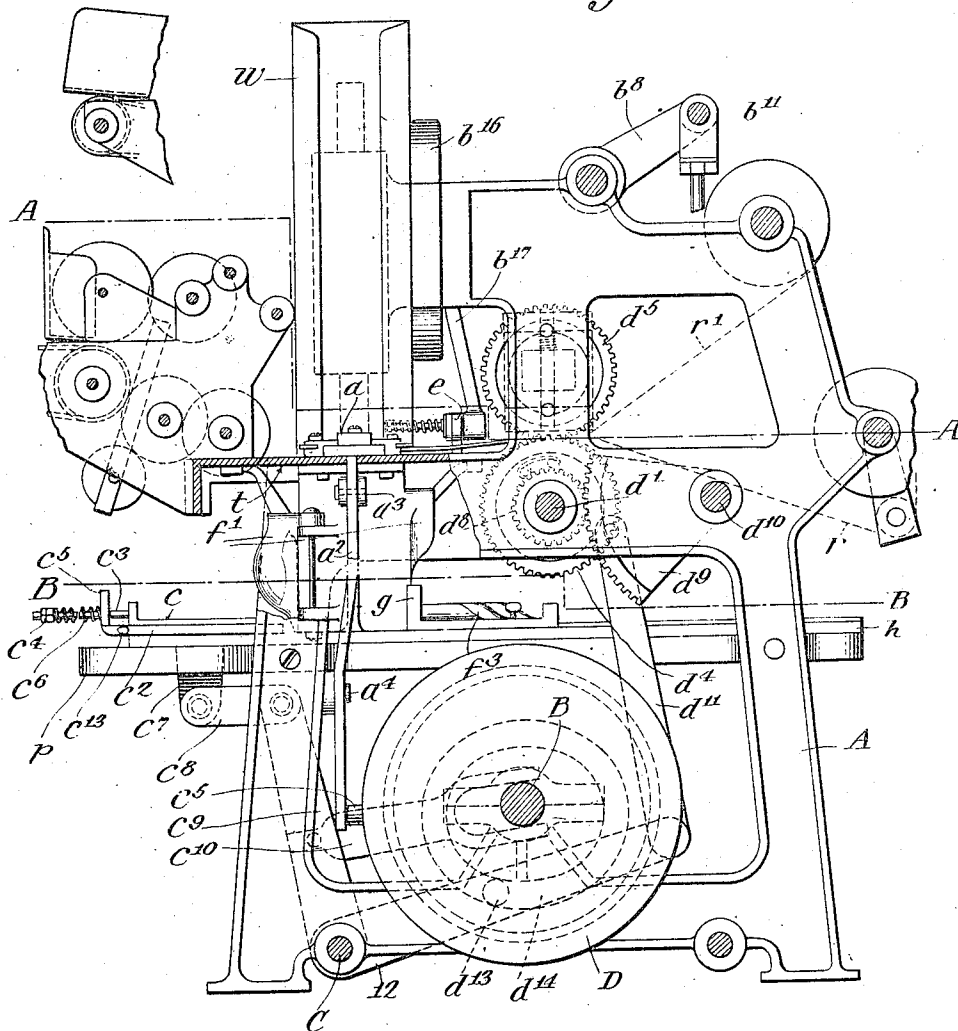


T. G. McGIRR.
WRAPPING MACHINE.
APPLICATION FILED FEB. 2, 1909.

949,803.

Patented Feb. 22, 1910.
4 SHEETS—SHEET 1.

Fig. 1.



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A. M. Berg.

Inventor:
Theodore G. McGirr,
By Samuel F. Watson,
his Attorney.

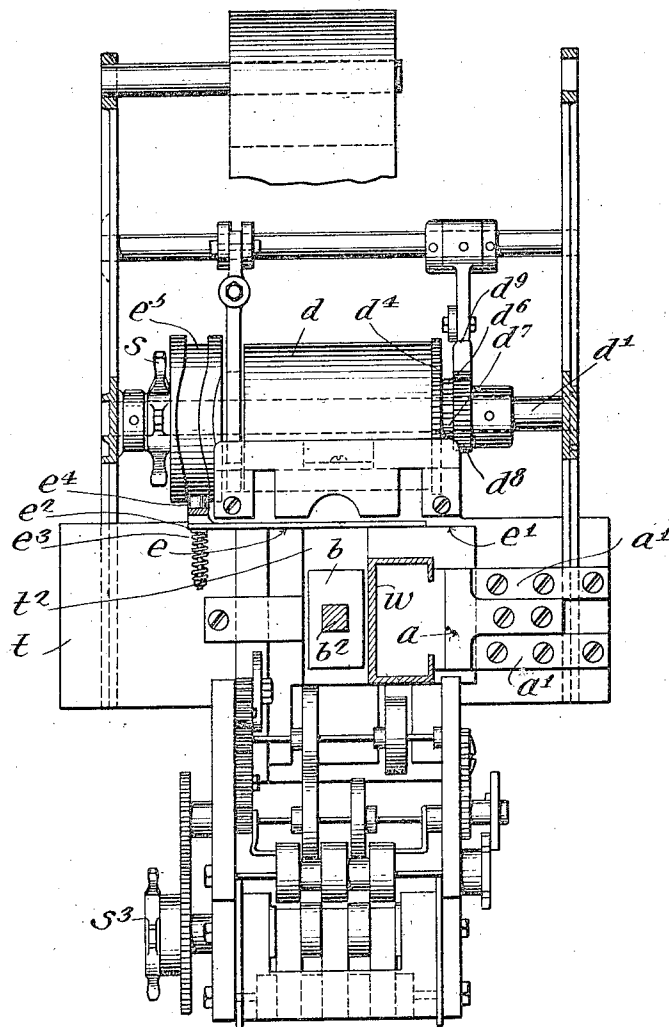
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4 SHEETS—SHEET 3.

Fig. 3.



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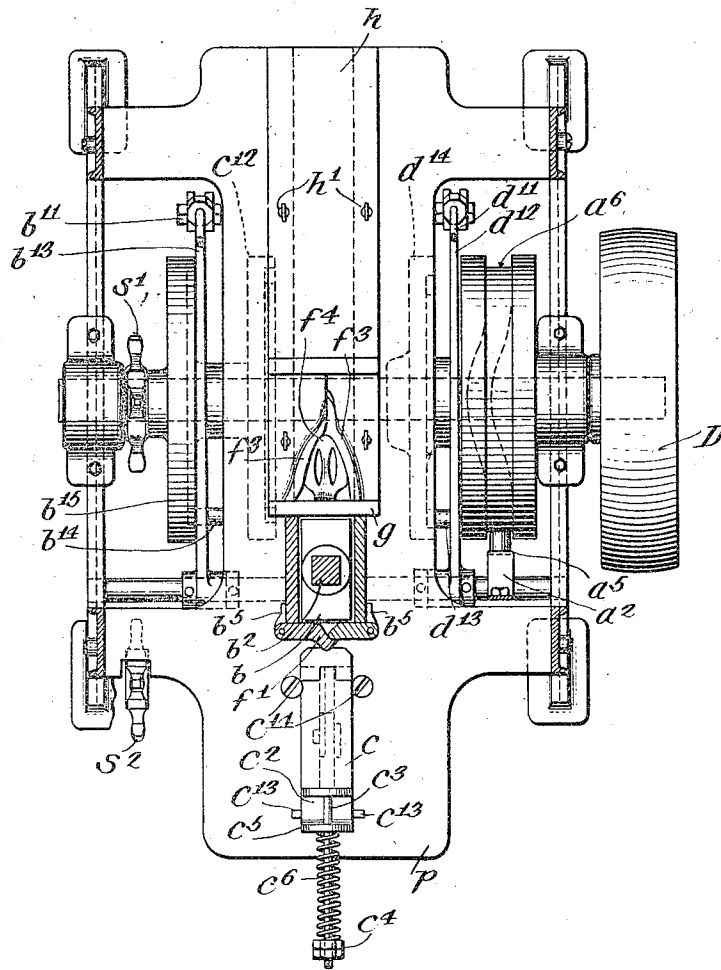
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4 SHEETS—SHEET 4.

Fig. 4.



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UNITED STATES PATENT OFFICE.

THEODORE G. MCGIRR, OF NEW YORK, N. Y., ASSIGNOR TO ACME WRAPPING MACHINE COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

WRAPPING-MACHINE.

949,803.

Specification of Letters Patent.

Patented Feb. 22, 1910.

Application filed February 2, 1909. Serial No. 475,689.

To all whom it may concern:

Be it known that I, THEODORE G. MCGIRR, a citizen of the United States, and residing in the city, county, and State of New York, have invented an Improvement in Wrapping-Machines, of which the following is a specification.

The present invention relates to machines for applying wrappers to articles, the object of the invention being to provide a simple, durable and compact apparatus for the purpose.

In a complete apparatus organized according to the present invention, there is a vertical holder into which the unwrapped articles are put, the said holder being open at its bottom so that the articles may be pushed laterally therefrom, a horizontally acting pusher or plunger for removing the articles from said vertical guide or holder and placing them over the wrapper, a vertically acting plunger which pushes the articles and the wrapper down a vertical chute provided with means for folding in the sides and ends of the wrapper and scrolls for turning in the corners of the wrapper to form of the same a five-sided box; a horizontally moving plunger for forcing the article and its wrapper into and through a horizontally disposed guide-way provided with means for laying the leading end of the wrapper down upon the article and with means for folding in the sides of the wrapper upon the article, said plunger being provided with spring means for folding in the follower or rear end of the wrapper upon the article before the sides thereof are laid down thereupon, as aforesaid. It is preferred that the wrappers should be fed and be severed from a roll or rolls by any suitable mechanism. The wrapper may have printed thereon any suitable or desired matter.

The invention comprises features of construction, arrangements and combination of devices hereinafter described and more particularly pointed out in the concluding claims.

The invention is embodied in the machine illustrated in the accompanying drawings forming part hereof, in which—

Figure 1 is an elevation from the left hand side of the machine; Fig. 2 is an elevation from the right hand side of the machine with the side frame removed; Fig. 3 is a plan sectional view upon the plane A. A of Figs. 1

and 2; Fig. 4 is a similar view upon the plane B B of Figs. 1 and 2.

In the drawings, the reference A designates a suitable frame work in which the moving parts are mounted in manners appropriate thereto, and B is a main or driving shaft having fast and loose pulleys B thereon. The said shaft B carries a series of cams hereinafter more particularly described.

The articles to be wrapped are placed in the vertical chute or guide-way *w* which is attached to a table *t* mounted on the frame work A. This guide-way *w* may be open at one side for convenience of access thereto as well as for observational purposes. A pusher *a* is mounted in horizontal guides *a'* attached to the table *t* and the pusher *a* has a part projecting through a slot in the table *t*, which part is connected at *a*³ with a lever *a*² fulcrumed at *a*⁴. The lever *a*² has a stud or roller *a*⁵ thereon which engages with the cam *a*⁶ fast upon the shaft B aforesaid, whereby the pusher *a* is reciprocated in its guides to cause the same to push the lowermost article from the guide-way *w* over the wrapper on the table *t*. The table *t* is slotted to allow the head *b* of the vertical plunger to move the article and wrapper downward into the vertical guide-way *b*⁵. The head *b* is carried by a rod *b*² which works in the guide *b*³ attached to one side of the chute or guide *w*. The guide *b*³ is slotted at *b*⁴ for the headed stud *b*⁶ which is fast to the rod *b*². A lever *b*⁸, fulcrumed at *b*⁹, is provided with a slot *b*⁷ which engages with the stud *b*⁶ aforesaid, whereby the lever moves the rod *b*² up and down in the guide *b*³. The lever *b*⁸ is connected at *b*¹⁰ with a pitman *b*¹¹, which pitman may be adjustable as to length and which is connected at *b*¹² with a lever *b*¹³, fulcrumed on the rod C on the lower part of the frame work. The lever *b*¹³ is provided with a stud or roller *b*¹⁴ which engages with the cam *b*¹⁵ fast upon the shaft B aforesaid, whereby the lever *b*¹³ is moved up and down.

As the plunger *b* moves the article and its wrapper downward the sides of the wrapper are turned at right angles to the underside of the article by the sides of the slot *t*² after which the inclined folders *f* turn up the ends of the bottom of the trough-like wrapper, thus leaving triangular projecting parts of the wrapper at each corner of the

article, after which the scrolls or helical folders f^1 turn in the said triangular corners so that by the time the plunger b reaches the position thereof indicated in Fig. 2, the wrapper has been folded into box-like form open at the top only. This leaves the article on the platform p ready to be moved horizontally to complete the folding operations. At this point, the horizontally acting plunger c advances to push the article horizontally. The plunger c has a downwardly projecting arm c^1 , which arm passes through and is guided by a slot in the table p and is pivotally connected with a link c^8 whose other end is pivotally connected with a lever c^9 fulcrumed upon the shaft C aforesaid. A pitman c^{10} is pivotally connected with the lever c^9 and is provided with a fork which slides upon the shaft B aforesaid and the pitman c^{10} is provided with a roller or stud which engages with a cam groove in the disk c^{12} which is fast upon the shaft B aforesaid. The cam groove in the disk c^{12} is proportioned to move the plunger c sufficiently far for the said plunger to push the article into the folders f^3 and underneath the over-hanging layer f^4 which is attached to the cross bar g of the guide-way h . The folder or layer f^4 presses down the forward end of the wrapper and its sides extend to nearly the edges of the articles, whereby they force down the forward end flat on the article and thus produce a neat and compact folding in of said end. The guide-way h is detachably connected with the platform p by means of screws h' . Attached and movable relatively to the plunger c is a folding finger c^2 which is provided with an up-turned end c^3 slidable on the rod c^4 , attached to the slide or plunger c ; a spring c^5 surrounds the rod c^4 and abuts against the end c^5 and adjustable nuts c^6 on the rod c^4 whereby the finger c^2 is normally held forward in position completely to push in and down the middle section of the end of the wrapper before the plunger c begins to move the article. The finger c^2 holds flat down the folded-in rear end of the wrapper until the finger is arrested by its pins c^{13} coming in contact with the stops c^{14} on the plate p , while the plunger c still advances to the limit of its motion, or to about opposite the upright g . The reciprocating plunger c causes each article that it comes in contact with to push before it the preceding article along the scrolls f^3 and the guide-way h until the same are delivered at the right hand side of the machine in Fig. 1.

The mechanism for feeding and cutting the wrappers is now to be described.

A roller d is loosely mounted upon the shaft d^1 , and above the roller d are disks or rollers d^2 mounted on a shaft d^3 , the said rollers d^2 co-acting with the roller d to feed forward the web or webs r r' where two

wrappers are employed. The roller d has a gear d^4 fast thereto, which meshes with and drives a gear d^5 attached to the rollers d^2 or to their shaft d^3 . The shaft d^1 has a gear d^8 loosely mounted thereon, which gear d^8 is connected with the gear d^4 by means of a ratchet wheel d^6 and a pawl d^7 , whereby the roller d will be rotated in one direction and not in the other as the gear d^8 is oscillated by the segment d^9 which is journaled on the shaft d^{10} of the frame work. The gear segment d^9 is connected by a pitman d^{11} with a lever d^{12} which is fulcrumed on the shaft C aforesaid and which lever is provided with a stud or roller d^{13} which engages with the cam groove in the disk d^{14} . The roller d is held against over-throw by means of a brake, which, in the instance shown, consists of two pivoted arms n which enter a groove in said roller, and which are held against the roller by an adjusting device comprising the bolt and screw nut n' . The arms n are pivoted on a support n^2 mounted on the rod d^{10} . The friction of the brake is regulated by the bolt and nut n' aforesaid. The wrappers are severed from the web or webs by means of a knife e and an edge e' as the edge of the table t . The knife e is fulcrumed at e^2 on a bracket b^{17} and is pressed against the bracket by means of the spring e^3 surrounding a rod e^2 and abutting against nuts on said rod and against said knife. The knife has an arm e^4 thereon which is provided with a stud engaging with the groove cam e^5 loosely mounted upon the shaft d^1 aforesaid and proportioned and timed to cause the knife to sever the wrappers from the web while the web is at rest. The cam e^5 is connected to a sprocket wheel s' , loosely mounted on the rod d^1 , which wheel is driven by a chain s^4 driven from shaft B by a wheel s' .

What I claim as new and desire to secure by Letters Patent of the United States, is—

1. In a wrapping-machine, the combination of a vertical guideway for the articles to be wrapped, a horizontally-acting pusher for removing the articles from said guide, a vertically-acting plunger beneath which said pusher places the articles, means for feeding wrappers underneath said vertical plunger and articles, a vertical guide down which said plunger moves the articles and wrappers and folds the wrappers about the ends and sides of the articles and provided with scrolls for laying the triangular points of the wrappers in against the ends, a horizontally-acting plunger for moving said articles endwise and provided with a spring-finger for laying the rear ends of the wrappers upon the tops of the articles, means for laying the front ends of the wrappers upon the tops of the articles, and means for laying the upstanding sides of the wrappers upon the tops of the articles.

2. In a wrapping-machine, the combination of a vertical guideway for the articles to be wrapped, a horizontally-acting pusher for removing the articles from said guide, a vertically-acting plunger beneath which said pusher places the articles, means for feeding wrappers underneath said vertical plunger and articles, a vertical guide down which said plunger moves the articles and wrappers for folding the wrappers about the ends and sides of the articles and provided with scrolls for laying the triangular points of the wrappers in against the ends, a horizontally-acting plunger for moving said articles endwise and provided with a spring-finger for laying the rear ends of the wrappers upon the tops of the articles, a fixed tucker for laying the front ends of the wrappers upon the tops of the articles, and scrolls for laying the upstanding sides of the wrappers upon the tops of the articles.

3. In a wrapping machine, the combination of a vertical guideway for the articles to be wrapped, means for feeding the wrappers and the labels to a point adjacent to said guideway with the labels underneath, a pusher for moving the articles over and on to said wrappers, a vertical plunger, appliances for folding the wrappers and labels and their triangular ends about five sides of the articles as said plunger moves them downward, a horizontal plunger for moving said articles along a fixed horizontal path, means carried by said horizontal plunger for folding one upstanding part of said wrapper down on the tops of said articles, a fixed tucker for folding in the opposite upstanding part of said wrappers as said horizontal plunger moves said articles forward along such pathway, and means alongside said path for thereafter folding the remaining upstanding parts of said wrappers.

4. In a wrapping machine, the combination with means for placing a wrapper in box-form on five sides of an article, of means for thereafter moving the article endwise, means for laying the rear end of the wrapper down on the article a tucker for laying the leading end of the wrapper down on the article, said tucker first laying down the middle of the leading end of the wrapper on the article and then smoothing or ironing the remainder of said end against the article, and means for laying the remaining upstanding sides of the wrapper to complete the wrapping operation.

5. In a wrapping-machine, the combina-

tion with means for placing the wrapper in box-form on five sides of the article, of a plunger for moving the articles along and provided with a spring-finger for folding one end of the wrapper on top of the article, a fixed tucker or layer for laying the label under the wrapper, said tucker or layer first laying the middle of the leading end of the wrapper and then smoothing or ironing the remainder of said end down on the article, and means for folding the upstanding sides of the wrapper down over the folded-in ends to complete the wrapping operation.

6. In a wrapping machine, an article moving plunger provided with a spring finger movable relatively thereto and adapted to lay the wrapper upon the article at that side, a fixed tucker or layer for laying the wrapper at the opposite side of the article, scrolls for laying down the sides of the wrapper as said plunger moves the article, and a stop for said spring finger for arresting the same while the plunger still moves onward.

7. In a machine of the class described, the combination with means for folding wrappers and their triangular projections about five sides of articles, of a plunger provided with a spring-finger for folding one upstanding part of said so-folded wrappers against the uncovered parts of said articles, a fixed tucker for folding-in the opposite upstanding parts of said wrappers against said uncovered parts of the articles as said plunger moves them forward, and scrolls alongside the path of the so-moved articles for thereafter folding the remaining upstanding parts of said wrappers.

8. In a wrapping machine, the combination with means for placing a wrapper in box form about five sides of a six-faced article, the four sides of the wrapper projecting from the uncovered or sixth side of the article, of means for thereafter moving the article in a direction parallel to the said uncovered face, means for laying the rear projecting side of said wrapper on said sixth or uncovered side, means for laying the front projecting side of said wrapper on said sixth side, and means for laying the remaining projecting sides of said wrapper on said sixth side.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

THEODORE G. MCGIRR.

Witnesses:

R. W. BARKLEY,

SAMUEL L. WATSON.