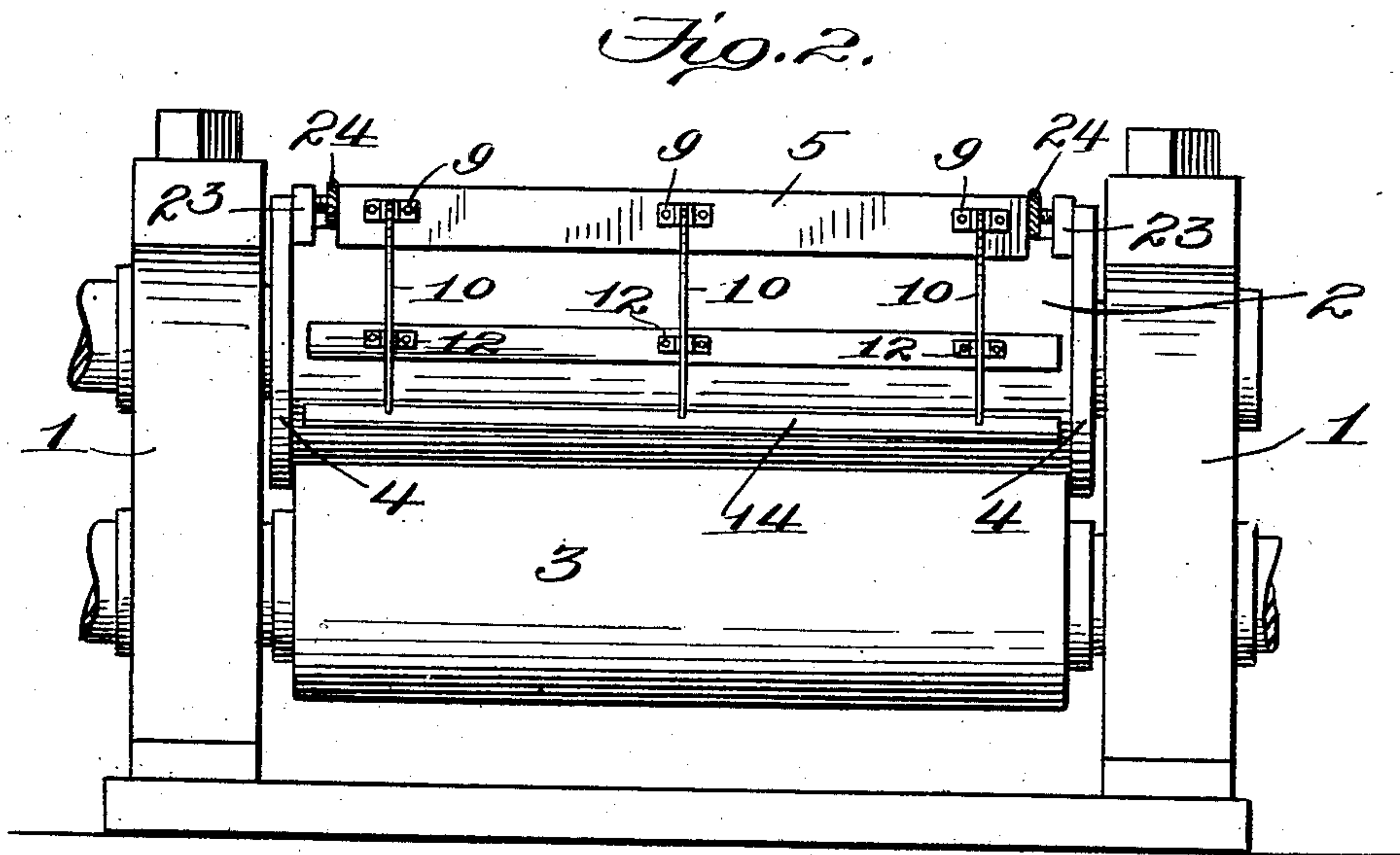
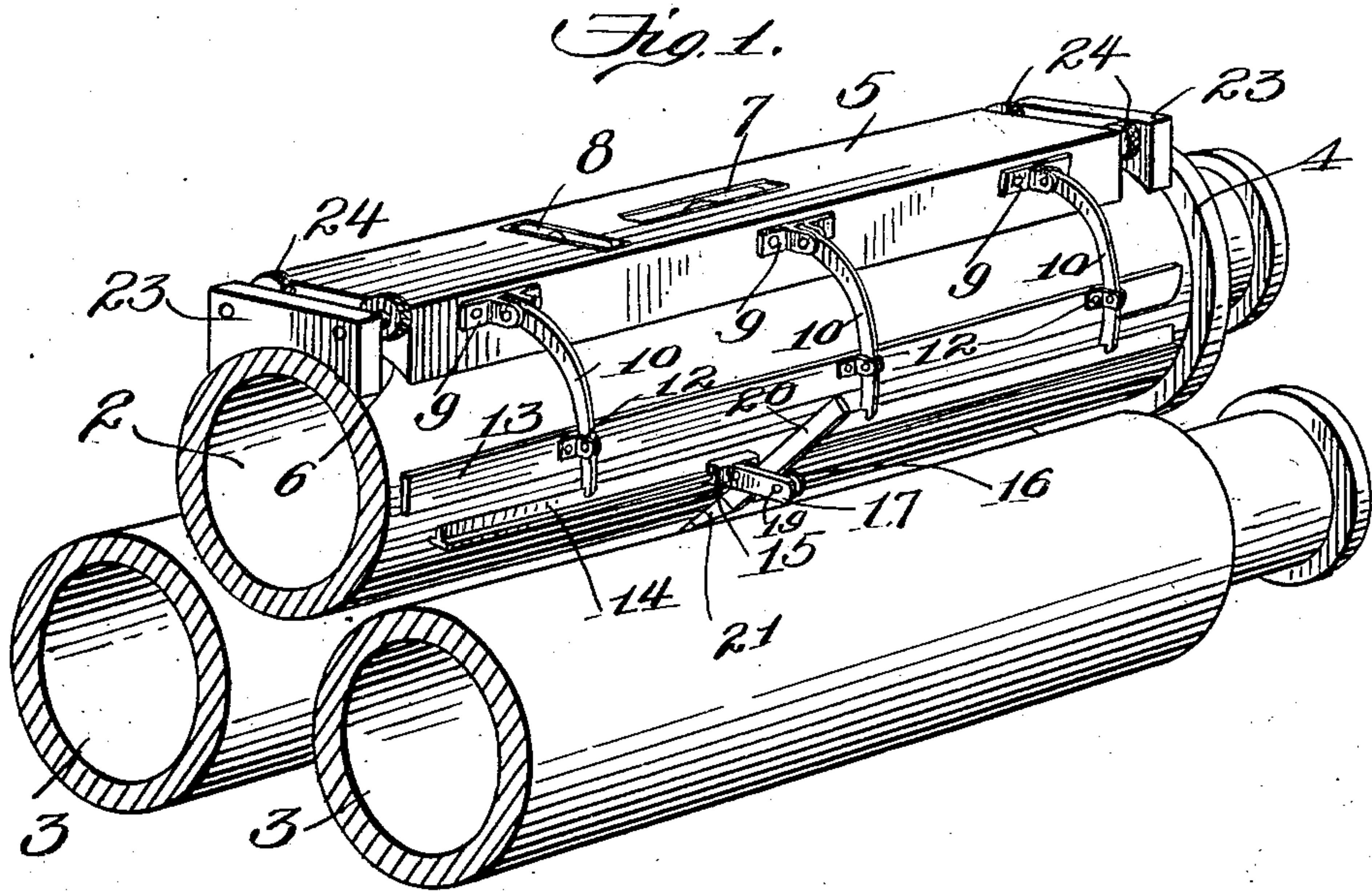
No. 898,349.

PATENTED SEPT. 8, 1908.

W. H. L. FIELDING.  
LEVELING DEVICE FOR CRUSHING ROLLS.

APPLICATION FILED MAY 16, 1908.

2 SHEETS—SHEET 1.



Witnesses:  
Robert Waterman  
Ernest Leiguerat.

Inventor.  
William H. L. Fielding  
By *W. H. Cook*  
Att'y.

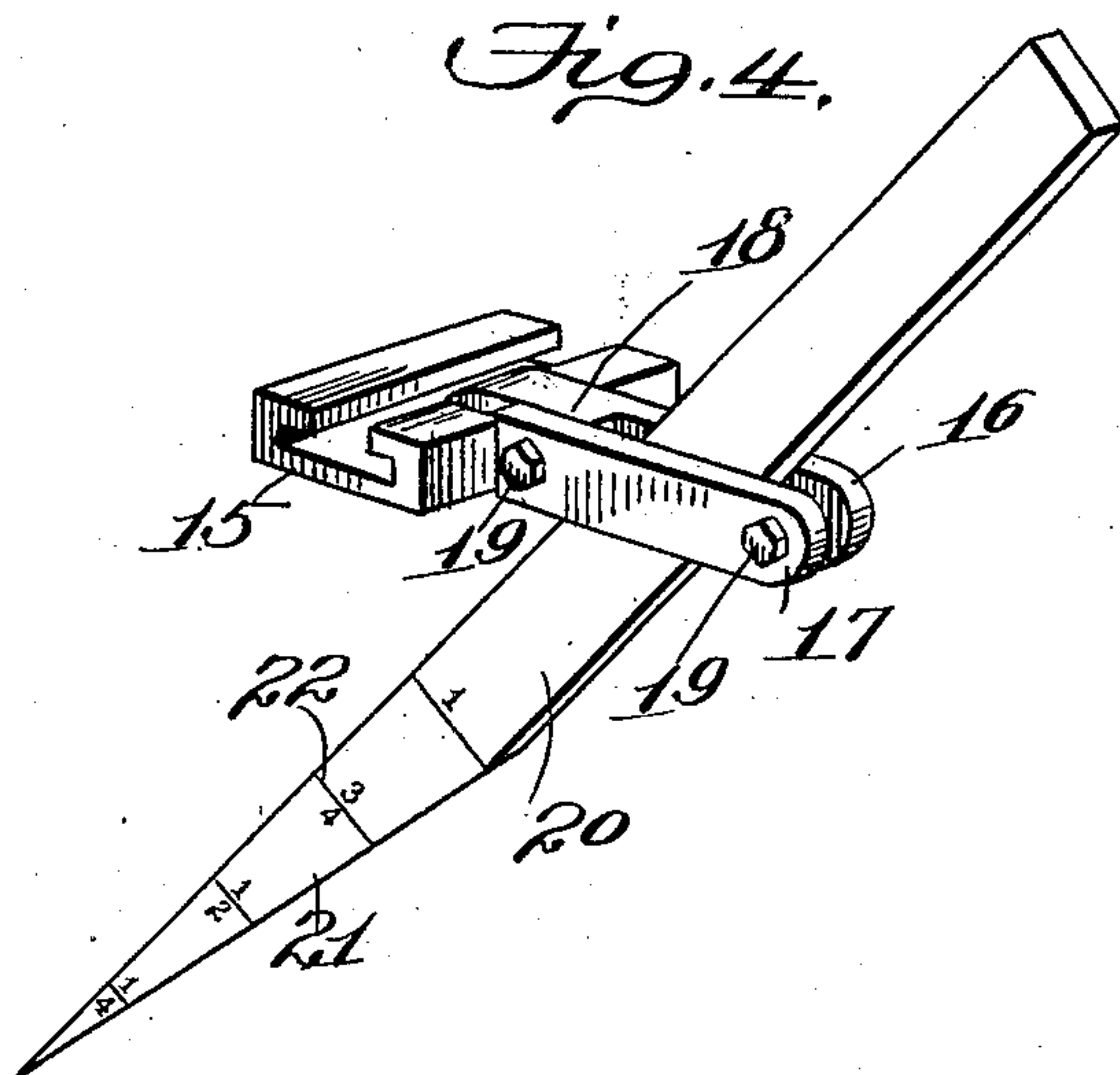
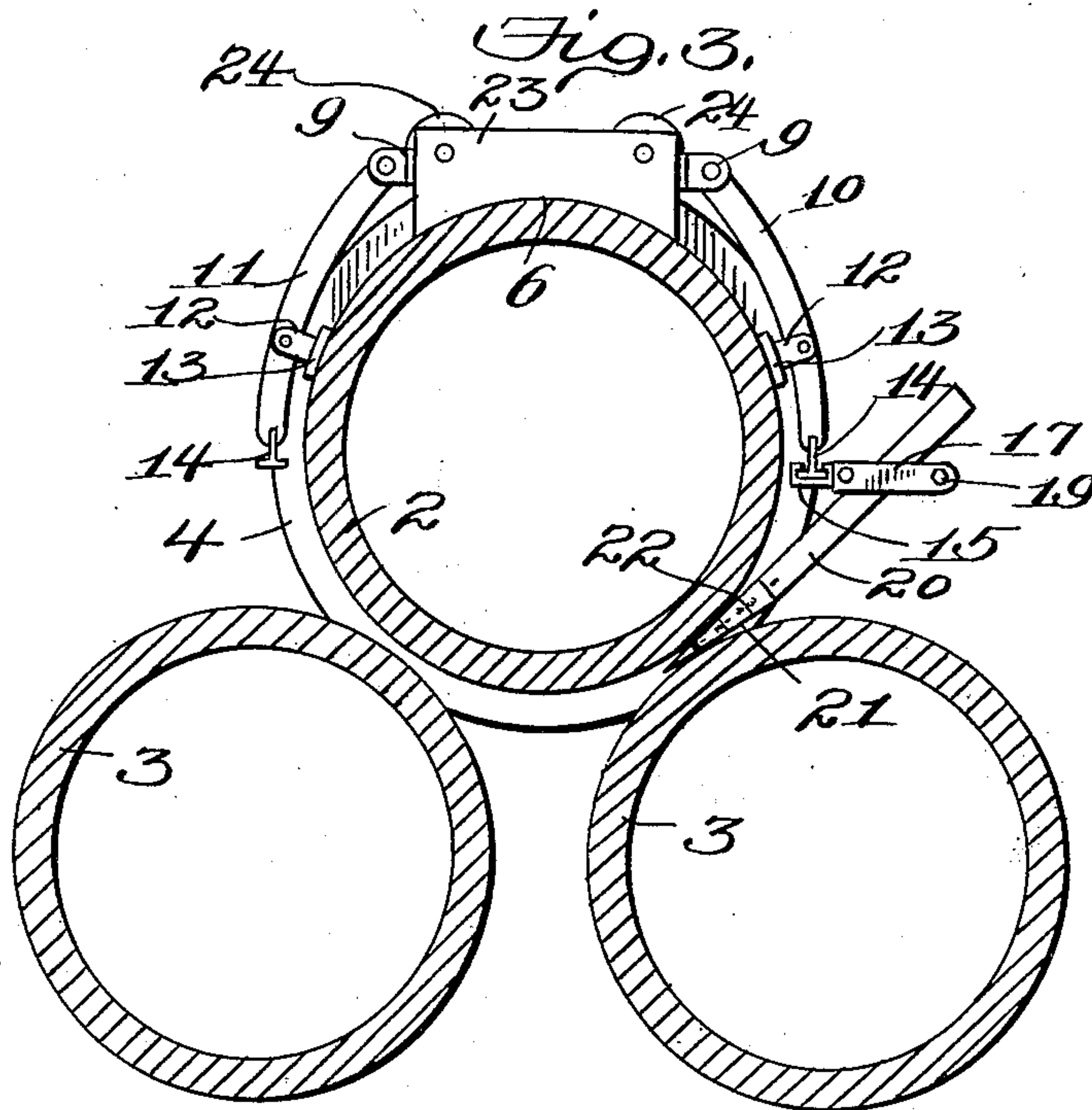
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Witnesses:  
Robert Waterman  
Ernest Huguenot.

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# UNITED STATES PATENT OFFICE.

WILLIAM H. L. FIELDING, OF NEW ORLEANS, LOUISIANA.

## LEVELING DEVICE FOR CRUSHING-ROLLS.

No. 898,349.

Specification of Letters Patent.

Patented Sept. 8, 1908.

Application filed May 16, 1908. Serial No. 433,265.

*To all whom it may concern:*

Be it known that I, WILLIAM H. L. FIELDING, a citizen of the United States, residing at New Orleans, Louisiana, have invented certain new and useful Improvements in Leveling Devices for Crushing-Rolls, of which the following is a specification.

This invention relates to a leveling device for crushing rolls and the object thereof is to provide means in a manner as hereinafter set forth for gaging the respective positions of the crushing rolls to determine the degree of vertical adjustability requisite for paralleling the rolls.

Further objects of the invention are to provide a leveling device for crushing rolls or for other objects wherein it is found applicable and which shall be simple in its construction, strong, durable, efficient in its use, readily set up for leveling purposes and inexpensive to manufacture.

With the foregoing and other objects in view, the invention consists of the novel construction, combination and arrangement of parts hereinafter more specifically described and illustrated in the accompanying drawings wherein is shown the preferred embodiment of a leveling device for the purpose set forth in accordance with this invention, but it is understood that changes, variations and modifications can be resorted to which come within the scope of the claims hereunto appended.

In describing the invention in detail, reference is had to the accompanying drawings wherein like reference characters denote corresponding parts throughout the several views and in which:—

Figure 1 is a perspective view broken away at one end of a set of crushing rolls showing the adaptation therewith of a leveling device in accordance with this invention. Fig. 2 is a front elevation of a housing in which is arranged a set of rolls and showing the manner in which the leveling device is fixed in position during the operation of leveling. Fig. 3 is an end view of Fig. 1, and Fig. 4 is a perspective view of the gage bar and its support.

Referring to the drawings by reference characters 1 denotes a housing in which is arranged a set of crushing rolls, the upper roll of the set being indicated by the reference character 2 and the lower rolls by the reference character 3, the upper roll being flanged as at 4.

A leveling device in accordance with this

invention and which is mounted upon the upper roll of the set when it is desired to adjust the rolls in parallelism with respect to each other embodies a spirit level consisting of a rectangular body portion 5 having a concave lower face 6, the lower face 6 conforming to the shape of the roll. The upper face of the body portion 5 is provided with two spirit glasses and indicated by the reference characters 7, 8. The spirit glass 7 extends longitudinally with respect to the body portion 5 and the spirit glass 8 extends at right angles with respect to the glass 7. The function of the spirit glass 7 is to level the roll while the function of the spirit glass 8 is to level the body portion 5 with respect to the roll so that the center of the body portion 5 will be in vertical alinement with respect to the axis of the roll upon which the body portion is mounted. Fixed to each side of the body portion 5 is a plurality of brackets 9 in which are pivotally connected a series of depending curvilinear arms. The arms depending from one side of the body portion 5 are indicated by the reference character 10 and the arms upon the other side are indicated by the reference character 11. To each series of arms near the lower end is pivotally attached by the brackets 12 a longitudinally extending curvilinear supporting member 13 and to the lower ends of each series of arms is fixed an inverted T-shaped suspension arm 14. Upon the suspension arm 14 is adapted to be mounted a carriage provided with a laterally extending clamp formed of a fixed and a removable member 16, 17, respectively. The member 16 forms a part of or is rigidly attached to the carriage 15 and is shouldered as at 18 against which abuts the inner end of the member 17. The members 16 and 17 are connected together by the hold-fast devices 19. The clamp which is attached to the carriage 15 is adapted to connect to the carriage and adjustable gage bar 20 having a beveled end 21 and a scale 22. The gage bar extends at an inclination and is adjustable upwardly and downwardly, owing to the fact that the clamping member 17 can be loosened or removed from the clamping member 16. The end of the gage bar is adapted to engage between the upper roll of the set and one of the lower rolls so that one can determine whether the said rolls are in parallelism with respect to each other and the space between the rolls is uniformly from end to end, the



tapering end of the gage bar being adapted to extend in the space between the rolls, the width of the space being determined by the scale upon the lower end of the gage bar.

5 After the body portion 5 has been adjusted to determine that it is level and the upper roll of the set is level it is maintained in such position by the holding plates 23 adjustably connected by the adjusting screws  
10 24 to the ends of the body portion 5, the said holding plates binding against the inner face of the flange 4, as clearly indicated in Fig. 2.

When the body portion 5 has been fixed in its adjusted position and the upper roll  
15 leveled, the leveling of the lower rolls with respect to the upper rolls is had through the medium of the gage bar 20, it having been decided what width of space is desired between the upper roll and the lower roll. If the  
20 space decided upon is half inch in width the gage bar is so set and positioned between the upper and lower roll, and then the latter is adjusted to the beveled edge of the gage bar so that the desired width of space is attained.  
25 The gage bar is then shifted from end to end of the space and the operator can readily determine whether the lower roll is trued if any variation should occur during the shifting of the gage bar.

30 What I claim is:—

1. A leveling device for rolls comprising a duplex spirit level having a concave lower face adapted to be mounted upon the upper roll of a set, said duplex spirit level constituting  
35 means for leveling the upper roll and the truing of the center of the spirit level in vertical alinement with respect to the axis of the roll, means for maintaining the spirit level in the position to which it has been adjusted, a  
40 pair of suspension members supported from the spirit level and adapted to be arranged one at each side of the roll, a carriage adapted to be shifted upon either of the said members, and a gage bar adjustably connected with  
45 the carriage.

2. A leveling device for rolls comprising a spirit level, two series of inclined arms connected to the sides thereof, a supporting member attached to each series of arms, a  
50 suspension member connected to each series of arms, a carriage adapted to be shifted upon either of said suspension members, and a gage bar adjustably connected to the carriage.

3. A leveling device for rolls comprising a spirit level, two series of inclined arms connected to the sides thereof, a supporting member attached to each series of arms, a suspension member connected to each series  
55 of arms, a carriage adapted to be shifted upon either of said suspension members, a gage bar adjustably connected to the carriage, and adjustable means carried by the spirit level to maintain it from movement.

65 4. A leveling device for rolls comprising a

spirit level having a concave lower face adapted to be mounted upon a roll, a pair of suspension members one adapted to be arranged at each side of the roll, means for connecting said members with the spirit level, a  
70 carriage adapted to be shifted upon either of said members, and an adjustable inclined gage bar connected with said carriage.

5. A leveling device for rolls comprising a spirit level having a concave lower face  
75 adapted to be mounted upon a roll, a pair of suspension members one adapted to be arranged at each side of the roll, means for connecting said members with the spirit level, a carriage adapted to be shifted upon either  
80 of said members, an adjustable inclined gage bar connected with said carriage, and means carried by the spirit level to prevent the longitudinal and transverse shifting thereof.

6. A leveling device for rolls comprising a  
85 spirit level adapted to be mounted upon a roll, a pair of suspension bars one adapted to be arranged at each side of the roll, separate connecting means between each member and said spirit level, a shiftable carriage adapted  
90 to be mounted upon either of the members, and an adjustable gaging means connected with said carriage.

7. A leveling device for rolls comprising a spirit level adapted to be mounted upon a  
95 roll, a pair of suspension bars one adapted to be arranged at each side of the roll, separate connecting means between each member and said spirit level, a shiftable carriage adapted to be mounted upon either of the members,  
100 an adjustable gaging means connected with said carriage, and means to prevent the shifting of said spirit level when positioned upon the roll.

8. A leveling device for rolls comprising a  
105 duplex spirit level, a pair of suspension members one adapted to be arranged at each side of the roll, pivoted and curvilinear connecting means between the suspension member and the spirit level, a shiftable carriage  
110 adapted to be mounted upon either of said members, and an adjustable gaging means connected with the carriage.

9. A leveling device for rolls comprising a duplex spirit level, a pair of suspension mem-  
115 bers one adapted to be arranged at each side of the roll, pivoted and curvilinear connecting means between the suspension member and the spirit level, a shiftable carriage adapted to be mounted upon either of said mem-  
120 bers, an adjustable gaging means connected with the carriage, and means adjustably connected with the spirit level for maintaining it from movement.

10. A leveling device for rolls comprising a  
125 duplex spirit level, a pair of suspension members one adapted to be arranged at each side of the roll, pivoted and curvilinear connecting means between the suspension member and the spirit level, a shiftable carriage  
130



adapted to be mounted upon either of said members, and an adjustable gage bar carried by said carriage and extending at an inclination, provided with a beveled end and a  
5 scale.

11. A leveling device for rolls comprising a duplex spirit level, a pair of suspension members one adapted to be arranged at each side of the roll, pivoted and curvilinear connecting means between the suspension member  
10 and the spirit level, a shiftable carriage adapted to be mounted upon either of said

members, an adjustable gage bar carried by said carriage, extending at an inclination, provided with a beveled end and a scale, and 15 adjustable means connected with the spirit level for maintaining it from movement.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM H. L. FIELDING.

Witnesses:

W. H. COOK,

ROBERT WATERMAN.