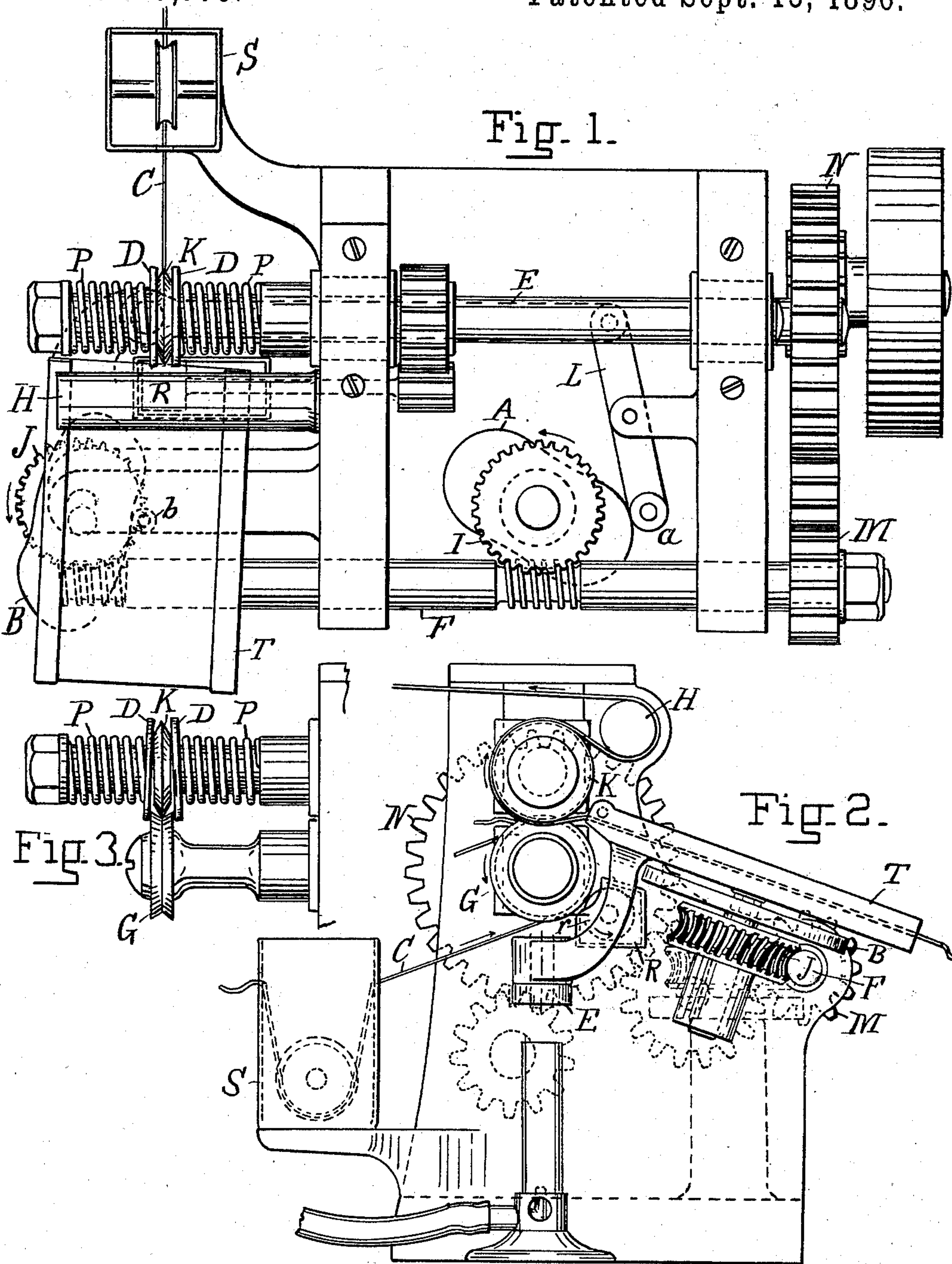


T. W. BRACHER.
MACHINE FOR MAKING SELVAGES ON FABRICS.

No. 567,779.

Patented Sept. 15, 1896.



Witnesses:

Samuel W. Balch
Wm. Whitman

Inventor

Thomas W. Bracher.

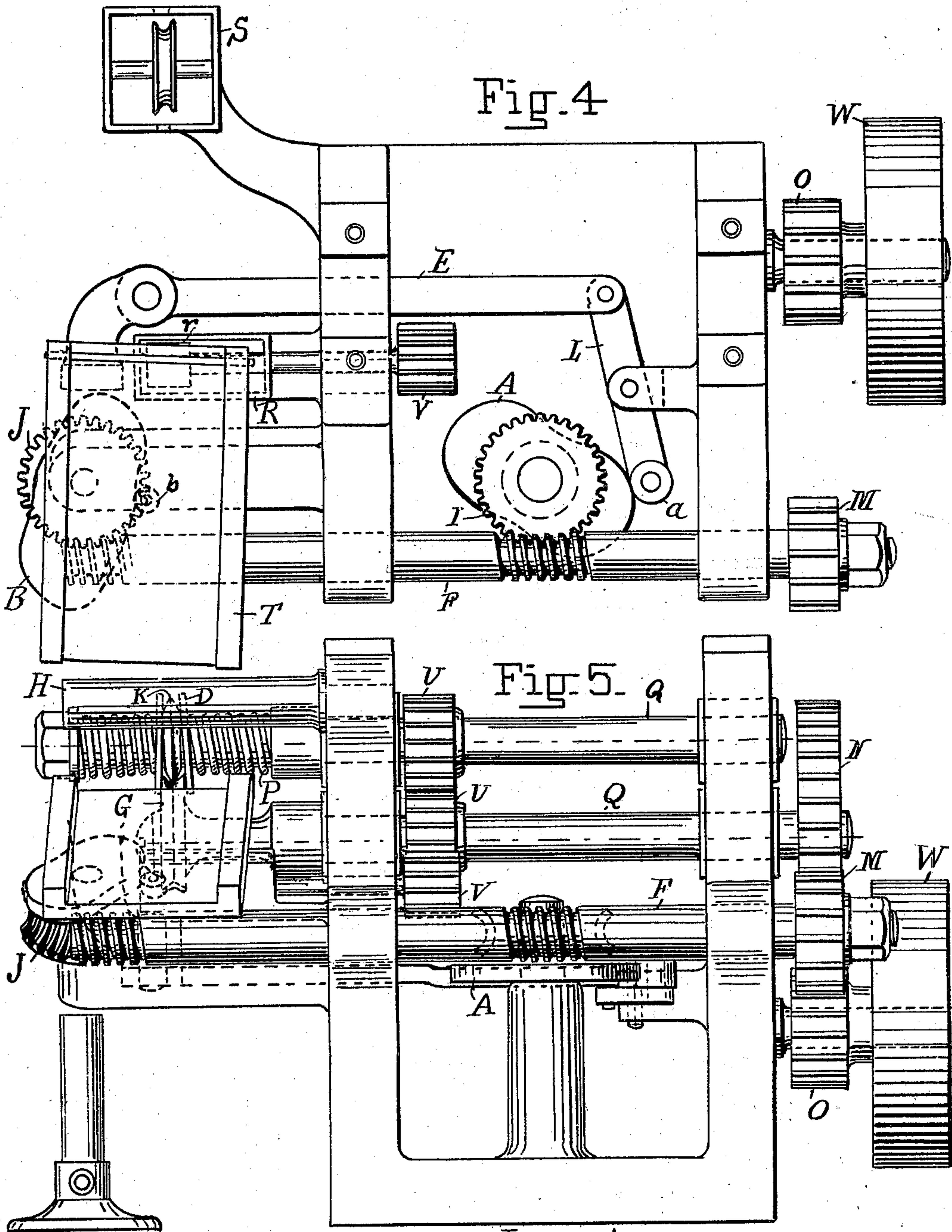
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UNITED STATES PATENT OFFICE.

THOMAS W. BRACHER, OF NEW YORK, N. Y.

MACHINE FOR MAKING SELVAGES ON FABRICS.

SPECIFICATION forming part of Letters Patent No. 567,779, dated September 15, 1896.

Application filed November 9, 1895. Serial No. 568,425. (No model.)

To all whom it may concern:

Be it known that I, THOMAS W. BRACHER, a citizen of the United States of America, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Machines for Making Selvages on Fabrics, of which the following is a specification.

The purpose of my machine is to shear apart textile fabrics and secure the severed edges with adhesive material. This it does by passing the work between rolls, one of which has a knife-edge, and applying the adhesive material to the severed edges at the rolls as the fabric is passing between them. A fine cord or thread moistened with adhesive material is conducted between the cutting-rolls with the fabric. The pressure of the rolls squeezes the adhesive material out of the cord into the severed edges of the fabric and the adhesive material on setting forms a selvedge. Means are also provided for folding over the severed edges and applying adhesive material in the angles of the folded-over edges to cement them down. In this way I can produce a selvedge edge around pieces of fabric of straight or sinuous outline. This selvedge edge, however, has an important specific application in the production of ribbons of varying width, such as are, for example, desirable for scarfs and hat-bindings. I make these by cutting apart a wide ribbon along a wavy or other line to give the desired variation in width to the severed parts. For the automatic production of these the machine is provided with a trough, which guides the fabric to the cutting-rolls and which, by means of cams, is given a combined lateral and angular movement, so that the fabric will be fed to the rolls in such a way that it will be sheared apart along the desired curve. The mechanism by which these results are obtained I believe to be new, as hereinafter described and claimed.

In the accompanying two sheets of drawings, which form a part of this specification, Figure 1 is a plan view of my invention. Fig. 2 is an end view thereof, and Fig. 3 is a side view of the rolls by which the fabric is severed and the adhesive material applied. Fig. 4 is a plan view in which the spindles bearing the cutting-rolls and the rod over

which the work is delivered are removed. Fig. 5 is a side view of the machine.

The severing of the fabric is effected by means of two rolls, the upper of which is brought to a single edge and is the knife-roll K. Below it is the grooved roll G, which is brought to two sharp edges. These rolls are carried by two spindles Q Q, which are geared together by gears U U. The lower of these spindles has a gear N, which meshes with a pinion O on a stud with a pulley-wheel W, by which the machine is driven. A fine cord or thread C passes through a box S, which contains adhesive material, as, for example, shellac. From this it passes half-way around the grooved roll and under the fabric. The knife-roll acts as a separating device and cuts through the fabric and into the underlying cord in the groove of the grooved roll. The cord is preferably of greater resistance than the fabric to be severed and being of yielding substance prevents the dulling of the knife-edge and insures the complete severing of the fabric. At the same time the pressure squeezes the shellac out of the cord and into the edges of the fabric as they are cut. The cord thus serves a double function—first, as a traveling carrier to transfer the adhesive material to the cut edges while they are tightly held between the two rolls, and, second, as a buffer on the opposite side of the fabric from the knife, into which the knife-edge of one of the rolls presses on cutting through the fabric. There is also a second box for shellac, R, in which is a gum-roll r, by which the shellac is transferred to the flanges of the grooved roll.

On the spindle with the knife-roll and on each side of the knife-roll are disks D D, which are pressed toward the rolls by springs P P. These disks are loose on the knife-roll spindle, so that they can tilt slightly, but they revolve with it. On the side where the two rolls come together the disks overlap the grooved roll and serve to fold the fabric over its sharp edges. The fabric having thus been folded and at the same time cut it is carried around with the knife-roll and the disks for nearly three-fourths of a revolution, and the folded edges of the two severed parts sink into the two grooves formed by the meeting of the disks and knife-roll. The edges of the

fabrics are thus pinched down and held while the shellac sets. On leaving the knife-roll and the disks the severed parts are delivered over a rod H.

5 It is not necessary to the carrying out of my invention always to apply the shellac in both the ways which have been described, for under some conditions either may be sufficient, and the application of the shellac may, 10 if desired, be made by means of a gum-roll directly to the knife-roll or to the groove of the grooved roll and the use of a moistened cord avoided. There is an advantage, however, in cutting against a moistened cord that 15 the knife-roll does not dull so readily, since it is not necessary to set it so close to the grooved roll in order to insure the complete severing of the fabric.

As a binding for hat-brims I find that it is 20 desirable to use a ribbon which has a width of an inch at the sides of the hat and a width of half an inch at the front and back. Taking the circumference of a hat-brim at thirty-four inches it will be seen that such a ribbon 25 should have two narrow and two wide places in that length. This is what my machine, as shown, is designed to make when constructed of such proportions that the rolls will be one inch in diameter. The work is 30 fed to the machine as a straight ribbon having a uniform width of one and a half inches. This is sheared apart along an undulating or sinuous line, the waves of which repeat every seventeen inches, and two ribbons, as above 35 described, are simultaneously produced.

Automatic means are provided for guiding the work, so that it will be sheared in the way that has been indicated. This is done by cams which reciprocate transversely the 40 guide or trough T, through which the work passes to the cutting-rolls. The trough is supported at the front by a bracket which is jointed to a rod E, that slides through a hole in the frame of the machine below the spindles 45 of the cutting-rolls. The rod is reciprocated through a lever L by a cam A. A second cam B is located under the guide for the work and operates upon it directly. These cams are revolved through suitable gearing, consisting of worm-wheels I and J, a worm-shaft 50 F, and gearing M and N, so that each will turn through one revolution to a peripheral travel of thirty-four inches by the rolls. By changing the gearing the machine can readily 55 be altered so as to produce other lengths.

In order to produce two undulations to a revolution of the cams they are each provided with two lobes. The cams are so shaped and set with respect to each other that the highest 60 points of one and the lowest points of the other will bear simultaneously against their respective rolls. When one of the lowest points of the cam A and one of the highest points of the cam B are against their respective cam-rolls, the guide will be in its extreme 65 position to the right. With the converse positions of the cams the guide will be in its ex-

treme left position. In both positions the guide is parallel to the direction of cutting, since at these points the line along which the 70 ribbon is sheared lies in the direction of the ribbon; but while shifting the guide from one side to the other it is necessary to tilt slightly to an angular position in order to 75 keep the line of shear in the direction of cutting. This is effected by so shaping the cam B that the part of the guide acted upon by it will move laterally in advance of the part acted on by the cam A.

The adhesive material employed as described is a finishing substance and is a liquid or semiliquid substance. 80

What I claim, and desire to secure by Letters Patent of the United States, is—

1. In a machine for making selvages on fabric, the combination of a knife, two supports, one of which is yielding, between which the fabric is held, and means for applying finishing substance to the fabric progressively in the direction of the line of cut said finishing 90 substance being applied while the fabric is held between said supports, substantially as described.

2. In a machine for making selvages on fabric, the combination with a knife-roll and a grooved roll, of means for applying finishing substance to one of the rolls progressively in the direction of the line of cutting, and means for operating the rolls, substantially as described. 100

3. In a machine for making selvages on fabric, the combination with a knife-roll and a grooved roll, of means for applying finishing substance to the grooved roll progressively in the direction of the line of cutting, and means 105 for operating the rolls, substantially as described.

4. In a machine for making selvages on fabric, the combination with a knife, of a traveling carrier and buffer which passes under the 110 knife, a support for the carrier and buffer, means for applying finishing substance thereto progressively in the direction of the line of cutting, and means for operating the knife, substantially as described. 115

5. In a machine for making selvages on fabric, the combination with a knife, of a cord which passes under the knife, a support for the cord, means for applying a liquid or semiliquid substance to the cord, and means for 120 operating the knife, substantially as described.

6. In a machine for making selvages on fabric, the combination with a knife-roll and a grooved roll, of a cord which passes over the 125 grooved roll, means for applying a liquid or semiliquid material to the cord, and means for operating the rolls, substantially as described.

7. In a machine for making selvages on fabric, the combination with a knife-roll and a grooved roll of a cord which passes over the grooved roll, means for applying a liquid or semiliquid substance to the cord, means for 130

applying a liquid or semiliquid substance to the edges of the grooved roll, and means for operating the rolls, substantially as described.

8. In a machine for making selvages on fabric, the combination with a knife-roll, of a grooved roll, disks on each side of the knife-roll with springs for pressing the disks against the knife-roll, means for applying a liquid or semiliquid substance to one of the rolls, and means for operating the rolls, substantially as described.

9. In a machine for making selvages on fabric, the combination with a knife-roll, disks on each side of the knife-roll with springs for pressing the disks against the knife-roll, means for applying a liquid or semiliquid substance to the grooved roll, and means for operating the rolls, substantially as described.

10. In a machine for making selvages on fabric, the combination with a knife-roll, of a grooved roll, disks on each side of the knife-roll with springs for pressing the disks against the knife-roll, a cord which passes over the grooved roll, means for applying a liquid or semiliquid substance to the cord, and means for operating the rolls, substantially as described.

11. In a machine for making selvages on fabric, the combination with a knife-roll, of a grooved roll, disks on each side of the knife-roll with springs for pressing the disks against the knife-roll, a cord which passes over the grooved roll, means for applying a liquid or semiliquid substance to the cord, means for applying a liquid or semiliquid substance to the edges of the grooved roll, and means for operating the rolls, substantially as described.

12. In a machine for making selvages on fabric, the combination with cutting-rolls of a guide for the work having a reciprocating transverse and angular movement, means for applying a liquid or semiliquid substance to

one of the rolls, and means for operating the rolls and reciprocating the guides, substantially as described.

13. In a machine for making selvages on fabric, the combination with cutting-rolls, of a guide for the work having a reciprocating transverse and angular movement, means for reciprocating the guide and also means whereby the guide is tilted to an angular position to the direction of feed while moving transversely, means for applying a liquid or semiliquid substance to one of the rolls, and means for operating the rolls, substantially as described.

14. A machine for making selvages on fabric, comprising a separating device which is brought into contact with the fabric to be treated, a yielding material, devices for supplying finishing substance thereto progressively in the direction of the line of cutting, a support for said yielding material and fabric, and mechanism whereby said fabric is forced against said yielding material and said yielding material against the support by said separating device until the fabric is severed, substantially as described and for the purposes specified.

15. In a machine for making selvages on fabric, the combination with a knife, of means for sustaining the fabric opposite the knife, means for applying adhesive finishing substance progressively in the direction of the line of cutting, while the said fabric is held adjacent to the knife, and means for feeding the fabric, substantially as described.

Signed by me in New York city this 8th day of November, 1895.

THOMAS W. BRACHER.

Witnesses:

SAMUEL W. BALCH,
ANSON BALDWIN.