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PATENTED JUNE 19, 1906.

J. G. HODGSON.

MECHANISM OR APPARATUS FOR LOADING AND COUNTING CANS.

APPLICATION FILED MAR. 6, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

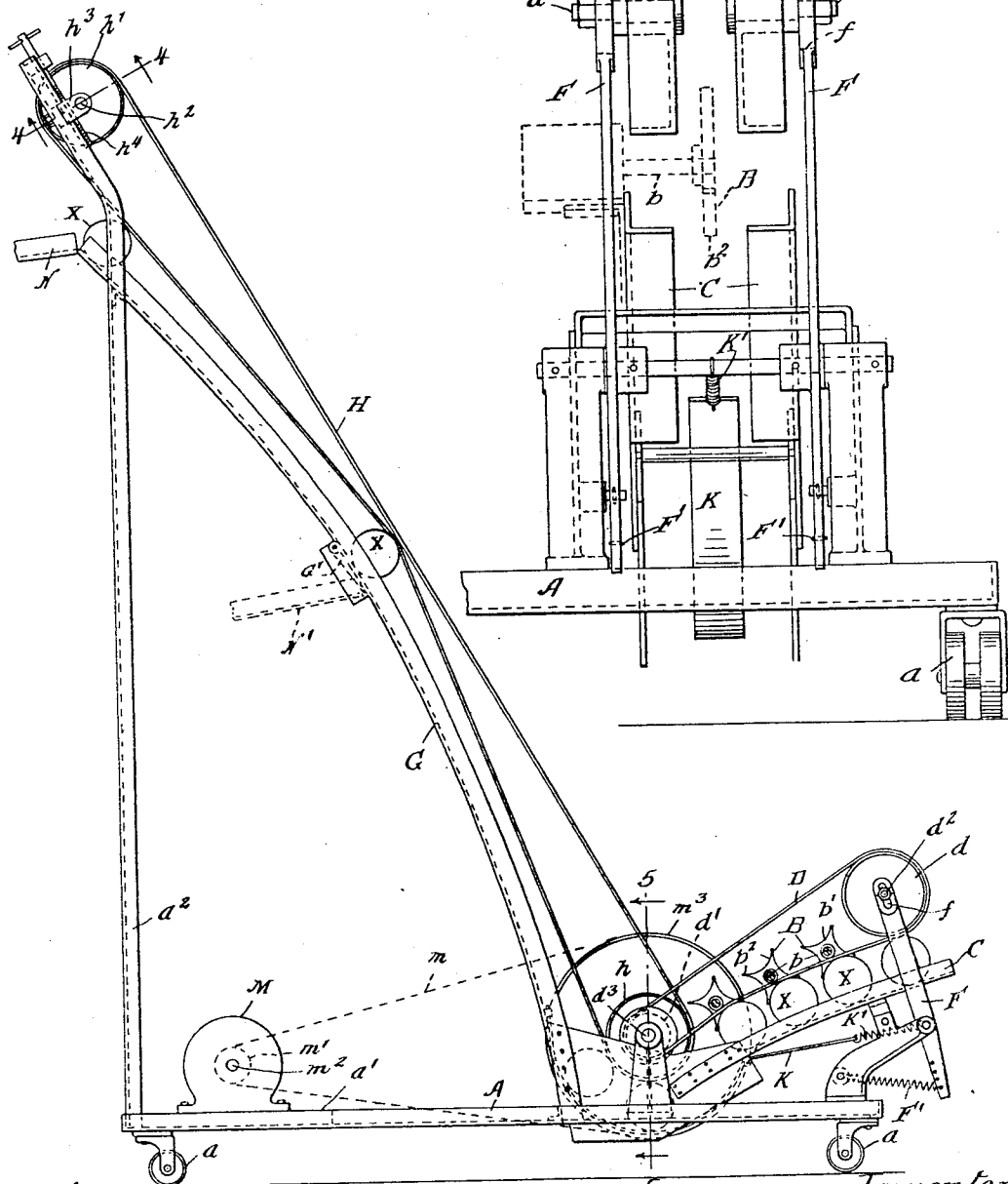
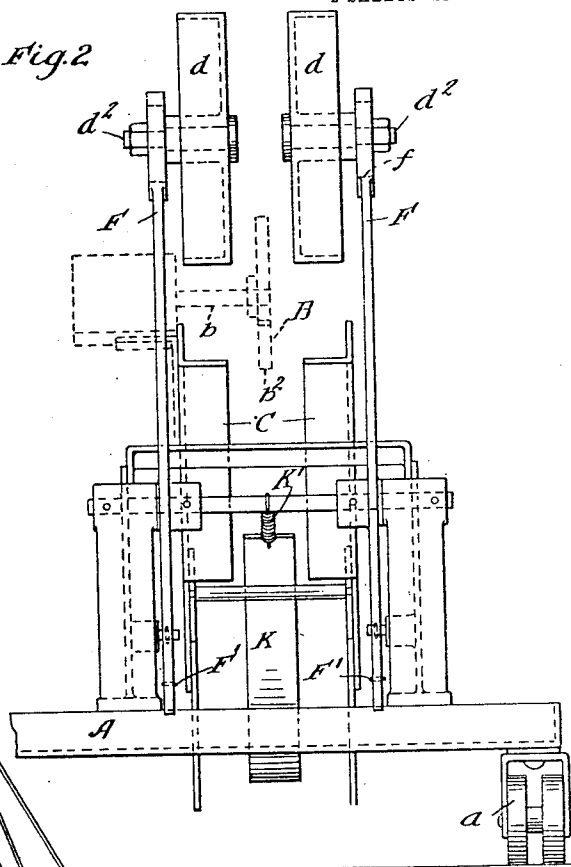


Fig. 2.



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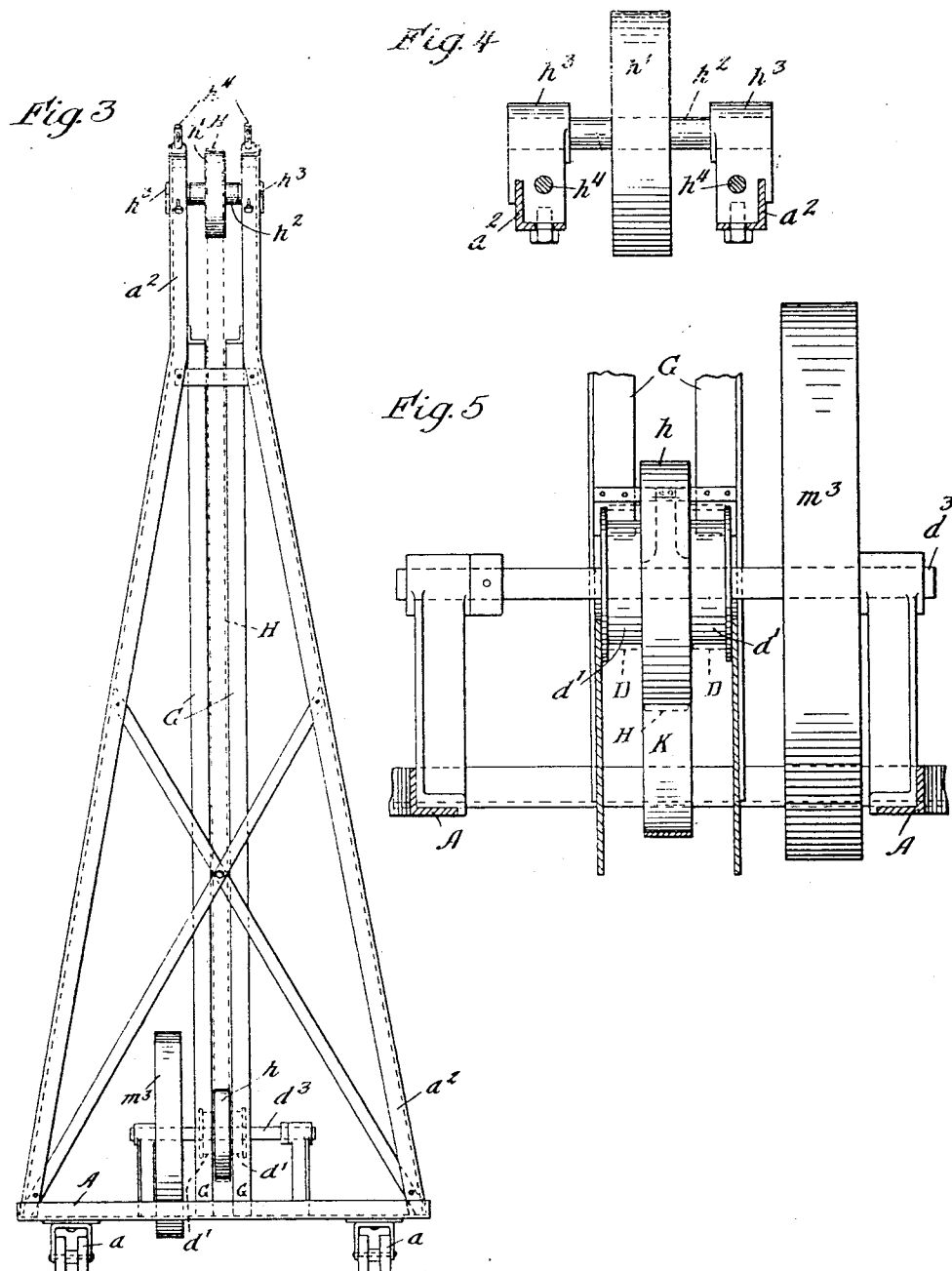
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3 SHEETS-SHEET 2.



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UNITED STATES PATENT OFFICE.

JOHN G. HODGSON, OF MAYWOOD, ILLINOIS, ASSIGNOR TO AMERICAN CAN COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

MECHANISM OR APPARATUS FOR LOADING AND COUNTING CANS.

No. 823,780.

Specification of Letters Patent.

Patented June 19, 1906.

Application filed March 6, 1905. Serial No. 248,784.

To all whom it may concern:

Be it known that I, JOHN G. HODGSON, a citizen of the United States, residing in Maywood, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Mechanism or Apparatus for Loading and Counting Cans, of which the following is a specification.

My invention relates to improvements in mechanism for loading and counting cans.

The object of my invention is to provide a machine or apparatus of a simple, efficient, and durable construction by means of which cans may be automatically, rapidly, and accurately counted and loaded into cars or other vehicles.

My invention consists in the means I employ to practically accomplish this object or result—that is to say, it consists, in connection with a wheeled frame or carriage and one or more counters, each furnished with a spider or wheel adapted to be turned by contact with the cans, of a curved runway along which the cans may be rolled, a belt for rolling the cans along the curved runway, a curved elevating-runway and a belt for rolling the cans along the curved elevated runway, a rotating wheel located between the counting-runway and the elevating-runway, and a flexible strip or member connecting the counting-runway with the elevating-runway, and thus causing the cans to be delivered by the rotating wheel at the angle or junction between the two runways. My invention also consists in the novel devices and novel combinations of parts and devices herein shown and described.

In the accompanying drawings, forming a part of this specification, Figure 1 is a side elevation of a can counting and loading machine embodying my invention. Fig. 2 is a front elevation. Fig. 3 is a rear elevation. Fig. 4 is a section on line 4 4 of Fig. 1, and Fig. 5 is a vertical section on line 5 5 of Fig. 1.

In the drawings, A represents a carriage or wheeled frame having wheels *a* to enable the machine or apparatus to be readily moved and turned into different positions in the factory as may be necessary in taking the cans from the discharge-runway of the can-making machines and delivering them into cars,

vehicles, or storage-warehouses. The frame or carriage A preferably comprises a base or platform *a'* and uprights *a''*. The counters or counting devices B, which are preferably three in number, so that each can will be counted three times, are each furnished with a rotating counting-shaft *b*, having a spider or star-wheel *b'*, the arms *b''* of which are preferably curved to correspond to the curvature of the cans to be counted, may be of any suitable or well-known construction now on the market and familiar to those skilled in the art. The counters B are arranged tandem, or one after another, along the can-counting runway C, which is slightly curved upward or toward the counters and preferably arranged in an inclined position on the portable frame or carriage A.

D D are can-rolling belts traveling on pulleys *d d'*. The shaft *d''* of the pulleys is adjustably mounted on a pivoted arm or lever F, having slots *f* to receive the shaft *d''*, so that the pulleys *d* may be adjusted in respect to the upwardly-curved can-counting runway C. To regulate the tension or pressure of the belts D upon the cans *x* as they roll along the curved runway C, a spring F', attached to the frame A at one end and to the lower end of the lever F at its opposite end, keeps the belt D under tension.

G is an upwardly-extending inclined and curved can-loading runway, and H is a can-rolling belt for rolling cans up this runway. The belt H travels upon pulleys *h h'*, the upper pulley *h'* having its shaft *h''* journaled in an adjustable bracket *h'''* on the frame A, and which adjustable bracket is furnished with an adjusting-screw *h''''*, by which the tension of the can-rolling belt H and its consequent grip upon the cans *x* may be regulated or adjusted as required to properly load the cans upon the curved loading-runway G. The pulley *h* for the belt H is on the shaft *d'''* of the pulley *d'*. Secured on this same shaft *d'''* is a can-rolling wheel or pulley, the same being preferably the belt-pulley *h* for the elevating-belt H, which coöperates with a flexible member or connection K, extending between and connecting the can-counting runway C and can-loading runway G. One end of this flexible connection K, which is prefer-

ably of heavy canvas, is connected with the frame through a spring K' to keep the same under proper tension.

Owing to the curvature or camber of the can-runways C and G toward their respective can-rolling belts D and H, these belts exert a positive and uniform grip and pressure in a uniform manner and past the spiders *b* of the counters B, and the whole mechanism is thus enabled to be made small in weight and of an easily portable or movable character. The power is communicated to the driving-shaft *d*³ from the electric motor M on the carriage A through the driving-belt on the pulley *m*¹ of the motor-shaft *m*² and the pulley *m*³ on the driving-shaft *d*³. The upright curved or cambered can-loading runway G elevates and delivers the cans onto a runway N and discharges them into a car, vehicle, or warehouse, as may be desired. The elevating or loading runway G is preferably also furnished with a hinged door G', so that when desired the cans may be discharged into a discharge-runway N' at a lesser height.

By employing two can-counter-runway belts D, D', parallel to each other, space is afforded between the two belts D, D' for the spiders or star-wheels *b*' of the counters B. The loading or elevating belt H is driven at a higher speed than the counter-belts D, so as to space the cans farther apart as they are being rolled up the elevating-runway G. This is effected by employing a pulley *h* of larger diameter than the pulley *d*' of the belts D.

I claim—

1. In a can loading and counting machine, the combination with a portable or wheeled frame or carriage, of a curved or cambered can-counting runway, an endless belt for rolling the cans along said counting-runway, a can-counter having a spider or counter-wheel arranged in the path of the cans to be engaged thereby as they roll along said counter-runway, an upright or elevating curved or cambered can-loading runway, an endless flexible belt for rolling the cans up said runway, a flexible connection or strip connecting said can-counting and said can-loading runways, and a wheel or pulley co-operating with said flexible connection to deliver the cans from said can-counting runway to said can-loading runway, substantially as specified.

2. The movable can loading and counting machine, consisting in the combination with a portable or wheeled frame or carriage, of a curved or cambered can-counting runway, an endless belt for rolling the cans along said counting-runway, a can-counter having a spider or counter-wheel arranged in the path of the cans to be engaged thereby as they roll along said counter-runway, an upright or elevating curved or cambered can-loading

runway, an endless flexible belt for rolling the cans up said runway, a flexible connection or strip connecting said can-counting and said can-loading runways, a wheel or pulley co-operating with said flexible connection to deliver the cans from said can-counting runway to said can-loading runway, and means for adjusting the upper pulley of the can elevating or loading runway, substantially as specified.

3. In a can loading and counting machine, the combination with a portable or wheeled frame or carriage, of a curved or cambered can-counting runway, an endless belt for rolling the cans along said counting-runway, a can-counter having a spider or counter-wheel arranged in the path of the cans to be engaged thereby as they roll along said counter-runway, an upright or elevating curved or cambered can-loading runway, an endless flexible belt for rolling the cans up said runway, a flexible connection or strip connecting said can-counting and said can-loading runways, a wheel or pulley co-operating with said flexible connection to deliver the cans from said can-counting runway to said can-loading runway, one of the pulleys of said can-counter runway being mounted on a vibrating arm, furnished with a spring to keep the belt under tension, substantially as specified.

4. The combination with a curved or cambered can-counter runway, a belt for rolling the cans along the same, pulleys for said belt, a spring-actuated tension-arm upon which one of said pulleys is mounted, and a counter having its spider or counter-wheel in the path of the cans as they roll along said runway, whereby the counter mechanism is actuated by the cans without shock substantially as specified.

5. The combination with a can-counter, of a curved or cambered can-counter runway and a belt for rolling the cans along said curved runway, said counter having a spider or counter-wheel projecting in the path of the cans as they are rolled along said runway by said belt, whereby the counter is smoothly actuated by the cans and without blows therefrom substantially as specified.

6. The combination with a curved or cambered can-counter runway, of a can-rolling belt, a counter, a curved or cambered elevating-runway, a belt for rolling the cans up said runway, a flexible strip connecting said runways co-operating with the lower pulley of the can-elevating belt to deliver the cans from the counter-runway to the elevating or loading runway, substantially as specified.

7. The movable or portable can counting and loading machine herein shown and described, consisting in the combination with a curved or cambered can-counter runway, of a can-rolling belt, a counter, a curved or

cambered elevating-runway, a belt for rolling the cans up said runway, a flexible strip connecting said runways coöperating with the lower pulley of the can-elevating belt to deliver the cans from the counter-runway to the elevating or loading runway, and a wheeled frame upon which the same is mounted, substantially as specified.

8. The combination with a curved or cambered upwardly-extending can loading or elevating runway, of an endless belt for rolling the cans up said runway, substantially as specified.

9. The movable or portable can-body mechanism consisting in the combination with a curved or cambered upwardly-extending can loading or elevating runway, of an endless belt for rolling the cans up said runway, and a wheeled frame upon which the same is mounted, substantially as specified.

10. The combination with a curved or cambered can loading or elevating runway, of an endless belt for rolling the cans up said runway, a can-counting runway and a counter and a flexible connection between

said two runways, coöperating with the belt-pulley of the elevating-runway to roll the cans along said flexible connection to the elevating-runway, substantially as specified.

11. The combination with a curved or cambered upwardly-extending can loading or elevating runway, of an endless belt for rolling the cans up said runway, pulleys for said belt, and means for adjusting the upper pulley of said belt, substantially as specified.

12. The combination with a curved or cambered can loading or elevating runway, of an endless belt for rolling the cans up said runway, a can-counting runway and a counter and a flexible connection between said two runways, coöperating with the belt-pulley of the elevating-runway to roll the cans along said flexible connection to the elevating-runway, and a spring for keeping said flexible connection under tension, substantially as specified.

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Witnesses:

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