

No. 662,494.

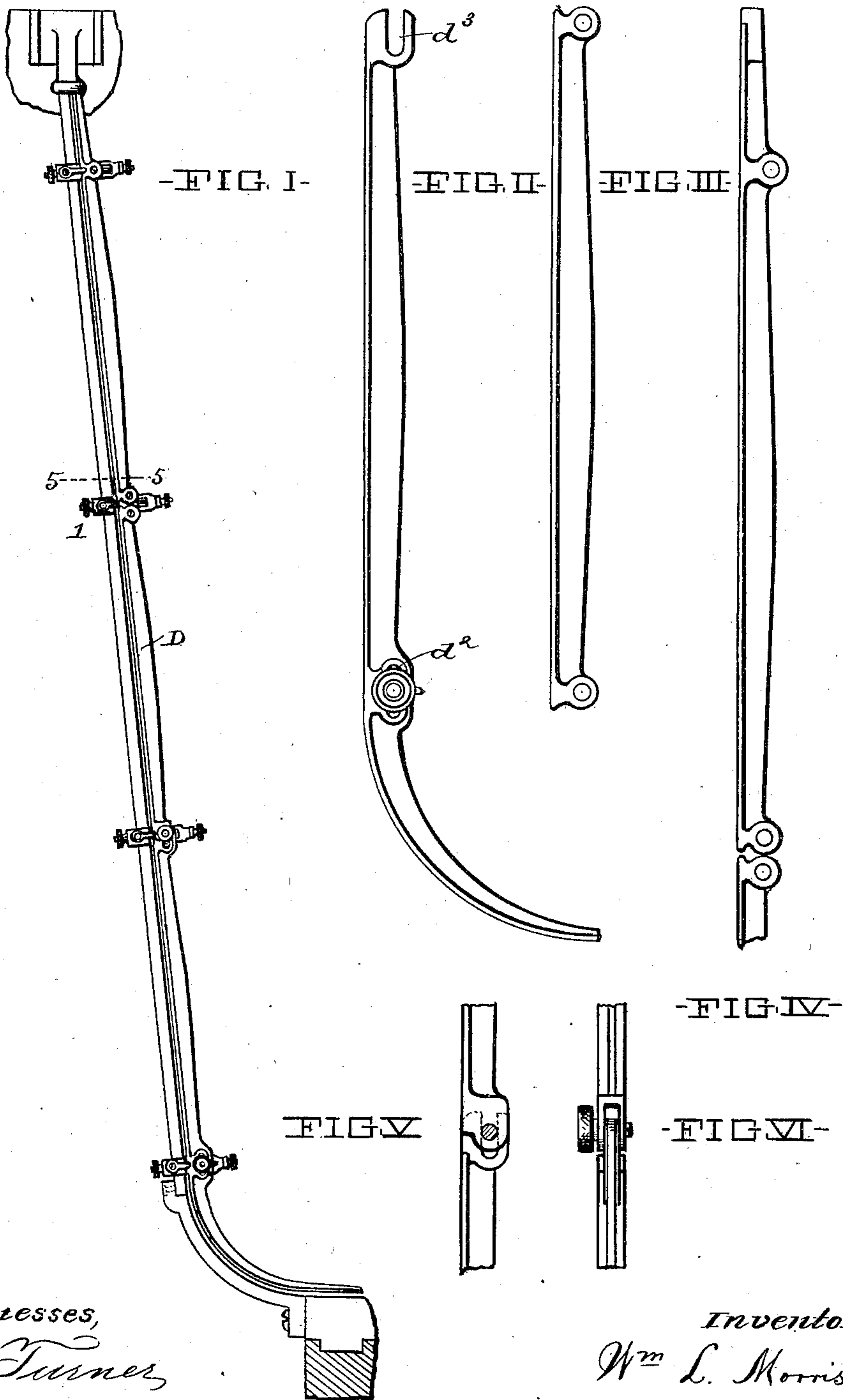
Patented Nov. 27, 1900.

W. L. MORRIS.  
WAD CHUTE.

(Application filed Jan. 9, 1900.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses,  
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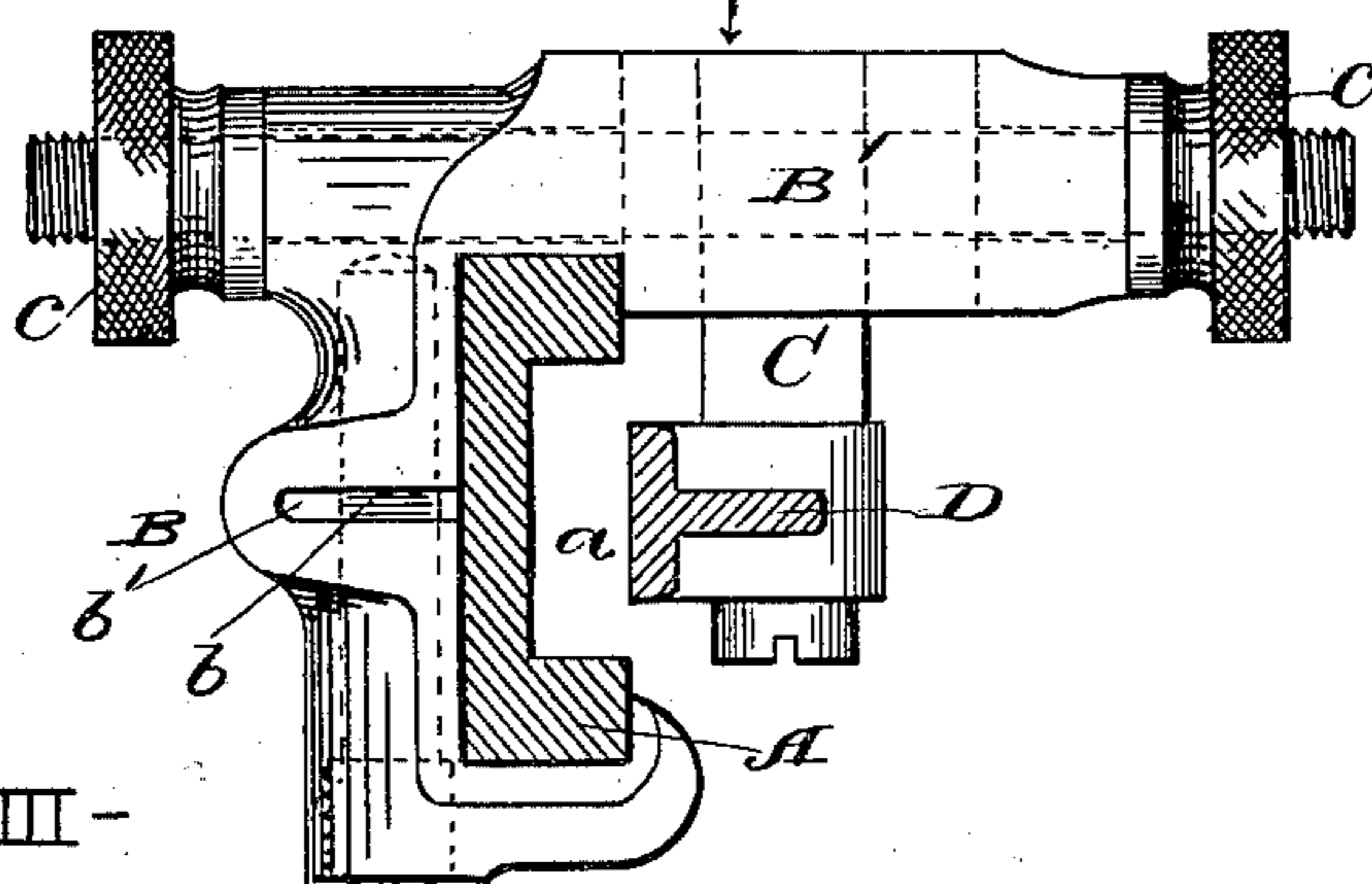
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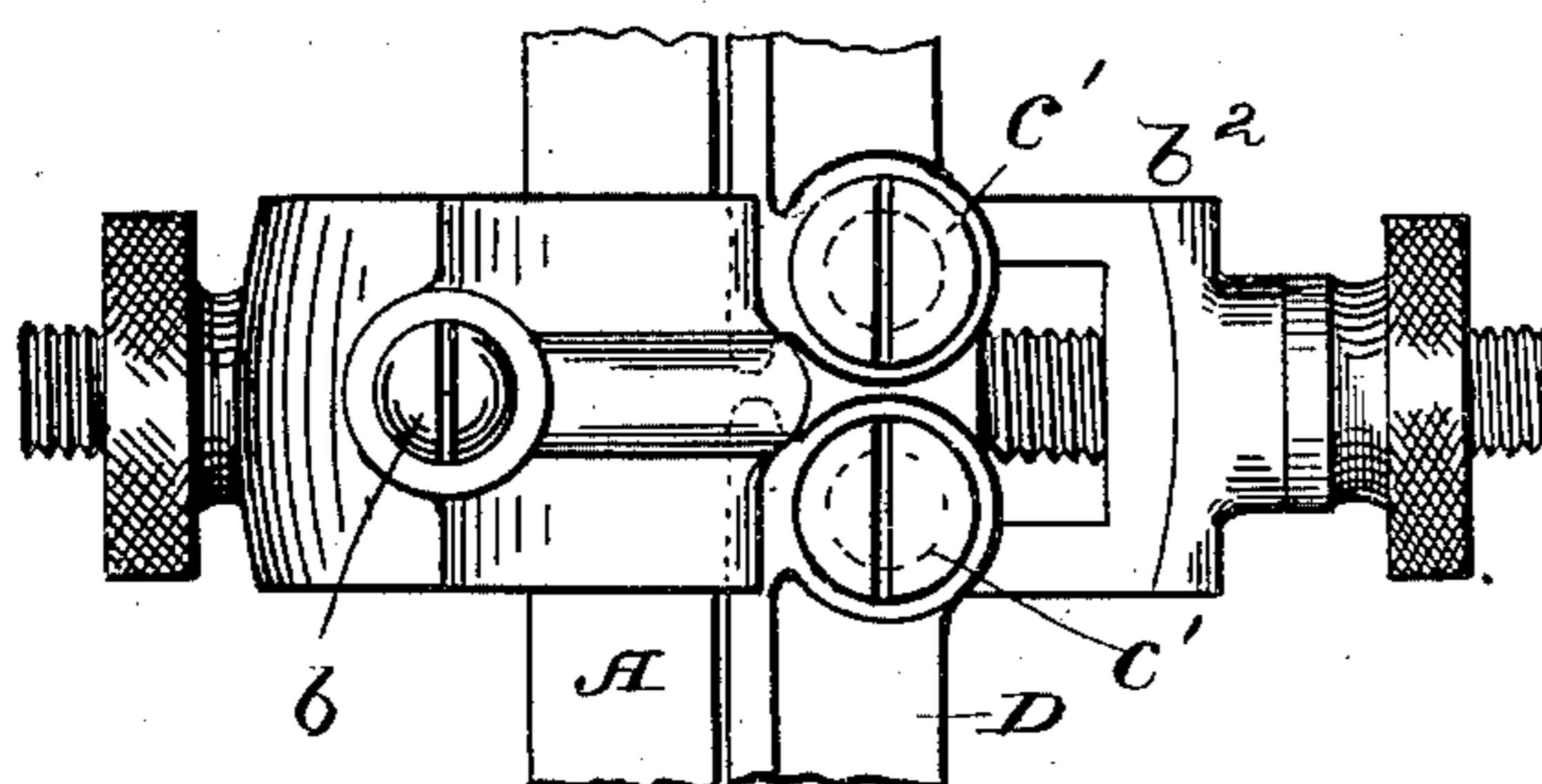
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**2 Sheets—Sheet 2.**

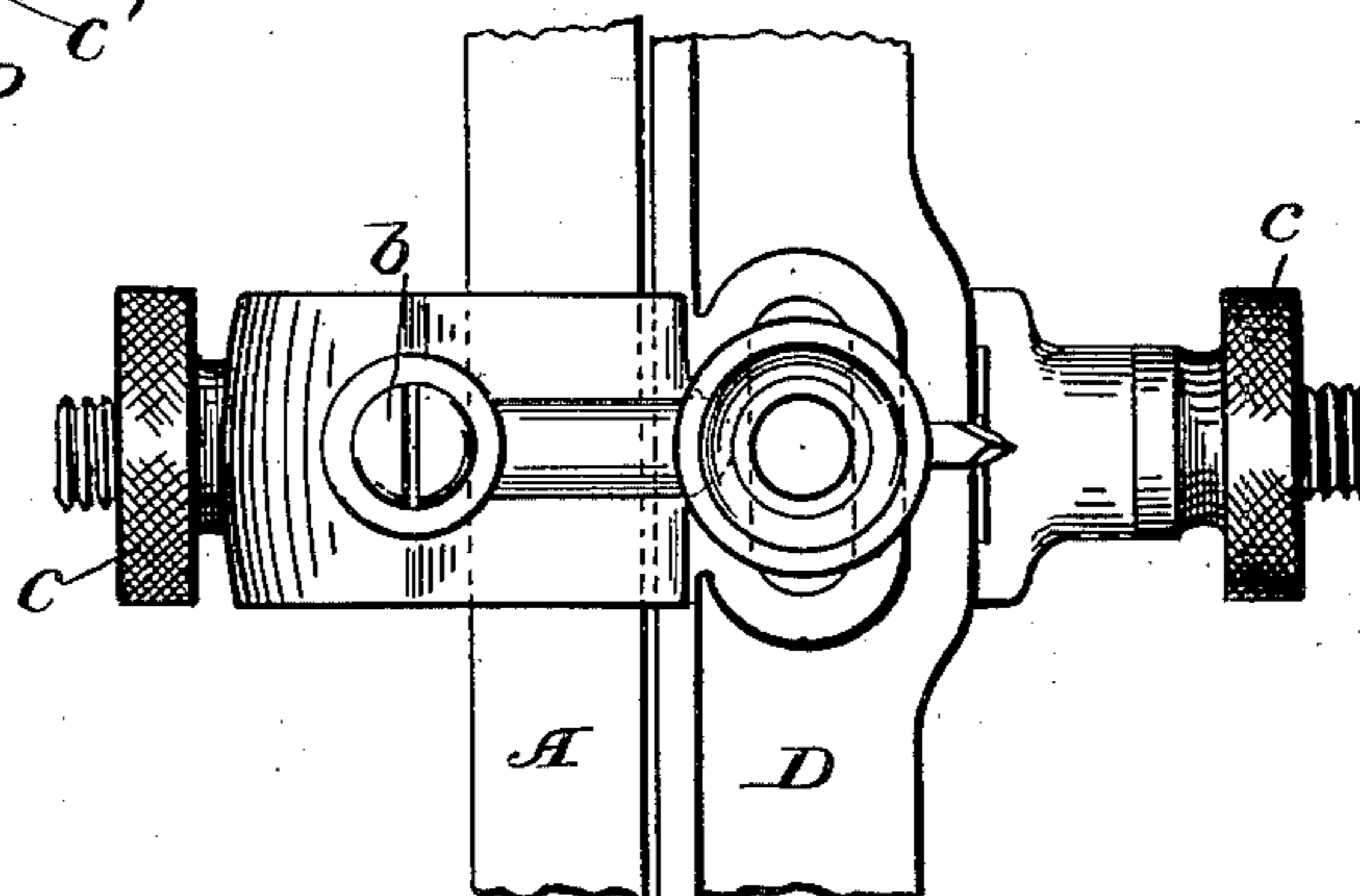
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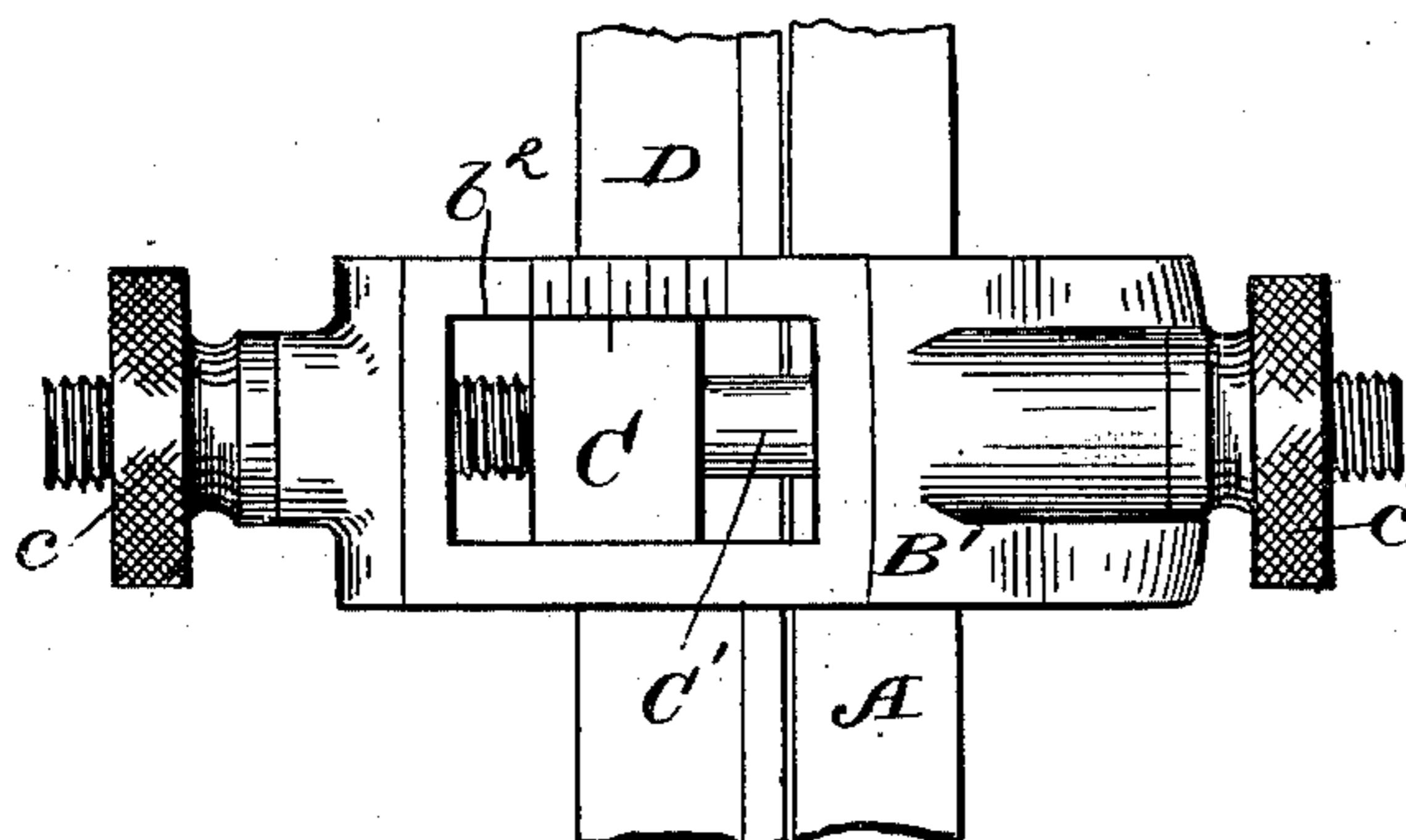
- FIG. VIII -



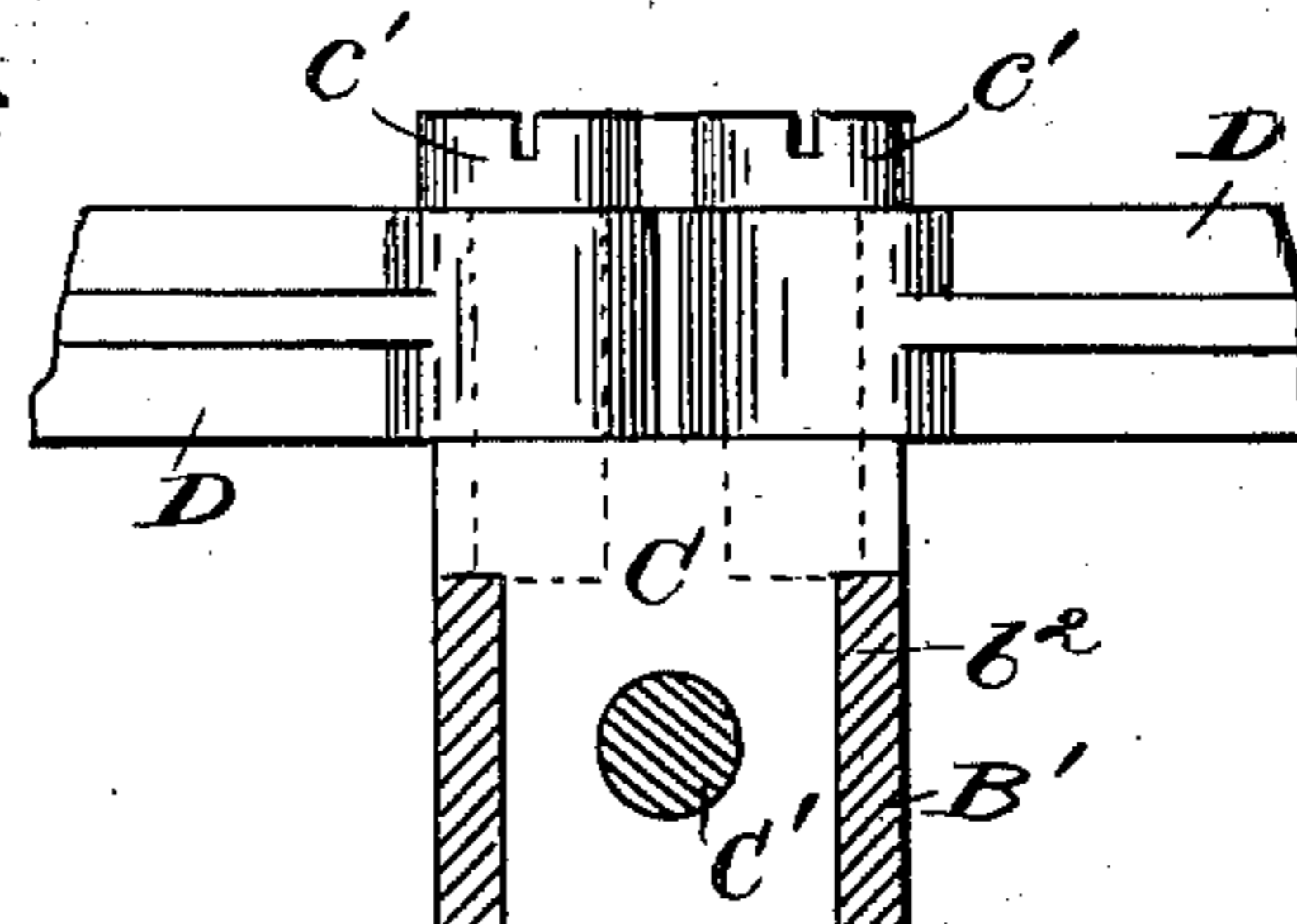
-FIG. IX-




-FIG. X-



- FIG. XI -



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# UNITED STATES PATENT OFFICE.

WILLIAM L. MORRIS, OF CLEVELAND, OHIO, ASSIGNOR TO THE AUSTIN CARTRIDGE COMPANY, OF SAME PLACE.

## WAD-CHUTE.

SPECIFICATION forming part of Letters Patent No. 662,494, dated November 27, 1900.

Application filed January 9, 1900. Serial No. 841. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM L. MORRIS, a citizen of the United States, and a resident of Cleveland, county of Cuyahoga, and State of Ohio, have invented a new and useful Improvement in Wad-Chutes, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

My invention relates to devices for feeding wads to shell-loading machines; and it consists of a chute or guideway composed of sections adjustable relatively to each other, whereby the length of the chute may be altered to conform with varying conditions and the sections properly alined, such guideway having a groove of variable width, whereby it may be altered for receiving and conducting wads of different sizes.

The annexed drawings and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawings, Figure I represents a side elevation of my improved wad-chute, showing one end attached to a wad-hopper, from which the wads are fed into the chute, and the other end secured to a shell-loading machine such as is shown in United States Letters Patent No. 639,080, broken portions only of the hopper and shell-loader being shown. Fig. II represents an enlarged side elevation of a portion of same. Fig. III represents an enlarged side elevation of a second portion of same, and Fig. IV an enlarged side elevation of a third portion. Figs. V and VI represent detail views of such portions. Fig. VII represents an enlarged horizontal section of the chute taken upon line 5 5, Fig. I, showing one of the brackets used in top plan. Fig. VIII represents an enlarged side elevation of a portion of the chute, including one of said brackets. Fig. IX represents a similar view, including a bracket of a second form. Fig. X represents an enlarged side elevation of a bracket, viewing same from the side opposite that from which the view illus-

trated in Fig. VIII was taken—that is, in the direction indicated by the arrow, Fig. V. Fig. XI represents a cross-section of such bracket taken upon line 9 9, Fig. VIII.

The device consists of an inclined guide A, formed with a groove *a*, of a width sufficient to permit the wads to travel freely therein upon their flat sides and embodies three walls, the back and two side walls, of the wad-race, Fig. VII. At intervals along said guide are secured a number of brackets B by means of a screw *b* passing transversely therethrough, and a groove *b'* splitting the bracket, whereby it is seen the latter may be adjustably secured longitudinally of said guide, Fig. VII. Laterally of the bracket is formed a portion B', cast integral therewith, in which is formed a guideway *b<sup>2</sup>*, in which is placed a cross-head C. The said portion B is smooth-bored longitudinally, a double-ended screw-bolt C' passing through such bore and cross-head and secured to the latter. A set-nut *c* is provided at each end of said screw-bolt, which may be caused to engage the respective ends of the portion B', and thus fix the position of the bolt and cross-head.

To each cross-head C is secured a screw *c'*, which projects therefrom in the direction of the wad-guide, as shown in Fig. VII. Supported upon said screw is one end of a sectional portion of a movable bar D, such end being suitably bored to permit of the free passage of such screw, as shown in Fig. III. Such bar consists of sections whose contiguous ends are hence supported by the brackets, the screws inserted in the adjustable cross-heads forming the supporting portions of such brackets. Where two ends of contiguous sections meet, as at 1, Fig. I, two such supporting-screws are provided in each cross-head, one such screw supporting the respective contiguous ends of such sections, as shown in Fig. XI. The brackets located at the extremities of the wad-guide are hence provided with but one such screw, as shown in Fig. VII. The uppermost section *d*, Fig. IV, is formed with an upwardly-extending portion *d'*, which extends into the vicinity of the portion of the wad-hopper to which the wad-chute is secured, as shown in Fig. I. The intermediate sections have the bores through which the sup-

porting-screws pass formed at their extremities, as shown in Fig. III. The length of the screws  $c'$  is such as to bring the movable bar D directly opposite the back wall of the wad-groove in the wad-guide, as shown in Fig. VII, the inner surface of such bar forming the fourth wall of the wad-race. Such fourth wall is, however, made of less width than that of the wad-race, leaving thereby an open space on each side thereof, Fig. VII. Such sections of the bar hence comprise a movable wall supported by the brackets, which may be adjusted toward and from the wad-groove, whereby the depth of the wad-race may be varied to conform with different thicknesses of wads, the various positions of the section ends being fixed by the two set-nuts  $c$ , which fix the position of the cross-heads in the brackets.

In order to obtain the same position relatively to the wad-guide on the part of each cross-head, a series of graduations are provided upon the lateral surface of each bracket in the vicinity of the path of the cross-heads, as shown in Fig. X, whereby the exact distance of each section end from said wad-guide is definitely known.

The wad-chute illustrated in the drawings is, as before mentioned, particularly adapted for application to the shell-loader shown and described in the above-mentioned Letters Patent and in which it is required to deliver the wads to a horizontal guideway, as shown in Fig. I. To accomplish this object, the lower portion of the wad-chute is provided with a curved section, the adjustable wall-section being similarly curved to conform with the wad-guide. In order to adjust said curved movable wall toward and from the guideway, said section of the wall is provided with slotted apertures  $d^2$  and  $d^3$ , as shown in Fig. II, whereby such sections may be adjusted vertically and the proper adjustment of the curved portion thereof thereby secured. In this case the upper end of said lower section is preferably caused to project into the lower end of the next section above, which is forked, as shown in Fig. VI, the thumb-screw of the bracket at this point passing through said fork and the slot  $d^3$ , Fig. V. It is thus seen that the vertical adjustment of the lower or curved section of the movable wall may be obtained, the adjustment of the section toward and from the wad-guide being at the same time preserved.

The supporting-screws may be either of the type shown in Fig. VIII or thumb-screws, as shown in Fig. IX, it being preferable, however, to use the small-headed screw at all points excepting those at which the lower vertically-adjustable portion of the wall is adjusted.

Single screws might be used for supporting two contiguous section ends instead of the two screws shown in Fig. VIII. Such construction would, however, necessitate a more expensive construction than the one shown.

By making the fourth and adjustable wall of less width than the wad-race, and thereby leaving an open space on each side thereof, the progress of the wads may be observed and the seat of the difficulty located in case the wad-column should accidentally become clogged.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means covered by any one of the following claims be employed.

I therefore particularly point out and distinctly claim as my invention—

1. The combination of a grooved guide, a wall composed of a plurality of sections, and brackets secured to and longitudinally adjustable upon said guide, supporting said wall opposite the groove in said guide, and provided with means for moving said wall toward and from said groove, substantially as set forth.

2. The combination of a grooved guide, a wall composed of a plurality of sections, a bracket for supporting contiguous ends of sections of said wall and longitudinally adjustable upon said guide, said bracket provided with a portion movable toward and from said groove and with means for securing said movable portion in a fixed position relatively to said guide, said wall supported by said movable portion, substantially as set forth.

3. The combination of a grooved guide, a wall composed of a plurality of sections, a bracket for supporting contiguous ends of sections of said wall and longitudinally adjustable upon said guide, said bracket provided with a cross-head, a double-end screw and nuts for actuating said cross-head, said contiguous ends supported by said cross-head, substantially as set forth.

4. A wad-chute consisting of the combination of a grooved guide, a movable wall of a width less than that of the groove in said guide, and means for adjusting said wall toward or from said groove, substantially as set forth.

5. A wad-chute consisting of the combination of a grooved guide, a bracket secured to said guide, a movable wall of a width less than that of the groove in said guide and supported by said bracket, the latter provided with means for adjusting said wall toward or from said guide, substantially as set forth.

6. A wad-chute comprising a grooved guide and a movable wall consisting of a plurality of separable sections, said wall being adjustable toward or from said guide, whereby the depth of the wad-race may be varied, substantially as set forth.

7. A wad-chute comprising a grooved guide and a movable wall consisting of a plurality of separable sections of a width less than that of the wad-race, said sections being adjustable

toward and from said guide, whereby the depth of the wad-race may be varied, substantially as set forth.

5 8. A wad-chute comprising a grooved guide and a movable bar forming one wall of the wad-race and consisting of a plurality of separable sections, contiguous ends of such sections being supported by a bracket, each of which is provided with means for adjusting  
10 the section end supported thereby toward and from the opposite race-wall, substantially as set forth.

15 9. A wad-chute consisting of the combination with a wad-guide of a bar consisting of a plurality of sections, contiguous section ends being supported upon a bracket, that portion of the bracket supporting said ends being adjustably movable toward and from said guide, whereby the depth of the wad-race may be varied, substantially as set forth.  
20

10. A wad-chute consisting of the combination of a grooved wad-guide, brackets secured to said guide, and a bar consisting of a plu-

25 rality of sections, each bracket provided with movable portion and means for adjustably fixing same, the section ends being respectively supported upon one such portion, substantially as set forth.

11. A wad-chute consisting of the combination of a grooved wad-guide, brackets secured  
30 to said guide, and a bar consisting of a plurality of sections, each bracket provided with a movable cross-head and a threaded bolt secured to said cross-head having two set-nuts adapted to engage the bracket whereby said  
35 cross-head may be moved and its position fixed, each end of each bar-section secured to one such cross-head whereby said bar may be adjusted relatively to said wad-guide, substantially as set forth.  
40

Signed by me this 26th day of December, 1899.

WILLIAM L. MORRIS.

Attest:

E. E. CROWELL,  
A. E. MERKEL.