

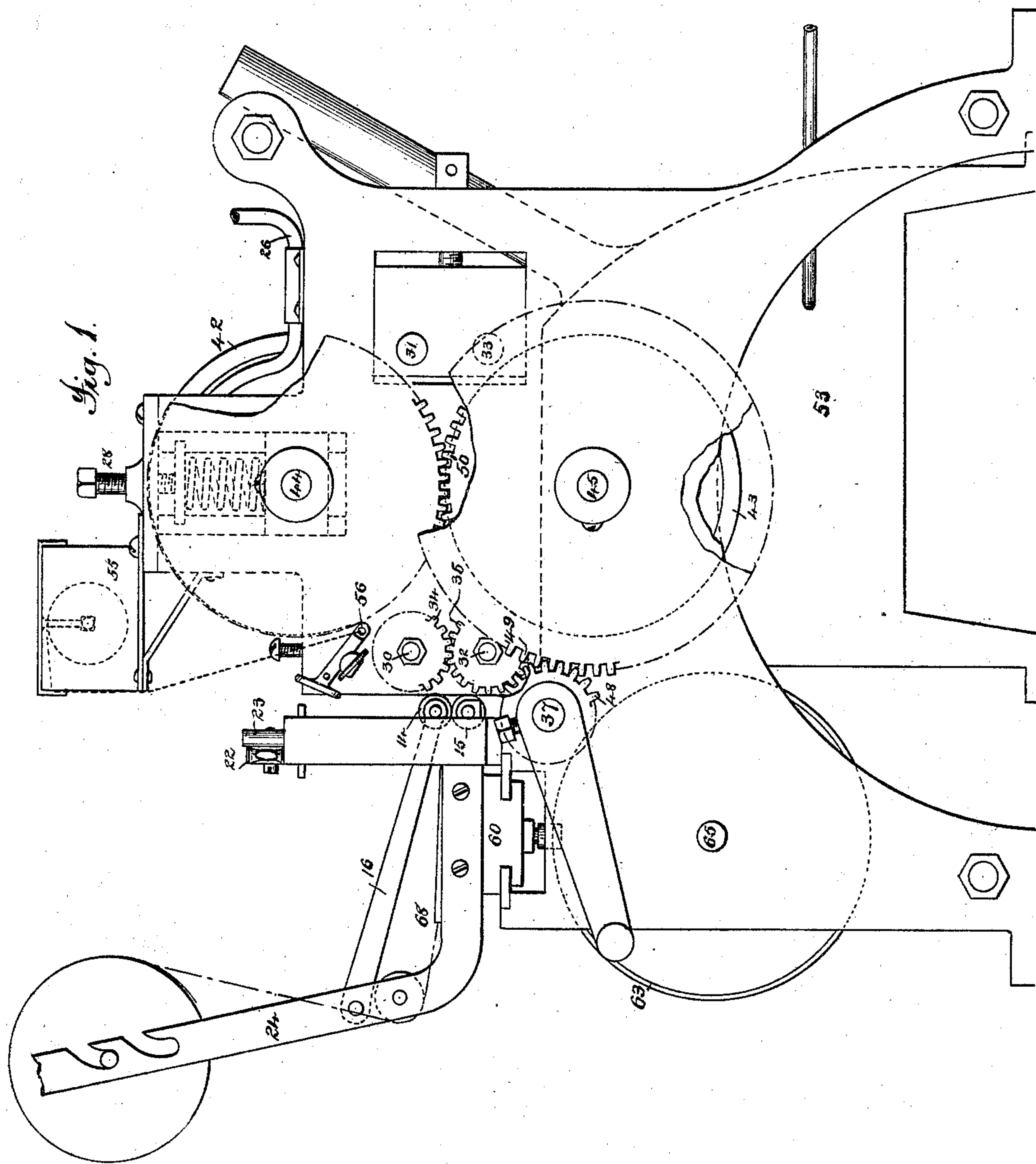
(No Model.)

3 Sheets—Sheet 1.

H. C. KERSTEN & A. S. SCHAUPP.
Machine for Making Fluted Trimming.

No. 241,143.

Patented May 10, 1881.



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T. H. Palmer

Inventors,
H. C. Kersten and A. S. Schaupp,
by - Munson & Philip
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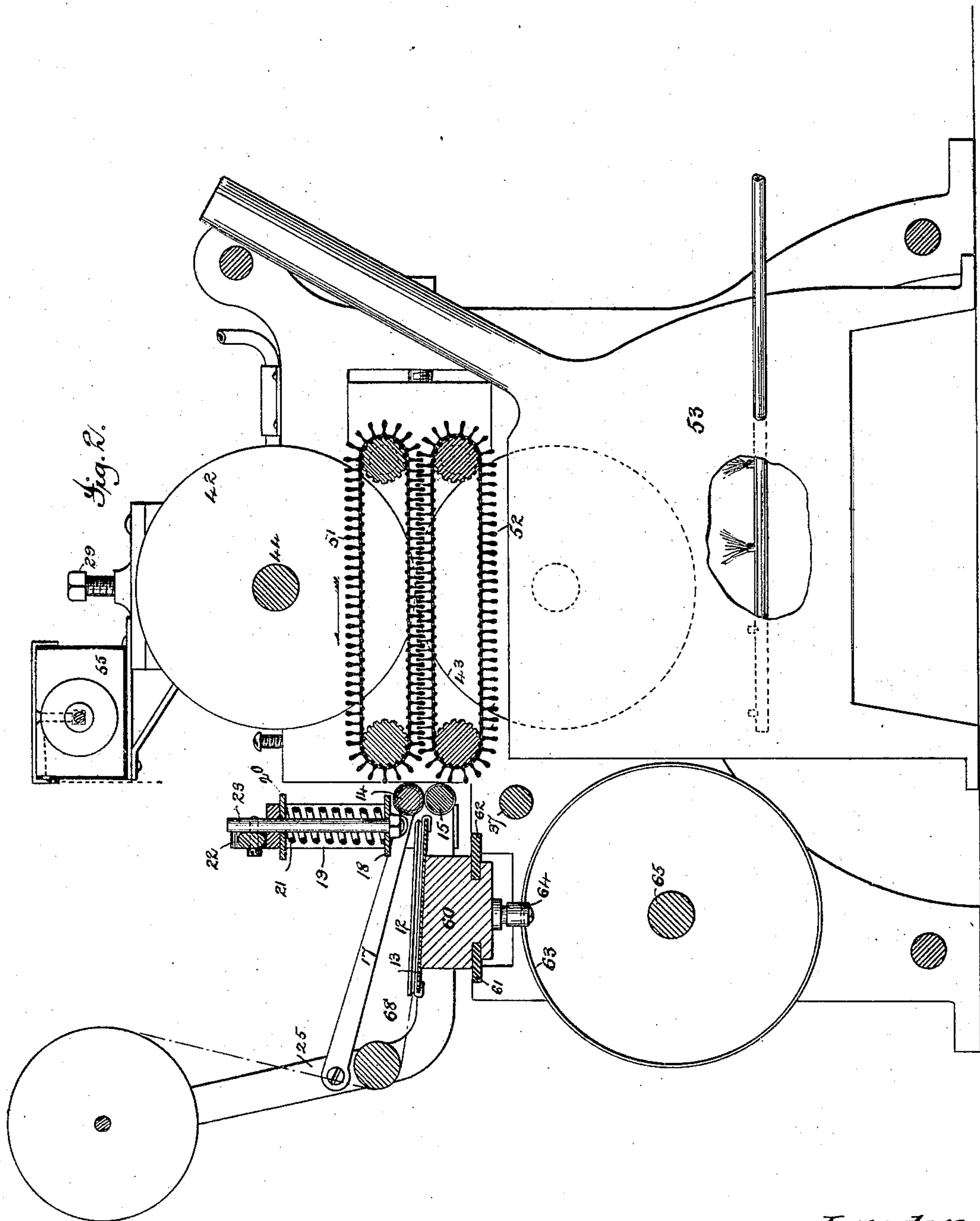
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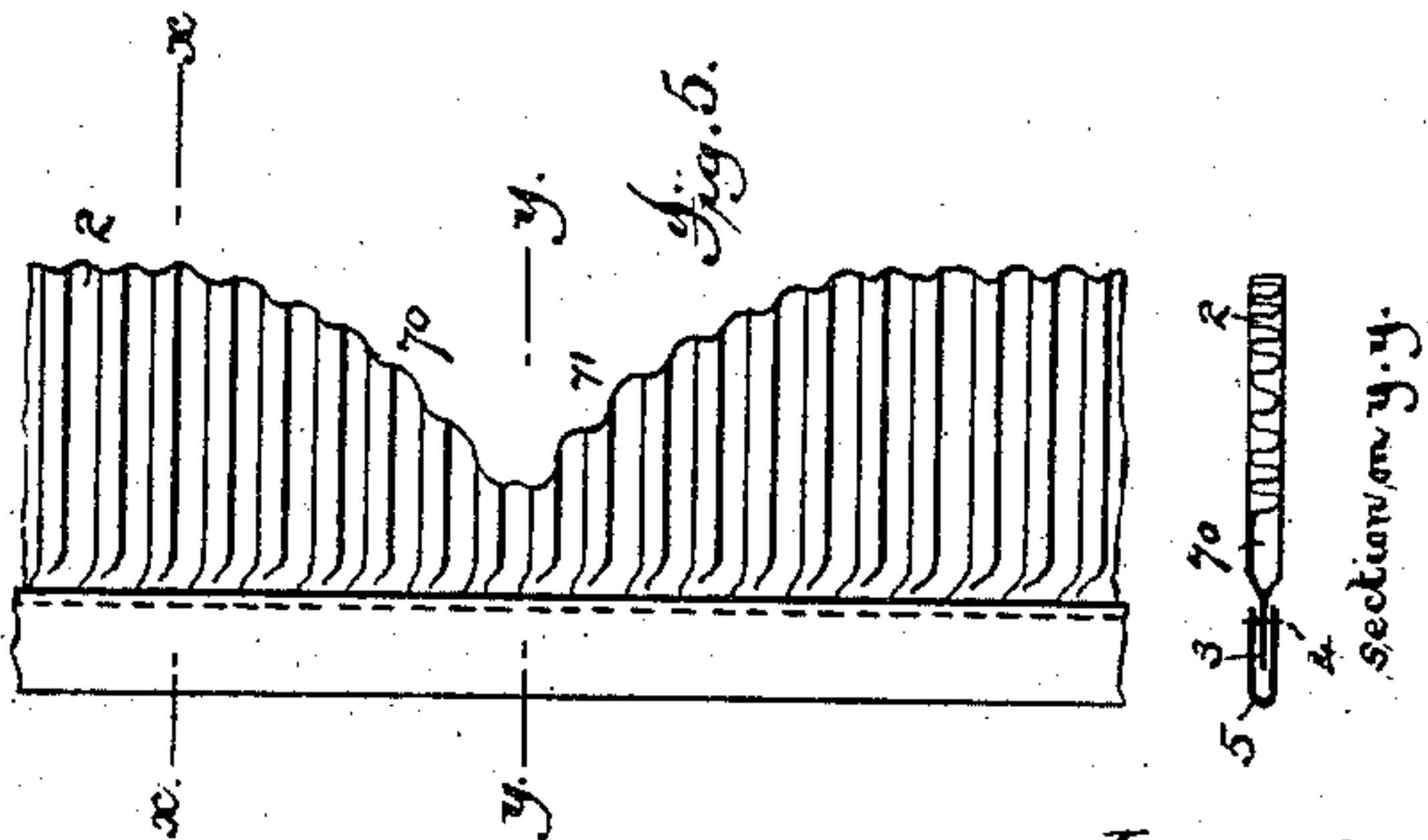
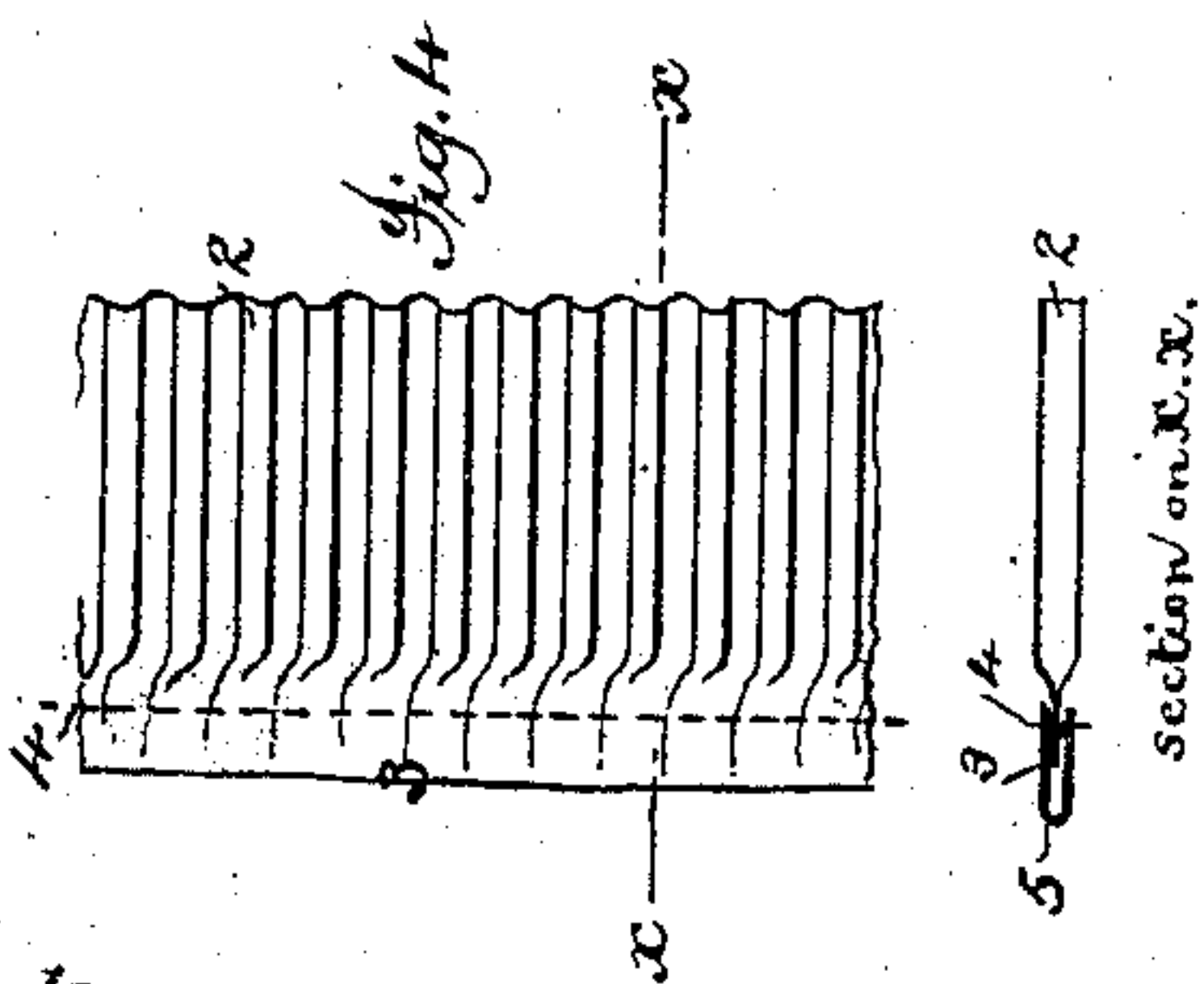
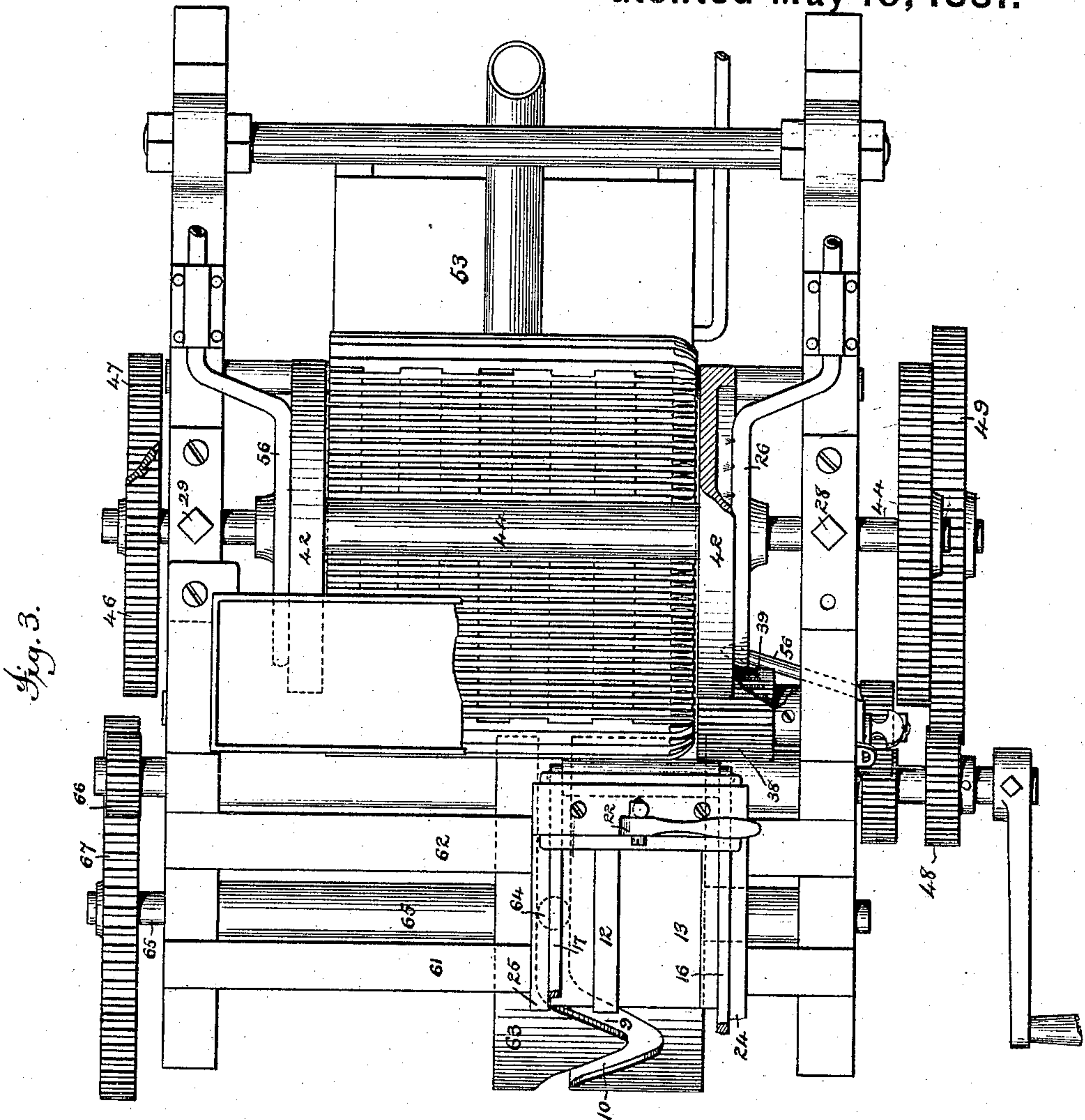
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UNITED STATES PATENT OFFICE.

HENRY C. KERSTEN, OF NEW YORK, AND ALBERT S. SCHAUPP, OF
BROOKLYN, N. Y.

MACHINE FOR MAKING FLUTED TRIMMINGS.

SPECIFICATION forming part of Letters Patent No. 241,143, dated May 10, 1881.

Application filed June 25, 1880. (No model.)

To all whom it may concern :

Be it known that we, HENRY C. KERSTEN and ALBERT S. SCHAUPP, citizens of the United States, residing respectively in the cities of New York and Brooklyn, counties of New York and Kings, and State of New York, have invented certain new and useful Improvements in Machines for Making Dress-Trimnings, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

In said drawings, Figure 1 represents a side elevation, Fig. 2 a sectional elevation, and Fig. 3 a plan view, of a machine embodying the present improvements. Fig. 4 illustrates by plan and section the straight fluted trimming produced. Fig. 5 illustrates in like manner the trimming as produced with narrowed ends.

This invention relates to that class of machines which operate to produce a fluted trimming that consists of a fluted body, one edge of which is united to a band to hold its ornamental bends or flutes in place.

The invention consists, principally, in a combination of two endless fluting-chains, the fluting portions of which are curved at one end, with ordinary fluting-rolls, and with compressing-rollers, a thread-conductor, and with an automatically-moving feeding mechanism, whereby by gradually-narrowed ends are imparted to the trimming, all of which will be more particularly hereinafter described, explained, and claimed.

In order to a ready understanding of the illustrated machine, which embodies the present improvements, a detailed description of its parts will first be given, and then their operations and modifications pointed out.

The main fluting device consists of a number of bars having curved upper faces that are linked together to form endless chains 51 52, which are mounted upon shafts 30 31 32 33, that are provided with sprocket-wheels, whereby said chains are positively moved so that the bars of one will fit between the bars of the other and thus impart flutes to the material passed between them. The shafts 30 32 are geared together by toothed wheels 34 35, so as to run in unison, and the latter meshes with a toothed wheel carried by the main shaft 37. On the

shafts 30 32 narrow fluting-rollers 38 39 are secured. Their inner surfaces, being set a slight distance from the inner edges of the endless fluting-chains 51 52, afford a space between the fluting-chains and fluting-rollers, in which the fabric is not bound, and hence may adapt its folds to suit those formed by said fluting devices. The edges of said chains are also curved, to more perfectly accomplish this purpose, as will hereinafter appear.

In advance of the fluting-rollers 38 39, and on each side of the fluting-chains 51 52, pressing disks or rollers 42 43 are arranged, which operate to positively feed forward the fabric and to press the same flatly where it is nipped by them. These rollers 42 43 are mounted upon shafts 44 45, which are geared together at one end by toothed wheels 46 47, whereby they are caused to rotate in unison, and at the opposite end the shaft 44 is provided with a toothed wheel that is driven from a pinion, 48, on the main shaft 37 by means of intermediates 49 50. The upper rollers, 42, are mounted in bearings that are spring-seated, as shown, and provided with adjusting-screws 28 29, whereby their pressure may be regulated. These rollers 42 are each heated by means of a coiled pipe, 26, that lies near the periphery of each roller, within an undercut recess, whereby the jets of gas emitted from said pipe may act to properly heat the roller. The roller 43, as well as the fluting-chains 51 52 and the fluting-rollers 38 39, are heated, so as to properly act upon the fabric, by means of gas-jets that are burned within the casing 53, that stands beneath the chains and between the rollers 43.

It is obvious that the material entered between the fluting-chain 51 and roller 38 and the fluting-chain 52 and roller 39 will be fluted thereby as the fabric is drawn onward by their rotative movement, and that the heated condition which they have will cause said flutes to retain their shape as the fabric emerges from the rear end of the machine.

It will also be apparent that that edge of the fabric which passes between the fluting-rollers 38 39 and between the pressing-rolls 42 43 will be pressed down flat, and thus act to aid the retention of the flutes in their proper form. In thus pressing the doubled curves or

flutings at one edge of the fabric down flat the lines of union between said flat part and the fluted part must take new curves, in order that the changes in the direction there given to the fabric may not be abrupt and unsightly. This is provided for by the curved ends of the fluting-chains 51 52, which thus permit the fabric to be curved up and down toward its flattened edge, and the latter to be properly formed. The fluted portions, therefore, of the fabric, which are compressed together to form the flattened edge, will be bent in regular curves from all portions of the flutes to the flattened parts, and thus lie so as to produce lines of union which present both symmetry and beauty, the flattened part being thus composed of narrow laps of fabric, and providing an edge having considerable strength and stiffness.

In order to secure the lapped parts of the fabric in place, a uniting-thread is secured thereto, as follows: This thread is led from a reel mounted upon a spindle in any convenient manner, and after passing through a bath containing a suitable cement, as the reservoir 55, it is directed through the conducting-pipe 56, that leads the same between the pressing-rollers 42 43, under and between which it is fed forward thereby so as to lie upon the fabric and be united thereto by the pressure and heat of the said rollers. By this operation a flat fabric entering through the devices, as described, will be crimped widthwise, and have one edge flattened and its lapped folds united securely together by the cemented thread, and emerge from the machine a finished article of trimming, like that shown in Fig. 4, where 2 indicates the flutes, 3 the flattened edge, and 4 the uniting-thread. This fabric when finished, by having the doubled binding, as 5, secured over its flattened edge by sewing or by cement, produces the finished article of trimming shown in figure 4.

In order to finish a like article of trimming with narrowed ends, so as to adapt it for use as a collarette, we have applied to the machine a feeding mechanism whereby this effect is accomplished automatically. This feeding mechanism consists of a guide, 68, one edge plate, 12, of which is adjustable laterally upon its companion plate 13, so as to adapt the guide to properly direct any width of fabric. This guide carries in its front end a pair of rolls, 14 15, the upper one of which is mounted in a swinging frame composed of arms 16 17 and a cross-bar, 18, that may move vertically in a frame, 19, between the heads 20 of which and the cross-bar 18 a spiral spring, 21, is arranged to elastically seat the roll 14 upon its companion 15. This pressure may be removed by a cam, 22, that is attached to a rod, 23, connected to the cross-bar 18, when the rolls are to be separated to admit the introduction of the fabric. This guide also carries upwardly-projecting arms 24 25, which may carry a guide or spindle supporting the fabric to be operated upon.

The base or stock 60 of the guide is arranged to slide laterally upon bearers 61 62, and its lateral movements are produced by means of a cam, 63, in the slot of which a stud, 64, projecting from the stock 60, travels. This cam is mounted upon a shaft, 65, to which motion is imparted from the main shaft 37 by means of a pinion, 66, and a toothed wheel, 67. If, now, the fabric be entered through the guide 68, and thence directed between the fluting devices, its forward feed through it will be governed by the guide as follows: While the stud 64 is traveling in the straight part of the groove of the cam 63 the fabric will be fed forward without lateral movement, and the trimming produced during that portion of the feed will be like that heretofore described. When, however, the curved part of the cam is entered by the stud 64 the guide will be gradually moved to the right so long as the incline 9 of the cam-groove is traveled by the stud, and then will gradually move to the left, as the inclined part 10 of the stud-groove is traveled, until the straight part of said groove is again entered by the stud, when the straight trimming will be produced, as before explained. In this lateral movement of the guide the fabric is so directed with respect to the space between the edges of the chains 51 52 and that of the rollers 38 39 as to cause the outer edge of the fabric to have a curved line of relation to the flattened portion formed by the pressing-rolls 42 43, thus producing a narrowed trimming, such as is shown in Fig. 5, which, when it has its projecting parts cut off, and is cut into sections by severing it between its narrowed portions, a collarette will be produced, the severed parts of which will be like those shown in Fig. 4, but which will be so disposed as to produce the curved, narrowed, or tapered ends 70 71.

We have thus far described but one set of mechanisms. It is to be understood, however, that both ends of the fluting-chains 51 52 are to be curved, and that the fluting-rolls 38 39 will be provided at each end thereof, and also that a second guide will be provided to feed the fabric to the second set of mechanisms, the second pressing-roll, 42, being provided with a heating-pipe, 56, and this duplication of the mechanisms will be increased, if desired.

What is claimed is—

1. In a machine for producing fluted trimmings, the combination, with the folding-rollers 38 39, of the fluting-chains 51 52, the ends whereof are curved, substantially as described.
2. The combination, with the fluting-rolls 38 39, and fluting-chains 51 52, having curved ends, of the pressing-rolls 42 43, substantially as described.
3. The combination, with the fluting-rolls 38 39, the fluting-chains 51 52, having curved ends, and the pressing-rollers 42 43, of a thread-conductor, as 56, and a means for heating the fluting devices, substantially as described.
4. In a machine for producing fluted trimmings, the combination, with the fluting-roll-

ers 38 39, of the fluting-chains 51 52, the ends whereof are curved, and the automatically-moving guide 68, substantially as described.

5 5. The combination, with the fluting-rolls 38 39, fluting-chains 51 52, having curved ends, and the pressing-rolls 42 43, of the automatically-moving guide 68, substantially as described.

10 6. The combination, with the fluting-rolls 38 39, the fluting-chains 51 52, having curved ends, pressing-rollers 42 43, thread-conductor,

and a means for heating the fluting devices, of the automatically-moving guide 68, substantially as described.

In testimony whereof we have hereunto set 15
our hands in the presence of two subscribing witnesses.

HENRY C. KERSTEN.
ALBERT S. SCHAUPP.

Witnesses:

GEO. H. GRAHAM,
T. H. PALMER.