

No. 881,542.

PATENTED MAR. 10, 1908.

C. L. BURGNER.
APPARATUS FOR UNLOADING HAY IN BARN.

APPLICATION FILED APR. 20, 1907.

3 SHEETS—SHEET 1.

Fig. 1.

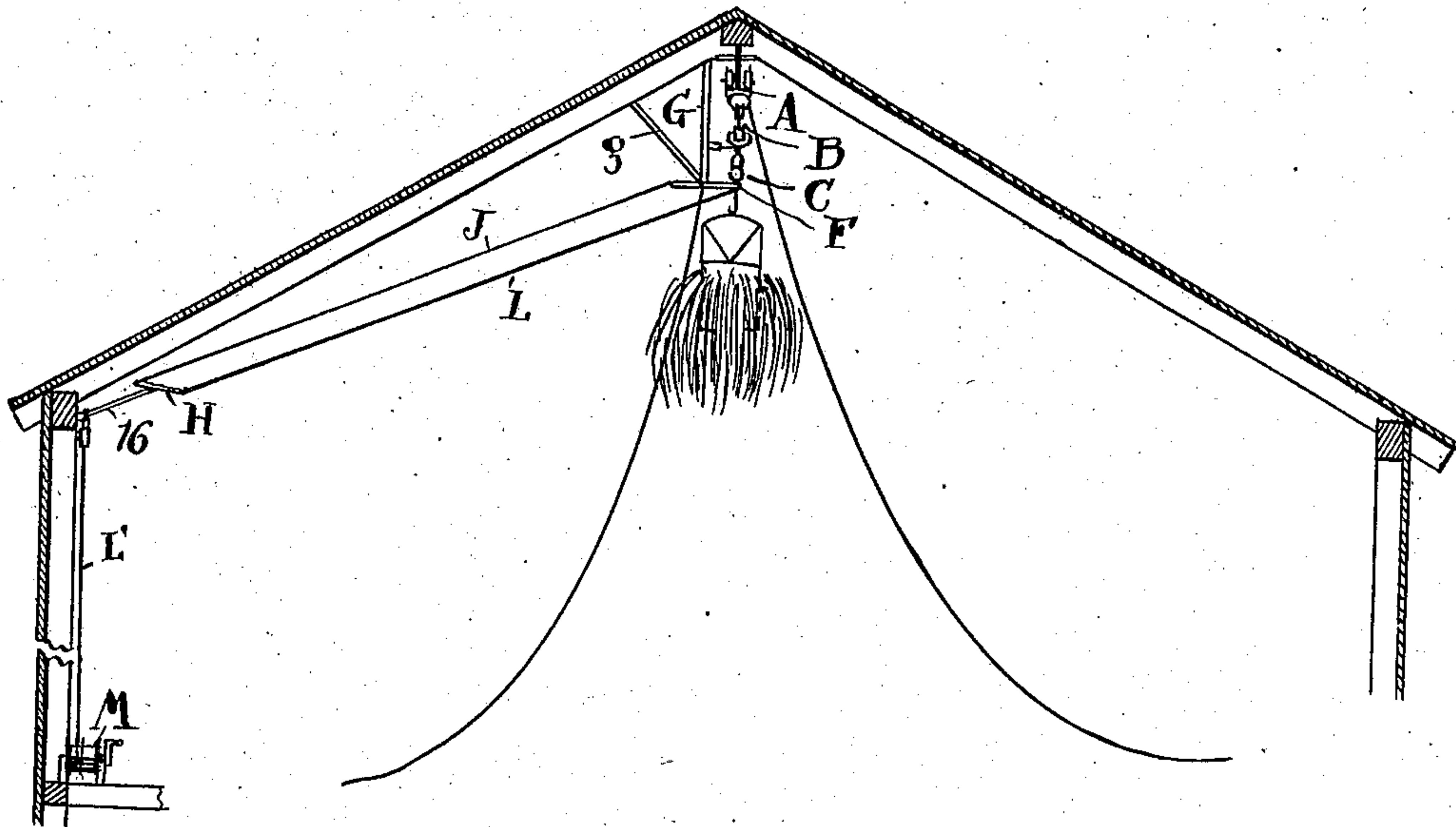
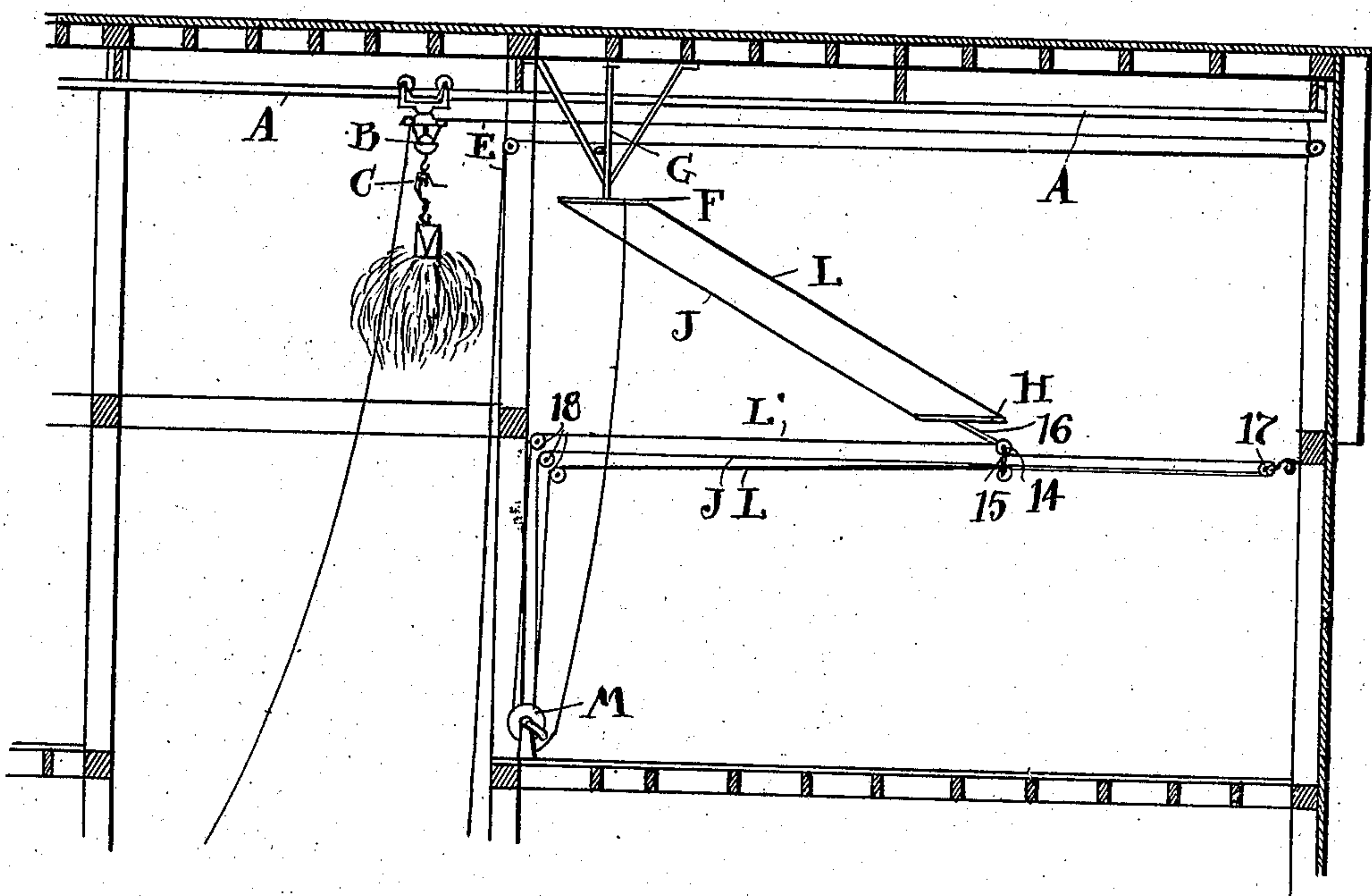


Fig. 2.



ATTEST
C. M. Fisher
L. F. Kimball

INVENTOR
Clarence L. Burgner.
BY Fisher & Moore ATTYS.

No. 881,542.

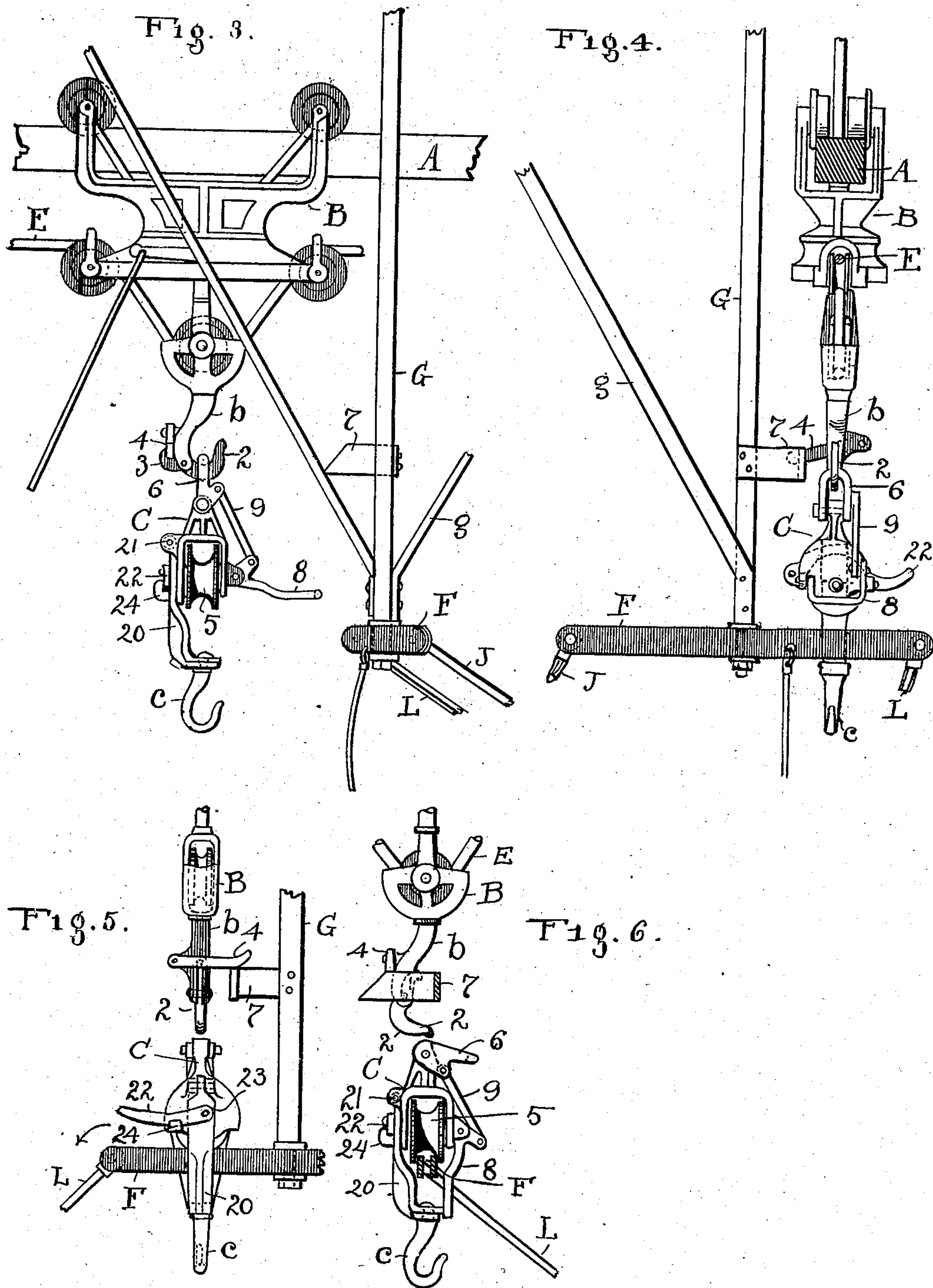
C. L. BURGNER.

PATENTED MAR. 10, 1908.

APPARATUS FOR UNLOADING HAY IN BARN.

APPLICATION FILED APR. 20, 1907.

3 SHEETS—SHEET 2.



ATTEST
E. M. Fisher.
L. J. Kimball

INVENTOR.
Clarence L. Burgner
BY Fisher & Kimball ATTYS.

No. 881,542.

C. L. BURGNER.

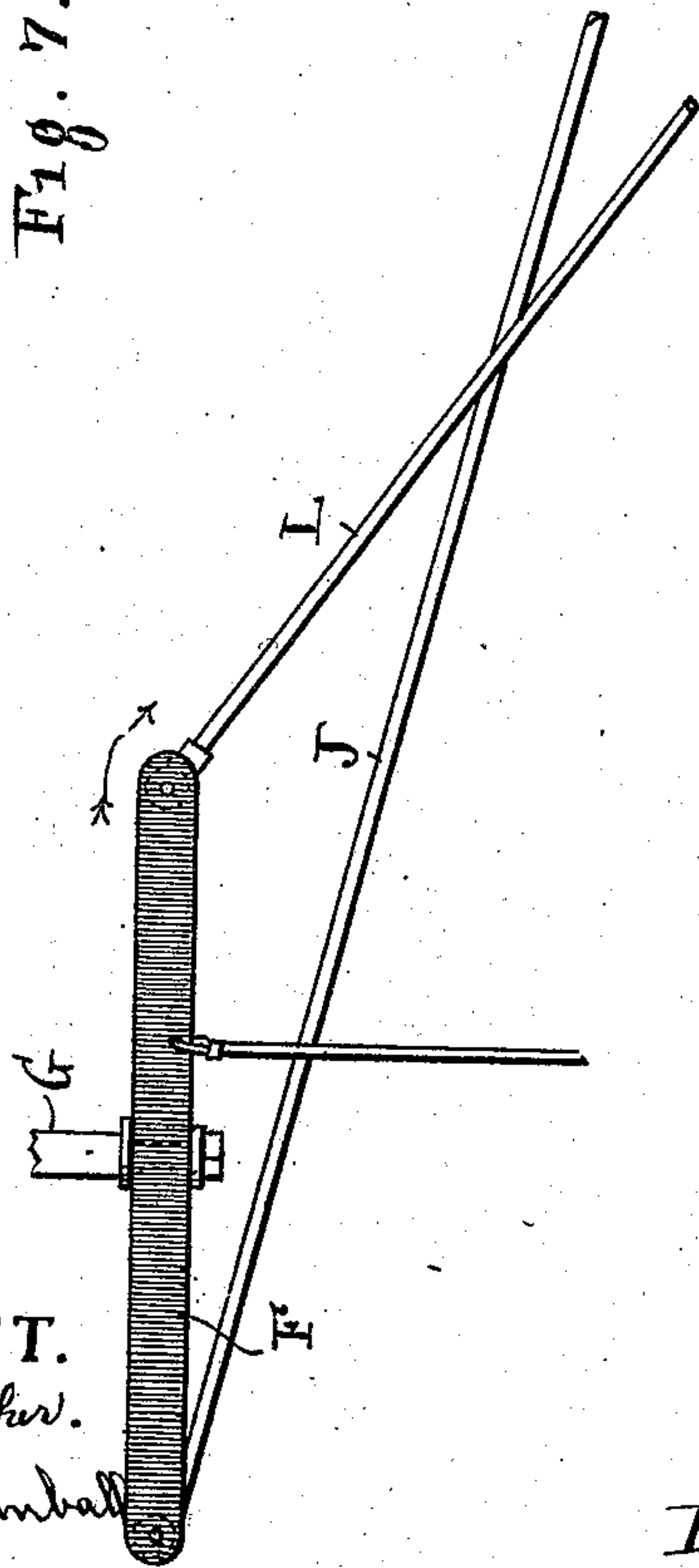
PATENTED MAR. 10, 1908.

APPARATUS FOR UNLOADING HAY IN BARN.

APPLICATION FILED APR. 20, 1907.

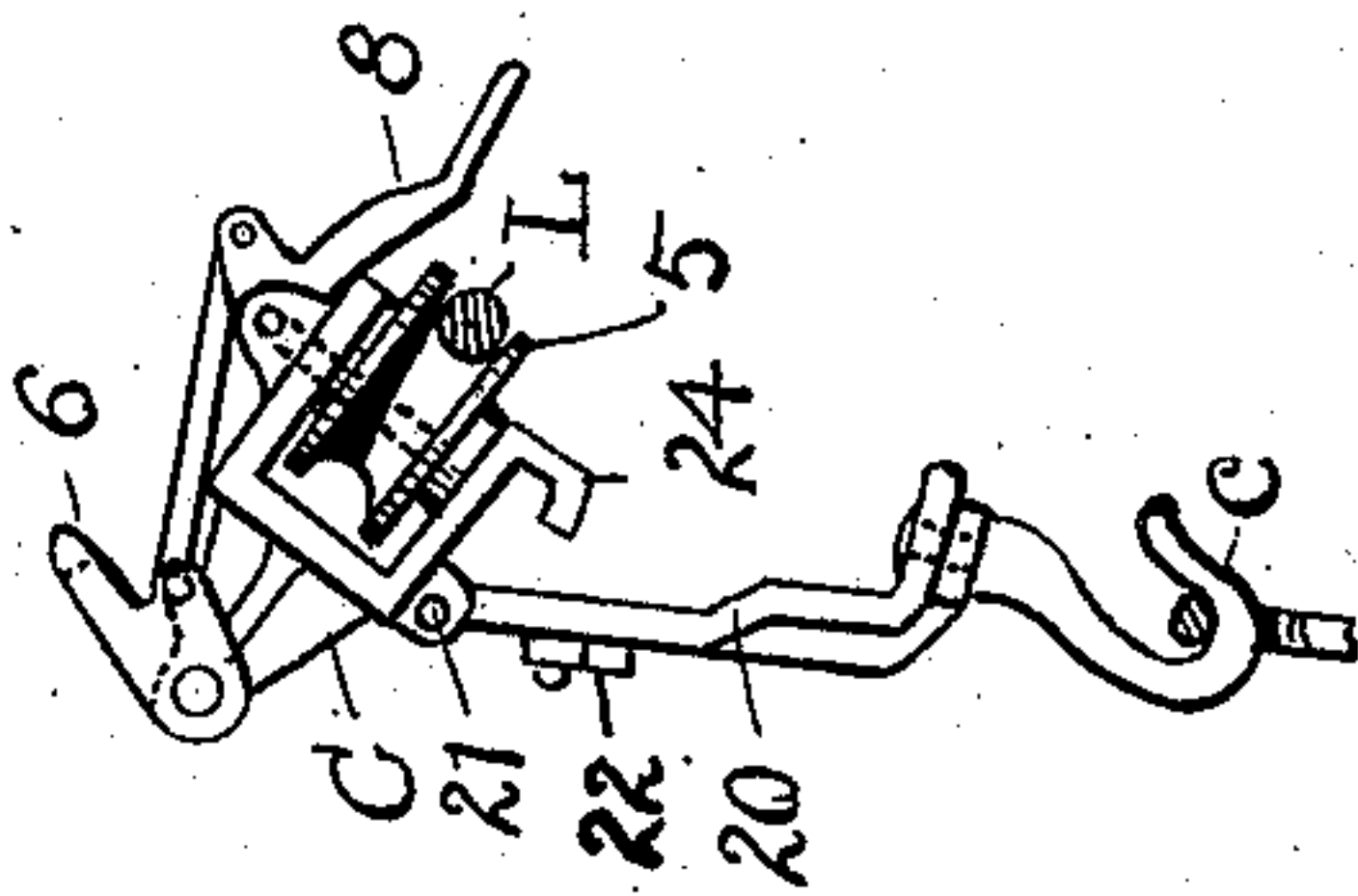
3 SHEETS—SHEET 3.

Fig. 7.



ATTEST.
C. M. Fisher.
L. F. Kimball.

Fig. 8.



INVENTOR
Clarence L. Burgner.
BY Fisher & Mow ATTYS.

UNITED STATES PATENT OFFICE.

CLARENCE L. BURGNER, OF CLINTON, OHIO.

APPARATUS FOR UNLOADING HAY IN BARN.

No. 881,542.

Specification of Letters Patent.

Patented March 10, 1908.

Application filed April 20, 1907. Serial No. 369,371.

To all whom it may concern:

Be it known that I, CLARENCE L. BURGNER, a citizen of the United States, residing at Clinton, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Apparatus for Unloading Hay in Barns, and do declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in apparatus for unloading hay in barns, and the invention consists in the construction and combination of parts, substantially as shown and described and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a cross section of a barn showing my invention arranged therein and more or less diagrammatic. Fig. 2 is a cross section of a barn at right angles to Fig. 1 showing my invention therein and likewise more or less diagrammatic. Fig. 3 is an enlarged elevation of the carrier members of the invention and other parts considerably enlarged as compared with Figs. 1 and 2, and Fig. 4 is a view of the same mechanism at right angles to Fig. 3 and looking in from the right of Fig. 3. Fig. 5 is a side elevation, of the two carrier parts of the invention seen in Fig. 3 detached from each other, and Fig. 6 is an elevation of the same parts, likewise detached, but exhibiting different sides of said parts as will hereinafter more fully appear. Fig. 7 is an elevation of the distributing mechanism with a portion broken out at the center, whereby the hay is carried to different portions of the mow according as the mechanism is arranged to lodge the hay here or there in the mow. Fig. 8 is an elevation of the distributing carrier as will hereinafter more fully appear.

The idea of the invention as thus illustrated is to lift the hay from a wagon in a barn into the mow and then convey the hay from its point of elevation to one portion or another of the mow so as to distribute the same mechanically instead of by hand, as will now appear. Thus, the invention comprises two carriers B and C, respectively, adapted to be mechanically united for lifting the hay into the mow and to be automatically separated for distributing purposes, whereby the distributing carrier is released from the lifting carrier and the load is con-

veyed thence to any desired portion of the mow by gravity, and there discharged. Of course, the original raising or lifting of the load by the foregoing mechanism is by power, as usual, such as horse-power attached to the rope or cable E.

The lifting carrier B is adapted to run on rail A in the extreme top of the loft and comprises the hook member *b*, which has means for making temporary engagement with the body of the carrier C after any of the well known connections now in use, and does not in itself constitute a novel portion of the present invention, excepting as the said hook member *b* is modified to adapt it to my present use. For example, when I have lifted the load from the wagon into the mow and am ready to distribute the same to a distant portion of the mow, my plan contemplates the moving of main carrier B to one side a distance sufficient to bring carrier C into operative relation with the remainder of the distributing mechanism, and when carrier C has reached such point, I plan to liberate the same from hook member *b* and lodge said member C on carrying bar F. To this end, hook 2 of member *b* is hinged or pivoted to the stem or shank of member *b* and behind said pivot point said hook has a notched extension 3 adapted to be engaged by a latch 4, so that when sheave or roller 5 of carrier C reaches a point directly above the fixed receiving bar F the said hook is automatically dropped and released from yoke 6 on carrier C, and said carrier C is then free to travel to its destination with its load, which presumably is suspended from hook *c*.

Rail or bar F is supported upon a suitable rigid depending frame comprising upright G and the two braces *g* to give it strength, and the said bar F is rigidly fixed on said upright G so far as tilting thereon is concerned, but is adapted to rotate horizontally, and it becomes the initial rest of carrier C and its sheave 5 after being detached from carrier B. Such release is effected in this instance by a lateral projection 7 fixed upon post or hanger G which, when the carrier parts are swung in towards said post, engages beneath latch 4 that locks hook 2 and raises said latch and liberates the hook, so that the hook drops and opens and carrier C is thereby released from carrier B. Yoke 6 on carrier is then drawn down by the weight of bell-crank lever 8, pivoted on carrier C and connected with said yoke by link 9, and the parts drop respec-

tively into position as seen in Fig. 6, where the long portion of lever 8 serves the purpose of a side guard to confine carrier C upon its track, as will hereinafter appear. Now, having liberated carrier C from carrier B and delivered the same upon bar F, the said carrier C is ready to be further employed for conveying the load suspended therefrom, but not shown, to one part or another of the mow.

To this end, I provide an arrangement for gravity conveyance of the load after it leaves the bar F, as seen in Fig. 7, and comprising bars F and H respectively and two ropes or cables J and L. Each of these ropes is secured to one end of bar F and passed over sheaves 12 at the ends of bar H and thence over sheaves 13 near the middle of said bar and back and down over other sheaves 14 to drum or windlass M, upon which said ropes are reversely wound, and are kept taut.

The sheaves 14 are supported on a cross head 15 apart from the cross member H by means of a rigid rod or bar 16, having a jointed connection with cross member H, Fig. 7 and ropes J—L pass thence to a sheave 17 hooked or otherwise engaged to the side of the hay-mow, while rope L' passes over sheave 18 to windlass M. Thus by means of said windlass, which is operated by hand and shifting hook 17 to one portion or another about the side of the mow, the hay can be carried to one point or another in the mow as preferred, and after carrier C is moved off bar F to either rope J or L it will run by gravity to its destination. Bars or cross portions F and H are shown of the same length in this instance, and they may have more or less length so as to more or less compass the width of the mow, and if long enough no special shifting of hook 17 will be required.

Cross-bar H is preferably formed in two parts, as bar F also may be, and sheaves 12 and 13 are supported between the sides of bar H and said ropes J and L are confined thereby, and carrier C has a hinged hook support 20 adapted to swing laterally in respect to said carrier body, and latch 22 pivoted at 23 is adapted to engage a lip 24 on said hook support 20 and lock it to said body. Then as the carrier runs to the end of its travel on either rope J or L the latch 22 engages pin 25 on bar H and is raised. When thus released the weight of the load tilts carrier C on the rope and lets it drop off with the hay hooks into the mow. Said carrier is then gathered up with the hooks and again restored to working position and so on.

If desired, rope E may be permitted to travel with auxiliary carrier C over the switch tracks and back again, keeping said carrier always under control of said rope E.

Briefly recapitulating the operation of the separate carriers, it will be understood first of all that carrier C is an auxiliary carrier for

switching and carrying the load to either side of the central loft rail A, and to that end is also a detachable link member between carrier B and the hay forks which hold and support the load. In lifting the load at the start by rope or cable E, both carrier C and hook b from which it is suspended, are raised until the hook part b comes to its place in or upon carrier B. The pull is now upon said carrier B and the same is caused to travel with the load over track A until sheave 5 of carrier C stands directly over bar F and upon which it is dropped when projection 7 unlatches hook 2 by lifting latch 4. Bar F is now rotated if the ropes J or L are so disposed in respect to the bar that running of the carrier C thereover could not be otherwise accomplished and then the carrier is either pulled by rope off of the bar or pushed therefrom by a man in the loft until the said carrier C is upon either one or the other of the inclined ropes J or L. From this point further travel is by gravity until said carrier C is released bodily from the rope by the weight of the load when latch 22 engages pin 25 on bar H and permits said carrier to tilt to one side of the rope.

The cross bars F and H, as well as various other parts of the apparatus are illustrated in Figs. 1 and 2 in a conventional or diagrammatic form as compared with the other figures of the drawing.

What I claim is:—

1. In a hay unloading apparatus, a main carrier and an auxiliary carrier for distributing the hay in the mow and a device connecting said parts adapted to open and release the auxiliary distributing carrier.

2. In a hay unloading apparatus, a main carrier for lifting the hay into the mow and a distributing carrier beneath the same, a downwardly opening hook connecting said carriers, and tracks for said distributing carrier adapted to convey the hay transversely over the mow.

3. The main carrier and the distributing carrier separably connected therewith, one of said parts having a hook adapted to be swung open to effect such separation of said parts, and means to receive the distributing carrier when release occurs.

4. The main carrier having a downwardly opening hook and a distributing carrier engaged by said hook, a track adapted to receive said distributing carrier and means to open said hook automatically when said track is occupied by said distributing carrier.

5. In a hay unloading apparatus, a main carrier and a fixed track therefor, in combination with a distributing carrier, means separably uniting said parts and a separate track for said distributing carrier adapted to be variously disposed in respect to the main carrier track.

6. In a hay unloading apparatus, a distrib-

uting carrier adapted to convey the hay and having a sheave on which it travels, and a track for said carrier comprising a receiving bar and rope, tracks stretched therefrom upon which the carrier is adapted to run.

7. In a hay unloading apparatus, the combination of the hay distributing carrier, with a rope track for said carrier, and means to take up and to lengthen said track according to its position in the hay mow.

8. An apparatus to unload hay in a mow, comprising a lifting device, in combination with a distributing device separably connected therewith, and a track arranged to receive said distributing device and convey the hay to any part of the mow, said track constructed to be lengthened and shortened, according to conditions.

9. In an unloading apparatus, a main carrier and an auxiliary carrier releasably connected therewith, in combination with a switching track for said auxiliary carrier.

10. In an unloading apparatus, a main carrier and an auxiliary carrier detachably connected therewith, a switch to receive said auxiliary carrier, and a track from said switch adapted to be shifted from place to place.

11. In an unloading apparatus, a tilting carrier having traveling rollers and a hook beneath the same, said hook being pivoted at one side of the carrier to tilt the same under load, and interlocking means between said hook and carrier.

12. In an unloading apparatus, a carrier having a load supporting member locked thereto and adapted to tilt the carrier when unlocked, a track for said carrier, and means to unlock said member and release said carrier from said track.

13. In an unloading apparatus, a main track and an adjustable side track and switch therefor, in combination with a main carrier for the main track, and an auxiliary carrier to transfer and convey the load over the side track.

14. In an unloading apparatus, a main track and a main carrier adapted to travel thereon, in combination with an inclined track and an auxiliary carrier adapted to transfer the load from the main track to the said inclined track and to travel by gravity to the place of discharge.

15. In an unloading apparatus, a main track and a main carrier thereon, in combination with an auxiliary carrier and a side track over which said auxiliary carrier is adapted to travel, and means to lengthen and shorten said side track and adjust the same angularly in respect to the main track.

16. In an unloading apparatus, a main carrier and an auxiliary carrier having a detachable connection therewith, and a side guard for said auxiliary carrier adapted to close when release is effected between said carriers.

17. In an unloading apparatus, a main carrier and an auxiliary carrier separably connected therewith, in combination with a side track for said auxiliary carrier, a rotatable switch between said tracks and means to automatically release said auxiliary carrier from the main carrier for deposit on said switch.

18. In an unloading apparatus, a main carrier and track therefor, an auxiliary carrier detachably connected with the main carrier and a side track therefor, traveling end supporting connections for said side track, and drum and cable winding mechanism for shifting said supporting connections.

19. In an unloading apparatus, a main carrier and an auxiliary carrier combined therewith to convey the load over separate tracks, one of said tracks having swiveled supports and means to shift the same angularly in respect to the other track.

20. In an unloading apparatus for hay mows, a main track and a cable operated carrier thereon, a switch in the line of said main track and a side track leading therefrom to the sides of the mow, and means to shift said side track to different positions in the mow, in combination with an auxiliary carrier detachably connected with the main carrier, means at the switch to automatically transfer the said auxiliary carrier thereto and to the side track, and means to automatically operate the auxiliary carrier to deposit the load beneath the side track.

In testimony whereof I sign this specification in the presence of two witnesses.

CLARENCE L. BURGNER.

Witnesses:

R. B. MOSER,
F. C. MUSSUN.