

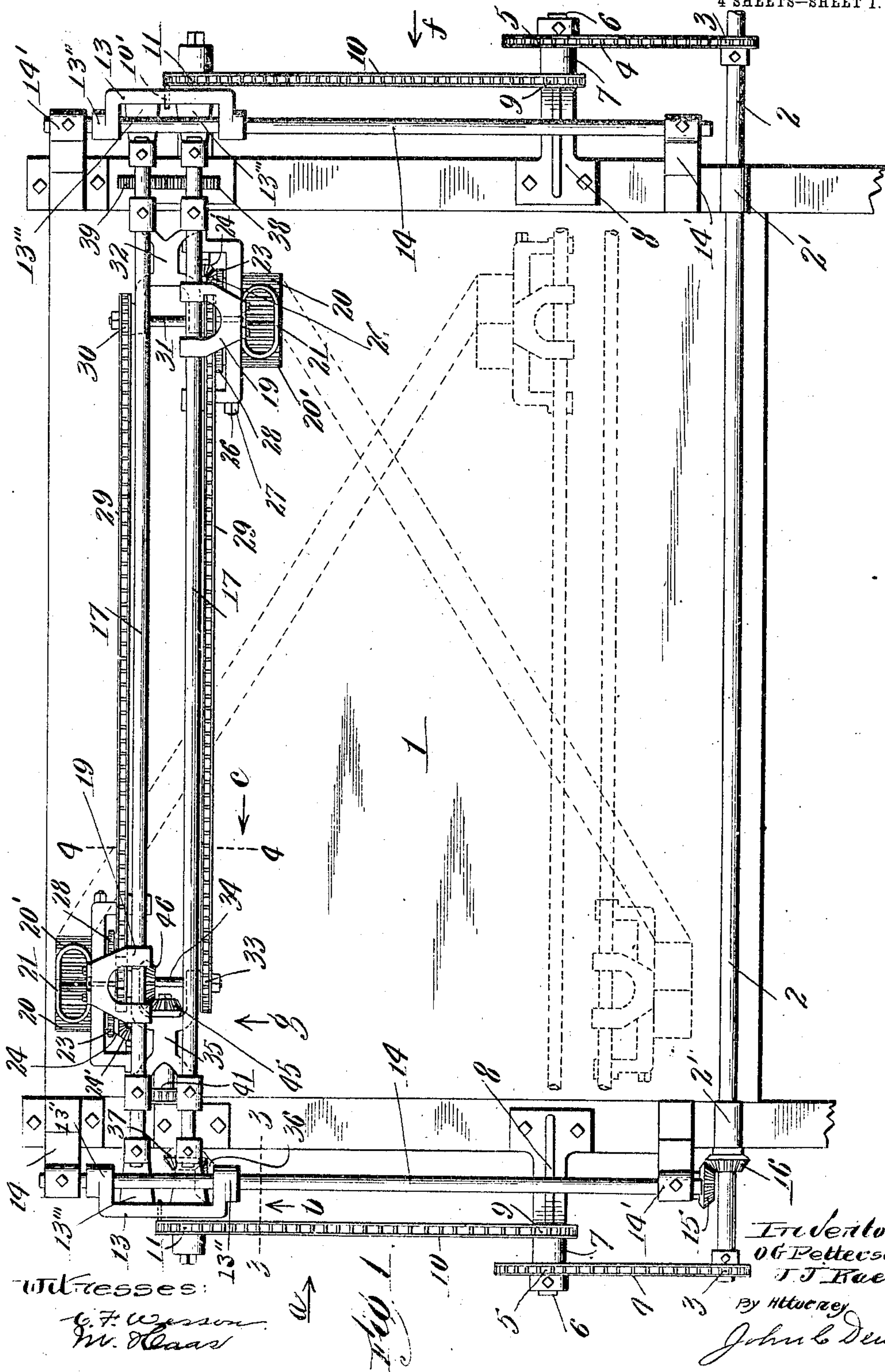
No. 844,741.

PATENTED FEB. 19, 1907.

O. G. PETTERSON & J. J. RAE.  
FEEDER FOR INTERMEDIATE CARDS.

APPLICATION FILED MAR. 30, 1906.

4 SHEETS—SHEET 1.



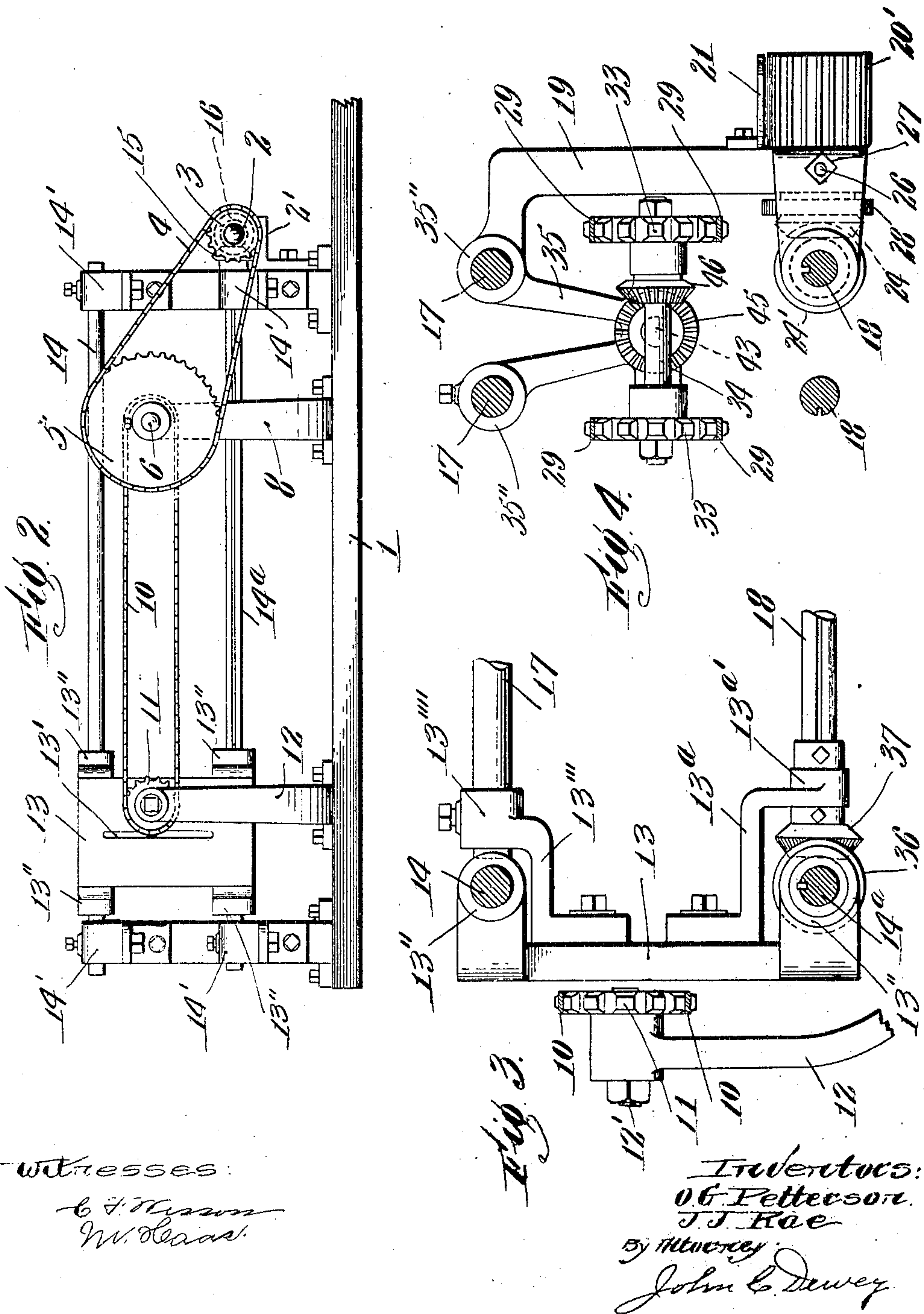
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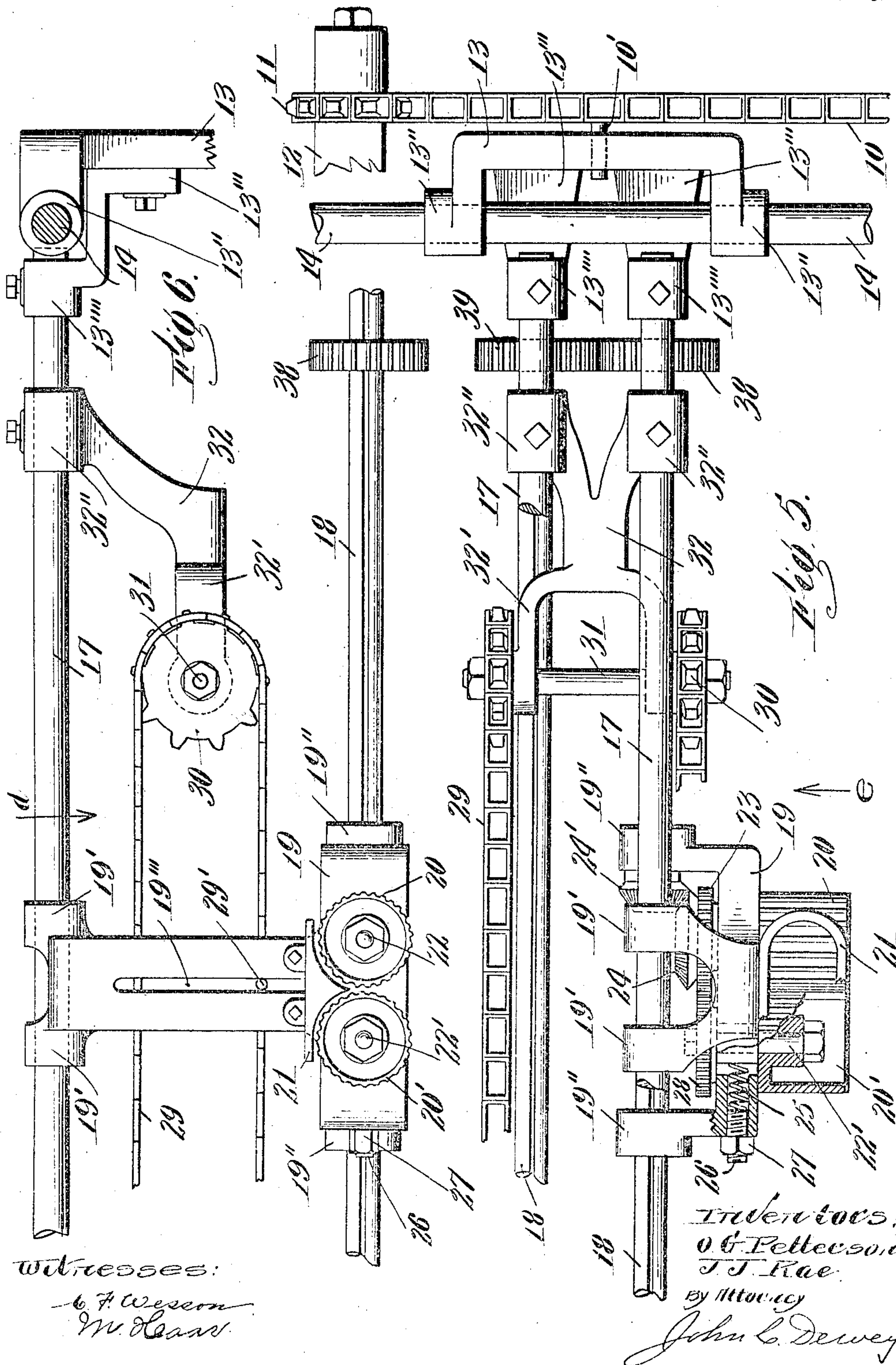
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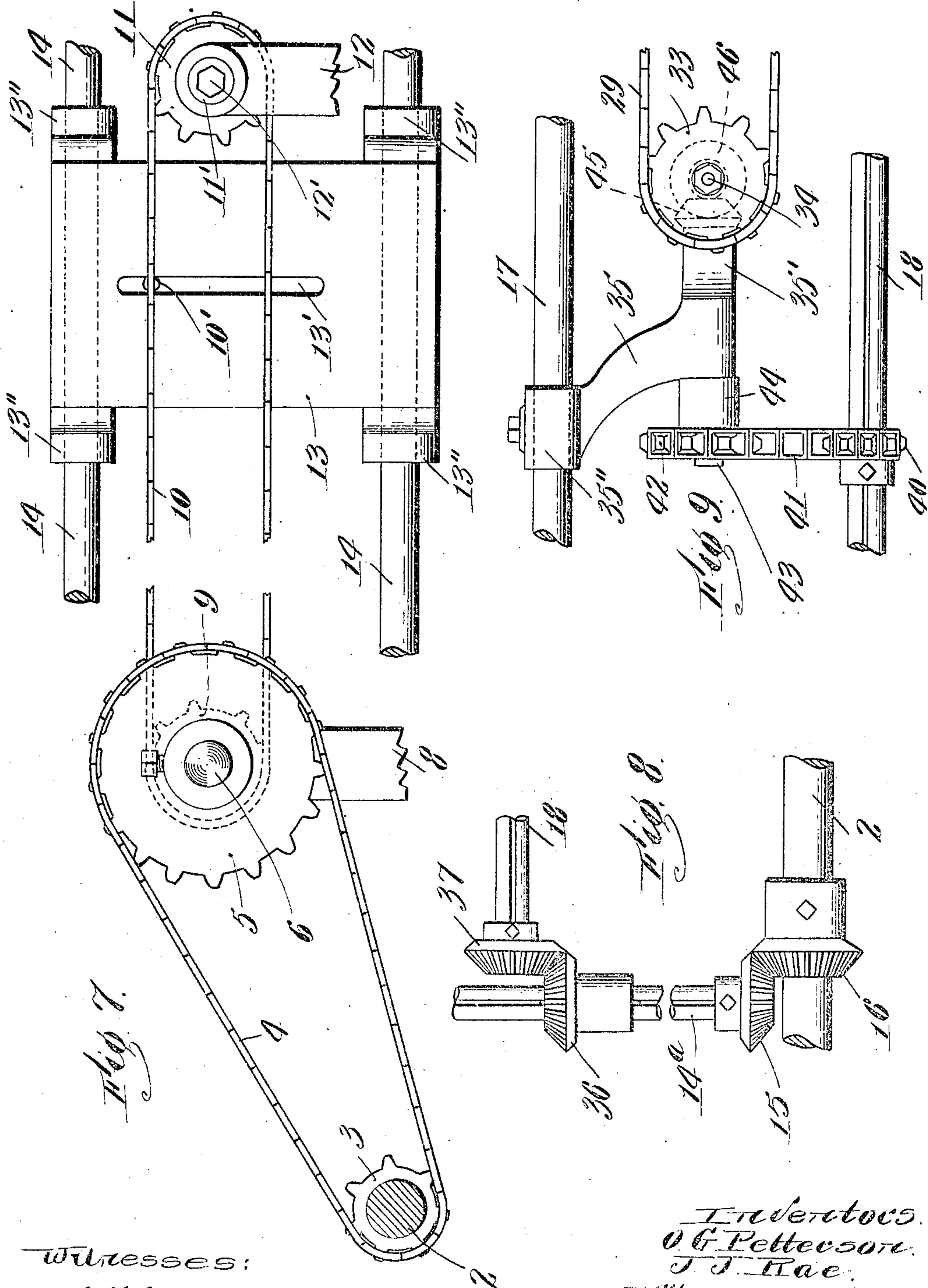
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4 SHEETS—SHEET 4.



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# UNITED STATES PATENT OFFICE.

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## FEEDER FOR INTERMEDIATE CARDS.

No. 844,741.

Specification of Letters Patent.

Patented Feb. 19, 1907.

Application filed March 30, 1906. Serial No. 308,881.

*To all whom it may concern:*

Be it known that we, OLOF G. PETTERSON and JAMES J. RAE, citizens of the United States, residing, respectively, at Worcester and Cherry Valley, both in the county of Worcester and State of Massachusetts, have jointly invented certain new and useful Improvements in Feeders for Intermediate Cards, of which the following is a specification.

Our invention relates to an intermediate feed or feeder for a card; and the object of our invention is to improve upon the construction of an intermediate feeder for a card as ordinarily made, and more particularly to provide a double feeder or a feeder having two travelers with feeding-rolls thereon, both travelers having a longitudinal and a traverse movement across the feeder-table simultaneously to lay two strips of drawings diagonally on the driven belts and said strips crossing each other.

Heretofore a feeder for a card has had a single traveler with feeding-rolls thereon for the drawings passing to the feeder, which traveler had a longitudinal movement in the direction of the length of the feeder-table on a stationary bridge or support to lay the drawings passing between the feeding-rolls on the traveler onto driven belts, which pass over the bed of the feeder-table, in the usual and well-known way.

In our improvements we provide a second traveler having feeding-rolls thereon and mechanism for operating the same simultaneously with the other traveler to cause said second traveler to have a longitudinal movement in the direction of the length of the feeder-table and also provide mechanism to cause both travelers to have a traverse movement in the direction of the width of the feeder-table to lay two strips of drawings diagonally on the driven belts, said strips crossing each other. We also provide travelers of improved construction and improved mechanism for supporting and operating the travelers.

We have shown in the drawings detached portions of an intermediate feeder for a card with our improvements combined therewith sufficient to enable those skilled in the art to understand the construction and operation of the same. We have not shown in

the drawings the driven belts and rolls of the feeder, as the same are of ordinary construction and operation and form no part of our present invention.

Referring to the drawings, Figure 1 is a plan view of a feeder embodying our improvements. The broken lines show the opposite positions of the two travelers carrying the feeding-rolls. Fig. 2 is an end view of the parts shown in Fig. 1 looking in the direction of arrow *a*, same figure. Fig. 3 is, on an enlarged scale, a section on line 3 3, Fig. 1, looking in the direction of arrow *b*, same figure. Fig. 4 is, on an enlarged scale, a section on line 4 4, Fig. 1, looking in the direction of arrow *c*, same figure. Fig. 5 is a plan view, on an enlarged scale, of a detached portion of the mechanism shown at the upper right-hand corner of Fig. 1, with the traveler and carriage in a different position, and also shown in Fig. 6 looking in the direction of arrow *d*, Fig. 6. Fig. 6 is a side view of the parts shown in Fig. 5 looking in the direction of arrow *e*, same figure. Some of the parts shown in Fig. 5 are not shown in this figure, and the feeding-roll is not shown broken away. Fig. 7 is, on an enlarged scale, an end view of a detached portion of the mechanism shown in Fig. 1 looking in the direction of arrow *f*, same figure. Fig. 8 is, on an enlarged scale, a plan view of the driving bevel-gears and portions of their shafts, detached, shown at the left in Fig. 1. Fig. 9 is, on an enlarged scale, a front view of the sprocket-chain mechanism shown at the left in Fig. 1 looking in the direction of arrow *g*, same figure.

In the accompanying drawings, 1 is the flat horizontal bed or table of the feeder, in this instance of regular parallelogram shape and suitably supported and provided with the usual driven belts and rollers. (Not shown.) At one side or edge of the table 1 is mounted in suitable bearings 2' an externally-driven shaft 2. The driven shaft 2 has a sprocket-wheel 3 fast thereon, (see Fig. 7,) which is connected by a sprocket-chain 4 with a sprocket-wheel 5, fast on a short shaft 6, mounted in a suitable bearing 7 on the upper end of an upright stand 8, secured at its lower end to the frame 1. (See Fig. 1.)

On the shaft 6 is fast a second sprocket-



wheel 9, connected by a sprocket-chain 10 with a sprocket-wheel 11, having a hub 11', (see Fig. 7,) mounted on a stud 12', fast in the upper end of an upright stand 12, secured at its lower end to the frame 1. The sprocket-chain 10 has a pin 10' extending inwardly therefrom to enter an elongated slot or opening 13' in the carriage 13, (see Fig. 7,) which has hubs or bearings 13'' at its upper and lower end loosely mounted on two parallel traverse-rods 14 to have a traverse motion thereon. The rods 14 are secured at their ends in two different horizontal planes on stands 14', secured to the end of the bed 1. (See Fig. 1.) On the opposite end of the feed-table 1 are parts similar to those above described. (See Figs. 1 and 2.) Said parts have the same figures of reference, except the lower supporting-rod for the carriage 13 at the left-hand end of the feeder, (shown in Fig. 1,) which is a rotary shaft marked 14<sup>a</sup> (see Fig. 2) and has a bevel-gear 15 fast thereon, which is in mesh with and driven by a bevel-gear 16, fast on the driven shaft 2. (See Fig. 1.)

Each carriage 13 has secured thereto at its upper part two inwardly-extending supporting-arms 13''', (see Figs. 3, 5, and 6,) and each arm has a hub 13'''' for a rod 17 extending in the direction of the length of the table 1. The two rods 17 are parallel to each other. Each carriage 13 has also secured to it at its lower part two supporting-arms 13<sup>a</sup>, each having a bearing 13<sup>a'</sup> for a rotary shaft 18. (See Fig. 3.) The two rotary shafts 18 are parallel to each other and extend in a plane below and are parallel to the two rods 17. One rod 17 and one shaft 18 form the supports for one traveler, and the other rod 17 and shaft 18 form the supports for the other traveler.

Each traveler 19 consists, preferably, of a frame, (see Fig. 6,) having hubs 19' on its upper end, which are loosely mounted on an upper rod 17, and hubs 19'' on its lower end, which are loosely mounted on a shaft 18. Each traveler carries two feeding-rolls 20 and 20' and a guide-mouth 21 to guide the drawings between the feeding-rolls in the usual way. One feeding-roll 20 has a hub thereon fast on a short shaft 22, having bearings in the traveler-frame 19 and having fast on its inner end a gear 23 and also a bevel-gear 24. (See Fig. 5.) The other feed-roll 20' is adjustable toward and away from the feed-roll 20, as is customary, the bearing for the shaft 22', on which the roll 20' is fast, being yieldingly held in the traveler-frame 19 by an expansion-spring 25, the tension of which is adjusted by a screw 26 and nut 27. (See Fig. 5.)

On the inner end of the shaft 22' is a gear 28, which meshes with and is driven by the gear 23. The bevel-gear 24 meshes with and is driven by a bevel-gear 24', splined on the shaft 18 and having its hub mounted in a

hub 19'' on the carriage 19. (See Fig. 5.) The gear 24' rotates with and has a longitudinal motion on said shaft 18.

A longitudinal movement or a movement in the direction of the length of the feed-table 1 is communicated to each traveler 19 by a sprocket-chain 29, which has a pin 29' thereon, (see Fig. 6,) which enters an elongated slot or opening 19''' in the traveler 19. The sprocket-chain 29 at one end passes over a sprocket-wheel 30, fast on one end of a shaft 31, carried in the forked end 32' of a bracket 32, having hubs 32'' thereon secured on the two parallel horizontal rods 17. (See Fig. 5.) The other end of the sprocket-chain 29 passes over a sprocket-wheel 33, fast on a shaft 34, (see Fig. 4,) supported in the forked end 35' of a bracket 35, (see Fig. 9,) having hubs 35'' supported on the rods 17 at the opposite end of the feeder. (See Fig. 1.)

We will now describe the mechanism for causing the two travelers to have a longitudinal movement in the direction of the length of the feeder-table and also a traverse movement in the direction of the width of the feeder-table, as indicated by broken lines in Fig. 1, to lay two strips of drawings diagonally on the driven belts, said strips crossing each other.

The shaft 14<sup>a</sup> has a bevel-gear 36 splined thereon, (see Fig. 8,) and the hub of said gear extends within the hub or bearing on the lower arm on the carriage 13. (See Fig. 3.) The bevel-gear 36 is adapted to rotate with and move longitudinally on said shaft 14<sup>a</sup>. The bevel-gear 36 meshes with a bevel-gear 37, fast on one end of the rotary shaft 18, and on the opposite end of the shaft 18 is fast a pinion 38, which meshes with and drives a pinion 39, fast on the second shaft 18. The other end of the second shaft 18 has a sprocket-wheel 40 fast thereon, (see Fig. 9,) which is connected by a sprocket-chain 41 with a sprocket-wheel 42, fast on a shaft 43, having a bearing 44 at the lower end of the bracket 35, (see Fig. 9,) fast on the rods 17. On the inner end of the shaft 43 is fast a bevel-gear 45, which meshes with and drives a bevel-gear 46, fast on the shaft 34, (see Fig. 1,) said shaft 34 having fast thereon the sprocket-wheels 33 for the sprocket-chains 29. (See Fig. 4.)

From the above description, in connection with the drawings, the operation of our improvements will be readily understood by those skilled in the art.

Supposing the parts of the machine to be in the position shown by full lines in Fig. 1, the rotation of the driven shaft 2 through the sprocket-chains 4 and 10 on each end of the machine will cause the carriages 13 to move simultaneously on their supporting-rods in the direction of the width of the feeder-table and toward the side of the table at the lower



part of Fig. 1. Through the bevel-gear 16 on the driven shaft 2, meshing with the bevel-gear 15, fast on the rotary shaft 14<sup>a</sup>, rotary motion is communicated to the shaft 14<sup>a</sup>, and through the bevel-gear 36 and bevel-gear 37 rotary motion is communicated to the shaft 18, and through the pinion 38, fast on the other end of said shaft, and the pinion 39, fast on the second shaft 18, rotary motion is communicated to said second shaft 18, and through the sprocket-wheel 40, fast on the other end of said shaft 18, (see Fig. 9,) and sprocket-chain 41 and sprocket-wheel 42, shaft 43, bevel-gear 45, bevel-gear 46, shaft 34, sprocket-wheels 33, fast thereon, sprocket-chains 29, and sprocket-wheels 30, fast on the shaft 31, movement is communicated to each traveler 19 to cause both travelers to move simultaneously in opposite directions and in the direction of the length of the table, as indicated by broken lines in Fig. 1, and at the same time through the rotation of the shafts 18 the feeding-rolls 20 and 20' on each traveler have communicated to them a rotary motion through a bevel-gear 24', splined on the shaft 18, bevel-gear 24, and gears 23 and 28.

It will be understood from the above description, in connection with the drawings, that in the operation of our improvements the two travelers carrying the feeding-rolls which feed the drawings to the driven belts passing over the table of the feeder are simultaneously moved in the direction of the length and also in the direction of the width of the feeder-table, as indicated by broken lines in Fig. 1, to deposit diagonally on the driven belts two strips of drawings, which cross each other.

By means of our improvements we are enabled to practically double the doublings of the ordinary feed, or feeder having only one traveler.

It will be understood that the details of construction of our improvements may be varied, if desired.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a feeder for a card, two travelers, each carrying feeding-rolls, and both travelers having a longitudinal and a traverse movement across the feed-table, and means for supporting and moving said travelers.

2. In a feeder for a card, two travelers, each carrying feeding-rolls, and both moving simultaneously in opposite directions, and means for supporting and moving said travelers to cause them to lay two strips of drawings diagonally, and crossing each other.

3. A feeder for a card, having two travelers, each having feeding-rolls, and both travelers moving simultaneously in opposite directions, in the direction of the length, and in the direction of the width of the feeder-table,

and means for supporting and operating said travelers, and the feeding-rolls thereon.

4. In a feeder for a card, the combination with the feeder-table, and two travelers, each carrying feeding-rolls for the drawings, of means for supporting said travelers and communicating a simultaneous movement to them, to cause them to move in opposite directions, in the direction of the length and in the direction of the width of the feeder-table.

5. In a feeder for a card, a feeder-table, two travelers carrying feeding-rolls, and each traveler supported on a rod and a rotary shaft, and adapted to have a movement in the direction of the length of said rod and shaft, two carriages for said rods and shafts, said carriages supported on and adapted to have a movement in the direction of the width of the table, and means for moving said carriages, and for moving said travelers.

6. In a feeder for a card, a feeder-table, two travelers carrying feeding-rolls, and each traveler supported on a rod and a rotary shaft, means for communicating to said travelers a movement in the direction of the length of the feeder-table, two supports for said rods and shafts, means for supporting said supports, and communicating to said supports a movement in the direction of the width of the feeder-table.

7. In a feeder for a card, two travelers, each carrying feeding-rolls, and means for supporting said travelers, and communicating a simultaneous movement to them, to cause them to lay two strips of drawings diagonally, said strips crossing each other.

8. In a feeder, a feeder-table, two travelers carrying feeding-rolls, and each traveler supported on a rod and a rotary shaft, and adapted to have a movement in the direction of the length of said rod and shaft, sprocket-wheel and sprocket-chain mechanism for moving each traveler on its rod and shaft, and gears connected with said shaft for operating the feeding-rolls, and means for rotating said shaft, supports for said rods and shafts, one of said supports mounted on two rods, and the other of said supports mounted on a rod and rotary shaft, and sprocket-wheel and sprocket-chain mechanism for moving said supports, and means for operating said sprocket-wheel and sprocket-chain mechanism.

9. A double feeder for a card having two travelers with feeding-rolls, and means for supporting and moving said travelers, to cause them to lay two strips of drawings diagonally to each other, and crossing each other.

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