

No. 765,205.

PATENTED JULY 19, 1904.

A. SHEDLOCK.  
WRAPPING MACHINE.

APPLICATION FILED OCT. 1, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

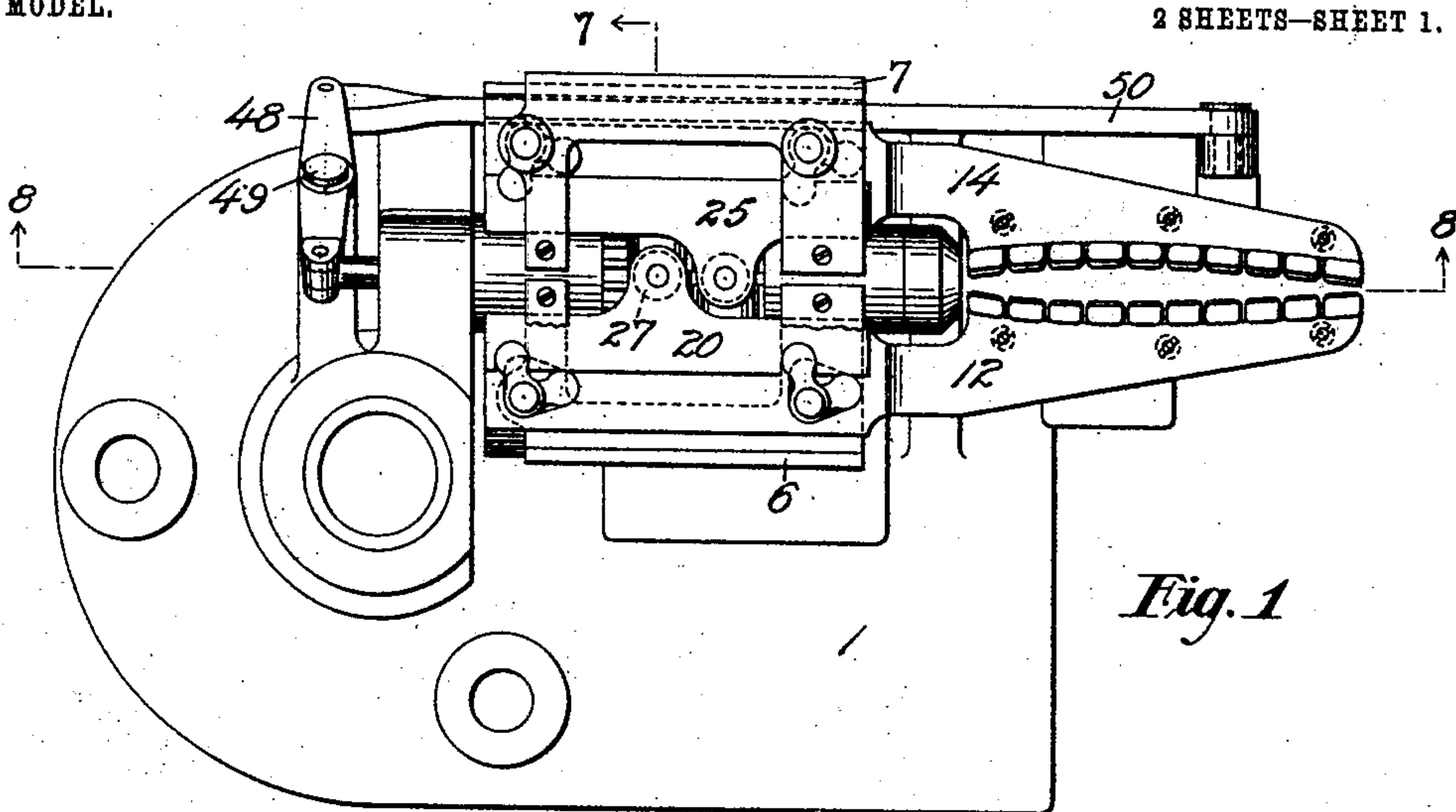


Fig. 1

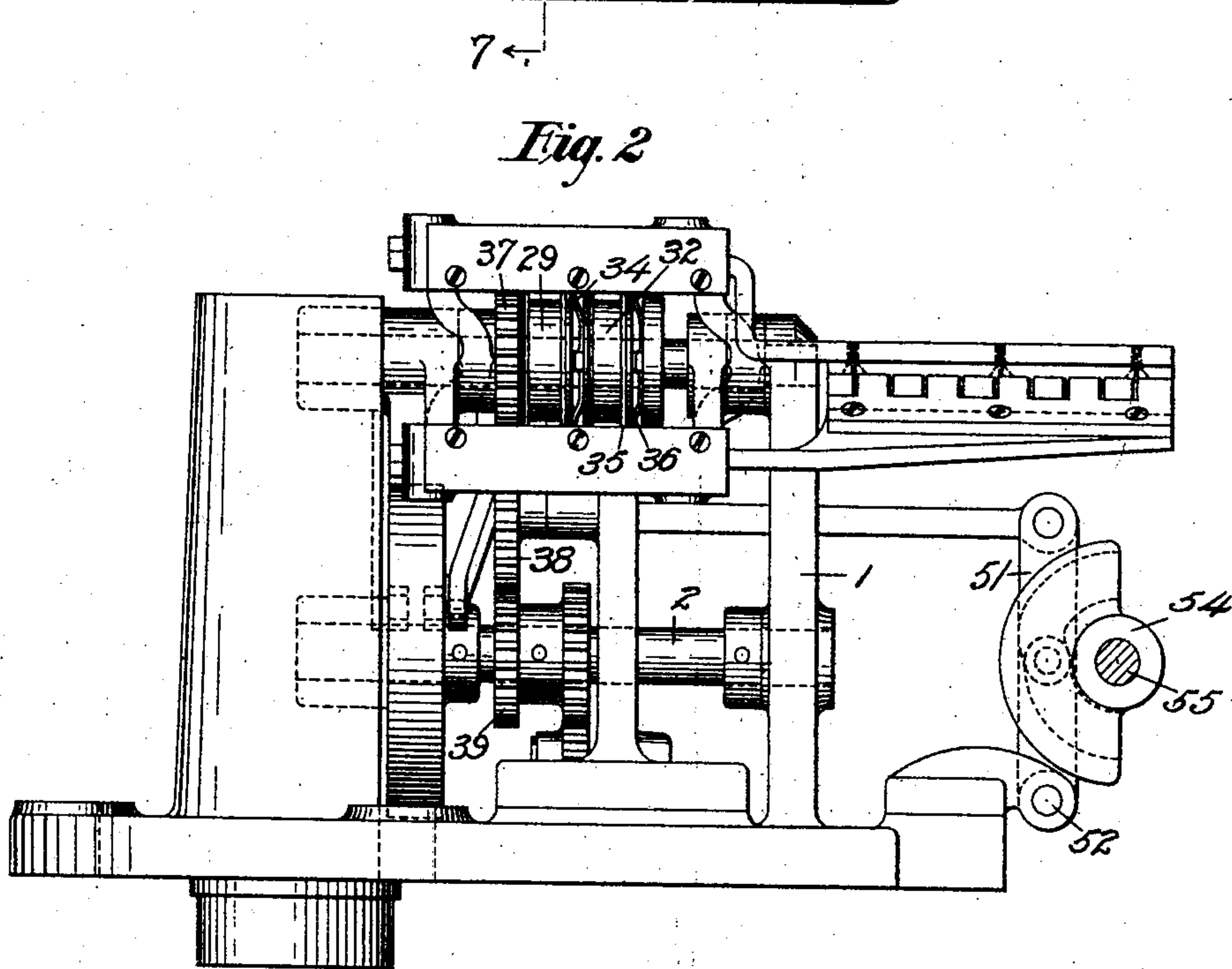


Fig. 2

Fig. 3

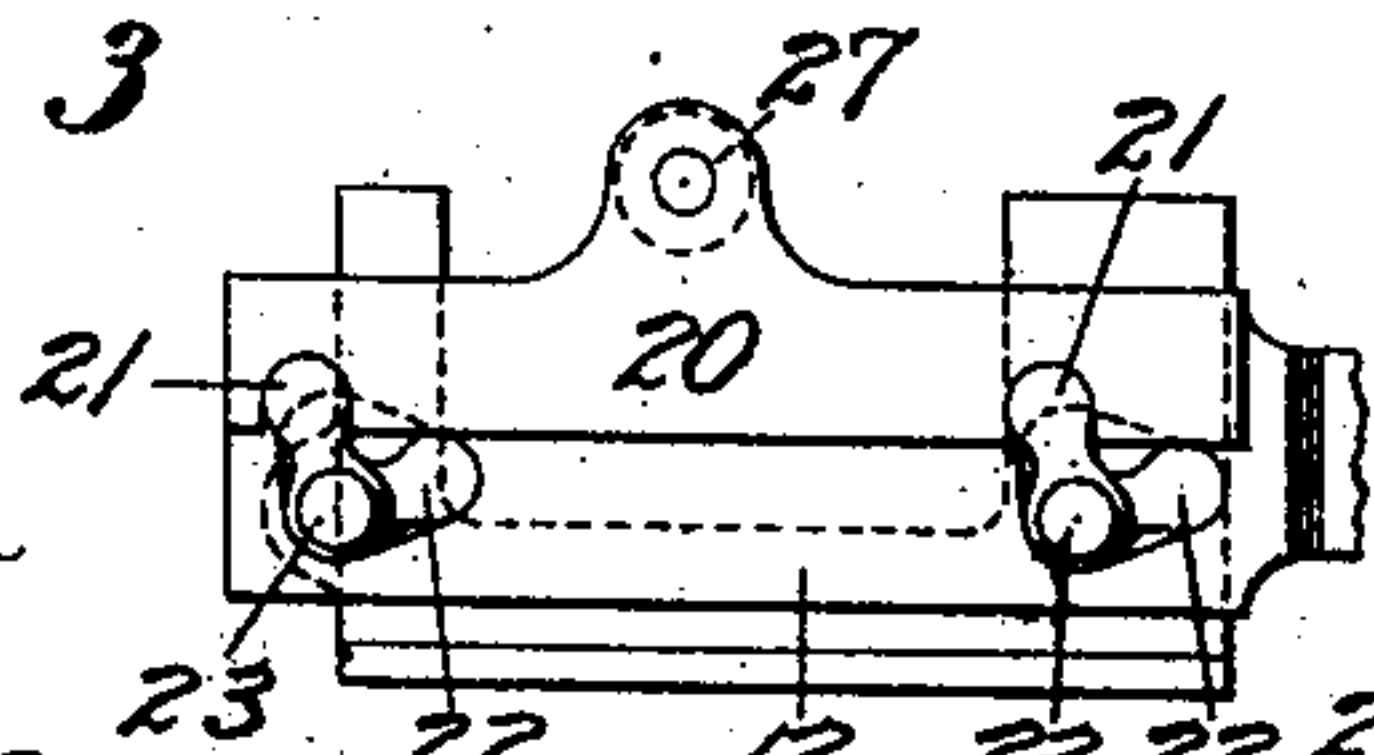
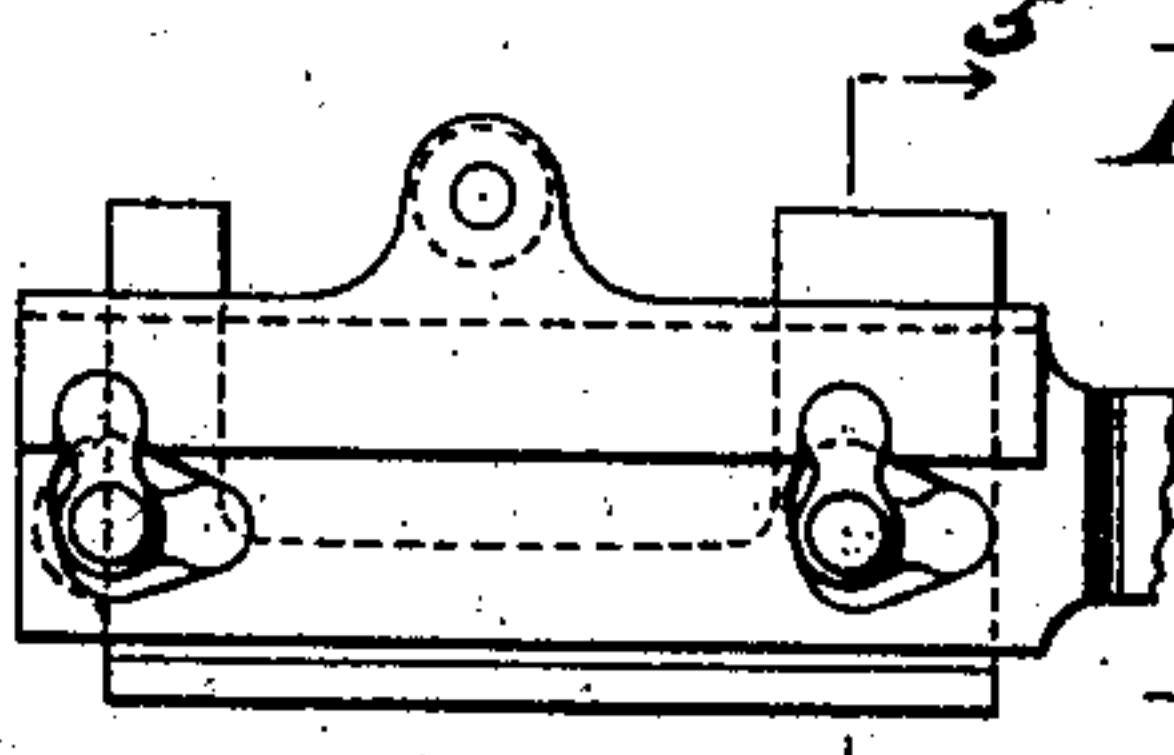


Fig. 4



Attest

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Fig. 5



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# UNITED STATES PATENT OFFICE.

ALFRED SHEDLOCK, OF JERSEY CITY, NEW JERSEY, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE AMERICAN TOBACCO COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

## WRAPPING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 765,205, dated July 19, 1904.

Application filed October 1, 1902. Serial No. 125,507. (No model.)

*To all whom it may concern:*

Be it known that I, ALFRED SHEDLOCK, a citizen of the United States, residing at Jersey City, county of Hudson, and State of New Jersey, have invented certain new and useful Improvements in Wrapping-Machines, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to certain improvements in cigar-machines.

In cigar-machines of the type in which the bunch is wrapped by means of a wrapping jaw or jaws the said (jaw or jaws) is oscillated about a center which corresponds with the axis of the bunch which is being operated on. In such machines the carriers for the jaws are so mounted that the weight is substantially all on one side of the center around which the jaws turn, so that the jaws instead of being properly balanced with respect to their center of movement are overbalanced. It has been found in practical operation that it is exceedingly difficult to run machines equipped with these overbalanced jaws at high rates of speed and that, furthermore, when they are so run excessive wear results.

It is the object of this invention to produce an improved machine employing a wrapping jaw or jaws turning about a center which corresponds with the axis of the bunch being operated upon, the jaws being so located and arranged with respect to this center that they are counterbalanced.

A further object of the invention is to improve the devices by which said jaws are operated.

With these and other objects in view the invention consists in certain constructions and in certain parts, improvements, and combinations, as will be hereinafter fully described and then specifically pointed out in the claims hereunto appended.

In the accompanying drawings, Figure 1 illustrates in plan view one form of machine embodying the invention. Fig. 2 is a side view of the machine shown in Fig. 1. Figs. 3 and 4 are detail plan views illustrating cer-

tain parts. Fig. 5 is a section on the line 5 5 of Fig. 4. Fig. 6 is an end view of the machine shown in Fig. 1. Fig. 7 is a section on the line 7 7 of Fig. 1. Fig. 8 is a section on the line 8 8 of Fig. 1. Figs. 9 and 10 are detail sectional views.

Referring to the drawings, which illustrate one concrete embodiment of the invention, 1 indicates the frame of the machine, which may be of any desired construction and configuration. This frame serves to support a main cam-shaft 2, which may be driven in any suitable manner. As shown, it is provided with a gear 3, which is in mesh with a driving-gear 4, which is operated from any suitable source of power.

In the machine which has been selected for the purpose of illustrating the invention the wrapping is accomplished by two pairs or sets of wrapping-jaws, which are distinguished from the jaws of prior machines employing wrapping-jaws by the fact that in this machine the jaws are counterbalanced, so as to reduce the inertia of the parts, thereby making it possible to run the machine at higher speeds and also to greatly reduce the friction and wear. It will be understood, however, that while the machine shown employs a plurality of jaws the invention includes machines in which the wrapping is effected by a single jaw properly counterbalanced, said jaw having suitable cooperating wrapping means co-acting therewith.

The construction by which the jaws are mounted so as to be counterbalanced may be varied widely. As shown, there is mounted in the frame a support 5, on which are mounted two carriers 6 and 7. The carrier 6 is provided with a bearing 8, which surrounds the support 5, and with a bearing 9, which also surrounds said support. The carrier 7 is provided with two similar bearings 10 and 11, which also surround the support. It will be seen by referring more especially to Figs. 6, 7, 9, and 10 that the carriers 6 and 7 have two wings or extensions, one wing or extension lying on one side of the support 5 and the other lying on the other side of said support. These



wings are constructed so that the carrier as a whole is exactly counterbalanced, the weight on each side of the support being equal.

The wrapping-jaws are supported in the carriers, the construction by which this is effected being of any suitable description. As shown, the carrier 6 is formed with wings in which are mounted slides 12 and 13, and the carrier 7 is provided with similar ways, which support slides 14 and 15. The forward end of each slide is given an angular bend to provide a wrapping-jaw, and to the projecting portions thus formed manipulator-fingers are secured, thus forming wrapping-jaws. The wrapping-jaw on the slide 12 is marked 16 and that on the slide 13 is marked 17. Similarly the jaw on the slide 14 is marked 18, and the jaw on the slide 15 is marked 19. These wrapping-jaws are so arranged as to inclose a space which corresponds in configuration to the bunch to be wrapped, and as usual in this type of machines the space is so arranged that the axis of the bunch corresponds to the axial line of the support 5 on which the carriers which support the jaws are mounted. The several slides and wrapping-jaws are so arranged that the jaws and slides of each pair counterbalance each other.

As usual in this type of machines, the jaws of each pair are given a movement toward and away from each other and from the axial center of the bunch to be wrapped, the movements being so timed that one pair of jaws moves in and seizes the bunch as the other pair of jaws retreats therefrom. Inasmuch as in the present machine the jaws are carried on slides, this to-and-fro movement is effected by moving the slides. The construction by which the movement of the slides is effected may be widely varied. As shown, the slide 12 has overlying it a slide 20, said slide having in engagement therewith the arms 21 of two bell-cranks 21 22, which are pivoted at 23 to the carrier 6. The arms 22 of these bell-cranks are in engagement with the slide 12. It is apparent that by giving the slide 20 a reciprocating motion the slide 12 will also be given a reciprocating motion at right angles to the movement of the slide 20 and that this movement will give the jaw carried by the slide 12 a movement toward and away from the corresponding jaw, which is carried by the slide 13, said slide being the slide which is mounted in the other end of the carrier 6. The slide 13 is moved by means of a slide 24, which is similar in all respects to the slide 20, the connecting bell-cranks being also similar. The slide 14 is moved by a slide 25 and the slide 15 by a slide 26. The construction intermediate the slides 25 and 14 and between the slides 26 and 15 is the same as that which has just been described, and a further description is therefore unnecessary.

The movement of the slides 20, 24, 25, and 26 may be effected by any desired construc-

tion. As shown, the slide 20 is provided with a cam-roll 27, and the slide 24 is provided with a cam-roll 28, these rolls being arranged to engage a cam 29, which is loosely mounted on the support 5. Similarly the slides 25 and 26 are provided with cam-rolls 30 and 31, these rolls being in engagement with a cam 32, which is mounted on and secured to a long hub 33, extending from the side of the cam 29. These cams 29 32 are so timed that the corresponding movements of the slides produced thereby take place alternately, so that one pair of jaws is moved in to seize the bunch as the other is moved out to release it.

It frequently happens in wrapping cigars that the bunches vary in size. If, therefore, the movement of the jaws toward the bunch was unvarying, the operation of the jaws on the bunch would be unequal. Means are therefore preferably provided for permitting the jaws to yield slightly, if necessary, as they come in contact with the bunch. The means by which this yielding movement is accomplished may be varied in construction. As shown, the cam 29 is provided with a yielding operating side 29', said side being held in position by means of a spring-disk 34. Similarly the cam 32 is provided with a yielding side 35, which is held in position by means of a spring-disk 36. The cams are so arranged that the jaws will operate without yielding upon a bunch of the smallest size, and in case a larger bunch is to be wrapped the jaws will yield according to the diameter of the bunch. The cams 29 and 32 may be driven in any desired manner. As shown, the cam 29 has secured thereto a gear 37, which is in mesh with an idle gear 38, said gear being in mesh with a gear 39, which is mounted on the main cam-shaft 2. 105

In order to produce the wrapping movement of the jaws, it is necessary in the machine shown to give the carriers a swinging movement about the center on which they are mounted. This may be effected in any desired manner. As shown, the carrier 6 has secured thereto an arm 40, which has on its end a cam-roll which engages with a cam-groove 41 in a cam-disk 42, mounted on the shaft 2. Similarly the carrier 7 is provided with an arm 43, the cam-roll of which engages with a cam-groove 44 in the opposite side of the cam-disk 42. These cam-grooves are so arranged that the swinging movements of the carriers take place in opposite directions, so that one set of jaws is executing its wrapping movement while the other set is opened and being returned for a fresh grip on the bunch. Means are also provided for opening the jaws in order to discharge a wrapped bunch and also to enable them to receive a fresh bunch to be wrapped. These means may be varied widely in construction. As shown, this is accomplished by giving the cams 29 and 32 a sidewise movement in addition to their rotary 130



movement. To accomplish this, there is shown a plunger 45, which extends through the support 5, said support being bored out for this purpose. This plunger 45 is connected by means of a pin 46 to a loose collar 47, which bears against the hub of the cam 29. The outer end of the plunger 45 is connected to a lever 48, pivoted at 49 to the frame of the machine and having connected thereto an operating-rod 50. This rod 50 is in turn connected to a lever 51, which is pivoted at 52 to a bracket on the frame of the machine, said lever having a cam-roll 53, which engages with a groove in a cam 54, mounted on a cam-shaft 55, suitably mounted in the frame of the machine. The driving means for this cam-shaft has been omitted in the interest of clearness.

While the construction which has just been described constitutes a preferred embodiment of the invention, it is to be understood that the invention may be embodied in constructions which differ widely therefrom. It is also to be understood that certain features of the invention are capable of use independently of the other features and of use in machines in which the wrapping-jaws are not counterbalanced. Furthermore, while the machine in which the invention is shown as embodied is intended for wrapping cigars it is to be understood that machines embodying the invention are capable of use for other purposes than wrapping cigars. The invention is not therefore to be limited to the specific form of construction described or to the specific use described.

What is claimed is—

1. In a wrapping-machine, the combination with a counterbalanced wrapping-jaw, of means for swinging it about a center, and co-operating wrapping means, substantially as described.

2. In a wrapping-machine, the combination with a pair of counterbalanced coöperating wrapping-jaws, of means for swinging the jaws about a common center, substantially as described.

3. In a wrapping-machine, the combination with a pair of wrapping-jaws arranged upon opposite sides of a center and counterbalancing each other, of means for swinging the jaws about said center, substantially as described.

4. In a wrapping-machine, the combination with a counterbalanced wrapping-jaw, of co-operating wrapping means, and means for swinging the jaw about and moving it toward and away from a center, substantially as described.

5. In a wrapping-machine, the combination with a pair of coöperating counterbalanced wrapping-jaws, of means for swinging the jaws about and toward and away from a common center, substantially as described.

6. In a wrapping-machine, the combination with a pair of counterbalanced wrapping-jaws arranged upon opposite sides of a center and

counterbalancing each other, of means for swinging the jaws about and moving them toward and away from said center, substantially as described.

7. In a wrapping-machine, the combination with a counterbalanced wrapping-jaw and co-operating wrapping means, of means for swinging the jaw about a center, and means for reciprocating it toward and away from said center, substantially as described.

8. In a wrapping-machine, the combination with a pair of coöperating counterbalanced wrapping-jaws, of means for swinging the jaws about a common center, and means for reciprocating the jaws toward and away from said center, substantially as described.

9. In a wrapping-machine, the combination with a carrier mounted to turn about a center, of a pair of wrapping-jaws said jaws being mounted on the carrier on opposite sides of the center, and the jaw and that part of the carrier on one side of the center counterbalancing the jaw and that part of the carrier on the other side of the center, and means for moving a jaw toward and away from said center, substantially as described.

10. In a wrapping-machine, the combination with a plurality of carriers mounted to turn about a common center, of a pair of oppositely-arranged jaws mounted on each carrier one jaw of each pair and the part of the carrier on which it is mounted counterbalancing the other jaw of the pair and the part of the carrier on which it is mounted, means for swinging the carriers about said center, and means for moving the jaws of each pair toward and away from the center, substantially as described.

11. In a wrapping-machine, the combination with a pair of counterbalanced carriers mounted to turn about a common center, of a pair of oppositely-arranged jaws mounted on each carrier, a pair of slides for each pair of jaws, said slides operating to move the jaws toward and away from said center, one slide and jaw of each pair counterbalancing the other slide and jaw of the pair, and means for swinging the carriers about said center, substantially as described.

12. In a wrapping-machine, the combination with a carrier mounted to turn about a center, of a pair of wrapping-jaws mounted on said carrier on opposite sides of the center, a pair of slides mounted in the carrier, the jaw and slide and that part of the carrier lying on one side of the center counterbalancing the jaw and slide and that part of the carrier lying on the other side of the center, means for swinging the carrier about said center, and means for operating the slides to move the jaws toward and away from the center, substantially as described.

13. In a wrapping-machine, the combination with a pair of carriers mounted to turn about a common center, each of said carriers being



provided with a way on each side of the center, a slide located in each of said ways, a pair of oppositely-arranged wrapping-jaws carried by each pair of slides, cams and suitable operating connections for operating the slides alternately to move the jaws toward and away from said center, one slide and jaw of each pair, the operating connections and that part of the carrier on one side of the center counterbalancing the other slide and jaw of the pair, the operating connections and that of the carrier on the other side of the center, and cam-operating means for swinging the carriers alternately about said center, substantially as described.

14. The combination with a support, of a pair of carriers mounted to swing about said support as a center, a pair of jaws mounted on each carrier on opposite sides of the support, the jaw and that part of a carrier on one side of the support counterbalancing the jaw and that part of the carrier on the other side of the support, means for swinging the carriers alternately about the support, means for moving each pair of jaws alternately toward and away from the center, and means for simultaneously moving all the jaws toward and away from the center to open and close the same, substantially as described.

15. In a wrapping-machine, the combination with a support, of a pair of carriers mounted to swing about said support as a center, ways formed in the carriers on opposite sides of the support, slides mounted in said ways, a pair of oppositely-arranged wrapping-jaws carried by each pair of slides, cams and suitable connections for operating the slides to move said pairs of jaws alternately toward and away from the center, the jaw, slide and that part of the carrier lying on one side of the support counterbalancing the jaw, slide and that part of the carrier lying on the other side of the support, and means for simultaneously moving all the jaws toward and away from the center to open and close them, substantially as described.

16. In a wrapping mechanism, the combination with a support, of a pair of carriers mounted to swing about the support as a center, a pair of oppositely-arranged jaws mounted on each carrier, the jaw and that part of the carrier on one side of the support counterbalancing the jaw and that part of the carrier on the other side of the support, cam-operated means for alternately swinging the carriers about the support, cams and suitable connections for alternately moving the pairs of jaws toward and away from the center, and means for operating said cams and connections to simultaneously move all the jaws away from and toward each other to open and close the jaws, substantially as described.

17. In a wrapping-machine, the combination with a pair of oppositely-arranged wrapping-jaws, of means for positively moving the jaws

away from each other, and yielding means including a cam for moving the jaws toward each other, substantially as described.

18. In a wrapping-machine, the combination with a plurality of pairs of oppositely-arranged wrapping-jaws, of cams for moving the jaws of each pair toward and away from each other, said cams having yielding sides, substantially as described.

19. In a wrapping-machine, the combination with a support, of a pair of carriers mounted to turn about said support as a center, a pair of oppositely-arranged wrapping-jaws mounted on each carrier, the jaw and that part of the carrier on one side of the support counterbalancing the jaw and that part of the carrier on the other side of the support, means for alternately swinging the pairs of jaws about the support, cams and suitable connections for moving the jaws of each pair toward and away from each other, and means for giving the cams a movement to simultaneously move all the jaws away from and toward each other, substantially as described.

20. In a wrapping-machine, the combination with a support, of a pair of carriers mounted to turn about the support as a center, a way located on each side of the center of each carrier, a slide located in each way, a wrapping-jaw carried by each slide, connections between the two slides of each carrier, the slide, jaw and that part of the carrier on one side of the support counterbalancing the slide, jaw and that part of the carrier on the other side of the support, means including a cam for alternately swinging the carriers about the support, and cams for operating the slides to move the jaws of each pair toward and away from each other, substantially as described.

21. In a wrapping-machine, the combination with a support, of a pair of carriers mounted to turn about the support as a center, a way located on each side of the center of each carrier, a slide located in each way, a wrapping-jaw carried by each slide, connections between the two slides of each carrier, the slide, jaw and that part of the carrier on one side of the support counterbalancing the slide, jaw and that part of the carrier on the other side of the support, means including a cam for alternately swinging the carriers about the support, cams for operating the slides to move the jaws of each pair toward and away from each other, and means for operating the cams to simultaneously move all the jaws toward and away from each other, substantially as described.

22. In a wrapping-machine, the combination with a support, of a pair of counterbalanced carriers mounted thereon, oppositely-arranged counterbalanced jaws mounted on the carriers, a driven shaft, cams mounted on said shaft, operating connections between the cams and the carriers, said cams and connections being arranged to alternately swing the carriers,



cams operated from the driven shaft, and means whereby said cams move the jaws on each carrier toward and away from each other, the jaws on one carrier being opened when  
5 the jaws on the other carrier are closed, substantially as described.

In testimony whereof I have hereunto set

my hand in the presence of two subscribing witnesses.

ALFRED SHEDLOCK.

Witnesses:

GEO. H. SNYDER,  
SYDNEY IRVIN PRESCOTT.