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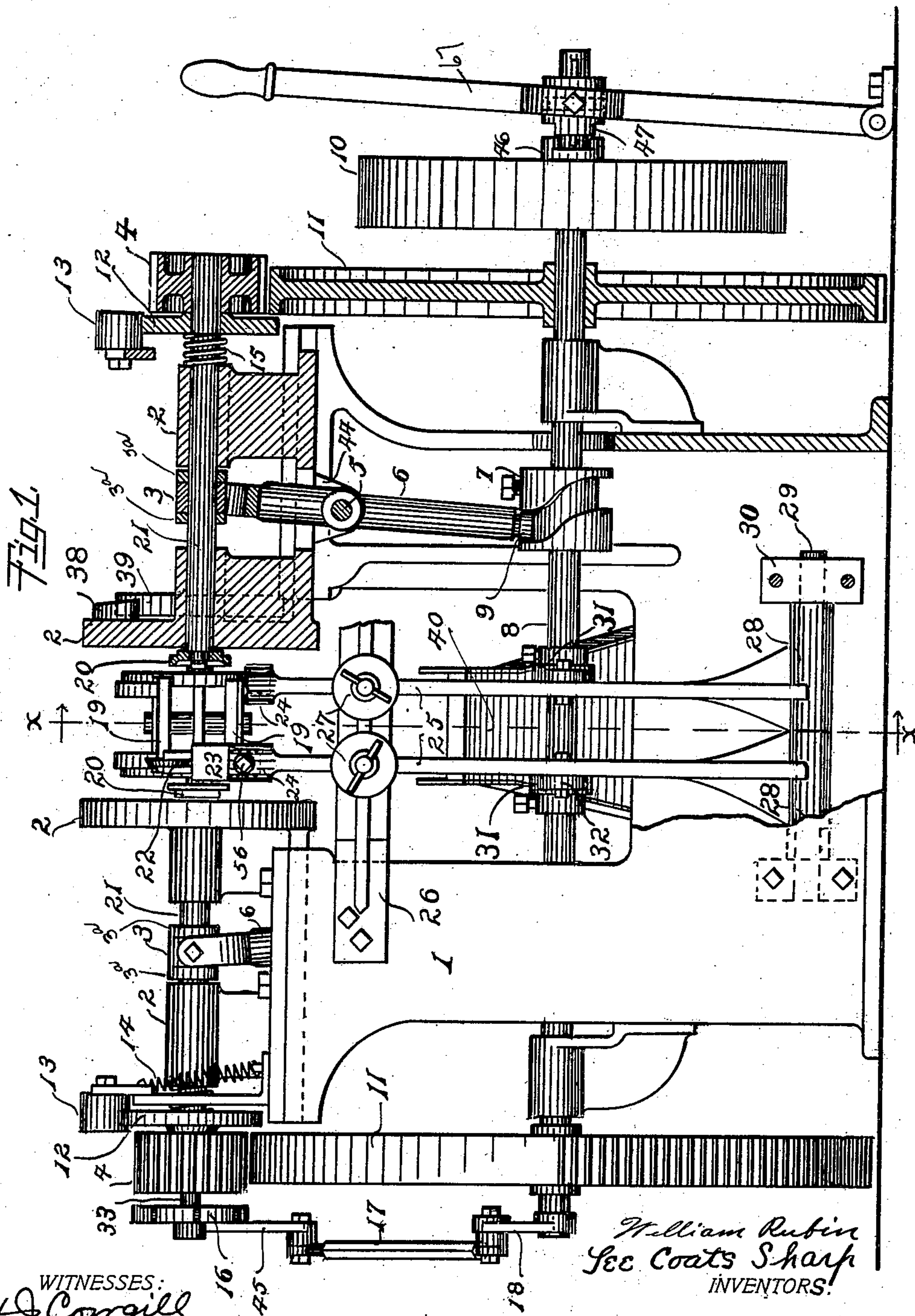
Patented Feb. 11, 1902.

W. RUBIN & L. C. SHARP.  
ADJUSTABLE SQUARE CAN HEADING MACHINE.

(Application filed June 21, 1901.)

(No Model.)

3 Sheets—Sheet 1.



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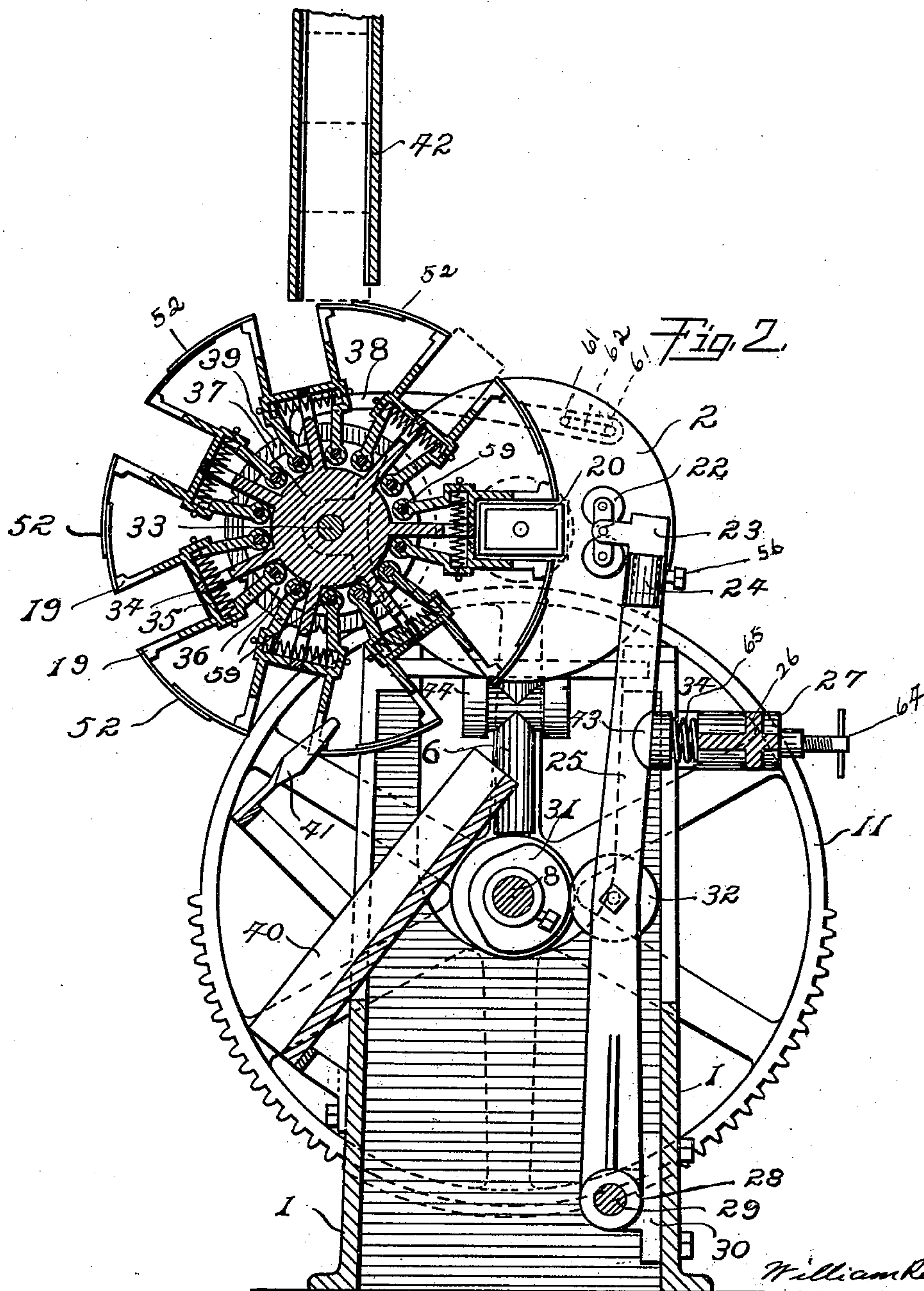
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WITNESSES:  
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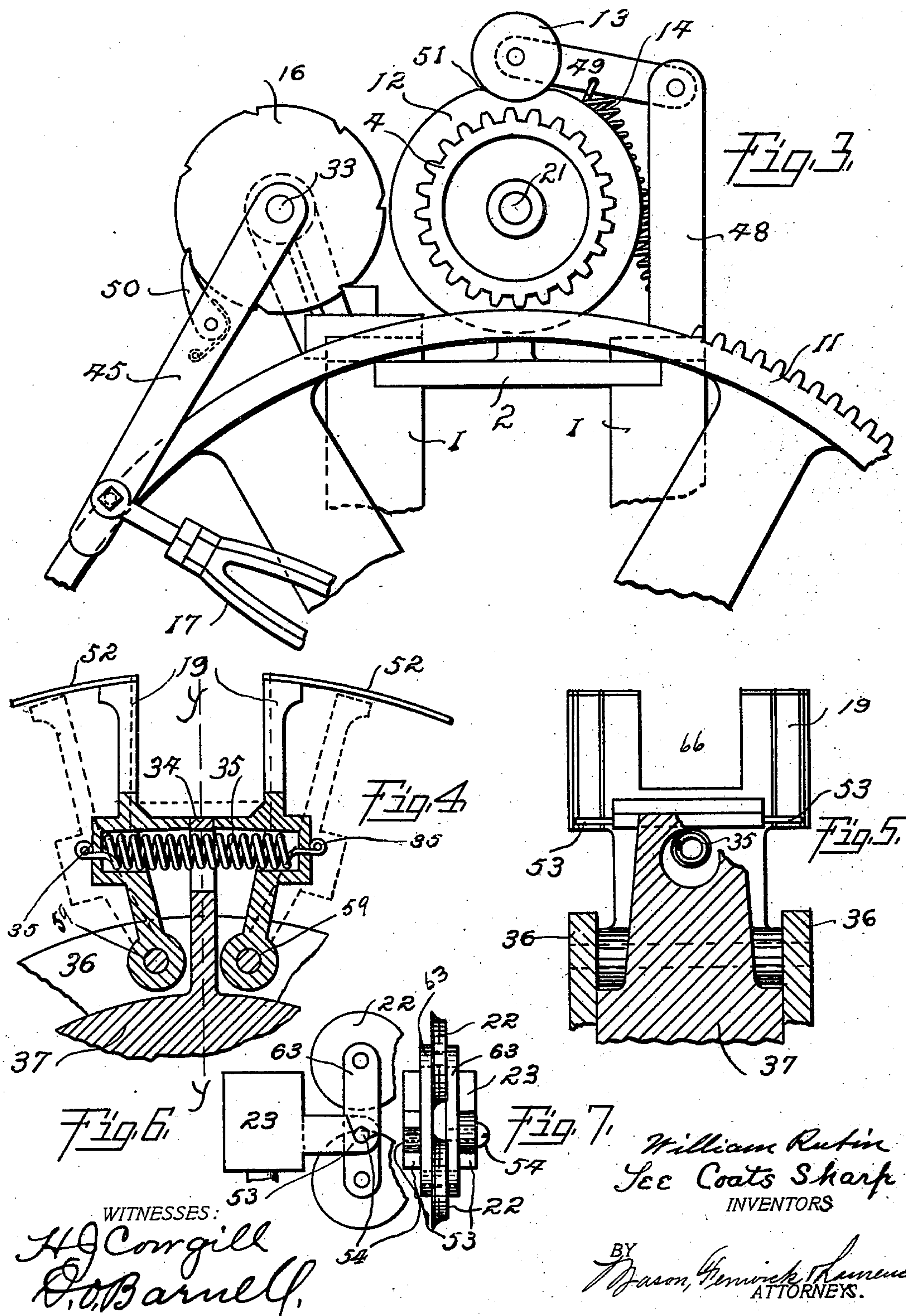
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# UNITED STATES PATENT OFFICE.

WILLIAM RUBIN, OF SOUTH OMAHA, AND LEE COATS SHARP, OF OMAHA,  
NEBRASKA.

## ADJUSTABLE SQUARE-CAN-HEADING MACHINE.

SPECIFICATION forming part of Letters Patent No. 692,912, dated February 11, 1902.

Application filed June 21, 1901. Serial No. 65,479. (No model)

*To all whom it may concern:*

Be it known that we, WILLIAM RUBIN, residing at South Omaha, and LEE COATS SHARP, residing at Omaha, in the county of Douglas and State of Nebraska, citizens of the United States, have invented certain new and useful Improvements in Adjustable Square-Can-Heading Machines; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to can-heading machines for heading square or irregular-shaped cans.

The objects of the invention are, first, to provide a simple device for crimping or double-seaming the heads on square or irregular-shaped cans; second, to provide an independent adjustment for each part of the machine; third, to provide elastic carriers for the can bodies, heads, and bottoms which will admit of the cans being rotated on their longitudinal axes during the crimping or seaming process without being removed from the carriers.

In the accompanying drawings, Figure 1 represents a view in side elevation of a machine embodying our invention, portions being broken away to more fully show the parts. Fig. 2 represents a sectional view of the machine on the plane indicated by the broken line *xx* of Fig. 1. Fig. 3 represents a view in end elevation of the feeding mechanism of the can-carriers and driving and holding mechanism of the can-holder shafts. Fig. 4 represents a detail sectional view of one of the extensible can-carriers. Fig. 5 represents a sectional view on the plane indicated by the broken line *yy* of Fig. 4. Fig. 6 represents a view in side elevation of one of the blocks which carry the crimping or seaming rollers. Fig. 7 represents a view in front elevation of the same.

Like numerals indicate the same parts wherever they occur in the various figures of the drawings.

The machine is supported upon a suitable base 1, upon which are adjustably secured two bearing-heads 2, in which are journaled two shafts 21. Said shafts are in line with each other and are provided upon their opposite

inner ends with can-holders 20. The shafts are given an intermittent reciprocating motion by the rocker-arms 6, which are pivoted at 5 between lugs 44, depending from the bottom of the bearing-heads 2, and are provided with rollers 9, which run in grooves of cams 7, secured upon the shaft 8, journaled in bearings upon the frame 1, the upper ends of the rocker-arms being forked to embrace cross heads or collars 3, loosely secured on said shafts 21 between fixed collars 3<sup>a</sup>, as clearly shown in Fig. 1, so as to permit of the free rotation of the shafts in the cross-heads. The shaft 8 is driven by power applied to the pulley 10, which is provided with an ordinary clutch device 46 and 47, operated by a lever 67. Secured to the shaft 8 are two large segmental gear-wheels 11, which during a portion of their revolution engage with the pinions 4 and rotate the shafts 21 the required number of times for crimping and seaming a can.

Secured to the shafts 21 are disks 12, having in their peripheries notches 51, Fig. 3. Rollers 13, journaled in links 49, pivoted to standards 48, projecting from the frame, are held against their disks 12 by the tension of springs 14, connecting the links and arms. At the end of the engagement of the toothed portions of the gears 11 with the pinions 4 the rollers 13 drop into the notches 51 and hold the shafts 21 stationary until the toothed segments of the gears 11 again mesh with the pinions 4, when the shafts are again rotated, the rollers 13 riding out of the notches. Springs 15, coiled upon shafts 21 outside of heads 2, serve to normally and yieldingly press and hold disks 12 in position against pinions 4, the latter being rigidly secured on the shafts.

Shaft 33 carries the can-feeding device, which comprises a plurality of carriers arranged radially about a common center, as is shown in Fig. 2. Said carriers consist of jaws 19, which are pivoted at 59 between the plates 36 36, which form peripheral flanges on hub 37, and are normally held together by the tension of the springs 35, attached to pins 53 on the jaw 19. Between the jaws and extending radially from the central block or hub 37 are arms 34, which serve to hold the jaws 19 in a definite radial position. In Fig. 4 is



shown in dotted lines the position of the jaws during the crimping or seaming operation and while the can is being rotated.

Curved plates 52 are secured to the jaws 5 19, and the plate of each jaw laps over the plate of the jaw of the next can-carrier, so that the spaces between the carriers are always closed and all danger of cans from the feed-chute 42 passing between adjacent carriers is 10 thereby avoided.

In the operation of the machine can bodies, heads, and bottoms are fed into the chute 42, whence they drop between the jaws of the carriers. The hub and carriers are rotated 15 intermittently by a ratchet-disk 16 on shaft 33, which is operated by the spring-pressed pawl 50 on lever 45, the connecting-link 17, and the crank 18 on the shaft 8. As the cans, bodies, heads, and bottoms come between the 20 can-holders 20 on the inner ends of the shafts 21, the spring-pawl 38, held to head 2 by pins 61 61, passing through slot 62, drops into one of the notches on a disk 39 on the shaft 33, and the feed mechanism is held stationary 25 during the crimping or seaming operation. As the cans come into position the holders 20 are pushed inward by rock-levers 6, as before described, and hold the can, which at the same time is rotated by the gears 11 and pinions 4, 30 as described. The crimping or seaming rollers are at the same time brought into position and the heads and bottoms are crimped or double seamed upon the can-body. The revolution of the square can is permitted by the 35 yielding opening and closing of the jaws 19 of the can-carriers, as before described. As the rotation of the can-feeding mechanism is continued the finished cans are removed from the carriers by the ejector 41 and drop into 40 chute 40, from whence they are received in any suitable receptacle. The spring-actuated levers 25 and double loosely-pivoted rollers 22 are especially adapted to following the outline of and crimping or seaming square or 45 other irregular-shaped cans.

All the parts of the machine are independently adjustable and are so strongly and economically constructed that wear or liability to breakage is reduced to a minimum.

At 22 are indicated two pairs of crimping 50 and seaming rollers, each pair pivoted between the opposite ends of parallel bars 63, mounted loosely on pivot-pins 54, secured in lugs 53, projecting from blocks 23, these 55 blocks carrying shanks extending downwardly therefrom and engaging sockets formed in the upper ends or heads 24 of the levers 25, secured in position by set-screws 56 in the said upper ends or heads 24. The levers 25 have hubs 28 at their lower ends provided with trunnions 29, journaled in lugs 30, projecting from the frame 1. In a bracket 26, bolted to the frame 1, are sockets 27, in which are seated springs 65, bearing against 65 the bottom of cups 43, secured or formed upon the levers 25, said springs being regulated as to their tension by set-screws 64, projecting

through the walls of the socket 27, the said springs forcing the levers 25 toward the shaft 8, their distance therefrom being regulated 70 by means of press-rollers 32, which are pivoted to levers 25 and bear against cams 31, secured to shaft 8. There are two sets of double crimping-rollers 22, one for the head and one for the bottom of the cans, each set 75 being independently and yieldingly pressed against the cans while they are being revolved during the crimping and seaming operation.

At 40 is indicated a discharge-chute secured below the can-carriers, and 41 indicates 80 an ejector rigidly secured, so that the notches 66 in the jaws 19 of the can-carriers will pass over it, and thus insure the removal of the can already seamed or crimped from between the jaws and its dropping into the discharge- 85 chute.

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

1. The combination with a suitable frame- 90 work and bearings, of two shafts mounted in said bearings in line with each other and adapted to be intermittently rotated from any suitable power, can-holders on the adjacent opposite inner ends of said shafts, a second 95 shaft, a can-carrier hub mounted thereon, and can-carriers projecting laterally from said hub, each carrier consisting of two jaws and a spring for normally holding them together, the hub being so located that the carriers will 100 be brought into position between the can-holders and the cans will be rotated thereby, substantially as described.

2. The combination with a suitable frame- 105 work and bearings mounted thereon, of can-holders and means for positively actuating them to alternately clamp the can endwise and release the same, a shaft, a head or hub mounted thereon, radially-located can-carriers projecting from said hub, each can-carrier 110 consisting of two can-inclosing jaws pivoted to the head, a spring connecting the said jaws for normally drawing the jaws together upon a can, and telescoping flanges on the adjacent jaws of adjacent pairs for closing 115 the space between the latter, substantially as described.

3. The combination with a can-carrier and means for holding and rotating a can in a carrier, of a lever pivoted to the frame, a head 120 on the lever, lugs upon said head, an arm loosely pivoted at its center between said lugs, crimping-rollers pivoted in the opposite ends of said arm, means for yieldingly pressing the lever toward the can in the carrier, and means 125 for pressing the lever away from the can, substantially as described.

4. In a can heading and crimping machine, a can-feeding mechanism comprising a central hub or disk, can-holders thereon, each 130 consisting of a pair of jaws yieldingly pressed toward each other, and curved plates secured to the ends of the jaws and projecting rearwardly therefrom, the curved plates on the



jaws of one carrier overlapping so as to telescope with the plates on the jaws of the adjacent carriers, substantially as described.

5 A can-feeding mechanism for a crimp-  
ing or seaming machine comprising a hub  
or disk, circular plates forming peripheral  
flanges on each side of said hub or disk, ra-  
dial arms projecting from the hub, can-hold-  
ers projecting from the hub, each side of the  
10 jaw pivoted between peripheral flanges on op-  
posite sides of the arms, and springs passing  
through the arms and secured at their ends  
to the jaws, substantially as described.

6. The combination in a can heading and  
15 crimping machine, of two shafts in line with  
each other, can-holders carried on the inner  
opposite ends thereof, a main shaft, a suit-  
able driving-wheel on the main shaft having  
gear-teeth on a portion of its periphery and  
20 the rest of its periphery plain, a pinion on  
each can-holder shaft adapted to engage the  
teeth of the gear-wheel, a disk on each can-  
holder shaft having a notch in one side, and  
a roller normally pressed against the periph-  
25 ery of the disk and adapted to engage in the

notch thereof, while the smooth portion of the  
periphery of the driving gear-wheel is pass-  
ing the teeth of the pinion, substantially as  
described.

7. The combination with a suitable frame- 30  
work and bearings mounted thereon, of can-  
holders and means for positively actuating  
them to alternately clamp the cans endwise  
and release the same, a can-carrying mech-  
anism, comprising a hub having radially-ex- 35  
tending projections formed thereon, jaws piv-  
oted upon each side of each projection for  
forming can-holding receptacles, the said pro-  
jections forming a center stop for said jaws,  
springs for drawing the said jaws against the 40  
said radial projections for holding the jaws  
against the cans, substantially as described.

In testimony whereof we hereunto affix our  
signatures in presence of two witnesses.

WILLIAM RUBIN.  
LEE COATS SHARP.

Witnesses:

H. M. CHRISTIE,  
A. J. COWGILL.