(No Model.)

N. C. GAUNTT.

BRAN PACKER.

No. 442,371. Patented Dec. 9, 1890.

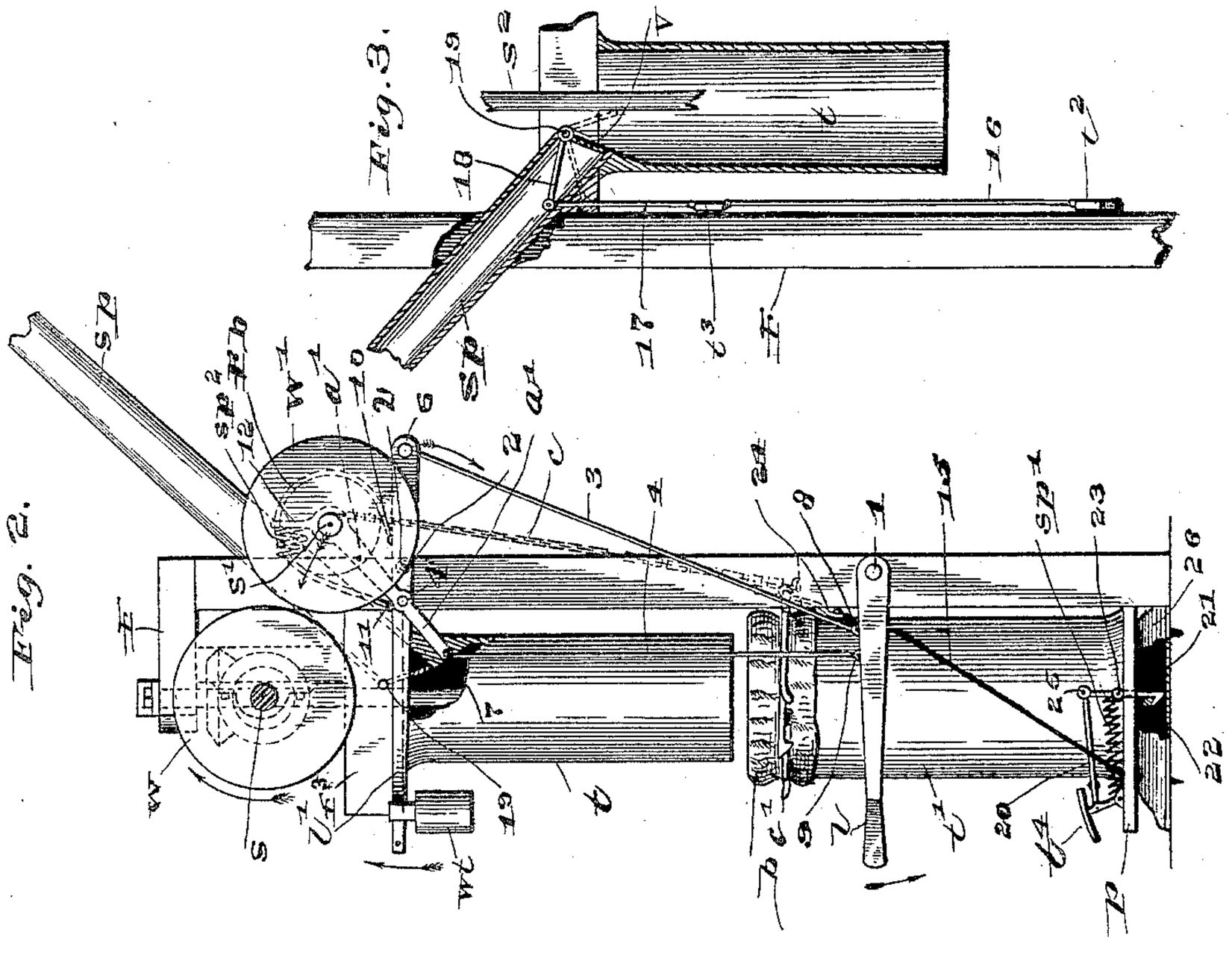

Fig. 2.

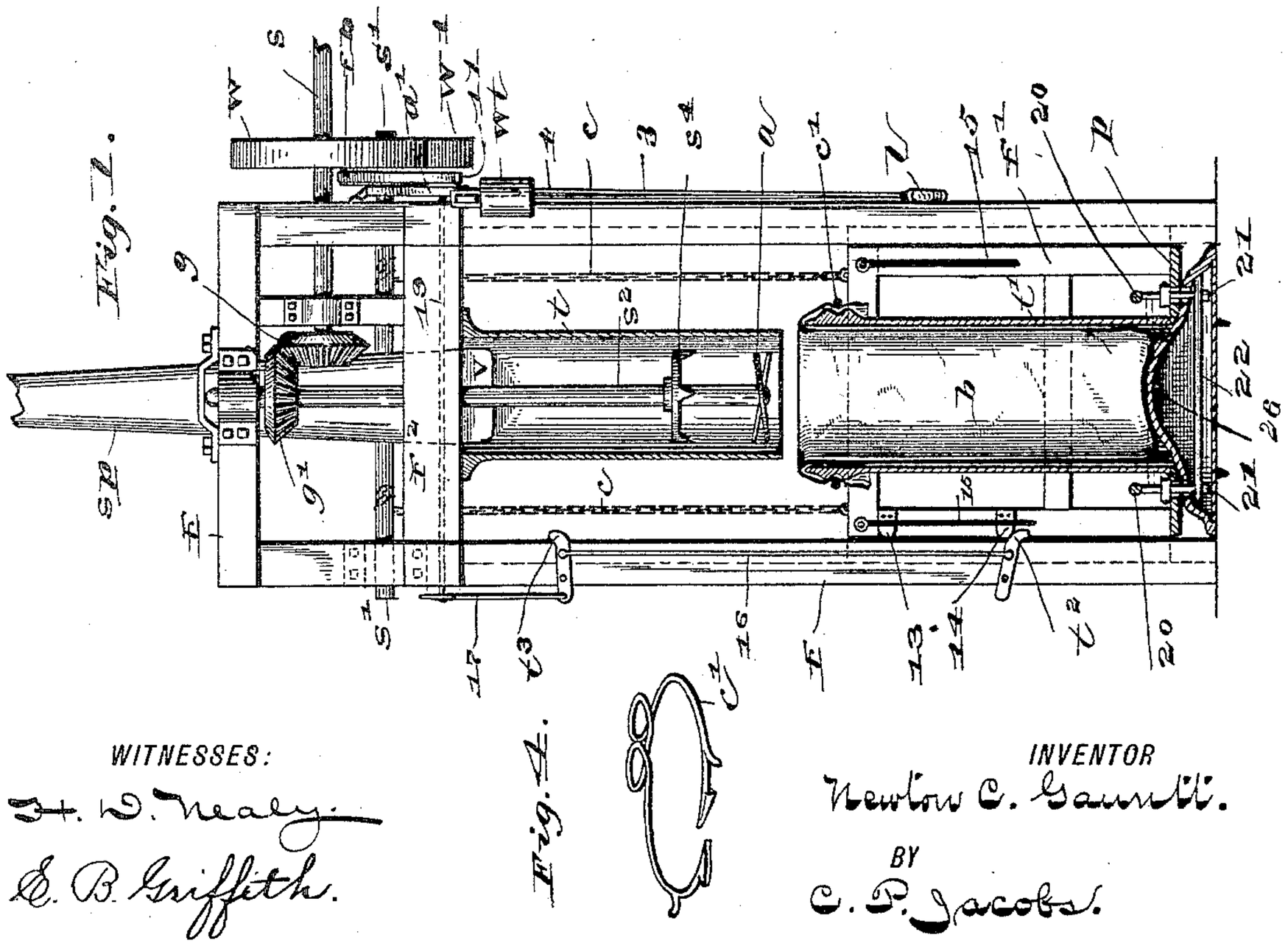

Fig. 1.

Fig. 4.

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BRAN-PACKER.

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Application filed May 12, 1890. Serial No. 351,412. (No model.)

To all whom it may concern:

Be it known that I, NEWTON C. GAUNTT, of Bowling Green, county of Warren, and State of Kentucky, have invented certain new and useful Improvements in Bran-Packers; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like letters and figures refer to like parts.

My invention relates to the construction of devices for packing bran in sacks, and will be understood from the following description.

In the drawings, Figure 1 is a front view, partly in section. Fig. 2 is a side view partly broken away. Fig. 3 is a detail sectional view of the spout and tube with which it is connected, showing the valve and its operating-rod. Fig. 4 is a perspective view of the bag-holder or clamp.

In detail my device comprises a frame F with cross-bar F^2, to the under side of which is fastened a tube t, and above and discharging therein is a feeding-spout sp, which is provided with a valve v for regulating the feed. A vertical shaft s^2 has bearings in the top cross-beam of the frame-work and carries near its upper end a bevel-gear g', which meshes with a similar gear g, carried on the main driving-shaft s, which has bearings at one end in a boxing on the frame and at the other in a hanger attached to the building at any suitable point. The vertical shaft s^2 carries near its lower end a stirring device s^4 and below a packer formed in the shape of an auger a, as shown in Fig. 1. Directly in line with the tube t is a second tube t', which is rigidly connected to an inner frame f', which slides in ways formed in the sides or uprights of the larger frame. This sliding frame is operated by means of chains c, which are connected to its top and extending above and winding around a counter-shaft s'. The tube t' incloses the sack or bag b, the upper end of the latter being turned over and down about the top of the tube t', which is thickened and provided with a groove, as shown in Fig. 1, for admitting the spring-clamp or bag-holder c', which encircles the turned-down end of the bag, clamping it in its place, it being locked by hooks formed on the ends of the clamp, as shown in Fig. 4. The tube t' is open at the bottom and is solidly connected with a platform p, which has a central circular opening therein, and also holes or slots through which pass hooks 21, which catch over a latch-rod 22 beneath, the hooks being centrally pivoted at 23 to a lug or extension upon the top of the platform p and again pivoted above at 25 to a link 20, connected to a treadle t^4, which is pivoted to the platform below, and a coiled spring sp' is inserted, whose tension normally operates to throw the hook forward for locking it, the pressure upon the treadle t^4 operating to depress it and throw the hook backward, unlocking it from its latch-rod. The platform p has a central circular opening which receives the bulging top of the bottom plate 26, which rests upon the floor and is made preferably of cast iron, so that it need not be fastened, its own weight sufficing to hold it in position between the uprights of the frame. The bottom of the bag rests upon the top of this bottom plate 26, as shown in Fig. 1, when the sack is filled. 15 are diagonal braces, which connect the platform p to the uprights of the frame-work F.

Upon the uprights of the sliding frame are fastened lugs 13 and 14, which are adapted to engage with the trigger t^2 below and t^3 above for the purpose of operating the valve. For this purpose the lower trigger t^2 is connected to the upper one by a rod 16, the triggers being pivoted to the uprights near their outer edge. The upper trigger t^3 is connected by a short rod 17 to a link 18, formed integral with the rod 19, upon which is mounted the valve v, this rod 19 having bearings in horizontal arms or extensions of the frame f^3, as shown in Fig. 2.

The counter-shaft s', about which the chains c, which carry the sliding frame, are intended to be wound, has bearings at one end in a boxing connected to the frame, and near its other end it is supported in bearings in the swinging arm a', which is pivoted at $4'$ to a lever $1'$, which carries a weight wt upon its outer end. This lever is pivoted at 2 to the frame, and upon its inner end is connected at 6 to a rod 3, whose opposite end is connected at 8 to a lever 1, pivoted to the frame-work at 1. This same lever 1 is connected at 9 to a rod 4, connected at 7 to the lower end of the swinging arm a'. The friction-wheel w' has

rigidly connected to its inner side a smaller wheel, about which is a friction-band *fb*, fastened at 10 and 11 to the lever 1′, and the peripheries of the wheels *w w′* are in line, so that they may be thrown in frictional contact with each other for the purpose of transmitting motion in the manner hereinafter described. By pressing down the lever 1 with the hand the inner end of the lever 1′ is drawn down and also the lower end of the swinging arm *a′*, thus easing the tension of the friction-band, which normally holds the wheel *w′* away from the driving-wheel and also acts as a brake on such friction-wheel, and by this movement of the lever 1 the friction-wheel is carried forward and upward, so that its periphery comes in contact with the periphery of the driving-wheel *w*, which revolves in the direction indicated by the arrow, Fig. 2, when power is applied to the driving-shaft *s* through ordinary means, such as a belt and pulley. This shaft being revolved carries the gears *g g′*, revolving the vertical shaft s^2 with its auger *a* and stirrer s^4, and when the wheel *w′* is brought in frictional contact with the driving-wheel *w* motion is imparted to the latter, the chains *c* are wound about its axle, and the sliding frame *f″* is drawn up.

The complete operation of the device is as follows: The bag having been set in place, as indicated in Fig. 1, power being applied to the shaft *s*, the vertical shaft s^2 revolves with its stirrer and packing-auger. The operator then depresses the lever 1, and through the connecting-rods 3 and 4 lifts the friction-wheel *w′* upward and carries it forward against the driving-wheel *w*, at the same time lowering the friction-band *fb*. The counter-shaft *s′* is thereby revolved, the chains *c* wound up about it, and the sliding frame *f″* is drawn up by these chains, carrying with it the platform *p*, the tube *t′*, and the sack or bag *b*, the latter passing over and about the upper tube *t* as it rises until the lug 13 strikes the trigger t^3, depressing the outer end of the latter, operating the rod 17 and the link 18 and opening the valve 19 in the feed-spout *sp*, as shown in dotted lines in Fig. 3, and the material passes down the spout and through the valve-opening into the tube *t* and into the bag. The parts are so arranged that the trigger t^3 is operated at the moment when the bag has risen high enough and ready to fill. As the feed comes down, it is stirred by the stirrer s^4 and packed by the auger *a*, and the pressure of the auger upon the bran operates to force down the sliding frame *f″*, and with it the tube *t′*, inclosing the bag *b*. When the bag has accomplished its descent, its bottom rests upon the bulging top of the bottom plate 26, and at that moment the lug 14 strikes the trigger t^2, pushing it downward, operating the rod 16, pulling down the upper trigger, and, through the rod 17 and the link 18, closing the valve *v* in the spout *sp* and cutting off further feed. The sack being filled, the operator removes the clamp *c′*, turning over and inward the ends of the bag, depresses the treadle t^4 with his foot, releasing the hooks 21 from the latch-rod 22, and then pushes down the lever 1′, bringing the wheels *w w′* in frictional contact, and revolving the counter-shaft *s′*. The chains are thereby wound about the shaft *s′* and the sliding frame *f″* is drawn upward again, carrying with it the tube *t′* from about the bag *b*, leaving the latter standing upon the bottom plate 26, from which it is removed by the hand of the operator and set away and another bag put in its place.

The spring-clamp or bag-holder shown in Fig. 4 is constructed of a continuous piece of spring metal, having one or more coils on one side and hooks on each of the free ends, the barbs of these hooks standing at right angles to each other, and when the clamp is closed about the bag the barb of one of these hooks drops down behind the barb of the other, as shown in Fig. 2. Behind the hooks projections are formed, which serve as handles for the purpose of unlocking the clamp. For convenience, and in order to prevent the clamp from being mislaid or lost, it is preferably connected to the tube below by a link or wire 24.

In Fig. 2 is shown in dotted lines a coiled spring sp^2, one end of which bears against an upright of the frame and the other against a projection 12, formed upon the inner end of the swinging arm *a′*, which normally holds the wheel *w′* from contact with the wheel *w*, and when they are forced together by means of the lever 1 as soon as pressure upon the latter is released the spring exerts its force to separate the wheels. The bottom plate 26 has spurs formed upon the bottom, which enter the floor for holding it in place and preventing its slipping away and moving about.

The vertical shaft s^2, that carries the stirrer and auger, is not only supported by the boxings at the top of the frame, but I preferably give it a bearing in a second boxing below the gears, which would be behind the cross-bar f^2, and is therefore not shown. This additional boxing serves to steady the shaft and prevent its twisting or getting out of line.

What I claim as my invention, and desire to secure by Letters Patent, is the following:

1. In a bran-packer, a main frame carrying packing mechanism, a sliding frame moving in ways formed in the uprights of the main frame, a tube for inclosing the sack connected therewith, a platform having a circular opening to admit the passage of the bag when filled, a bottom plate resting upon the floor below, having a bulging top protruding through the opening in the platform, and a spring locking mechanism for connecting such platform and tube to the bottom plate, all combined substantially as shown and described.

2. In a bran-packer, a main frame, a sliding frame *f′*, moving therein, and a tube *t′*, having a platform *p* connected to such sliding frame,

in combination with a bottom plate 26, having a bulging top protruding through an opening in such platform when the latter rests upon such bottom plate, a locking mechanism for uniting the parts together, and a packing mechanism located in and carried upon the main frame, substantially as shown and described.

3. In a bran-packer, a main frame, a main shaft, a driving-pulley carried in bearings thereon, a packing mechanism comprising a vertical tube connected to the frame, a revolving packer and stirrer moving in such tube, a bag-holding tube located in line below such packing-tube and carried upon an auxiliary frame having a vertical movement within the main frame, a counter-shaft also carried on such main frame and having a bearing at one end in a swinging arm, a friction-wheel mounted on such shaft, and chains connecting such counter-shaft to the sliding frame, with means, substantially as described, for throwing the friction-wheel in contact with the main driving-wheel for operating the bag-lifting mechanism and bran-packing mechanism at one and the same time, substantially as shown and described.

In witness whereof I have hereunto set my hand this 5th day of April, 1890.

NEWTON C. GAUNTT.

Witnesses:
E. H. PORTER,
J. W. COLLINS.