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PATENTED NOV. 29, 1904.

W. S. BAKER.
SAFETY ATTACHMENT FOR GINS.

APPLICATION FILED MAR. 8, 1904.

NO MODEL.

3 SHEETS—SHEET 1.

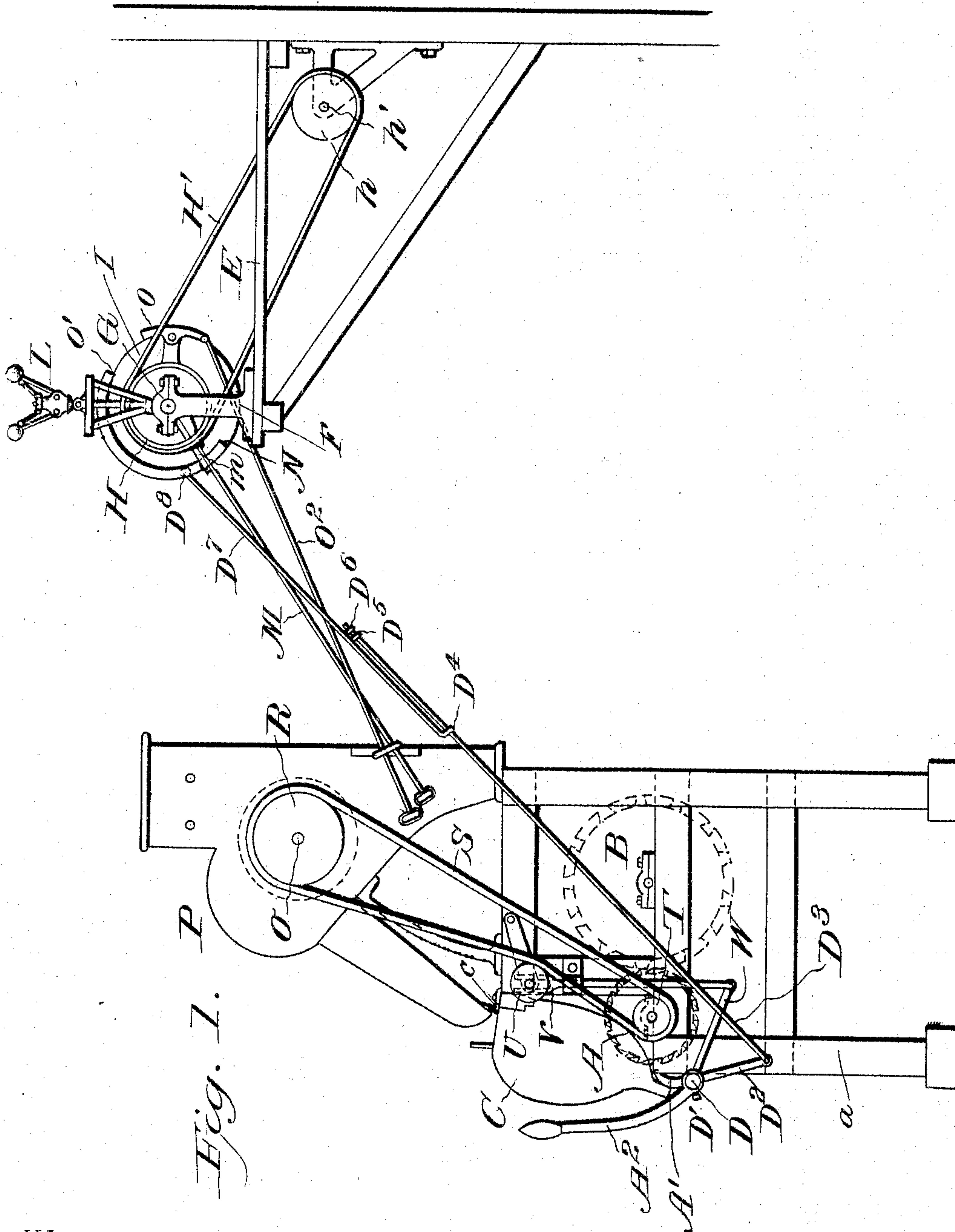


Fig. 7.

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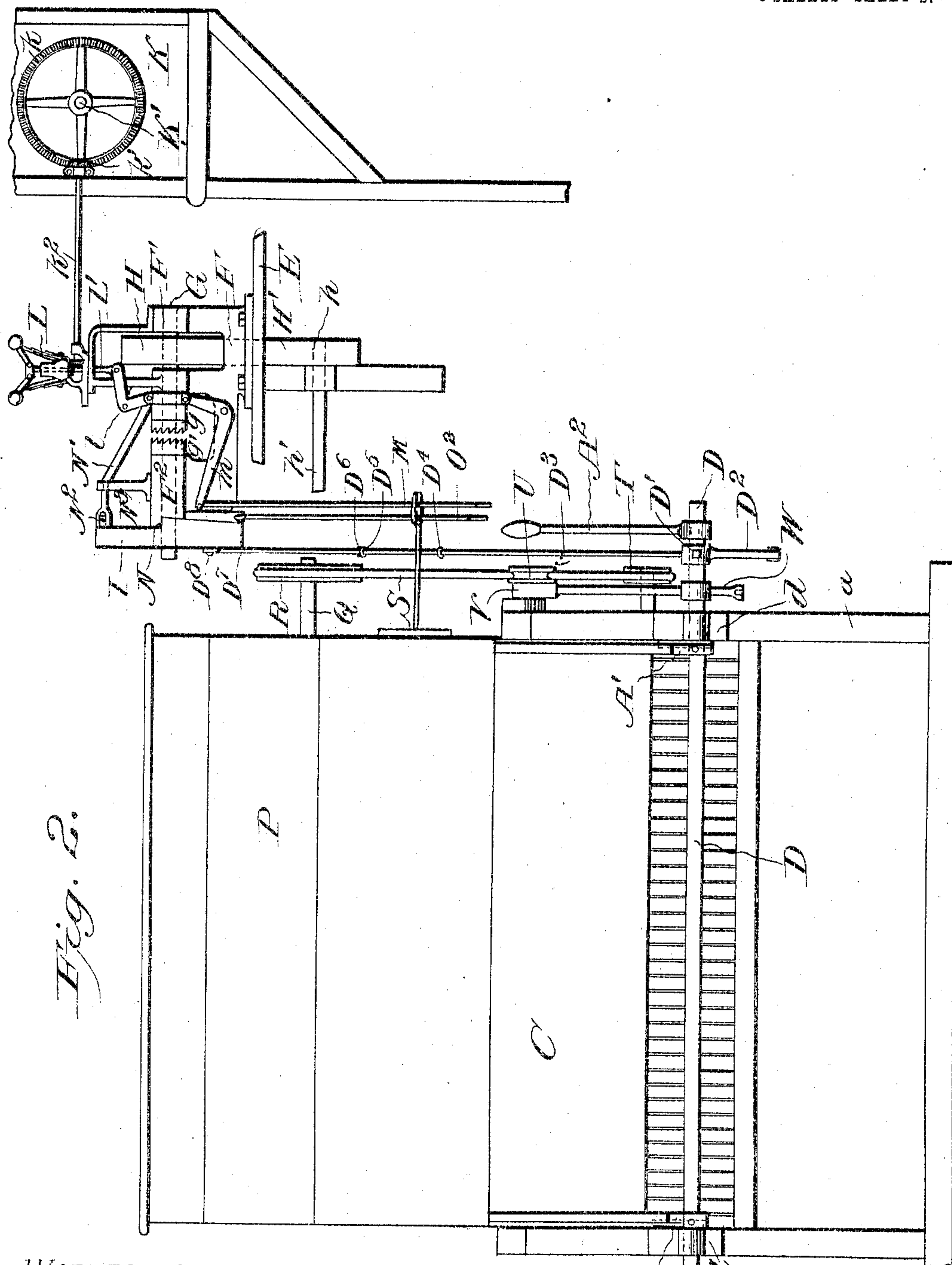
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3 SHEETS—SHEET 2.



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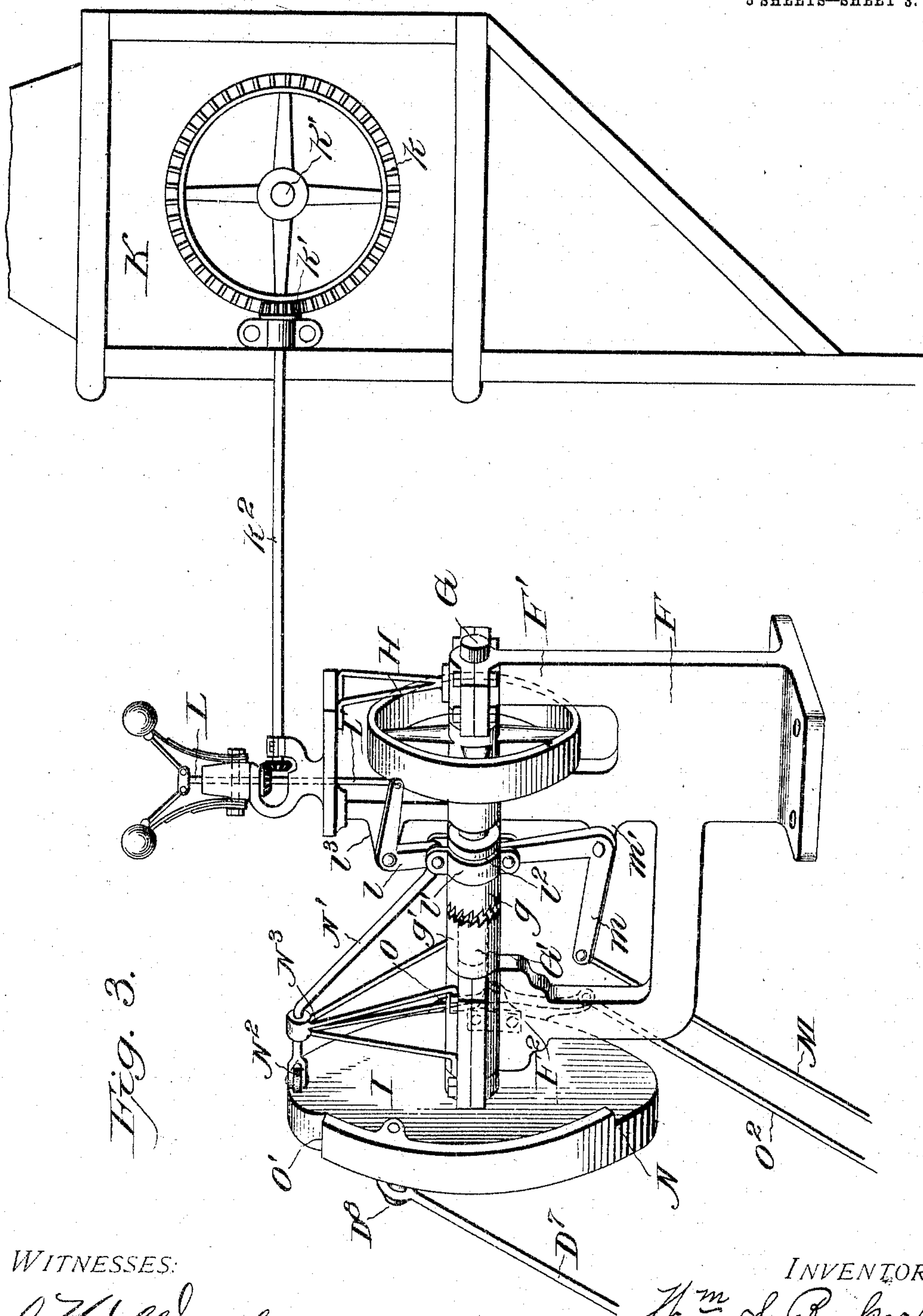
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

WILLIAM SORNEY BAKER, OF PURVES, TEXAS.

SAFETY ATTACHMENT FOR GINS.

SPECIFICATION forming part of Letters Patent No. 776,007, dated November 29, 1904.

Application filed March 8, 1904. Serial No. 197,089. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM SORNEY BAKER, a citizen of the United States, residing at Purves, in the county of Erath and State of Texas, have invented new and useful Improvements in Safety Attachments for Gins, of which the following is a specification.

In the ginning of cotton great care and attention must be exercised in watching the condenser which removes the fiber from the lint-flue into the press-box. Stoppage of the condenser from any cause, such as a broken belt or chain, &c., will result in damage by breakage of some of the parts or by fire from the friction of the gin-saws through the cotton.

The object of my invention is to provide means whereby when from any cause the condenser slows down or stops running the breast of the gin will be automatically lifted, so that the saws will no longer operate on the cotton, and at the same time the feed of cotton to the saws will be stopped.

With these objects in view the invention consists in certain novel features of construction hereinafter described and claimed, and shown in the appended drawings, in which—

Figure 1 is a front elevation of a saw-gin provided with my improvements. Fig. 2 is a side elevation thereof. Fig. 3 is an enlarged detail view in perspective of a part of the attachment.

Referring specifically to the drawings, A denotes the gin-saws. They are mounted on the usual saw-shaft, which is supported in suitable bearings on the main frame *a* of the machine, and driven from any source of power. The usual brush for removing the lint from the saws is indicated at B. Hinged to the front of the gin at *c* is the gin-breast C, carrying the usual gin-ribs, between which the saws revolve when the parts are in operative position.

The parts thus far described are of the usual construction and are all to be found in ordinary saw-gins.

In front of the gin below the breast a rock-shaft D is mounted in suitable bearings *d* on the frame *a*. This shaft extends throughout the entire length of the gin and carries wipers A', which extend under the breast, at each

end thereof, in such a manner that when the shaft is rocked said wipers will lift the breast away from the saws, whereby they will be rendered inoperative. By means of a hand-lever A², secured at any convenient point on the shaft, the wipers may be manually operative, if desired. On one end of the shaft D there is secured by a set-screw D' or otherwise a downwardly-extending lever D², which carries as its outer end a rod D³, which is joined to another rod, D⁷, by a connection comprising loops D⁴ and D⁵ on the latter rod, through which the rod D³ extends. The latter rod has on its outer end an enlargement or nut D⁶, so that the parts cannot become separated. The purpose of this construction is to permit the gin-breast to be lifted by the hand-lever A² without disturbing the mechanism which actuates the rod D⁷. It will be seen that when the hand-lever A² is swung forward to lift the gin-breast the upward movement of the rod D³ will not be communicated to the rod D⁷, as the former will simply slide through the loops D⁴ and D⁵; but when the rod D⁷ is pulled up the loop D⁵ thereon will catch behind the enlargement D⁶, whereby the rod D³ will move with the rod D⁷ and the shaft D will be rocked, causing the wipers to lift the breast, as heretofore described.

I will now proceed to explain the mechanism for automatically operating the parts just described. This mechanism is controlled by a governor in gear with the condenser, the construction being such that the breast will be lifted when the condenser stops or runs too slow for a safe operation of the gin. On a bracket or platform E, extending from the wall of the gin-room or located in any other convenient position, is mounted a pillow-block F, having bearings F' and F². A shaft G is mounted in the bearing F' and has at one end a movable clutch member *g*, which is movable along the shaft to engage the fixed clutch member *g'* on a shaft G' in the bearing F², whereby said shafts are coupled. The shaft G has a pulley H, which is driven by a belt H' from a pulley *h* on a line-shaft *h'*. The shaft G carries a disk I, near the rim of which the rod D⁷ is secured, as at D⁸, in any suitable manner. This disk is to be driven from the

shaft G by coupling the same to the shaft G', as heretofore described, and operates the rod D' to raise the gin-breast. A portion of the condenser is shown at K and the drive-shaft thereof at K'. On said shaft is a large bevel-wheel k , which is in mesh with a small bevel-wheel k' on a shaft k^2 , which drives a ball-governor L of ordinary construction, which is mounted on the pillow-block. To the governor-stem L' is pivoted one arm of a bell-crank lever l , the other arm of which is pivoted to a block l' , which is loosely mounted in a groove l^2 in the movable clutch member g . The bell-crank is fulcrumed to a suitable support l^3 on the pillow-block. It will be seen that when the governor-stem drops by reason of a decrease in the speed of the condenser the clutch member g will be slid forward into engagement with the fixed clutch member on the shaft G', causing said shaft to revolve and the disk I to turn, which will actuate the rod D' to lift the gin-breast. In order to operate the clutch manually, a rod M is connected to one arm of another bell-crank m , fulcrumed on a support m' on the pillow-block. The other arm of the bell-crank is pivoted to the block l' . The rod extends to a convenient location near the gin and has a handle, whereby it may be readily grasped by the ginner to operate the clutch.

In addition to the above means must also be provided for holding up the gin-breast until the necessity for the stopping of the gin is removed. This is accomplished by forming a cam-like projection N on the face of the disk I. A follower N' is connected at one end to the block l' , and the other end has a roller N² in contact with the projection N, so that when the disk is revolved a certain distance, depending on the length of the projection, said follower will be moved sidewise in a plane parallel to the axis of the shafts G and G' and being connected to the block l' the clutch member g will be disengaged from the clutch member g' , which stops the shaft G and the disk I. The follower is mounted in suitable bearings on a support N³, extending from the pillow-block. After the shafts are uncoupled it will be necessary to hold the disk I from turning back, and thus lowering the gin-breast again. This is accomplished by a dog O, pivoted on the pillow-block, which engages behind a projection O', formed on the rim of the disk I. The connection between said disk and the gin-breast is so adjusted that when the disk has made one-half a revolution the gin-breast will have been sufficiently lifted to render the saws inoperative. The cam projection N is also so constructed that when this half-revolution of the disk has taken place the shafts G and G' will be uncoupled and at the same time the dog O will have engaged the projection O', thereby holding the disk from turning back. A rod O² is secured to the dog and extends to a convenient location near the gin, having a

handle whereby it can be grasped by the ginner to release the dog. When this is done, the disk I can turn, and the breast will drop down to its normal operative position by reason of its own weight.

The mechanism described thus far only lifts the gin-breast to render the saws inoperative. In addition to this it is advisable at the same time also to stop the feed of cotton to the gin. This is accomplished by the following means: The feeder is indicated at P and the feeder-shaft at Q, on which there is a pulley R, which receives motion from the saw-shaft by a belt S over a pulley T on said saw-shaft. The belt is a loose one and is kept in operative position by a tightener, which consists in an idler U, which is journaled in a fork V, which is secured at its lower end to a lever W, fastened on the rock-shaft D by a set-screw or other suitable manner. It will be seen that when the shaft D is rocked the idler will be thrown off the belt, whereby it is loosened and rendered inoperative, thus stopping the feed of cotton to the saws. When the shaft is rocked in the opposite direction to resume operation of the gin, the idler will again engage the belt and tighten it, whereby the feed of cotton will be resumed.

I have shown and described the attachment connected to one gin only. Inasmuch, however, as gins are usually operated in series of several, it may be desirable to have the device operate on all the gins simultaneously. This can be done by extending the rock-shaft along all the gins and providing wipers thereon for each gin-breast. If the entire series of saws are mounted on one shaft and the feeders also, the belt-tightener mechanism need not to be duplicated.

It will be further understood that changes in the minor details of the construction may be made without departing from the principle of the invention. With slight changes it can be readily installed in any ordinary saw-gin plant.

Having thus described my invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. The combination with a gin and condenser, of a speed-governor geared to the condenser, and means controlled by the governor for rendering the gin inoperative.

2. The combination with a gin and condenser, of a speed-governor geared to the condenser, and governor-controlled and manually-operative means for rendering the gin inoperative.

3. The combination with a gin having a hinged breast, and a condenser, of means controlled by the speed of the condenser for lifting the gin-breast.

4. The combination with a gin and a condenser, of means controlled by the speed of the condenser for stopping the feeder.

5. The combination with a gin having a

hinged breast, and a condenser, of means controlled by the speed of the condenser for lifting the gin-breast and stopping the feeder.

6. The combination with a gin having a hinged breast, and a condenser, of a speed-governor geared to the condenser, and means controlled by the governor for lifting the gin-breast.

7. The combination with a gin and a condenser, of a speed-governor geared to the condenser, and means controlled by the governor for stopping the feeder.

8. The combination with a gin having a hinged breast, and a condenser, of a speed-governor geared to the condenser, and means controlled by the governor for lifting the gin-breast and stopping the feeder.

9. The combination with a gin having a hinged breast, and a condenser, of means controlled by the speed of the condenser for lifting the gin-breast, and manually-operative means for lifting said breast.

10. The combination with a gin and a condenser, of means controlled by the speed of the condenser for stopping the feeder, and manually-operative means for stopping said feeder.

11. The combination with a gin having a hinged breast, and a condenser, of means controlled by the speed of the condenser for lifting the gin-breast and stopping the feeder, and manually-operative means for lifting said breast and stopping said feeder.

12. The combination with a gin having a hinged breast, and a condenser, of a speed-governor geared to the condenser, and governor-controlled and manually-operative means for lifting said breast.

13. The combination with a gin and a condenser, of a speed-governor geared to the condenser, and governor-controlled and manually-operative means for stopping the feeder.

14. The combination with a gin having a hinged breast, and a condenser of a speed-governor geared to the condenser, and governor-controlled and manually-operative means for lifting the breast and stopping the feeder.

15. The combination with a gin having a hinged breast, and a condenser, of a rock-shaft having means to engage the breast to lift the same, a rotatable disk connected to the rock-shaft for actuating the same, a drive-shaft and means for driving the same, a governor geared to the condenser, means on the drive-shaft and controlled by the governor for coupling said drive-shaft and rotatable disk, and means for uncoupling said parts and holding the disk against turning when uncoupled.

16. The combination with a gin having a hinged breast, and a condenser, of a rock-shaft having means to engage the breast to lift the same, a rotatable disk connected to the rock-shaft for actuating the same, a drive-shaft and means for driving the same, a governor geared to the condenser, means on the drive-shaft

and controlled by the governor for coupling said drive shaft and rotatable disk, manually-operative means for coupling said parts, and means for uncoupling them and holding the disk against turning when uncoupled.

17. The combination with a gin having a hinged breast, a condenser, and a belt-driven feeder, of a rock-shaft having means engaging the breast for lifting the same, an idler belt-tightener for the feeder-belt carried by the rock-shaft and normally in operative position, a rotatable disk connected to the rock-shaft for actuating the same to lift the breast and to render the belt-tightener inoperative, a drive-shaft and means for driving the same, a governor geared to the condenser, means on the drive-shaft and controlled by the governor for coupling said drive-shaft and rotatable disk and means for uncoupling said parts and holding the disk against turning when uncoupled.

18. The combination with a gin having a hinged breast, and a condenser, and a belt-driven feeder, of a rock-shaft having means for engaging the breast to lift the same, an idler belt-tightener for the feeder-belt carried by the rock-shaft and normally in operative position, a rotatable disk connected to the rock-shaft for actuating the same to lift the breast and to render the belt-tightener inoperative, a drive-shaft and means for driving the same, a governor geared to the condenser, governor-controlled and manually-operative means on the drive-shaft for coupling the same to the rotatable disk, and means for uncoupling said parts and holding the disk against turning when uncoupled.

19. The combination with a gin having a hinged breast, a condenser, and a belt-driven feeder, of a rock-shaft having means to engage the breast to lift the same, an idler belt-tightener for the feeder-belt carried by the rock-shaft and normally in operative position, a rotatable disk connected to the rock-shaft for actuating the same to lift the breast and to render the belt-tightener inoperative, a drive-shaft and means for driving the same, a governor geared to the condenser, means on the drive-shaft and controlled by the governor for coupling said drive-shaft and disk, a cam-like projection on the disk, a follower engaging said projection and secured to the coupling means and movable by said projection in a plane parallel to the axis of the drive-shaft for uncoupling the same, a dog engaging the disk to hold it from turning when uncoupled, and means for releasing the dog.

20. The combination with a gin having a hinged breast, a condenser, and a belt-driven feeder, of a rock-shaft having means to engage the breast to lift the same, an idler belt-tightener for the feeder-belt carried by the rock-shaft and normally in operative position, a rotatable disk connected to the rock-shaft for actuating the same to lift the breast and

to render the belt-tightener inoperative, a
drive-shaft and means for driving the same,
a governor geared to the condenser, governor-
controlled and manually-operative means on
5 the drive-shaft for coupling the same to the
disk, a cam-like projection on the disk, a fol-
lower engaging said projection and secured
to the coupling means and movable by said
projection in a plane parallel to the axis of
10 the drive-shaft for uncoupling the same, a dog

engaging the disk to hold it from turning
when uncoupled, and means for releasing the
dog.

In testimony whereof I have signed my name
to this specification in the presence of two sub- 15
scribing witnesses.

WILLIAM SORNEY BAKER.

Witnesses:

D. I. WOOD,

JOHN T. SIMMONS.