

(No Model.)

2 Sheets—Sheet 1.

W. SHAW.
APPARATUS FOR PRINTING CARPET YARNS.

No. 582,025.

Patented May 4, 1897.

Fig. 1.

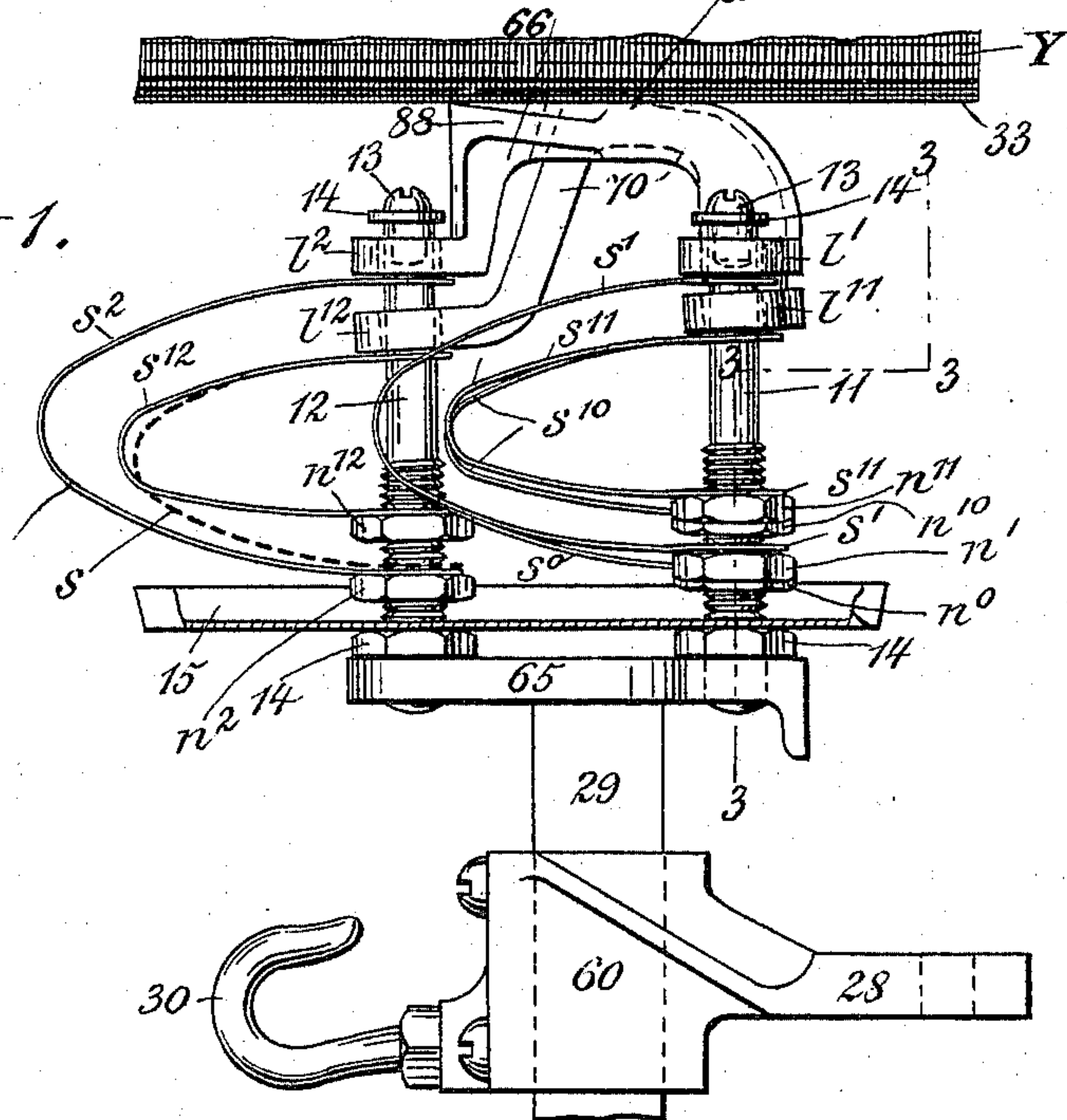


Fig. 2.

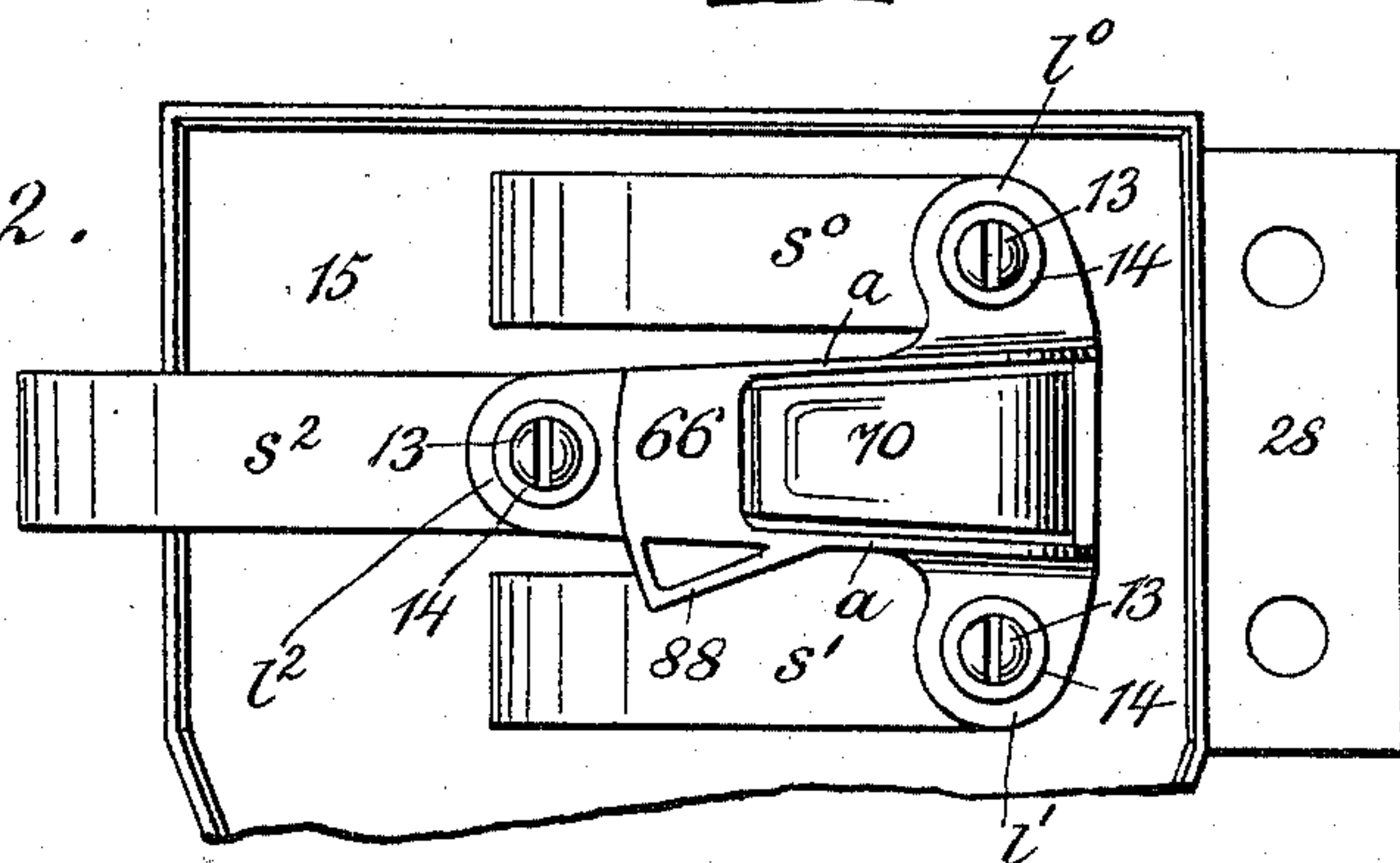
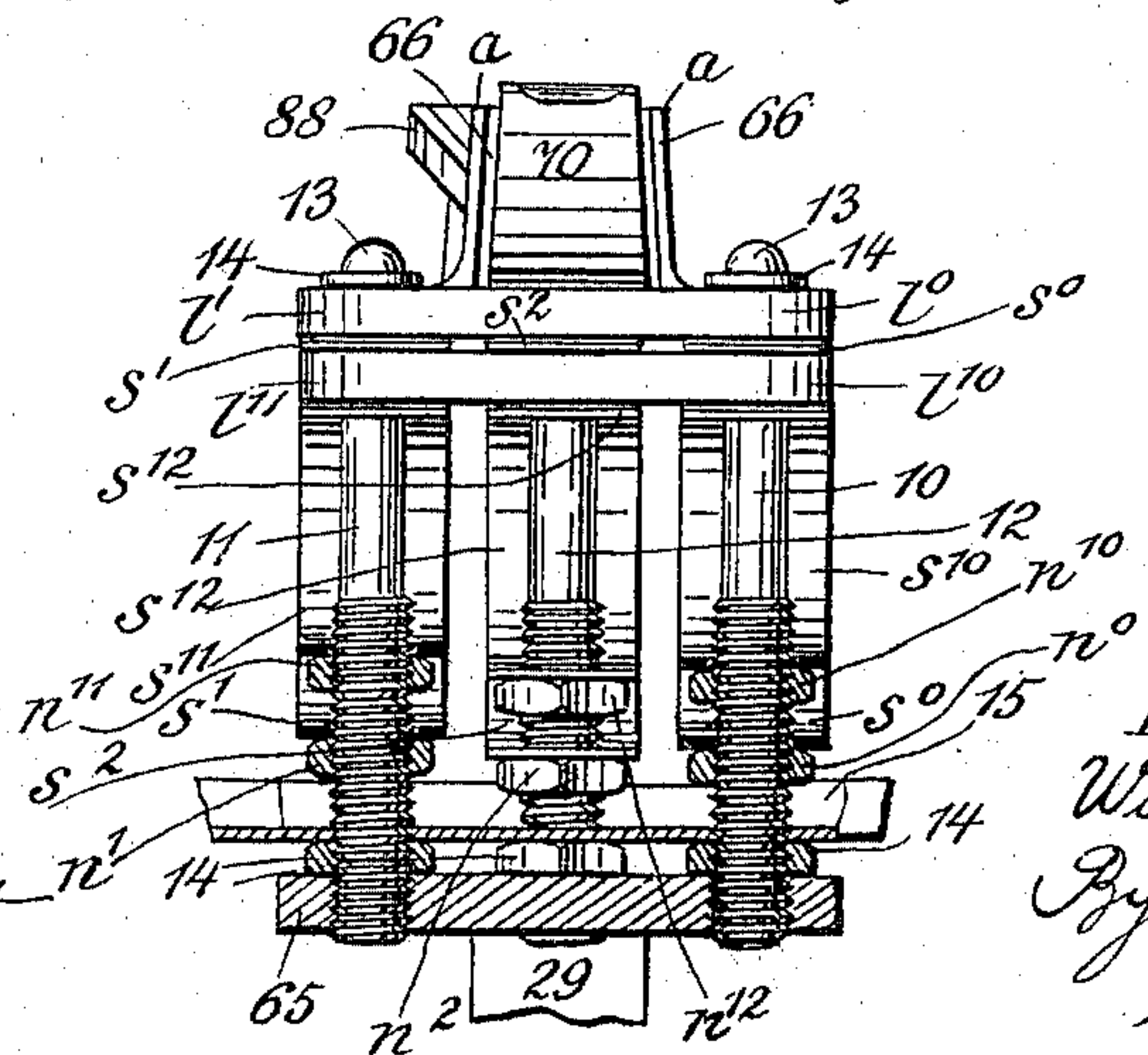


Fig. 3.



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Inventor:
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By C. L. Horack
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(No Model.)

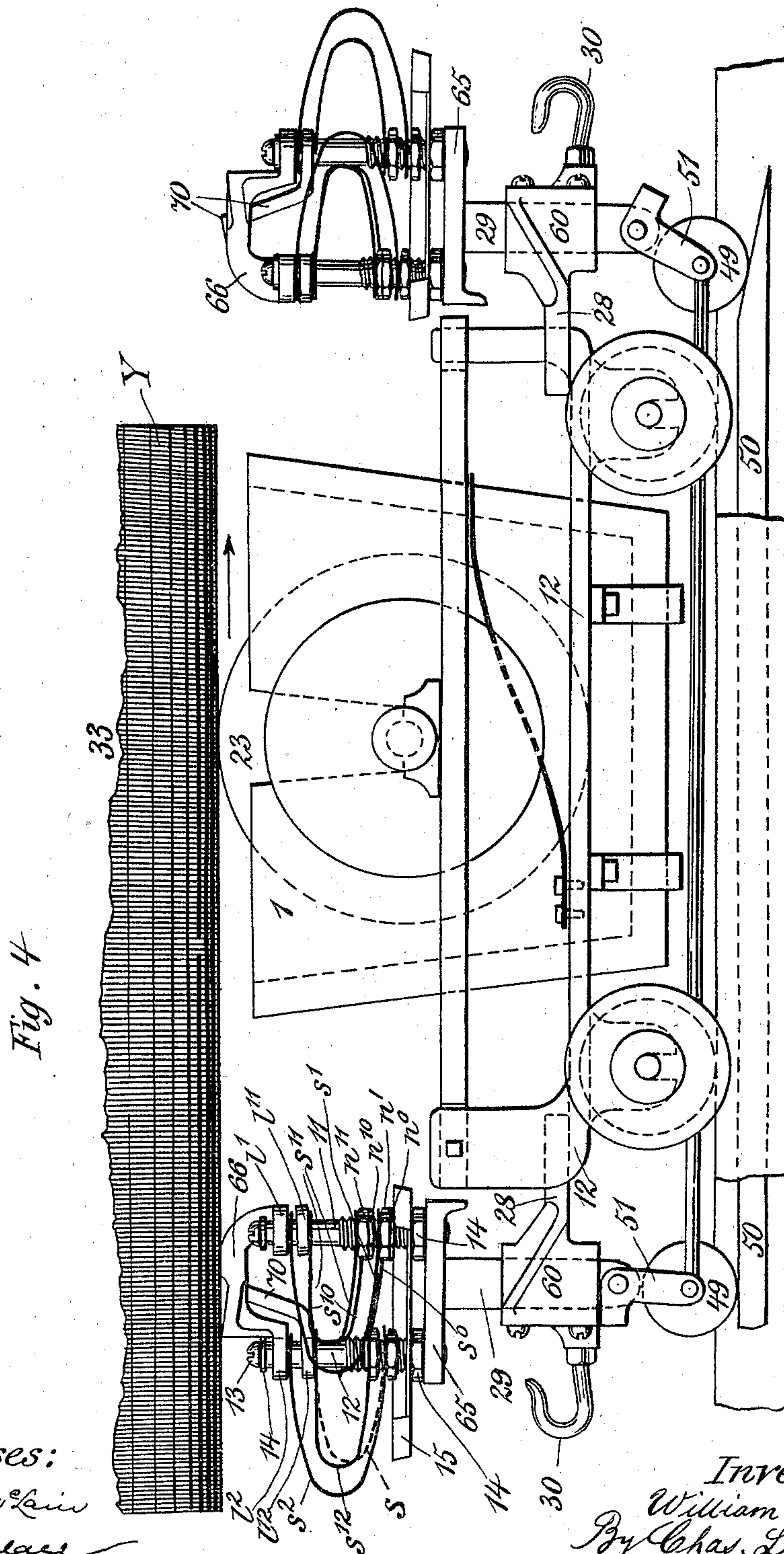
2 Sheets—Sheet 2.

W. SHAW.

APPARATUS FOR PRINTING CARPET YARNS.

No. 582,025.

Patented May 4, 1897.



Witnesses:
James McLean
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Inventor:
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UNITED STATES PATENT OFFICE.

WILLIAM SHAW, OF BROOKLYN, NEW YORK.

APPARATUS FOR PRINTING CARPET-YARNS.

SPECIFICATION forming part of Letters Patent No. 582,025, dated May 4, 1897.

Application filed November 27, 1896. Serial No. 613,501. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM SHAW, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Apparatus for Printing Carpet-Yarns, of which the following is a specification.

My invention refers to improvements in apparatus for printing carpet-yarns such as used in the manufacture of tapestry and velvet carpets, and more particularly to the class of appliances illustrated and described in my Letters Patent of the United States No. 543,512, dated July 30, 1895.

The principal object of my invention is to provide suitable means for adjusting and regulating the yielding or elastic pressure under which appliances for forcing liquid or semi-liquid coloring-matter into yarn wound on a drum are conducted along such yarn after the coloring-matter has been applied principally to its surface by a color-wheel. The means for carrying out this object are more fully described hereinafter and set forth in the claims.

In the accompanying drawings, forming part of this specification and wherein like figures and letters of reference indicate corresponding parts throughout the different views, Figure 1 is a side elevation of a vertical standard in a proper guide and carrying a platform on which rubbing appliances in operative engagement with the yarn on a yarn-drum are mounted in accordance with my invention. Fig. 2 is a ground plan of Fig. 1, and Fig. 3 a vertical section along line 3 3 in Fig. 1. Fig. 4 is a side elevation of a color-carriage with a color-wheel and rubbing appliances mounted thereon in accordance with my invention.

28 is a bracket adapted to be attached to the main body of a color-carriage and carrying a vertical arm 60, which forms a bearing, within which a post 29, made of rectangular cross-section, is made to slide. 30 is a hook attached to arm 60, to which the cord is to be attached used in drawing the color-carriage 12 forward and backward along the yarn Y on yarn-drum 33. Color-box 1 and color-wheel 23 are mounted on said carriage. Posts 29 are actuated by hinged levers 51, carrying

rollers 49, which ride on a center rail 50, so as to produce operative contact between the rubbing appliances and the yarn on the drum while said rubbing appliances travel behind the color-wheel. All these parts substantially correspond in their construction and in their mutual relations and functions with the parts bearing corresponding characters of reference in said United States Letters Patent No. 543,512.

65 is a platform at the upper extremity of post 29. 10, 11, and 12 are cylindrical studs screwed into said platform, and 14 14 jam-nuts for holding said studs in position.

15 is a pan for catching and carrying off the drippings of coloring-matter from the equalizer 66 and the rubber 70, mounted at upper ends of said studs in manner herein-after described. This equalizer 66, to which may be attached an auxiliary rubber 88 and the main rubber 70, correspond as to their functions with the equalizer 66 and the rubbers 70 of aforesaid United States patents and resemble the same also as far as their general configuration is concerned. Equalizer 66 is provided near its forward end with side lugs l^0 and l^1 and with a rear lug l^2 , and rubber 70 with side lugs l^{10} and l^{11} and with a rear lug l^{12} , in such manner that the upper end of stud 10 freely passes through lugs l^0 and l^{10} , that of stud 11 through lugs l^1 and l^{11} , and that of stud 12 through lugs l^2 and l^{12} , so as to allow the equalizer and the rubber to freely play upward and downward along said studs. 13 13 are screws entering the heads of said studs and serving by means of washers 14 to prevent the equalizer and the rubber from leaving said studs.

s^0 , s^1 , s^2 , s^{10} , s^{11} , and s^{12} are U-shaped leaf-springs yieldingly supporting, respectively, lugs l^0 , l^1 , l^2 , l^{10} , l^{11} , and l^{12} . The lower ends of said springs are provided with perforations of sufficient size to permit the same to pass over the lower screw-threaded portions of studs 10, 11, and 12, while the perforations in the upper ends of said springs are of sufficient size to allow of the free play up and down of these ends along the studs.

I have found in practice that it is of much importance to be able to adjust the tension of the supporting-springs under different parts of the equalizer and of the rubber in-

dependent of the tensions of the other springs or in certain relations with such tensions, and in accordance with the particular functions of the portions of the equalizer and the rubber which are more immediately supported by them. Thus if it should appear that too great an amount of coloring-matter is being applied to the yarn by the color-wheel and brought in contact with the equalizer and the rubber I can remedy this by increasing the tension on springs s^{10} and s^{11} , which will result in more firmly pressing the downward-curving front end of rubber 70 against the yarn and thereby pushing off and conducting downward such surplus coloring-matter. On the other hand, by increasing the tension on springs s^0 and s' I more firmly hold the longitudinal arms a of the equalizer against the yarn and thereby prevent the escape side-ward of the coloring-matter forming the streaks applied to the yarn. If it should appear that the coloring-matter be not forced entirely through the yarn by the equalizer and the rubber, I remedy this by increasing the tension on rear springs s^2 and s^{12} . While it is intended to make corresponding side springs, as s^0 and s' and s^{10} and s^{11} , of the same configurations and to give them corresponding tensions, it often occurs that this cannot be accomplished with sufficient accuracy in the manufacture and bending of these springs, and in this emergency it again becomes of much importance to provide simple means for producing proper tensions on these springs after they have been mounted on studs 10 and 11, and these adjustments I accomplish by means of nuts n^0 , n' , n^2 , n^{10} , n^{11} , and n^{12} , which support the lower ends of springs s^0 , s' , s^2 , s^{10} , s^{11} , and s^{12} , respectively, and are in engagement with the screw-threaded lower portions of aforesaid studs. In screwing the nuts upward the tensions on the springs supported by them will be increased, while screwing them downward will reduce such tensions.

I have found in practice that providing the various springs be carefully bent according to proper patterns, so that the tensions of each of the two springs on one of the studs bear a proper relation to each other, the upper adjusting-nuts n^{10} , n^{11} , and n^{12} may be dispensed with and the lower ends of the smaller and interior springs s^{10} , s^{11} , and s^{12} may be made to rest directly upon the lower ends of springs s^{10} , s^{11} , and s^{12} , respectively, in which case nuts n^0 , n' , and n^2 will be utilized each in adjusting the tension of the two springs

on the corresponding stud. Such a condition is indicated in dotted lines in the left-hand portion of Fig. 1 at s .

I claim as new and desire to secure by Letters Patent—

1. In apparatus for printing carpet-yarns, the combination with a yarn-drum and a color-wheel, of a rubbing appliance mounted on springs, and means applied to one of said springs, whereby its tension is adjusted independent of the tension of other such springs.

2. In apparatus for printing carpet-yarns, the combination with a U-shaped equalizer of a supporting-spring on each side of its front portion and a supporting-spring under its rear portion, and means applied to each of said springs, whereby its tension is adjusted independent of the tensions of the other springs.

3. In apparatus for printing carpet-yarns, the combination of a U-shaped equalizer, of a supporting-spring on each side of its front portion and a supporting-spring under its rear portion, and means applied to the rear spring, whereby its tension is adjusted independent of the tension of the front springs.

4. In apparatus for printing carpet-yarns the combination of an equalizer, provided with two bars adapted to extend along the streaks of coloring-matter applied to yarn on a drum and a cross connection, of a rubber inserted between said arms, springs for supporting the front portions and the rear portions of the equalizer and of the rubber, and adjusting means applied to said front springs, whereby the upward pressure on said front portions is adjusted independent of that on said rear portions.

5. In apparatus for printing carpet-yarns, the combination with a U-shaped equalizer of a rubber inserted between its arms, joint screw-threaded guide-studs for said equalizer and said rubber near their front ends and their rear ends, supporting-springs for the forward ends and for the rear ends of the equalizer and of the rubber mounted on said studs, and nuts on said studs for independently adjusting the tensions of said springs.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 20th day of November, 1896.

WILLIAM SHAW.

Witnesses:

SIMON SULTAN,
CHAS. L. HORACK.