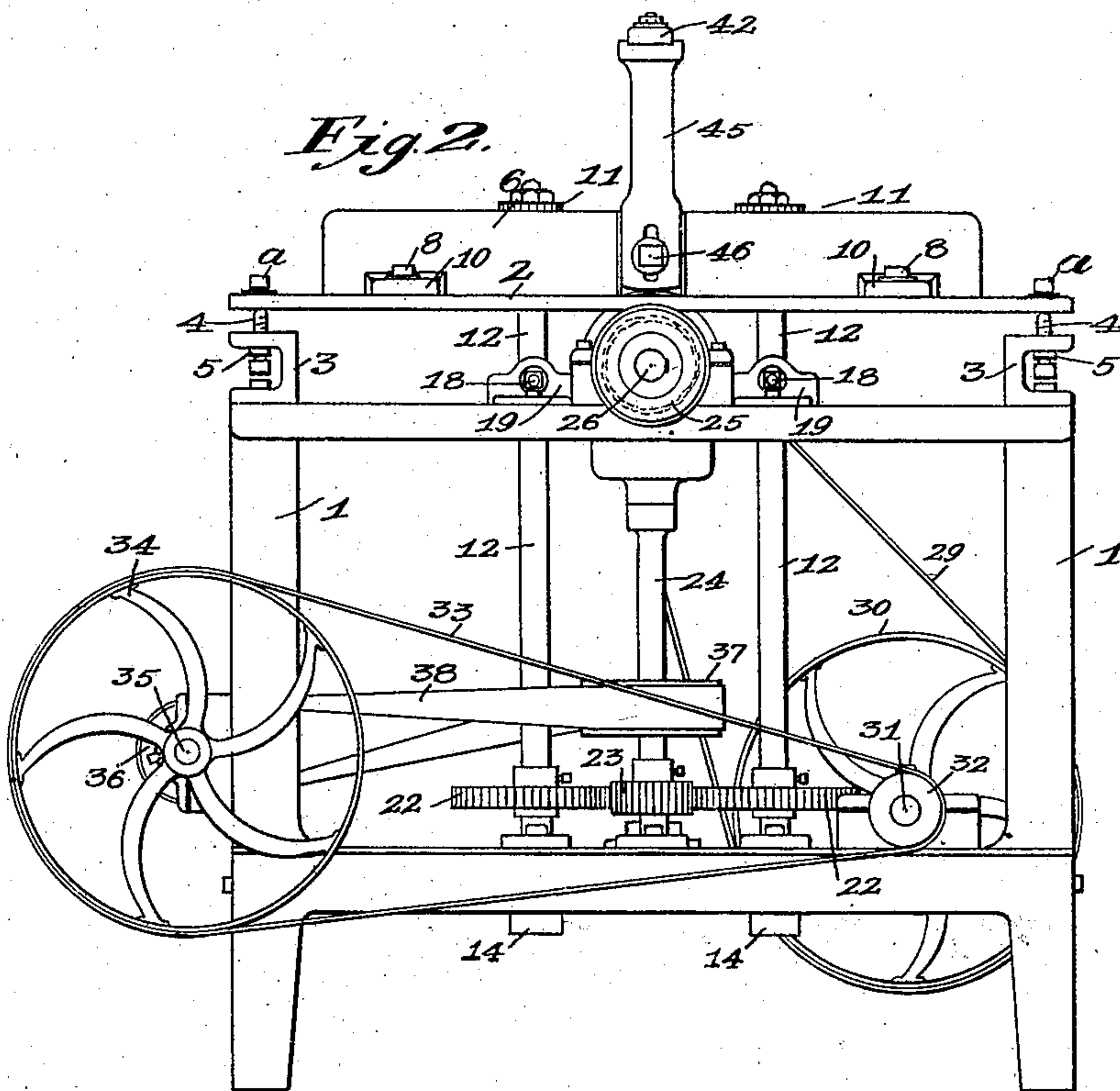
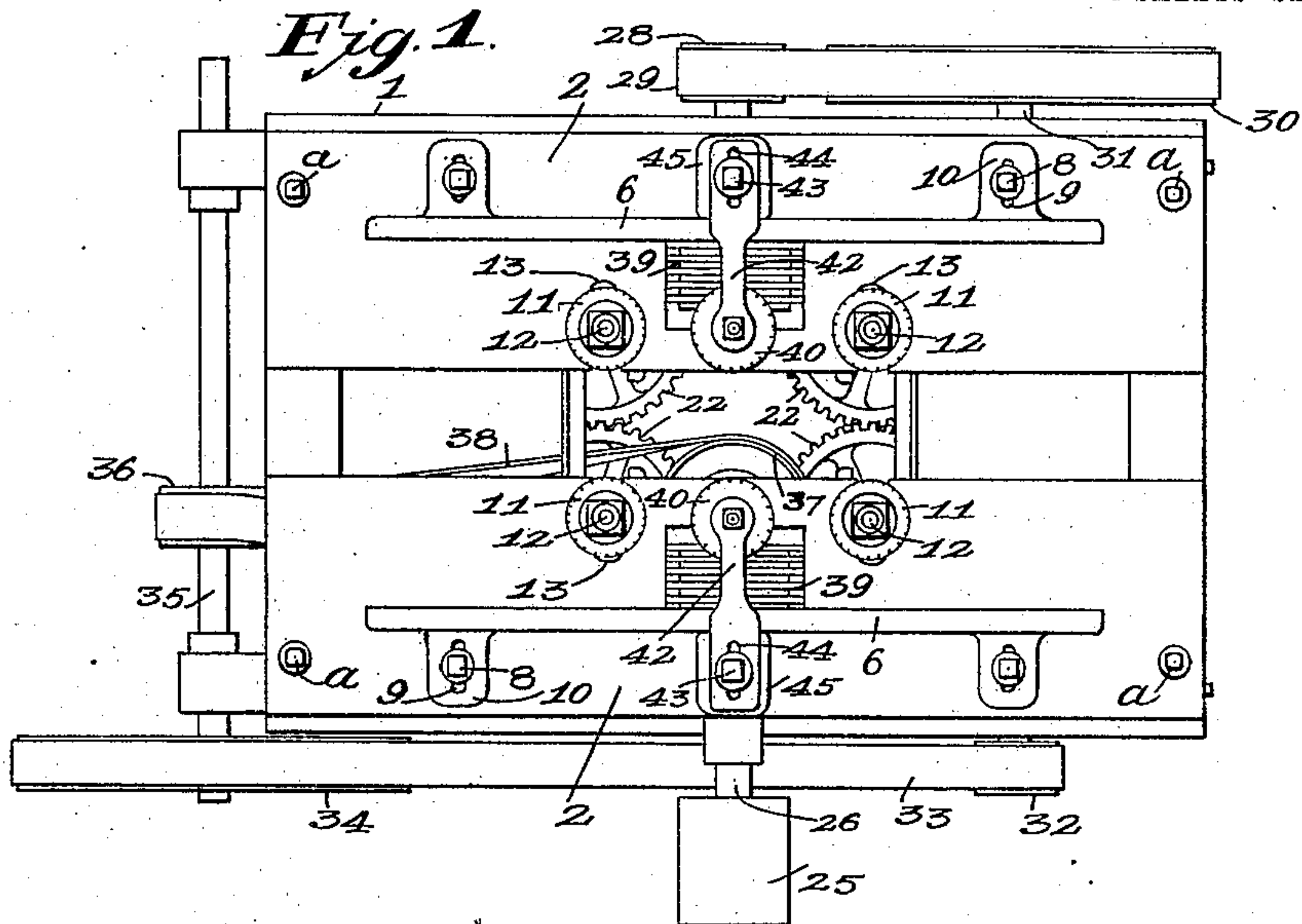


No. 816,039.

PATENTED MAR. 27, 1906.

G. E. PRIEST.  
GANG MATCHING MACHINE.  
APPLICATION FILED JULY 8, 1902.

2 SHEETS--SHEET 1.



Witnesses  
Ernest J. Hough  
Charles E. Hodge

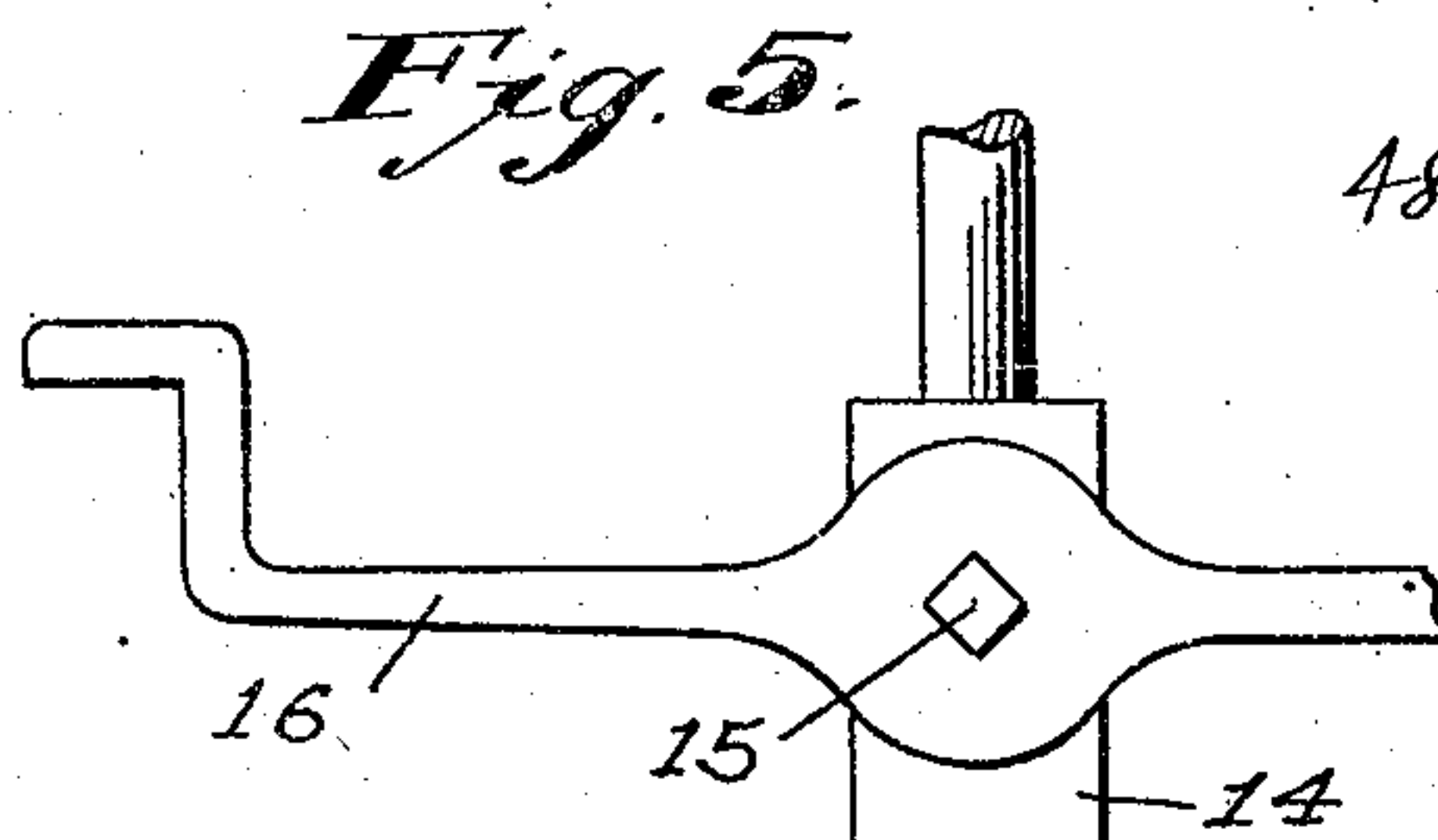
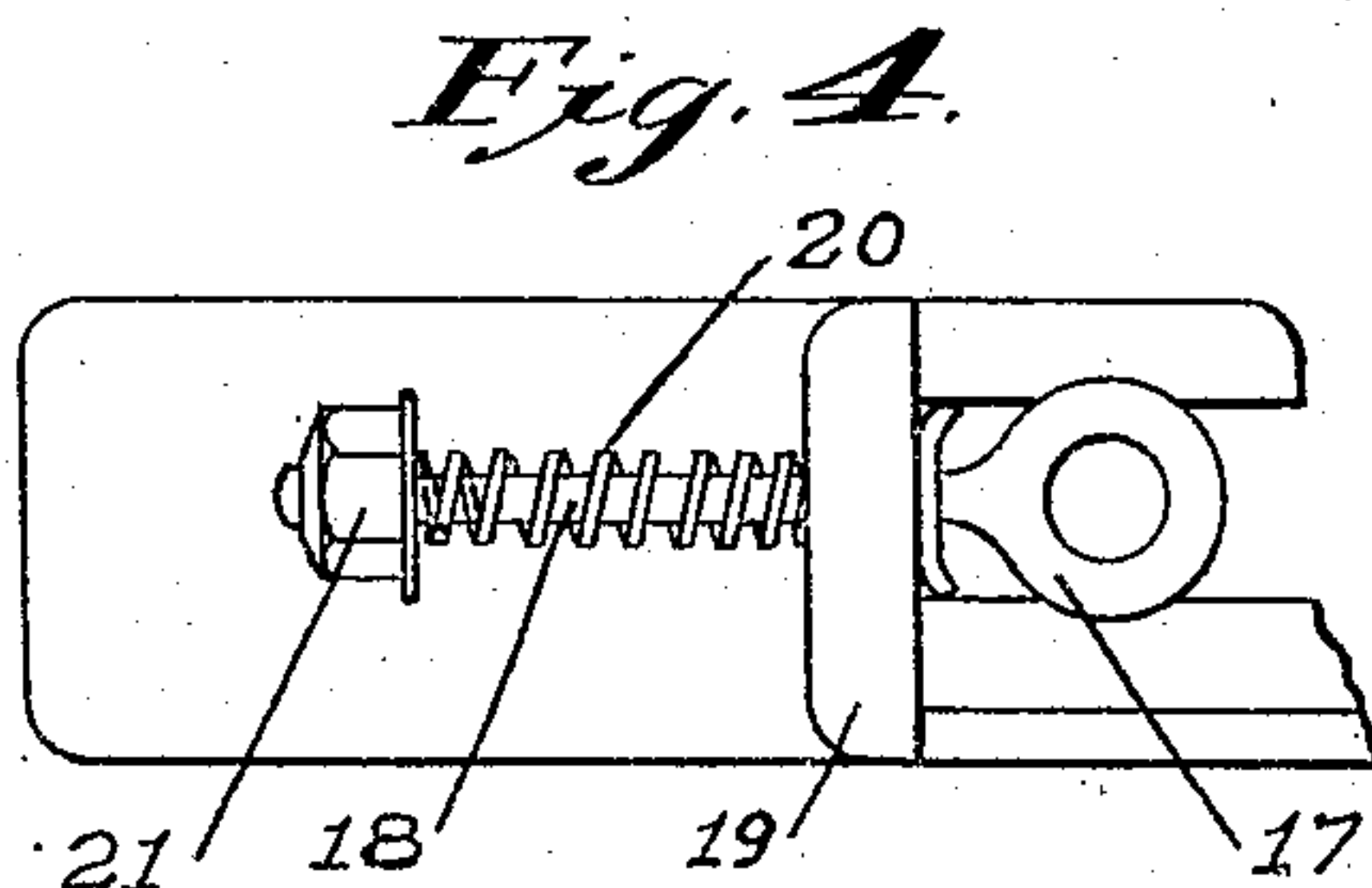
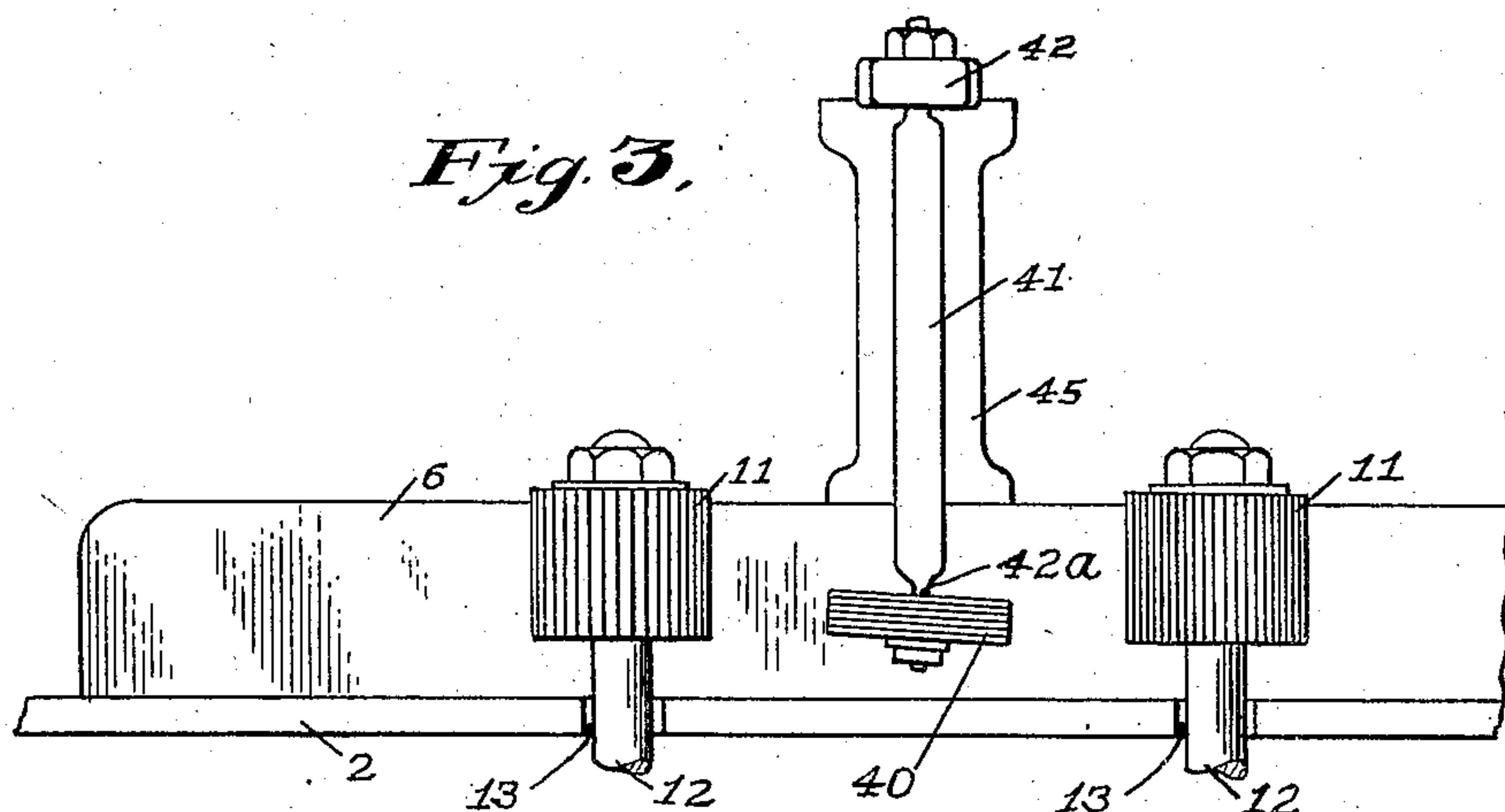
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No. 816,039.

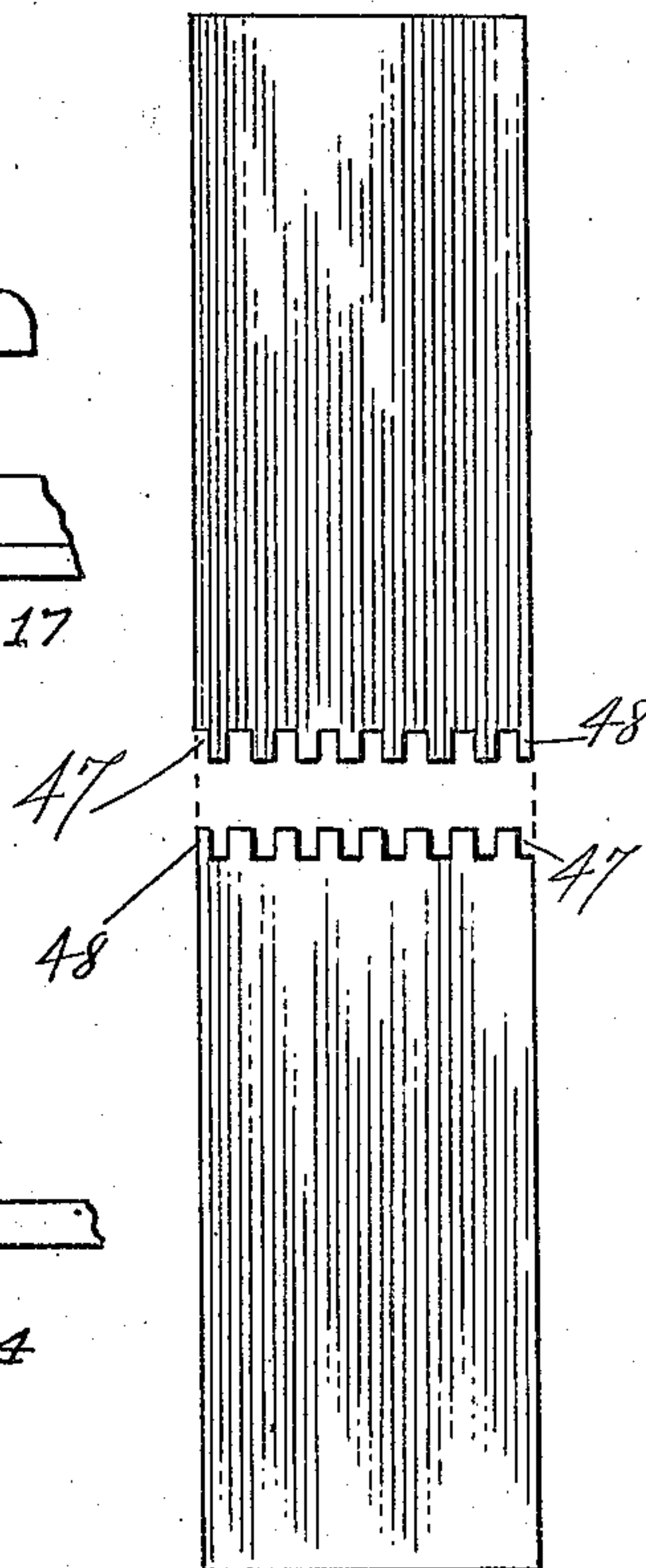
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2 SHEETS—SHEET 2.



*Fig. 6.*



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# UNITED STATES PATENT OFFICE.

GEORGE E. PRIEST, OF ORANGE, MASSACHUSETTS.

## GANG MATCHING-MACHINE.

No. 816,039.

Specification of Letters Patent.

Patented March 27, 1906.

Application filed July 8, 1902. Serial No. 114,733.

*To all whom it may concern:*

Be it known that I, GEORGE E. PRIEST, a citizen of the United States, residing at Orange, in the county of Franklin and Commonwealth of Massachusetts, have invented a new and useful Improvement in Gang Matching-Machines, of which the following is a specification accompanied by drawings forming a part of the same, in which—

10 Figure 1 is a plan view. Fig. 2 is a side elevation. Fig. 3 is a detached view of the feed-rolls. Fig. 4 shows one of the yielding boxes tongue-and-grooved. Fig. 5 shows one of the swiveled boxes, and Fig. 6 represents two pieces of board with matched edges.

Similar reference letters and figures refer to similar parts in the different views.

20 The object is to provide an automatic machine for cutting the grooves in matched boards, so that a board is fed and held upon the table of the machine without the necessity of the operator keeping his hand upon it during its passage through the machine.

25 Referring to the accompanying drawings, 1 denotes the frame of the machine illustrated, and 2 2 are the tables supported thereon.

3 3 are brackets interposed between the outer ends of the tables and the frame of the machine and secured to the latter. The tables rest upon the upper ends of adjusting-screws 4 4, which are adjustable up and down in threaded holes formed therefor in the upper flange of the brackets, they being provided as a means for adjusting the tables. These screws are provided with jam-nuts 5 5, adapted to be screwed up tight against the underside of the flange when the screws are set in position to lock them in that adjustment.

40 In the adjustment of the tables to regulate the depth of saw-cut in the work being operated upon it is my custom generally to first adjust the set-screws at one end of the frame, so as to make the tables perfectly level transversely. Then to regulate the depth of cut of the saws it is only necessary to adjust the set-screws from the opposite end or from one end of the machine, as it makes no difference whether the tables tilt lengthwise or not. 50 When the screws are thus adjusted, they are locked as described. When thus adjusted, the tables are clamped in place by means of the screws or bolts *a a*, which extend through the tables into the brackets and hold the tables securely in place.

On each table a gage 6 is stationed, it be-

ing adjustable laterally by means of bolts 8 8, operating in slots 9 9 in the lugs 10 10. These lugs extend exactly at right angles to the center of the surfaces of the gages in order to insure the gages standing up at right angles to the surface of the table. In this way the gages may be set at the desired positions on the tables to regulate the positions of curves of the matching strips to be sawed. The work operated upon is fed forward upon the table by means of four fluted rolls 11 11, secured on vertical shafts 12 12, which shafts are let into slots 13 13, opening out into the inner edge of the tables. These shafts are stepped at their lower ends in sockets 14 14, which are held by trunnions 15 15, upon which they are capable of rocking in the cross-beams 16 16, which latter are secured at their ends to the frame of the machine. At or near their upper ends these shafts are journaled in eyebolts 17 17, the stems 18 18 of which extend outwardly through opposite ends of the castings 19 19 and have springs 20 20, which are held in place by the nuts 21 21 on the outer ends of these stems. The tension of these springs holds the feed-rolls 11 11 normally but yieldingly in the direction of the gages, and they are adapted to yield to the pressure of the board fed between the rolls and the gages, so that the rolls take sufficient hold upon the work to feed it along. Thus the vertical shafts 12 12 have slight rocking motion at their lower ends on the trunnions 15 15.

Each shaft 12 has a geared wheel 22 secured thereto, and these intermesh with each other across the machine in pairs and on one side of the machine with an intermediate gear-wheel 23 on the vertical shaft 24, which shaft is mounted like shafts 12 12, whereby all of the shafts 12 12 rotate in unison and in opposite directions on opposite sides of the machine to impart the feeding motion to the rolls 11 11. These shafts are driven through a belt (not shown) passed over the pulley 25, secured on horizontal shaft 26, this shaft 26 having a small sheave 28 on its opposite end, over which an endless belt 29 passes on its way to pulley 30 on the horizontal shaft 31, which turns in suitable bearings and has the sheave 32 on its opposite end, over which an endless belt 33 passes, said belt 33 running around a larger sheave 34 on the outer end of the horizontal shaft 35, and a small pulley 36 on said shaft 35 communicates motion to the drum 37 on vertical shaft 24 through a belt 38, which has a quarter-turn between said



shafts. In this way the speed of drive-shaft 26, which carries the gang of saws 39 39, is communicated to the four vertical shafts 12 12, but at a greatly-reduced speed, as the feed of the work across the table is comparatively slow, while the revolution of the cutters is necessarily at a very high speed.

The action of the saws beneath the work of course exerts more or less upward pressure upon the work, which has a tendency to lift the work from the table. This is resisted by the rolls 40 40. These rolls are circumferentially fluted or ribbed and journaled upon the lower ends of depending plate-spring supports 41 41, the journal ends 42<sup>a</sup> 42<sup>a</sup> being slightly inclined, so that the rolls 40 40, which turn thereon, incline and feed the work downwardly or against the table, the springs 41 41 being sufficiently rigid to cause the rolls 40 40 to rigidly embrace the edge of the work, and yet sufficiently yielding to respond to the tendency of the work to force them aside. In other words, the inclined feed-rolls 40 40 are idlers; but they are yieldingly supported and in traversing the adjacent edge of the work constantly feed it downward upon the surface of the table. The springs 41 41 are secured to the inner ends of horizontally-disposed arms 42 42, and said arms are adjustable transversely of the machine by the bolts 43 43 in elongated slots 44 44 in the outer ends of said arms upon the upper ends of the vertically-adjustable uprights 45 45, which latter are adjustably secured to the gages 6 6 by bolts 46 46.

In operating the machine the tables are adjusted to the depth of kerf desired, and the gages are set so that a groove 47, for instance, is cut in the piece of work lying next to one of them, and a tongue 48 is cut in that piece of work lying next to the other, so that when the two strips have passed through the machine their tongues and grooves register, and when the two pieces of work are put together their edges are exactly flush, as Fig. 6 would indicate, if the strips were joined instead of separated. All the operator has to do is to start the work through the machine, it being fed forward and held down upon the table by rolls 11 and 40. The work is usually taken from the opposite end by a workman—a boy, for instance—and disposed of in any convenient manner. The gages may be ad-

justed as required at any time, according to the width of the material being operated upon, and in like manner the rolls 40 40 may be raised or lowered or shifted inwardly or outwardly to bring them into the best position to accomplish their purpose.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination with a suitable support, and a set of feed-rolls, of a laterally-adjustable gage, an upright secured to the gage, and vertically adjustable with respect thereto, an arm projecting from the upright and laterally adjustable with respect thereto, a yielding support depending from the arm and a rotary member carried by the support.

2. The combination with a suitable support and a set of feed-rolls, of a gage, an upright secured thereto, an arm projecting from the upright and laterally adjustable with respect thereto, a yielding support depending from the arm and a rotary member carried by the support, the lower end of the support being deflected at an angle to its body portion.

3. The combination in a gang matching-machine, with a suitable support, of a cutter, feed-rolls located adjacent thereto, and a gage adjustable with respect to the cutter, a depending adjustable resilient arm carried by the gage, and an inclined rotary member carried by the arm, the rotary member adapted to engage the opposite side of the work from that abutting the gage to force the work against the gage.

4. In a gang matching-machine, the combination with a table and cutters, of gages adjustable on the table, and depending spring-supported feed-rolls adjustably supported by and above the gage and adapted to guide and feed the work between it and the gage.

5. In a gang matching-machine, the combination with a table, and gages adjustable thereon, of two gangs of cutters in different relative arrangement with respect to their corresponding ends, and means for feeding the work down toward the table.

Dated this 28th day of June, 1902.

GEORGE E. PRIEST.

Witnesses:

WILLIAM H. WALKER,  
ARTHUR J. DEXTER.