

No. 826,785.

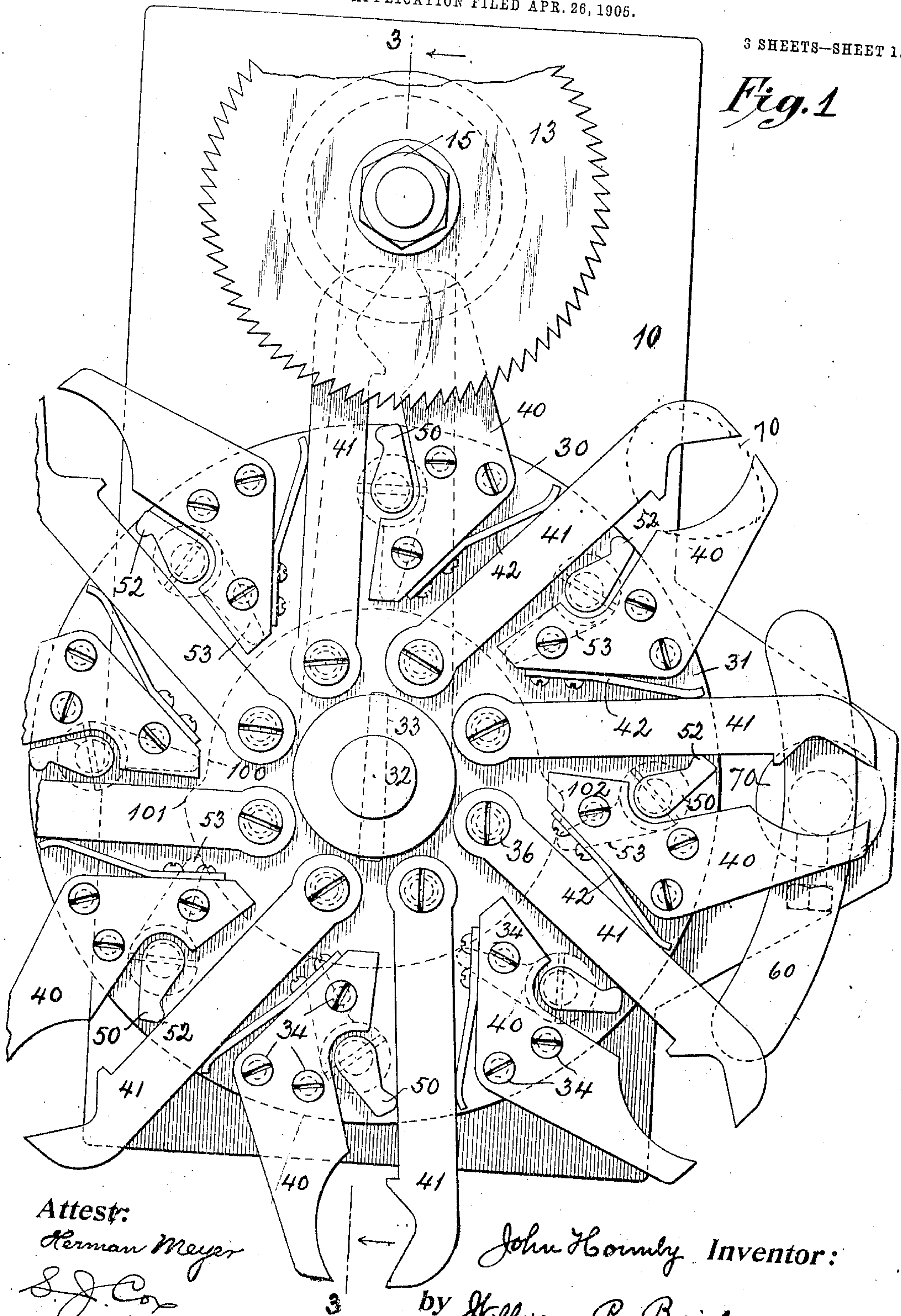
PATENTED JULY 24, 1906.

J. HORMBY.  
IVORY NUT SAWING MACHINE.

APPLICATION FILED APR. 26, 1905.

3 SHEETS—SHEET 1.

*Fig. 1*



Attest:

Herman Meyer

*S. J. Cox*

John Hormby Inventor:

by William R. Baird  
his Atty.

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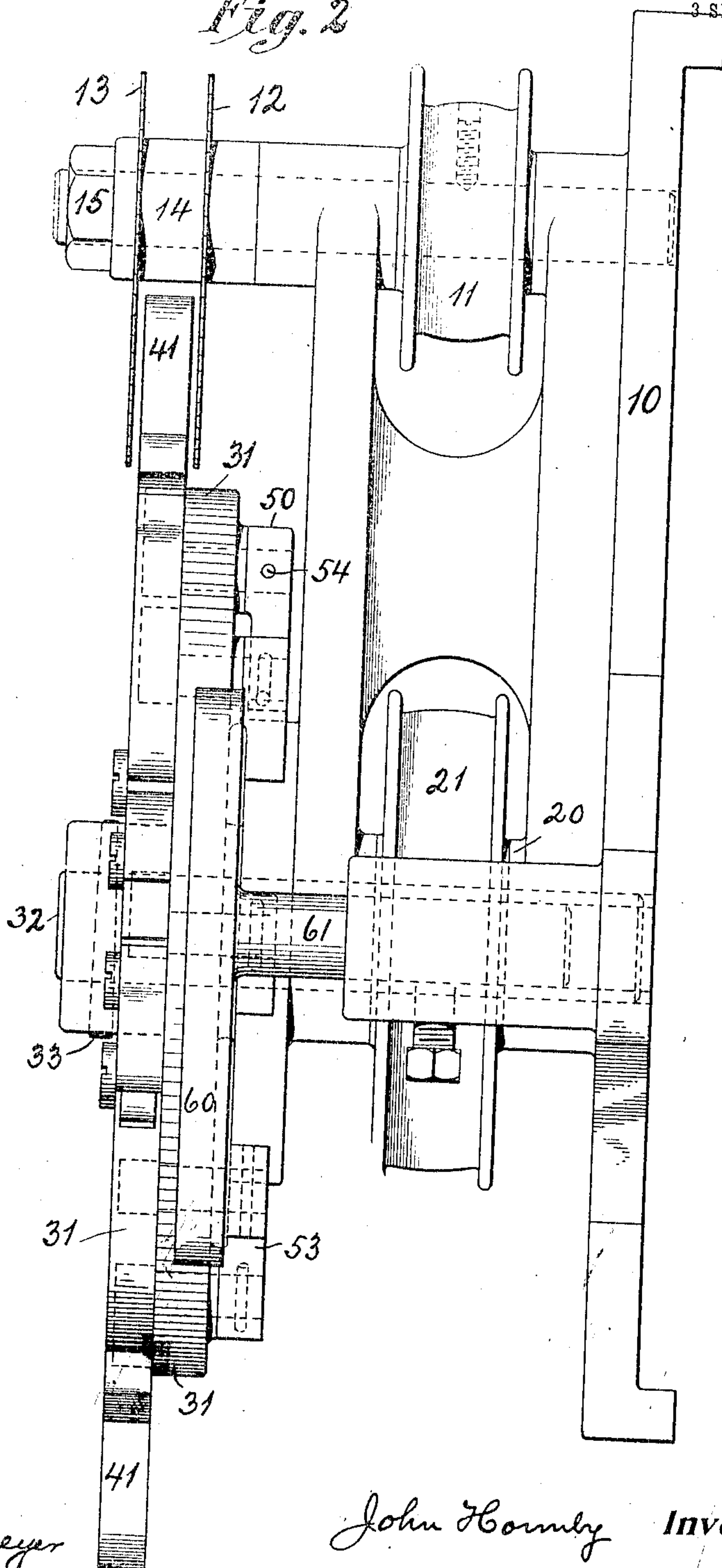
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*Fig. 2*

3 SHEETS—SHEET 2.



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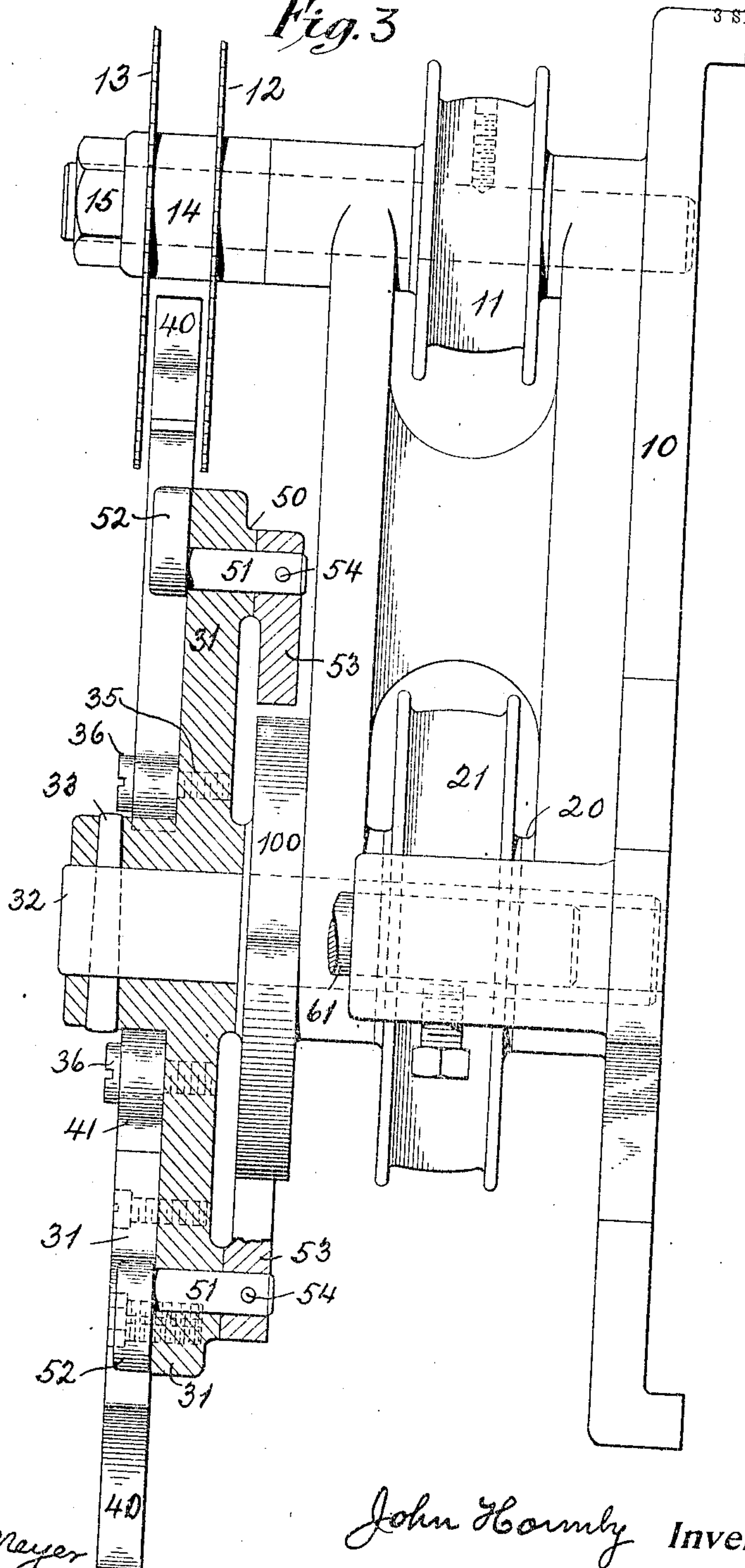
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*Fig. 3*

3 SHEETS—SHEET 3.



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# UNITED STATES PATENT OFFICE.

JOHN HORMBY, OF NEW YORK, N. Y.

## IVORY-NUT-SAWING MACHINE.

No. 826,785.

Specification of Letters Patent.

Patented July 24, 1906.

Application filed April 26, 1905. Serial No. 257,421.

*To all whom it may concern:*

Be it known that I, JOHN HORMBY, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Ivory-Nut-Sawing Machines, of which the following is a specification.

My invention relates to ivory-nut-sawing machines; and its novelty consists in the construction and adaptation of the parts, as will be more fully hereinafter pointed out.

In the sawing of ivory-nuts it is frequently desirable to cut the nut transversely to its longitudinal axis and to cut off its ovoid ends. In order that the pieces so trimmed may be of uniform width after this operation, I employ two saws, which cut the nut simultaneously, the distance apart of their cutting planes determining naturally the width of the trimmed piece. In feeding these nuts to the saws it is necessary that they should be firmly held, as the material is very hard. It is also frequently convenient to locate the saws in such position that the workmen can readily handle them. I have provided therefor a carrier which receives the nut at a convenient place, is caused firmly to grasp it and convey it to the saws, which hold it after being cut, and finally discharges it automatically and then also automatically is put into condition to receive another nut to repeat the operation. The carrier comprises a plurality of pairs of jaws, so that while one nut is being placed between one pair of jaws another is being carried between another pair of jaws to the saws, a third is being discharged from the machine, and so on.

In the drawings, Figure 1 is a side elevation of a sawing apparatus comprising a saw and my improved carrier. Fig. 2 is an end elevation thereof, and Fig. 3 a vertical transverse section on the plane of the line 3 3 in Fig. 1.

In the drawings, 10 is a frame or standard of any suitable form, construction, or material adapted to support the journal-boxes of the saw-arbors, which are provided with suitable actuating mechanism, as the pulley 11. The saws 12 13 are mounted in any approved manner and are spaced apart a proper distance by a suitable collar 14 and secured in place by a nut 15, fastened to the end of the saw-spindle. Mounted on the frame or standard 10 in suitable bearings 20 is a pulley 21, by means of which a carrier 30 is rotated,

its shaft being made integral with the shaft of the pulley 21.

30 is the endless carrier. It comprises a flat disk 31, mounted to rotate with a shaft 32 and secured in place thereon by a key 33 or in any other suitable manner. Placed symmetrically around the carrier are jaws 40 and 41, arranged in pairs, 40 being the fixed jaw and 41 the movable jaw of each pair. The fixed jaw 40 is secured to the face of the carrier 30 by screws 34 34 or in any other suitable manner, and the movable jaw 41 is secured to the face of the carrier to oscillate or swing upon a pin 35, being adjusted thereon by a slotted nut 36. A flat spring 42, secured to each fixed jaw 40 or to some suitable place on the disk 31, is arranged to press constantly against the rear surface of the movable jaw.

The means for opening and closing the jaws are as follows: A cam-disk 100 is rigidly secured to or made integral with the frame 10 of the machine. Adjacent to each movable jaw and arranged between it and its fixed jaw is a tripper 50. This comprises a shaft 51, which passes through a suitable aperture in the carrier-disk 31, provided for that purpose, a head-piece 52, adapted to press against the front edge of the movable jaw 41, and a tail-piece 53, adapted at the proper time to be brought into contact with and ride upon the cam-disk 100. The head 52 and shaft 51 are preferably made integral, and the tail 53 is secured to the shaft 51 by a pin 54 passing through both. The cam-disk is either eccentrically placed or is of larger radius from the point 101 to the point 102 than from the point 102 to the point 101.

60 is a gage-plate vertically placed and mounted upon a bracket 61, secured to the frame 10 of the machine. Its purpose is to determine the position of the nut placed between the jaws at that point. The nut is pressed to the right against this plate as it is placed between the jaws and they close upon it, the thickness of the piece cut from the nut being determined by the horizontal distance between the plane of the face of the gage and the plane of the saw 12.

The mode of operation of the machine is as follows: Supposing the parts to be assembled as shown in Fig. 1, it will be assumed that a nut 70 is placed between the pair of jaws 40 and 41 opposite the gage 60. It will be observed that the tailpiece of the trip 50, as shown in the figure, is riding along the



periphery of the cam-plate 100 and is approaching the point 102. The head-piece 52 of this trip 50 is in the position shown, pressing upward against the jaw 41 to keep it apart from the jaw 40. Now if the next pair of jaws toward the saw are examined (and it is obvious that this pair will show the position of the pair just spoken of when the carrier has rotated an eight part of its path) it will be seen that the tailpiece 53 no longer rides upon the periphery of the cam 100, but is separated from it, and that the head-piece 52 no longer presses against the movable jaw 41, but is away from it, and that the spring 42 presses down to cause the jaws to grasp firmly the nut 70 between them. As the carrier continues to rotate, the nut is brought between the saws, its ovoid ends are removed thereby, and as the carrier continues to rotate the trimmed piece is still held between the jaws which grasp it. When, however, the point 101 of the periphery of the cam-plate 100 is reached, the tail-piece 53 of the tripper 50 comes into contact again with the said periphery and throws forward the head-piece 52 to press against the movable jaw 41 to move it away from the fixed jaw 40, and thus to cause it to loosen its grasp upon the trimmed piece of nut, which is thereby permitted to drop. The jaw remains open until the tailpiece of the tripper 50 again reaches the point 102, when the parts are closed by the action of the spring 42.

What I claim as new is—

1. In an apparatus of the kind described, the combination of a stationary cam-disk, a rotary endless carrier adjacent thereto and concentric therewith, a series of fixed jaws on the carrier, a series of corresponding movable jaws on the carrier, a spring pressing each movable jaw toward the corresponding fixed jaw, and a trip for each pair of jaws pivoted to the carrier and operated by the cam to force the movable jaw away from the fixed jaw at a predetermined point in the rotation of the carrier.

2. In an apparatus of the kind described, the combination of a stationary cam-disk, a rotary endless carrier-plate by the side thereof and concentric therewith, a series of fixed jaws secured on the opposite face of the carrier-plate, corresponding movable jaws on the same side of the plate normally spring-pressed toward the movable jaws, a series of shafts passing through apertures in the carrier-plate, a tripper head-piece secured on each shaft between each pair of jaws, and a tripper-tailpiece on the opposite end of each shaft in position to be operated by the cam to open the jaws at predetermined times.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN HORMBY.

Witnesses:

ROSE LEVI,

CARRIE B. THOMPSON.