

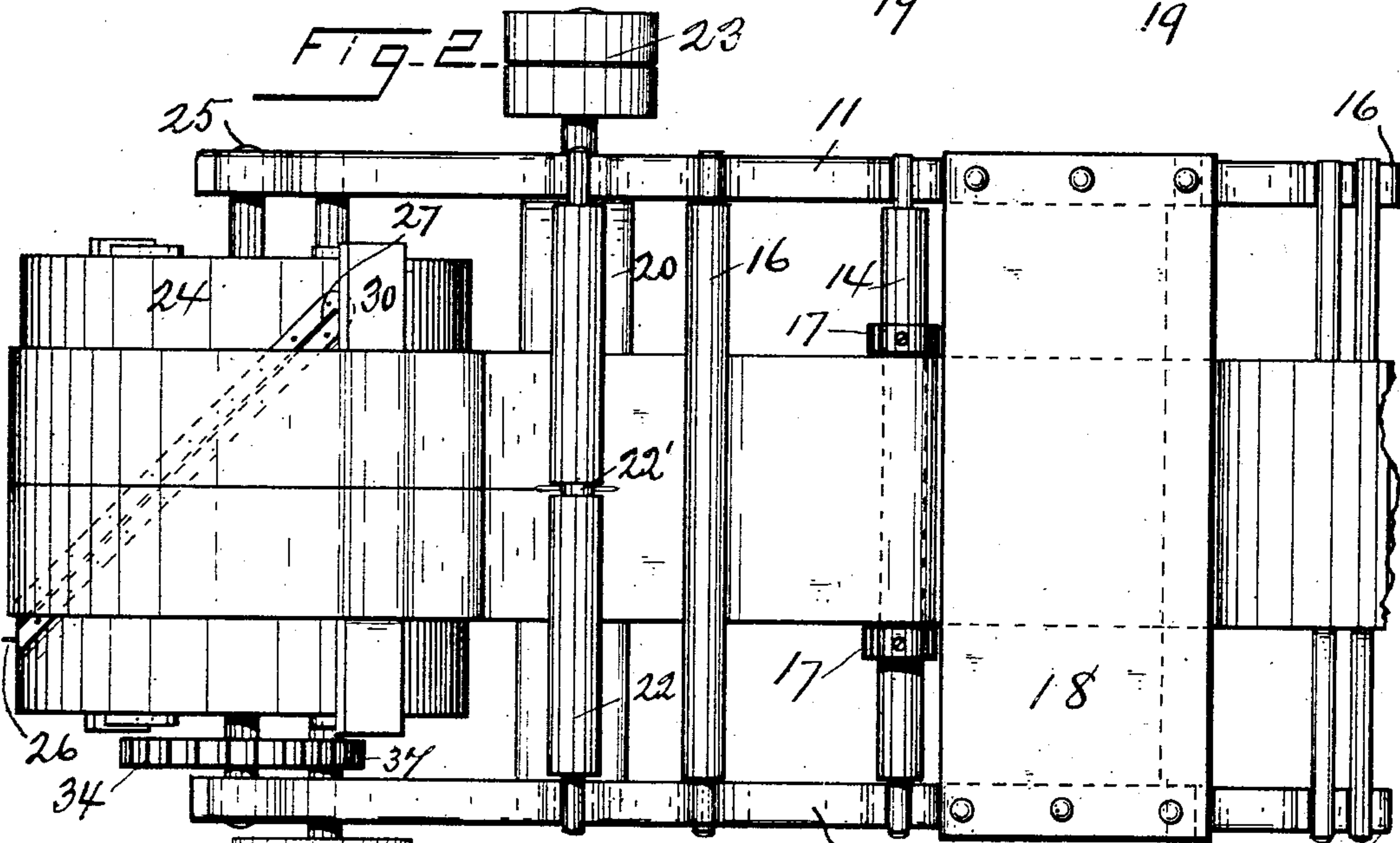
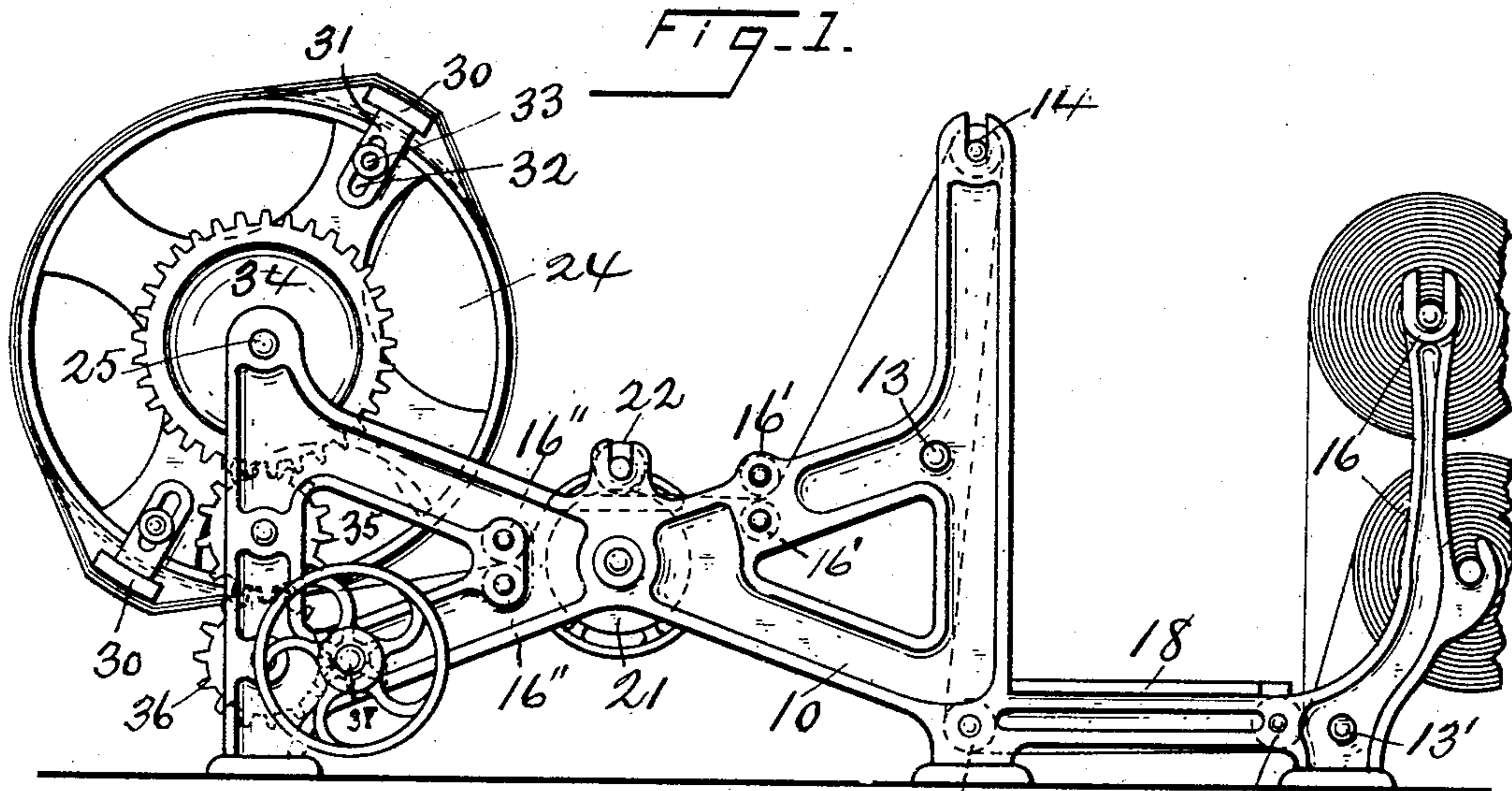
(No Model.)

2 Sheets—Sheet 1.

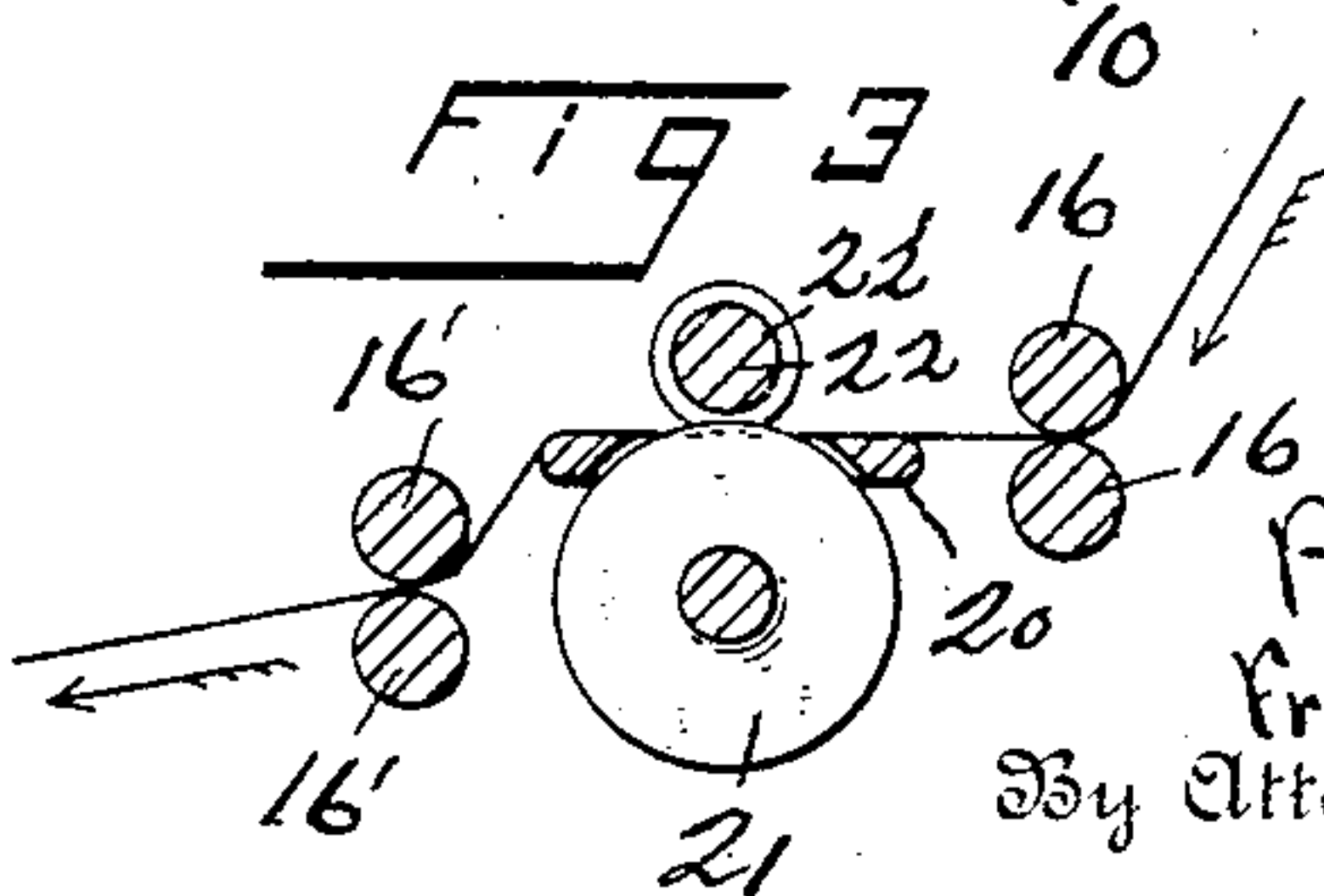
R. T. PALMER, Jr. & F. W. MERCER.
MACHINE FOR MEASURING AND CUTTING FABRICS.

No. 538,464.

Patented Apr. 30, 1895.



Witnesses
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(No Model.)

2 Sheets—Sheet 2.

R. T. PALMER, Jr. & F. W. MERCER.
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FIG-4-

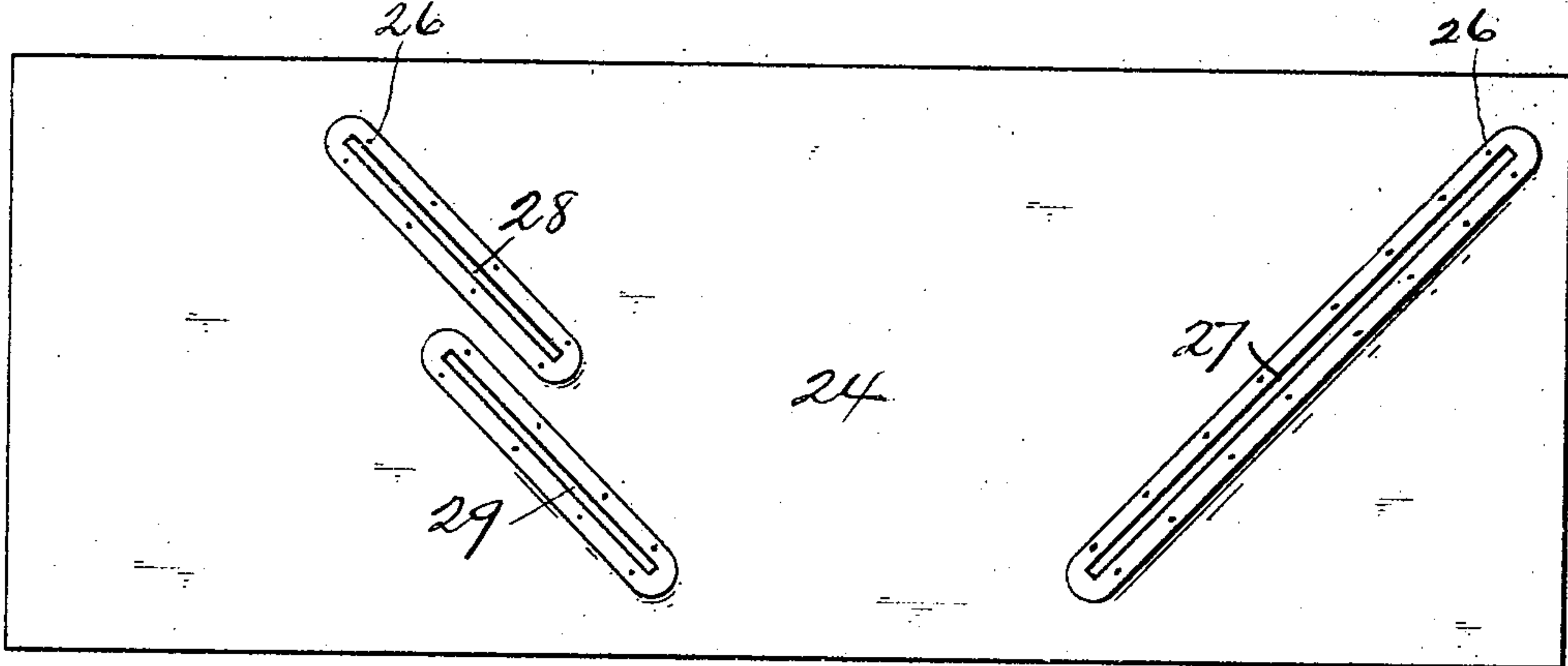


FIG-5-

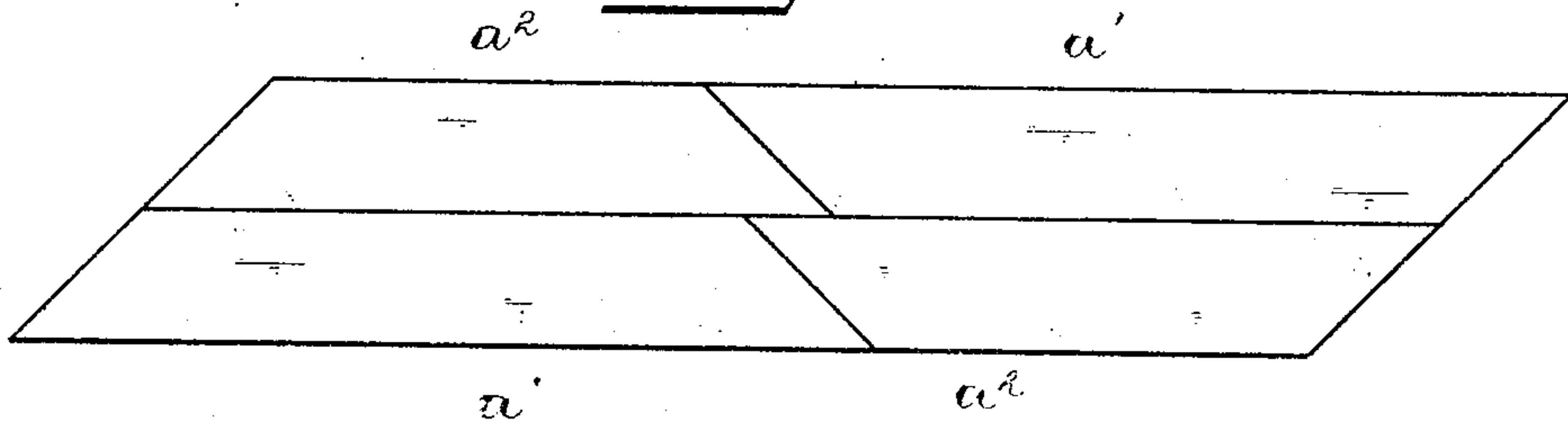
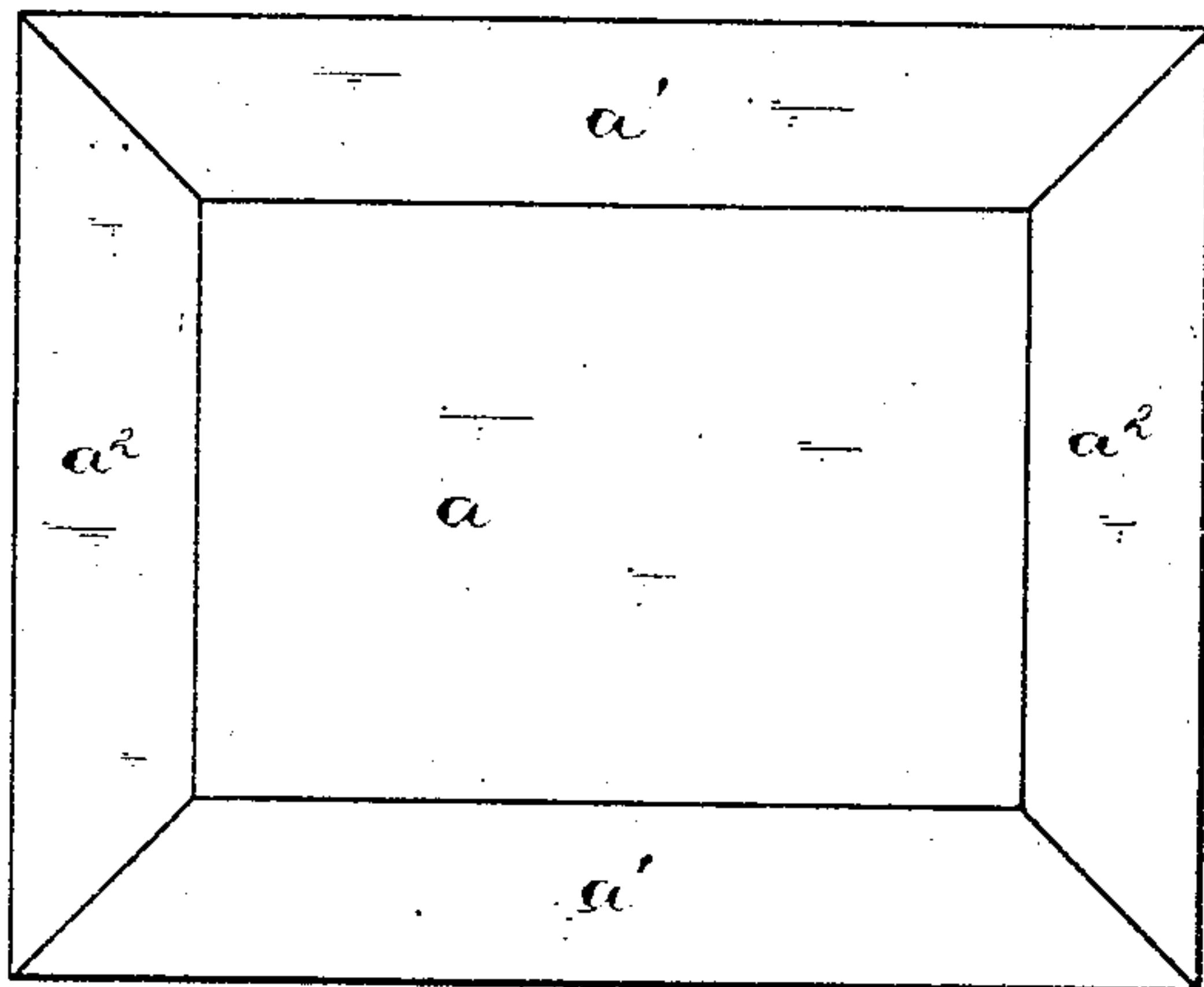


FIG-6-



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UNITED STATES PATENT OFFICE.

REUBEN T. PALMER, JR., AND FREDERIC W. MERCER, OF NEW LONDON,
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MACHINE FOR MEASURING AND CUTTING FABRICS.

SPECIFICATION forming part of Letters Patent No. 538,464, dated April 30, 1895.

Application filed November 16, 1894. Serial No. 529,051. (No model.)

To all whom it may concern:

Be it known that we, REUBEN T. PALMER, Jr., and FREDERIC W. MERCER, citizens of the United States, residing in the city and county of New London and State of Connecticut, have invented certain new and useful Improvements in Machines for Measuring and Cutting Fabrics, which improvements are fully set forth and described in the following specification, reference being had to the accompanying two sheets of drawings.

The particular object of our invention is to provide inexpensive, and quickly operated, mechanism for measuring, stripping up, and mitering fabrics of the class commonly used in the manufacture of bed comfortables.

Figure 6 illustrates a common arrangement of the several sections of fabric necessary to produce one face or cover of a so called "border" comfortable, said cover being made up of a center piece a of rectangular form, and border sections a' — a^2 which are stitched to said center-piece; the sections a' — a^2 being also stitched together at their mitered ends.

The cutting of the several mitered border fabrics has ordinarily been performed on tables upon which the fabric is first spread and stretched and finally cut diagonally by a hand knife that is guided by a simple triangle of forty-five degrees.

We have always found in practice that it is impossible to spread and stretch the thin fabric without drawing it out of its normal shape and, consequently, when released from the cutting board, it is disposed to return to said normal shape and thus vary the angle of the cut ends. This is particularly noticeable when cheap help is employed and in order to obtain satisfactory results, and to avoid waste of fabric, we have found it necessary to employ operatives of a high order of intelligence, who command proportionately high wages.

To overcome the objectionable results of the described primitive method we have invented a machine which strips the fabric lengthwise, reels the strips upon a cylinder or drum of exact size to measure off the fabric accurately and provides certain established guides for the cutting knife which render it impossible to cut other than true miters.

Our invention is fully illustrated in the annexed drawings, in which—

Fig. 1 is a side elevation of a machine embodying our invention, and Fig. 2 is a plan view of the same. Fig. 3 is a longitudinal central vertical section of the guide-rolls and slitting-knife of said machine. Fig. 4 is a development of the cylinder upon which the fabric is rolled before being mitered, and Fig. 5 is a plan view of said fabric as it appears when removed from the cylinder and spread out. Fig. 6 is a plan of the cover of a bed-comfortable having a mitered border.

In the drawings 10 and 11 indicate the main supporting frames of our newly invented machine, the same being connected and stiffened by cross-rods 13—13'.

At the rear portion of the machine frames are one or more pairs of journal bearings 16 in which the arbor that supports the fabric to be cut, is hung, as seen in Fig. 1.

Ordinarily but one web of cloth is run through the machine but more than one web may be operated upon, at the same time, if desired.

14 denotes a bar or shaft hung in the upper part of the machine frames and having adjustably secured thereon collars 17 that serve as side guides between which the web of fabric passes, as it approaches the slitting mechanism, and between said bar 14 and the described journal bearings 16 is a platform 18 having rollers 19 mounted on its front and rear ends, beneath which the fabric is passed before it is carried over the bar 14.

The platform 18 is an important factor in our machine, as we find in practice that the thin web of cloth is inclined, more or less, to ride toward one or the other of the ends of said bar 14, notwithstanding the guide collars 17, and it is frequently necessary for the attendant to guide the fabric by hand, a short time, or until such tendency to "ride" is corrected.

The platform 18, upon which the attendant may stand, renders it an easy matter to thus reach and control the fabric whereas, if the platform was not provided the attendant would be compelled to reach a yard or more from one side of the machine.

Having passed the web over guide-bar 14 it is then passed between certain guide-rolls 16', which confront each other and are so located that there is only slight space between them, the same being true of a similar pair of rolls

16". Between the two described pairs of rolls (16' and 16") is a table 20 of considerable width that is slitted at its central portion to allow the circumferential edge of a sheet steel circular knife 21 to project upward through said table as best seen in Fig. 3 and immediately over said table and knife is an idle roll 22 whose central portion has an annular groove 22' providing clear space in which the knife edge may revolve. Knife 21 is provided to cut the web of fabric lengthwise through its center, thus making two strips each 18 inches wide or one half the width of the original roll, which is ordinarily one yard wide; each longitudinal half part being suitably printed to serve as a fancy border when mitered and made up into a bed comfortable cover. The shaft of knife 21 has upon one end a pulley 23 that may be driven at a high rate of speed by a belt from any convenient counter-shaft. After the web of fabric has been stripped, as described, and the two strips have been passed between the pair of bars 16', the ends of said strips are carried around a cylinder or drum 24 whose shaft 25 is journaled in the machine frames 10—11; the ends of the fabric being pressed upon pins 26 projecting from said drum. Drum 24 is of such exact diameter that its circumference equals one side and one end of the border of a mitered quilt and attention may be called here to the fact that comfortables of this class, as made commercially, are of somewhat greater length than width, as seen in Fig. 6 of the drawings, although they vary somewhat in size.

The circumferential wall of the drum 24 has one long diagonal slot 27, of forty five degrees pitch (relatively to the edge of the fabric wound upon said drum) and it has also two short slots 28—29, of the same pitch but extending only half across the drum (see Fig. 4); these short slots being so located relatively to the long slot 27, that they space off the circumference of the drum properly to make one side and one end section of a border out of each layer of fabric wound upon the drum. Slots 27, 28 and 29 are provided to guide a knife used by the attendant in cut-

ting off and mitering the border strips. When the machine is in operation several layers of the stripped fabric (say fifty or more) are reeled upon the drum and the several layers are then mitered simultaneously by cutting them at the diagonal slots 27, 28 and 29 as described. The large number of pieces thus quickly produced are accurately mitered and do not vary appreciably in length. Being reeled upon the drum under uniform tension they are all stretched alike and there is no distortion of the angle when the cut sections are removed from the drum.

For cutting borders for large comfortables we provide, at opposite sides of the drum 24 plates or sections of board 30 extending the entire length of the drum and supported by light metallic frames 31 that are slotted radially to the axis of the drum, as at 32 and are adjustably secured to the drum heads by screws or bolts 33. By suitably adjusting said plates 30 outward, or inward, considerable variation in the length of the mitered strips may be attained. Secured to the drum shaft 25, at one end thereof, is a gear 34 that meshes with, and is driven by a smaller gear 35 on a stud projecting from frame 10 and said gear 35 is driven by a similar gear 36 also hung on a stud. Gear 36 is driven by a small spur gear 37 on a shaft 38 which latter also bears fast and loose pulleys 39—40 which are driven by a belt from a suitable counter-shaft. The described train of gearing drives the drum 24 with a slow but steady movement.

Our invention performs its work rapidly and cheaply and prevents the spoiling of stock.

Having described our invention, we claim—

In a fabric mitering machine, in combination, a drum having diagonal circumferential slots, as set forth, radially adjustable bars 30 secured to opposite sides of said drum intermediate said slots, and mechanism for revolving said drum.

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