A. ARMBRUSTER.

MACHINE FOR PACKING FUEL IN PAPER BAGS.

APPLICATION FILED APR. 10, 1913.

1,079,628.

Patented Nov. 25, 1913.

3 SHEETS—SHEET 1

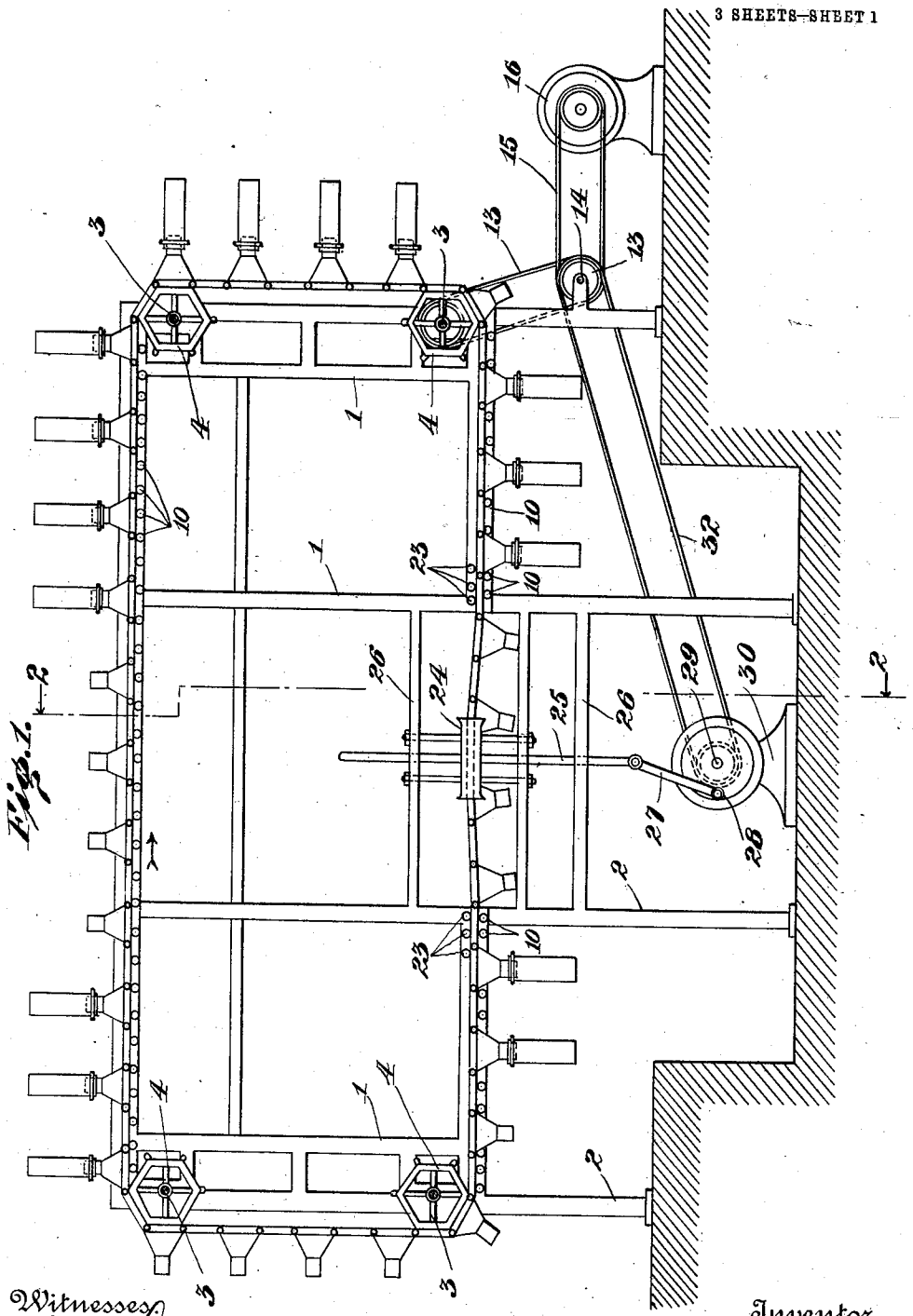


Fig. 1.

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Fig. 3.

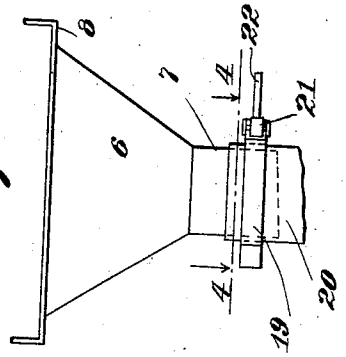


Fig. 4.

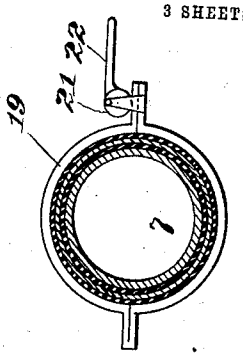
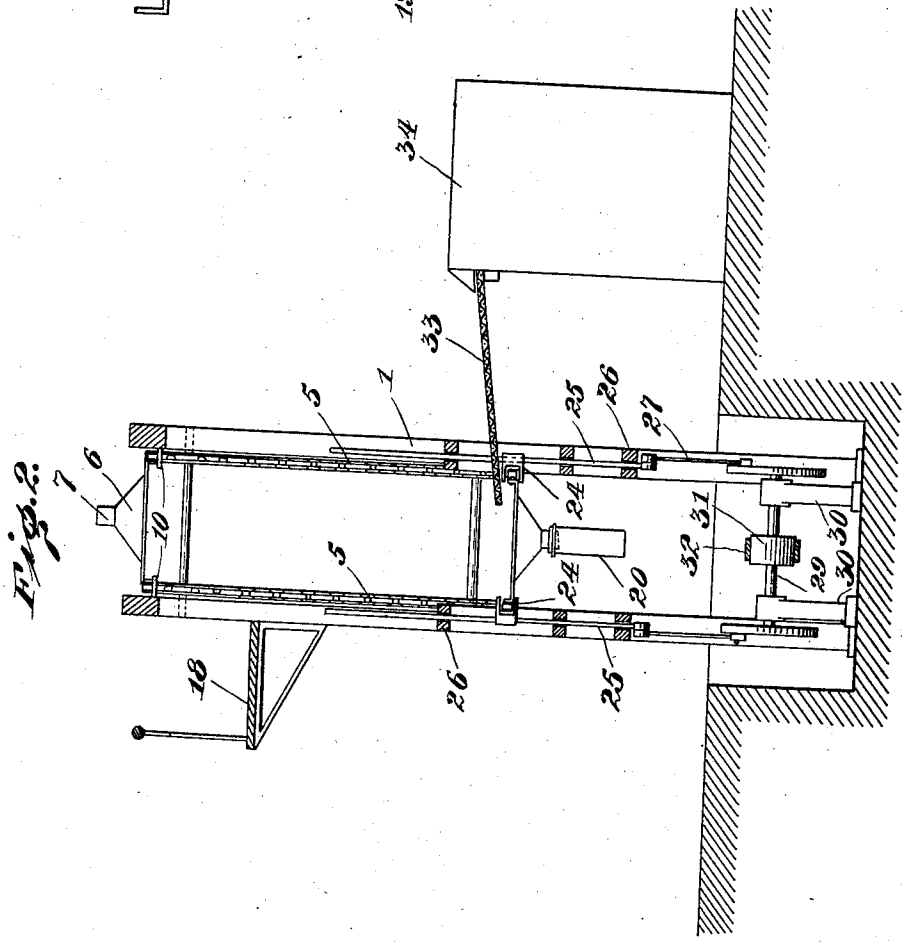


Fig. 2.



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3 SHEETS—SHEET 3.

Fig. 6.

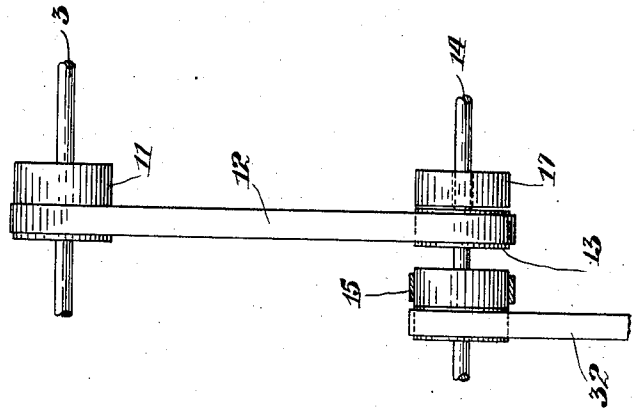
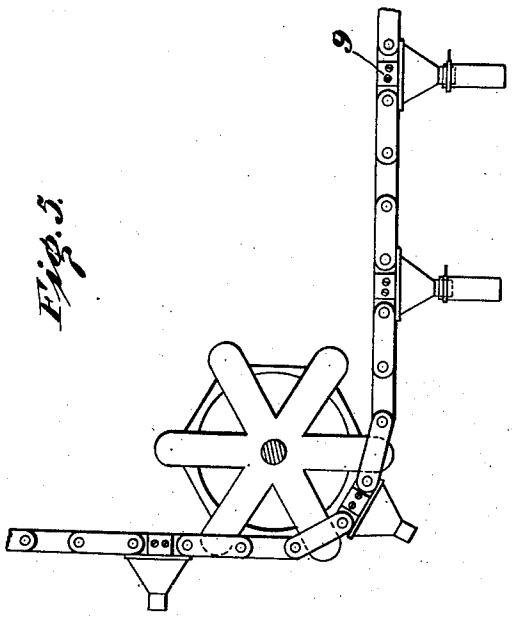


Fig. 5.



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UNITED STATES PATENT OFFICE.

ALBERT ARMBRUSTER, OF NEW YORK, N. Y.

MACHINE FOR PACKING FUEL IN PAPER BAGS.

1,079,628. Specification of Letters Patent. Patented Nov. 25, 1913.

Application filed April 10, 1913. Serial No. 760,274.

To all whom it may concern:

Be it known that I, ALBERT ARMBRUSTER, a citizen of the United States, residing in New York city, in the county of Kings and State of New York, have invented a new and useful Machine for Packing Fuel in Paper Bags, of which the following is a specification.

This invention relates to apparatus for filling bags with charcoal or like material, and my improvements include mechanical means for performing this operation automatically; at the same time cleaning the material from dust and small particles; a further feature of invention consisting in certain novel means for vibrating the filled bags to settle and pack the contents therein.

My invention still further consists in the novel construction and arrangement of the parts composing the apparatus, all as will be hereinafter described and pointed out in the claim.

In the drawings: Figure 1 is a front elevation of my machine. Fig. 2 is a side sectional view on the line 2—2 of Fig. 1. Fig. 3 is an enlarged detail elevation of one of the feed hoppers. Fig. 4 is a section on the line 4—4 of Fig. 3. Fig. 5 is an enlarged detail of one of the sprockets employed in supporting and directing the hopper carrying chains, and Fig. 6 is an enlarged detail of the driving pulleys.

In carrying out my invention I provide a light, skeleton twin-like frame, as 1, substantially rectangular in form, and having the supports 2, by which said frame is sustained in a vertical position.

Mounted on shafts 3 in the four corners of the frame are pairs of sprocket wheels 4, which carry a pair of separated, parallel chains 5, the space between said chains being of sufficient width to accommodate the mouths of the feed hoppers 6. Said hoppers 6 are of funnel like contour, with cylindrical necks 7 and peripheral flanges 8, by which latter they are attached, as through the medium of angle-plates 9, to the blocks of chains 5, spanning the space between said chains. Thus the feed hoppers are arranged, at suitable intervals apart, about the rectangle formed by their supporting chains, with their mouths directed inwardly of said rectangle. The chains are prevented from sagging, along the upper and lower stretches of the rectangle, by supporting rollers 10, mounted in the frame. A pulley 11, fast on one of the shafts 3, is driven by a belt 12, which engages a pulley 13 on shaft 14, driven, as by a belt 15, from a motor 16. An idle pulley 17, also on shaft 14, is provided to receive the belt 12, when desired to stop the travel of chains 5.

It is the purpose, at a certain point in the travel of chains 5, to place bags or receptacles upon the necks 7 of the hoppers; at another point in said travel to provide means for filling and packing said bags with charcoal or other material; and at a still further point to provide means for removing said bags. For example, I may provide a platform, as 18, at the left hand side of the apparatus; the direction of travel of the chains being from left to right along the top; the attendant to stand on this platform and place empty bags upon the feed hopper necks 7. In order that this operation may be expeditiously performed, I provide distensible clamping rings, as 19, placed about necks 7, and adapted to be opened to receive the open ends of the bags, as 20, said rings having a pivotal cam, as 21, with lever 22, for quickly closing said ring and clamping the bag between it and neck 7 by a single movement of lever 22. As the bags 20 are carried, depending along the lower stretch of chain movement, they receive in succession, their charge or quota of charcoal or other material at a certain fixed point relatively to such chain movement. At this point the chains pass a space where no supporting rollers 10 are employed, said space being bounded by rollers 23, mounted in the frame above said chains, in conjunction with lower, space-boundary rollers 10. Within said space are horizontal U-shaped guides 24 for the chains, said guides being carried by vertical rods 25, which rods are capable of reciprocating movement through guide orifices in transverse bars 26. Said rods have pivotal links 27 at their lower ends, connecting them through cranks 28 with a crank shaft 29, that is mounted in bearings 30, and driven by pulley 31 and belt 32, from shaft 14.

The function of the mechanism just described is to vibrate the rods 25 and guides 24, thereby agitating the feed hoppers and bags which have been filled with charcoal, thereby settling and packing the charcoal in said bags. The charcoal or other material to be packed in the bags is entered therein as from a chute, which may be in

form of an inclined screen 33. This screen is entered within frame 1 over the passing line of feed hoppers in the space where the chains, hoppers and bags are caused to vibrate, the charcoal or other material being supplied to said screen from a platform or stand, as 34. The screen 33 may have mechanical means (not shown,) for shaking it in order to remove dust and small particles before the charcoal or other material enters the feed hoppers and bags. At a point beyond the bag filling space the filled bags may be removed from the necks of the feed hoppers by simply unlocking the clamp rings, as is obvious.

In the operation of my invention, assuming the hopper carrying chains to be in motion and the belt 32 at the same time operating shaft 29, thus causing the chain guides 24 and chains to vibrate, the charcoal is passed into the frame above the feed hoppers along inclined screen 33. In its passage over said screen it is freed from dust, etc., and falls by gravity into the feed hoppers, in succession. The vibration of the chains, feed hoppers and bags causes the charcoal to become automatically packed in the bags, and the latter are removed by hand from the hopper necks, in the manner described. As said bag freed hoppers pass upwardly to a point near platform 18, empty bags are fitted to the necks 7 in the manner described, and these bags, in turn, are filled and packed as before described.

While I have described a practical construction and arrangement of parts in my improved apparatus for filling and packing bags with charcoal or the like, I do not limit myself to the exact details thereof herein shown, but consider my improvements as including such equivalent constructions and arrangements as fall properly within the spirit and scope of my invention.

I claim:

An apparatus for filling and packing bags with charcoal or the like, comprising a vertical frame, a series of feed hoppers, means for removably attaching bags thereto, a pair of chains carrying said hoppers, sprockets carrying said chains in spaced parallelism over a rectangle, supports for said chains to prevent sagging; driving means for said chains, a fixed supply device for said passing hoppers, vertically reciprocating guides for said chains; and means, co-acting with said chain driving means, to actuate said guides, thereby vibrating said chains, hoppers and attached bags, to pack the bag contents.

In testimony whereof I have hereunto set my hand this 7th day of April, 1913.

ALBERT ARMBRUSTER.

Witnesses:

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GERTRUDE E. COYLE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."