

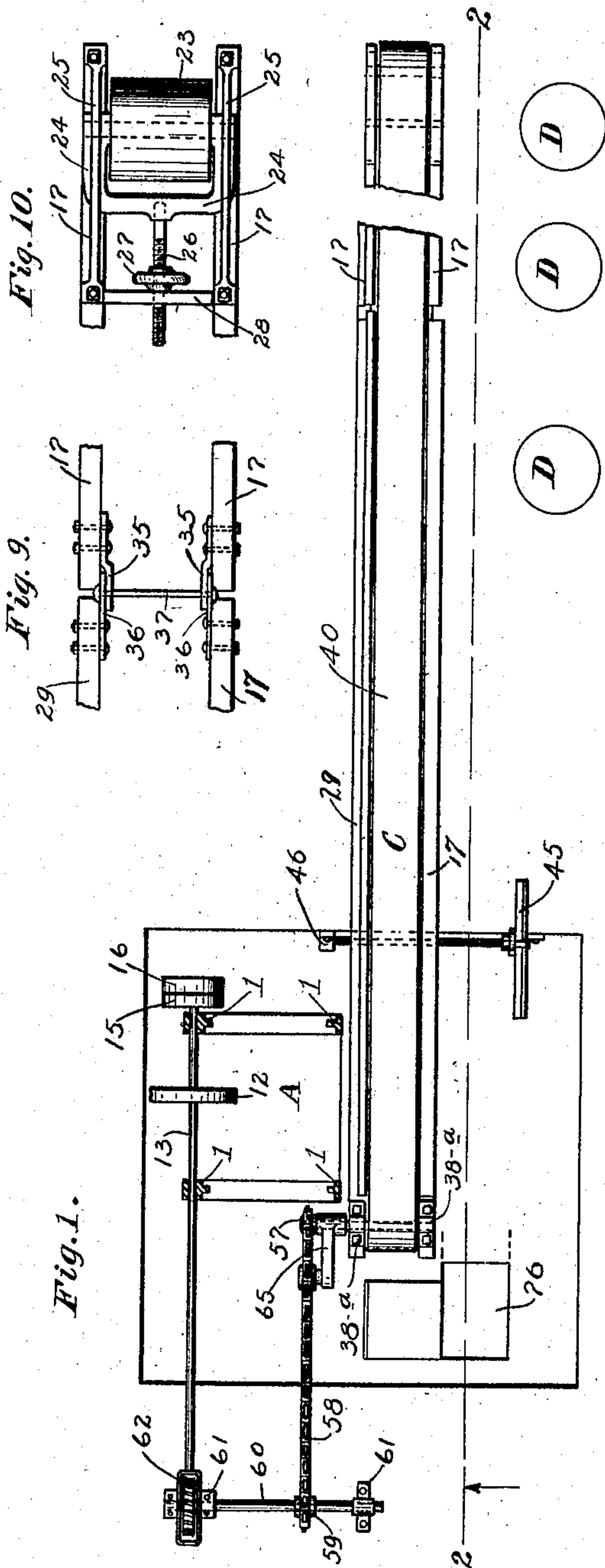
J. E. MILLER.
SEWING MACHINE.

APPLICATION FILED DEC. 16, 1907.

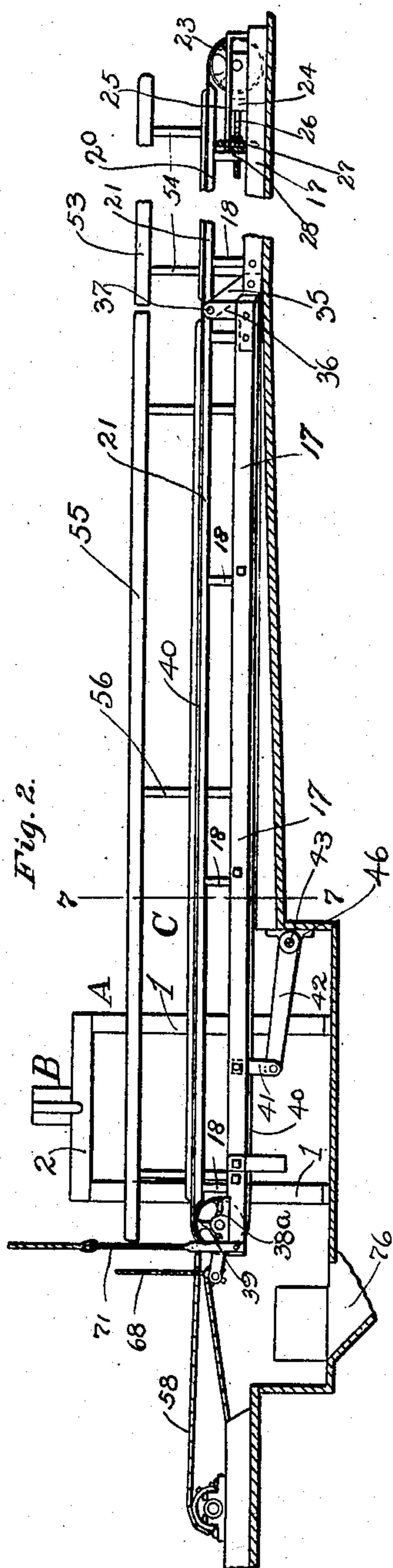
924,175.

Patented June 8, 1909.

4 SHEETS—SHEET 1.



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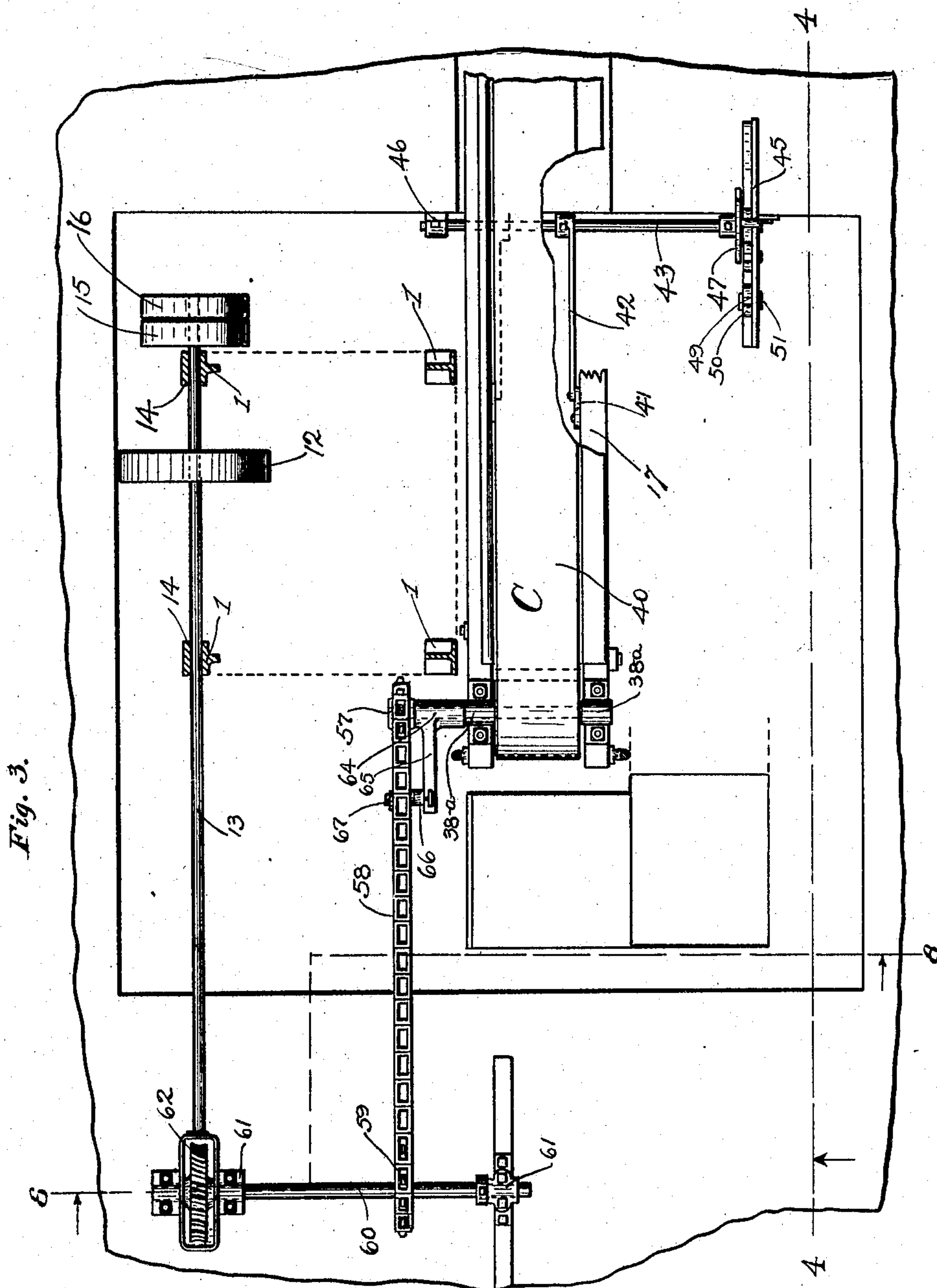
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4 SHEETS—SHEET 3.

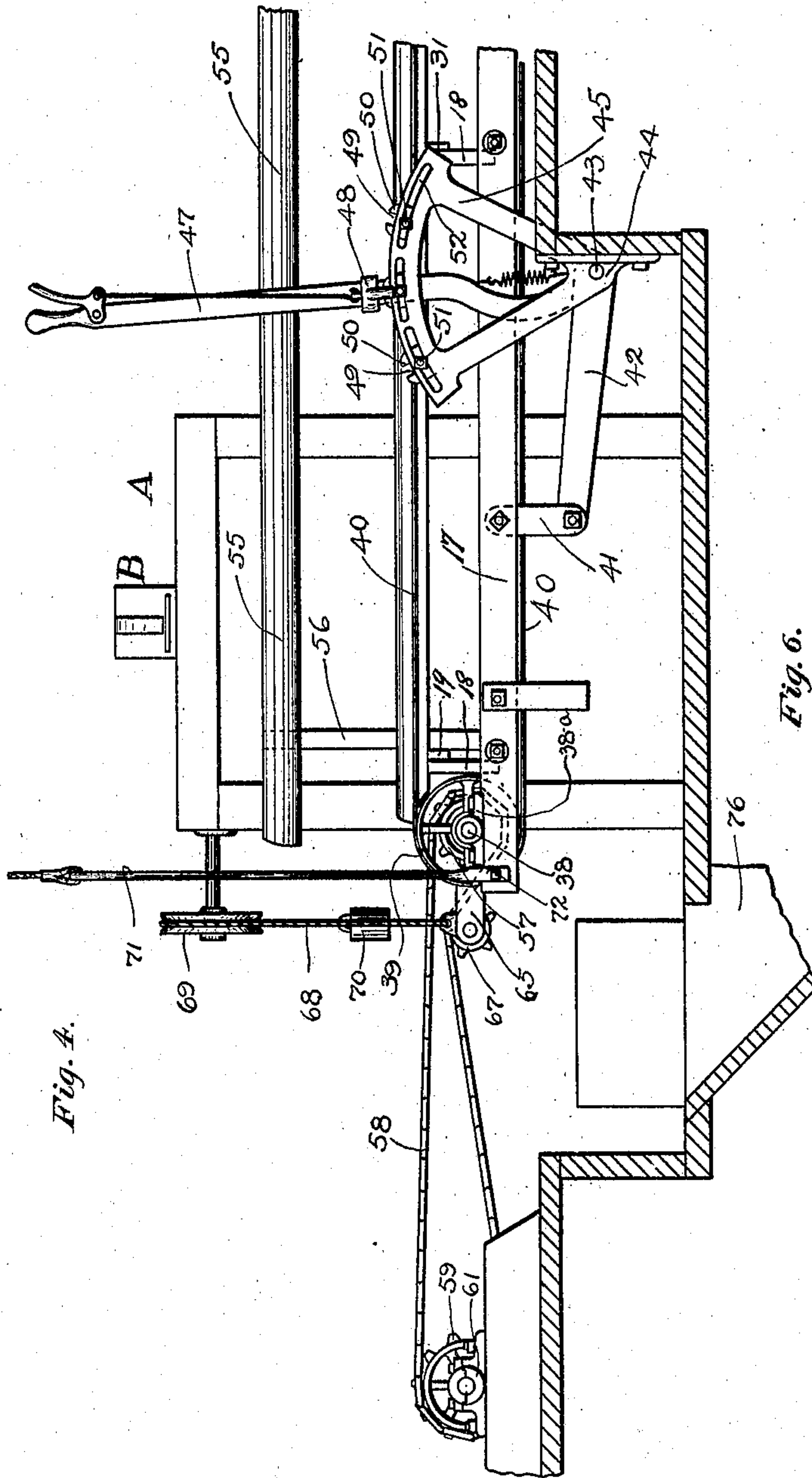


Fig. 4.

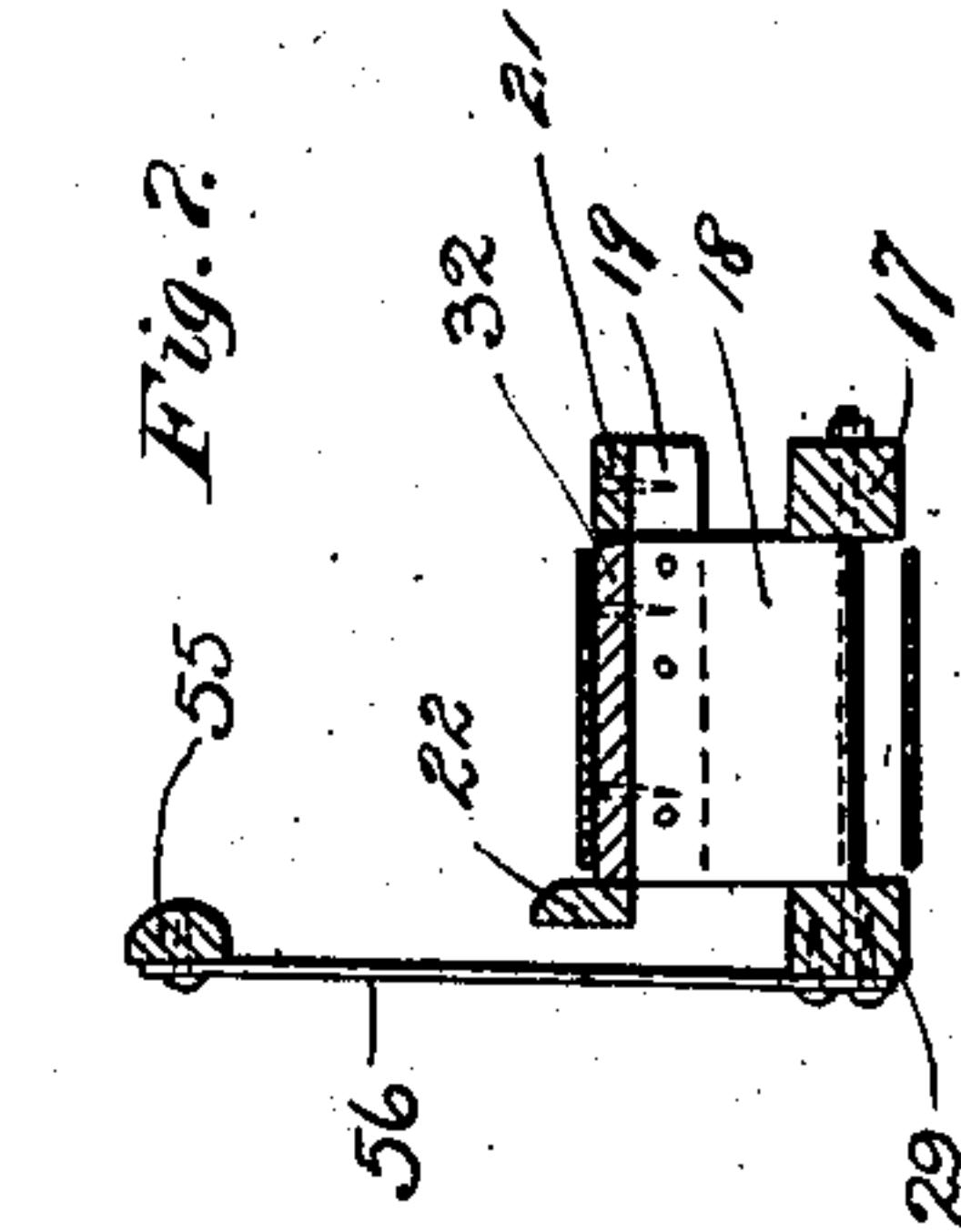


Fig. 6.

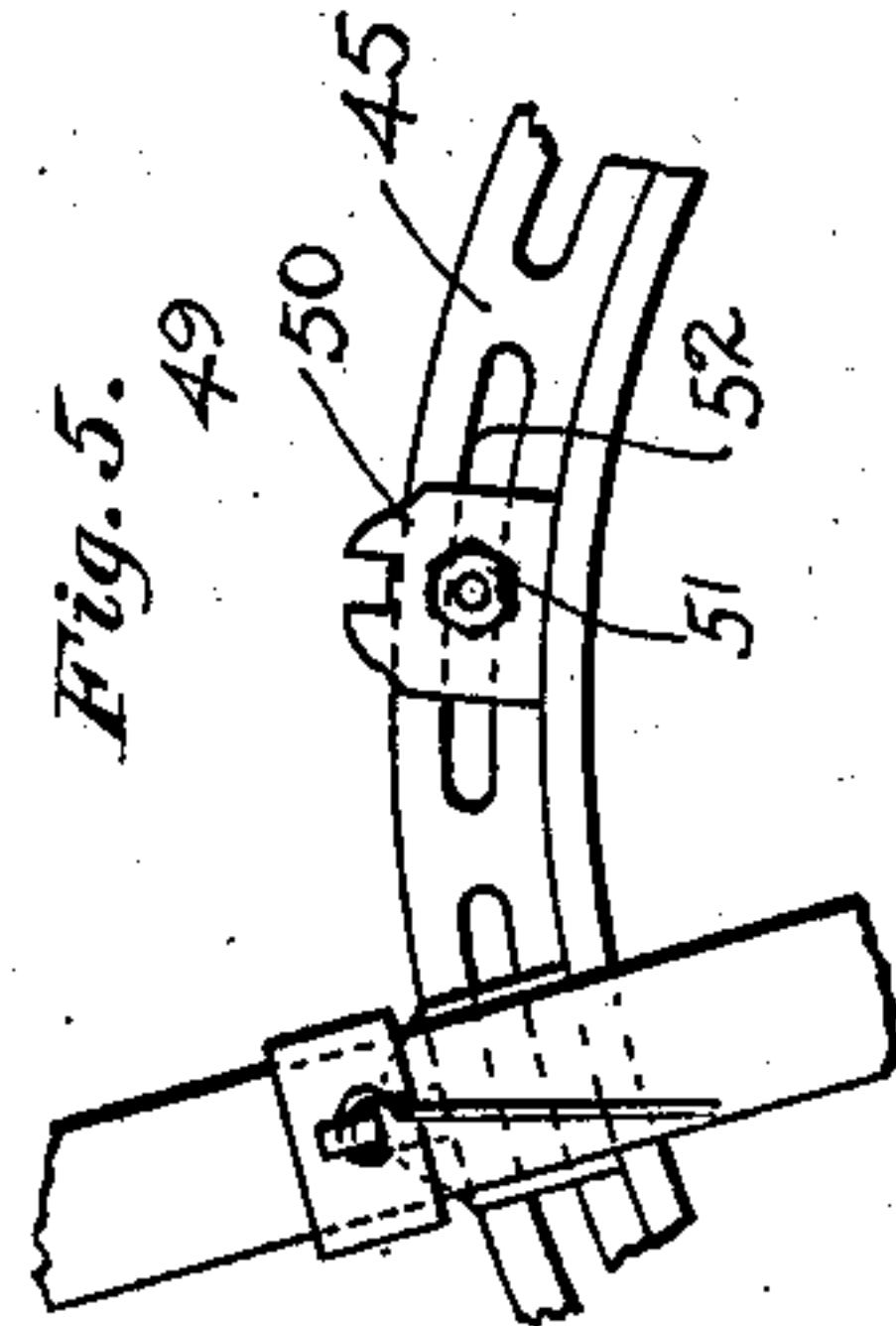


Fig. 5.

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4 SHEETS—SHEET 4.

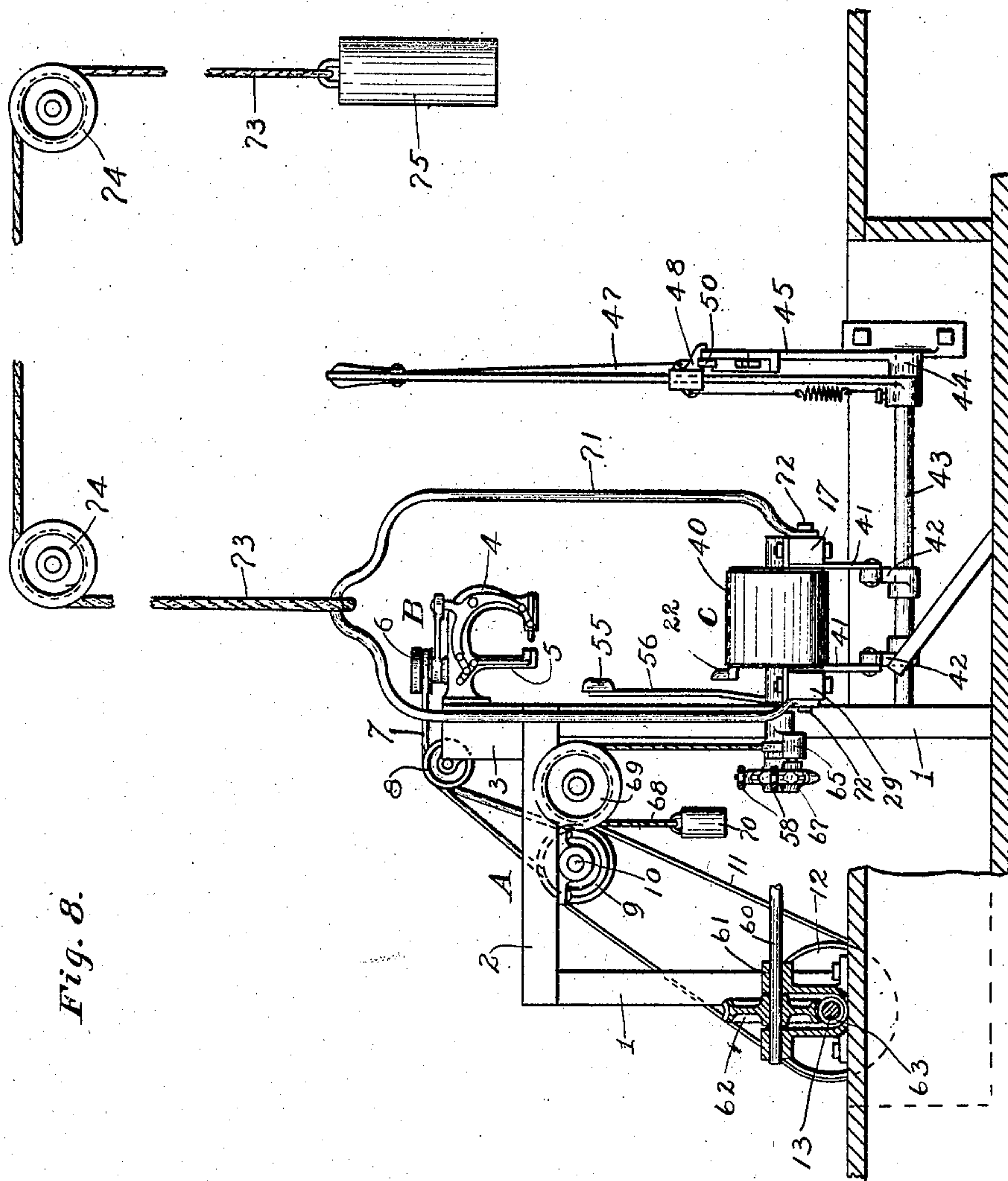


Fig. 8.

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UNITED STATES PATENT OFFICE.

JESSE E. MILLER, OF KNOXVILLE, TENNESSEE.

SEWING-MACHINE.

No. 924,175.

Specification of Letters Patent.

Patented June 8, 1909.

Application filed December 16, 1907. Serial No. 406,651.

To all whom it may concern:

Be it known that I, JESSE E. MILLER, a citizen of the United States, residing at Knoxville, in the county of Knox and State of Tennessee, have invented a new and useful Improvement in Sewing-Machines, of which the following is a specification, reference being had to the accompanying drawing.

My improvement relates particularly to sewing machines for closing filled bags, such bags being closed by sewing across the upper end instead of tying such end.

The object of the invention is to provide such sewing machine with mechanism for guiding and conveying bags of varying sizes to the sewing head, in order that bags of varying sizes may be filled and indiscriminately placed upon such conveying and guiding mechanism, and by the latter properly presented to the sewing head.

In the accompanying drawings, Figure 1 is a general plan of an apparatus embodying my improvement, portions being broken away; Fig. 2 is an upright section on the line 2—2 of Fig. 1; Fig. 3 is a larger detail plan of the mechanism shown in the left hand portion of Fig. 1; Fig. 4 is a section on the line 4—4 of Fig. 3, looking in the direction of the arrow; Figs. 5 and 6 are detail views of a rack and lever involved in the raising and lowering of the conveyer; Fig. 7 is a transverse section on the line 7—7 of Fig. 2; Fig. 8 is an upright section on the line 8—8 of Fig. 3, looking in the direction of the arrow; Fig. 9 is a detail plan illustrating the hinge joining the two frame sections of the conveyer; Fig. 10 is a detail plan showing the mounting of one of the conveyer belt pulleys.

By way of general statement, it may be said that the apparatus illustrated by said drawings comprises (1) a framework supporting a sewing head set in position for sewing a fabric passing said head in an upright plane. (2) mechanism for driving the sewing mechanism, and (3) relatively long conveying mechanism extending from one or a plurality of bag-filling stations or machines from which filled bags of varying sizes are indiscriminately placed upon said conveying mechanism.

A designates the frame supporting the sewing head, B.

C represents the conveyer.

D, D, D are bag-filling stations or bag-filling machines.

The frame, A, has four upright standards, 1; a horizontal table portion, 2; a head standard, 3, mounted upon the front portion of said table, 2, and supporting the head, B, having the depending outer arm, 4, and inner arm, 5, which correspond, respectively, to the ordinary upper arm and lower arm or base plate of ordinary forms of sewing machines.

For the driving of the sewing mechanism, the usual band wheel, 6, receives a band, 7, extending around said wheel and around two guide wheels, 8, on the head standard, 3, and thence around a grooved wheel, 9, on the horizontal shaft, 10, under the table, 2. Said shaft, 10, is driven by a belt, 11, from a band wheel, 12, on the horizontal power shaft, 13, mounted in bearings, 14, in the rear frame standards, 1, 1. On said shaft, 13, is a fixed pulley, 15, and a loose pulley, 16, to receive a power belt not shown.

The conveyer, C, is parallel to the front of the frame, A, and directly beneath the sewing head. Thence it extends any desired distance to the stations or machines, D, preferably in a direct line. Said distance may conveniently be twenty, thirty, or forty feet, or more. In the form shown in the drawings, said conveyer is constructed as follows: Parallel horizontal base bars, 17, support standards, 18, which in turn support at their upper ends cross pieces, 19, upon which rest a middle relatively wide board, 20, a front strip, 21, and a rear rising strip, 22. At the foot end (the end the farther from the sewing mechanism) of the frame thus formed is a roller or band wheel, 23, having bearings in the sliding U-shape yoke, 24, confined between the base bars, 17, and bars, 25, arranged parallel to said bars, 17. From said yoke a screw-shaft, 26, extends through a nut, 27, which bears against the face of a cross-bar, 28, between said cross-bar and said wheel, 23, said cross-bar being secured to the base bars, 17. By turning said nut in the proper direction, said screw-shaft, yoke, and band wheel may be pushed away from the sewing mechanism—or toward and from the sewing mechanism. Said frame extends to within ten or fifteen feet of the frame, A. At a distance from the frame, A, the said conveyer frame is provided with a horizontal hinge. For such hinging of said

frame, all the horizontal frame pieces are cut transversely and oblique standards, 35, are secured to the head ends of the base bars, 17, at one side of the cut and ears, 36, rise from said base bars at the other side of said cut and are joined to said oblique standards by a shaft or pintle, 37, extending horizontally through said ears and said standards. Thus the conveyer frame comprises a fixed section and a hinged section.

Upon the head ends of the base bars, 17, are seated bearings, 38^a, in which is journaled the shaft, 38, of a band wheel, 39, which is of approximately the same size as the band wheel, 23, at the foot end of the stationary frame of the conveyer. An endless conveyer belt, 40, extends the full length of said conveyer frame and around the band wheels, 23 and 39. Between said wheels, the upper portion of said belt rests slidably upon the middle boards, 20; and the lower portion of said belt extends between the base bars, 17, of said frame. The tension of said belt may be varied by shifting the wheel, 23, at the front end of the conveyer. The hinged end of said conveyer is supported by a pair of upright links, 41, which are hinged by their upper ends to the base bars, 17, and by their lower ends to approximately horizontal rigid arms, 42, supported by a horizontal transverse rock-shaft, 43, the front end of which rests in a bearing, 44, in the lower portion of a segment rack, 45, (Figs. 4 and 8) while the rear end thereof rests in a bearing, 46, (Figs. 1, 2 and 3). From said rock shaft, at the side of said segment rack, 45, a rack lever, 47, rises above said rack. Said lever is provided with a sliding member, 48, which is adapted to engage and lock in any one of three notches, 49. Each of said notches is in a block, 50, which is secured to the rack, 45, by means of a bolt, 51, extending through said block and a slot, 52, in said segment and concentric to the axis of the segment. Thus said blocks are adjustable on the arc of a circle of which the axis of the segment is the center. By such adjustment, the rack lever and its connections may be made to support the head or free end of the hinged frame of the conveyer at three precise chosen elevations within the range of movement which can be imparted by said lever. For example, two of said blocks may be set for engaging said lever at the opposite limits of movement of said lever while the other of said blocks is set exactly midway between the other blocks. Or any one of said blocks may be set to any other position in order to hold bags of a particular size at the precise height required while passing the sewing mechanism. The value of such adjustment will be understood when it is remembered that the second of three sizes of bags may not reach precisely half way between the largest and the small-

est of the three bags and that different lots of bags for a given weight or quantity of material may vary in height as they vary in diameter.

A fender, 53, is supported above the rear portion of the stationary portion of the conveyer frame by standards, 54, rising from the rear portion of said frame; and a similar fender, 55, is similarly supported above the rear portion of the hinged portion of the frame of the conveyer by standards, 56, rising from the rear portion of said hinged portion of the frame. The function of said fenders is to support bags which lean rearward so far that they tend to fall.

On the rear end of the shaft, 38, is a sprocket wheel, 57, which receives a sprocket chain, 58, which also surrounds a sprocket wheel, 59, on the horizontal shaft, 60, resting in bearings, 61. On said shaft is a worm gear wheel, 62, which is engaged by a worm, 63, on the power shaft, 13.

By means of the gearing just described power is transmitted to the conveyer belt at a velocity which is lower compared with the velocity imparted to the sewing head.

Between the sprocket wheel, 57, and the adjacent bearing, 38^a, a sleeve, 64, loosely surrounds the shaft, 38, and from said sleeve an arm, 65, extends toward the shaft, 60, approximately parallel to the sprocket chain, 58. On said arm a wrist, 66, extends horizontally rearward beneath said chain and supports an idle sprocket wheel, 67. From the arm, 65, a cord, 68, extends over a loose pulley, 69, and has one end secured to the arm, 65, while its other end is secured to a weight, 70. Said weight tends to draw said cord over said pulley and causes the latter to lift the arm, 65, and thereby press the idle sprocket wheel, 67, upward against the sprocket chain, 58, and impart to said chain a proper degree of tension, notwithstanding the upward and downward movements of the adjacent end of the conveyer frame and the sprocket wheel, 57.

To facilitate the upward and downward movement of the free end of the hinged section of the conveyer, said section may be counterbalanced in any suitable manner. In the form shown in the drawings, this is accomplished by means of a yoke or bail, a cord, two guide pulleys, and a counterweight. The bail, 71, spans the conveyer frame and is secured thereto by bolts, 72. The cord, 73, extends over the guide rollers, 74, and has one end attached to said bail while the other end is attached to the counterweight, 75.

Opposite the free end of the hinged section of the conveyer frame there is a floor opening, 76, for the passage of the sewed bags after they leave the conveyer.

In operation, bags are filled at any desired number of bag-filling stations or machines,

D, and the bags are set upright upon the conveyer, C, at points on the latter most convenient to said stations. Said bags are set upon the conveyer with sufficient force to cause the flattening of their lower portions so as to form a base adapting the bag to stand upright without support. In such position each bag is carried toward the sewing head, and the attendant at said mechanism operates the rack lever, 47, for the raising or lowering of the hinged section of the conveyer as may be necessary by variations in the height of the bags on the conveyer; and said attendant gives such assistance as may be necessary to the sewing operation, as, for example, the drawing of the mouth of the bag parallel to the line of travel and guiding said mouth between the base plate and arm of the sewing head. After passing said sewing head, the bag falls over the adjacent end of the conveyer and through the floor opening, 76, upon any conveying mechanism adapted to convey sewed bags to places for storage or upon cars or wagons.

I claim as my invention:

1. In an apparatus of the nature described, a sewing head, a relatively long and approximately straight and horizontal conveyer member having one end hinged at a fixed elevation distant from the sewing head supporting frame and the other end extending beneath the sewing head, quick-acting mechanism for raising and lowering the free end of said hinged section, and mechanism for driving said sewing head and said conveyer.

2. In an apparatus of the nature described, a sewing head, a relatively long and approximately straight and horizontal conveyer comprising an approximately horizontal frame section having one end extending beneath the sewing head and being hinged by the other end, said hinged end having a substantially fixed elevation, mechanism for raising and lowering the free end of said section, mechanism for driving said sewing head and said conveyer, and a counterbalance for said hinged frame.

3. In an apparatus of the nature described, a sewing head supporting frame, a sewing head, a relatively long and approximately straight and horizontal conveyer frame comprising an approximately horizontal section having one end hinged at a fixed elevation and distant from the sewing head supporting frame and the other end extending beneath the sewing head, an endless belt

mounted on said frame, quick-acting mechanism for raising and lowering said hinged section, mechanism for locking said raising and lowering mechanism in chosen positions, and mechanism for driving said sewing head and said conveyer belt.

4. In an apparatus of the nature described, a sewing head supporting frame, a sewing head, a relatively long and approximately straight and horizontal conveyer comprising an approximately horizontal section having one end hinged at a fixed elevation and distant from the sewing head supporting frame and the other end extending beneath the sewing head, quick-acting mechanism for raising and lowering the free end of said hinged section, mechanism for locking said raising and lowering mechanism in chosen positions, mechanism for driving said sewing head, and driving mechanism engaging the free end of said hinged conveyer section.

5. In an apparatus of the nature described, a sewing head, a relatively long and approximately straight and horizontal conveyer comprising an approximately horizontal frame section having one end extending beneath the sewing head and being hinged by the other end, a lever in operative relation with said hinged section for raising and lowering the latter, mechanism for engaging said lever in different positions, and mechanism for driving said sewing head and said conveyer.

6. In an apparatus of the nature described, a sewing head, a conveyer having a hinged section extending beneath the sewing head, the hinged end of said section having a substantially fixed elevation, a lever in operative relation with said hinged section for raising and lowering the latter, and adjustable mechanism for engaging said lever in different positions.

7. In an apparatus of the nature described, a sewing head, a conveyer having a hinged section extending beneath the sewing head, a rack lever in operative relation with said hinged section for raising and lowering the latter, and a rack having adjustable blocks for engaging said lever in different positions.

In testimony whereof I have signed my name, in presence of two witnesses, this 12th day of December, in the year one thousand nine hundred and seven.

JESSE E. MILLER.

Witnesses:

CYRUS KEHR,
C. A. MORSE.