

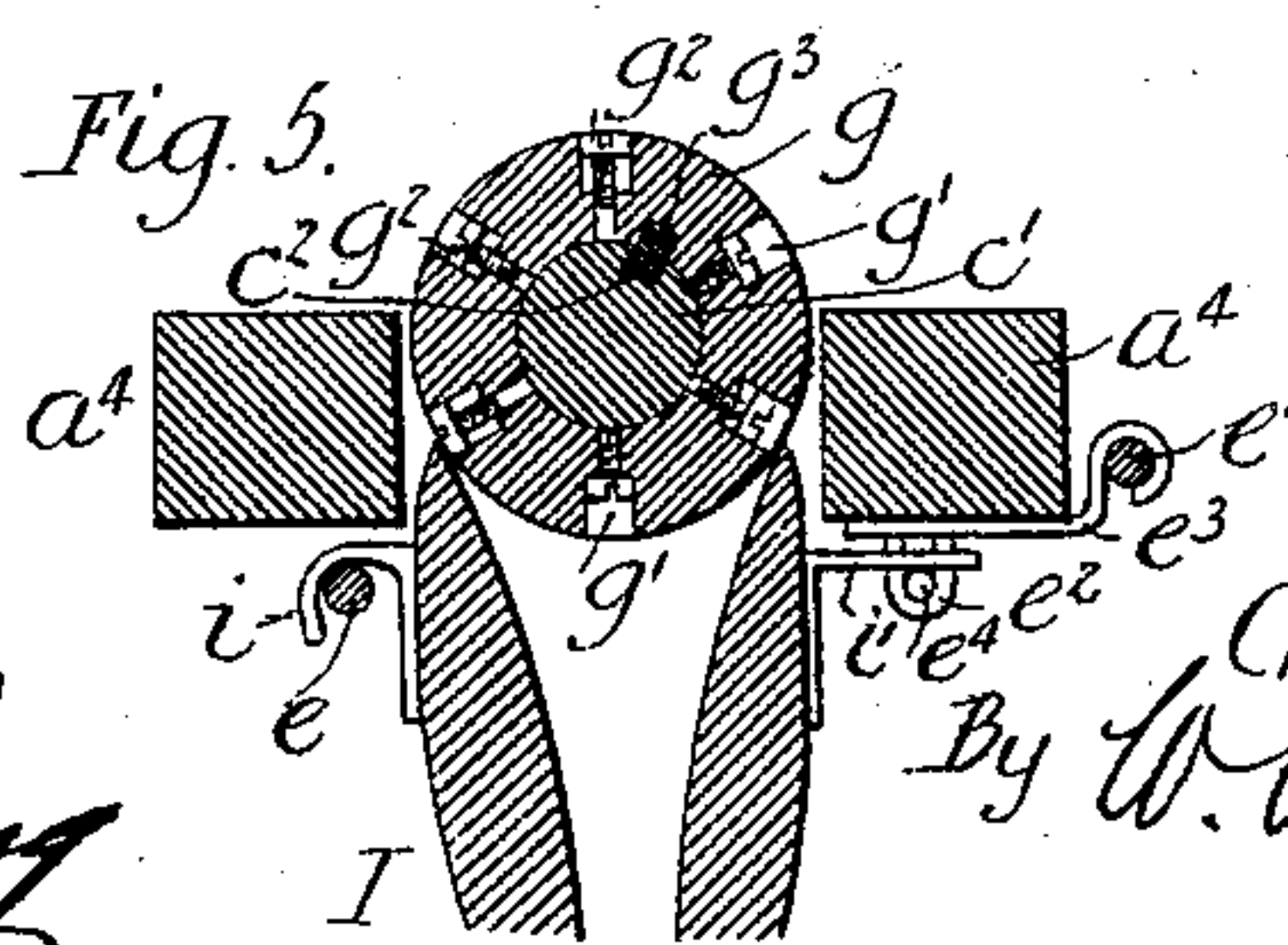
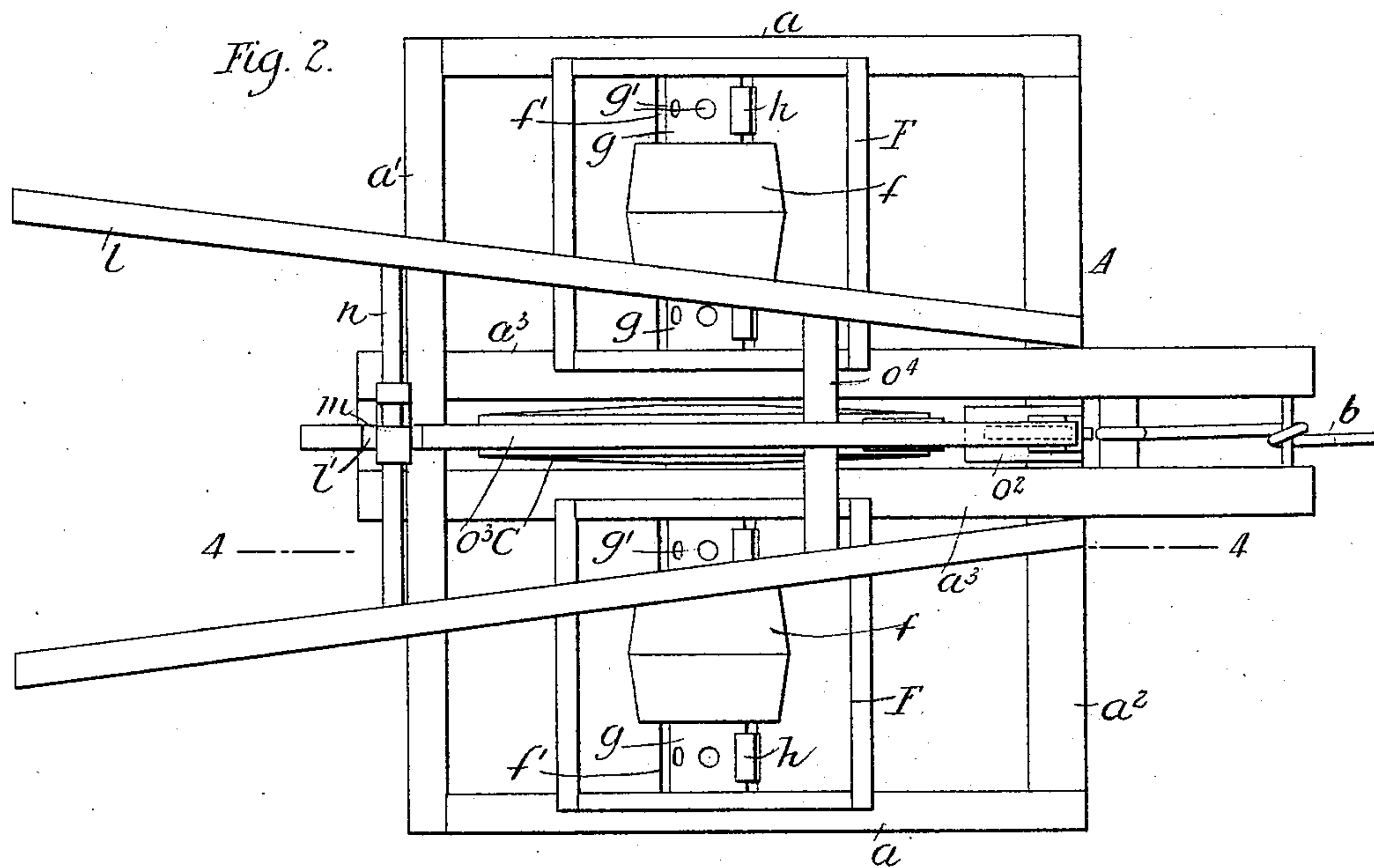
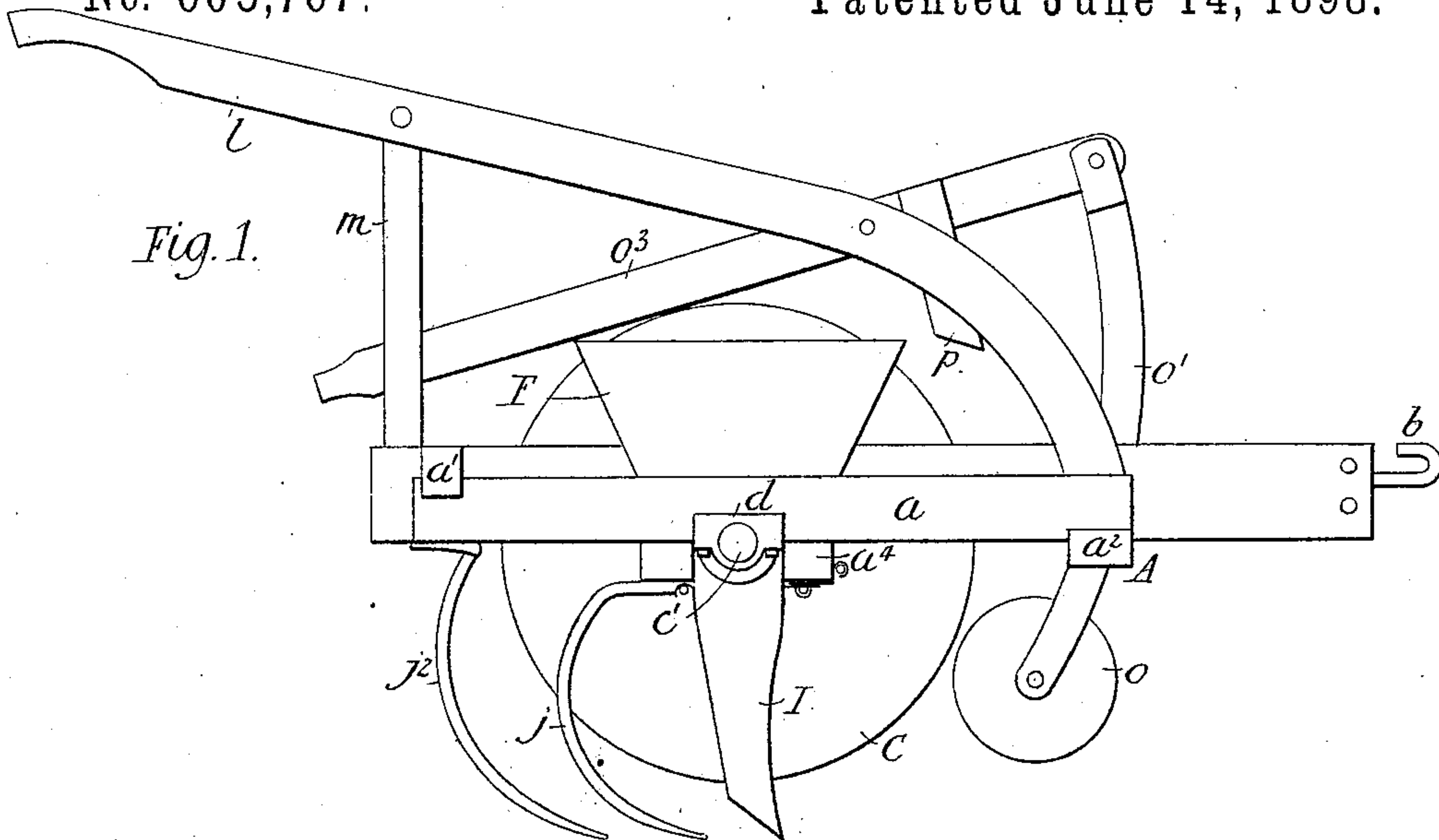
(No Model.)

2 Sheets—Sheet 1.

C. H. WHITNEY.
COMBINED PLOW, PLANTER, AND CULTIVATOR.

No. 605,767.

Patented June 14, 1898.



WITNESSES
Ben Temple Webster.
Arthur Benson

INVENTOR
Charles H. Whitney
By W. W. Dudley & Co.
his Attorneys

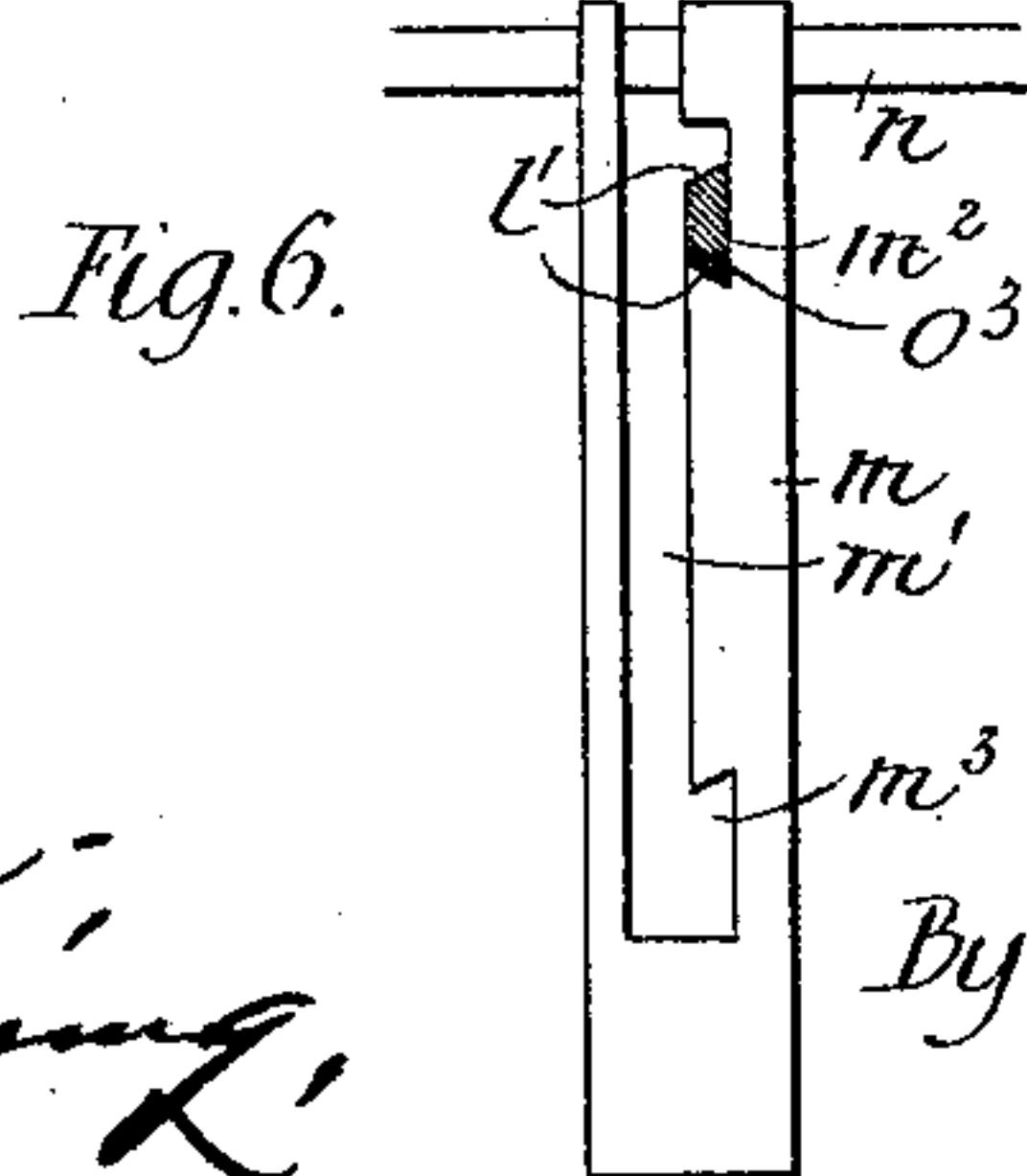
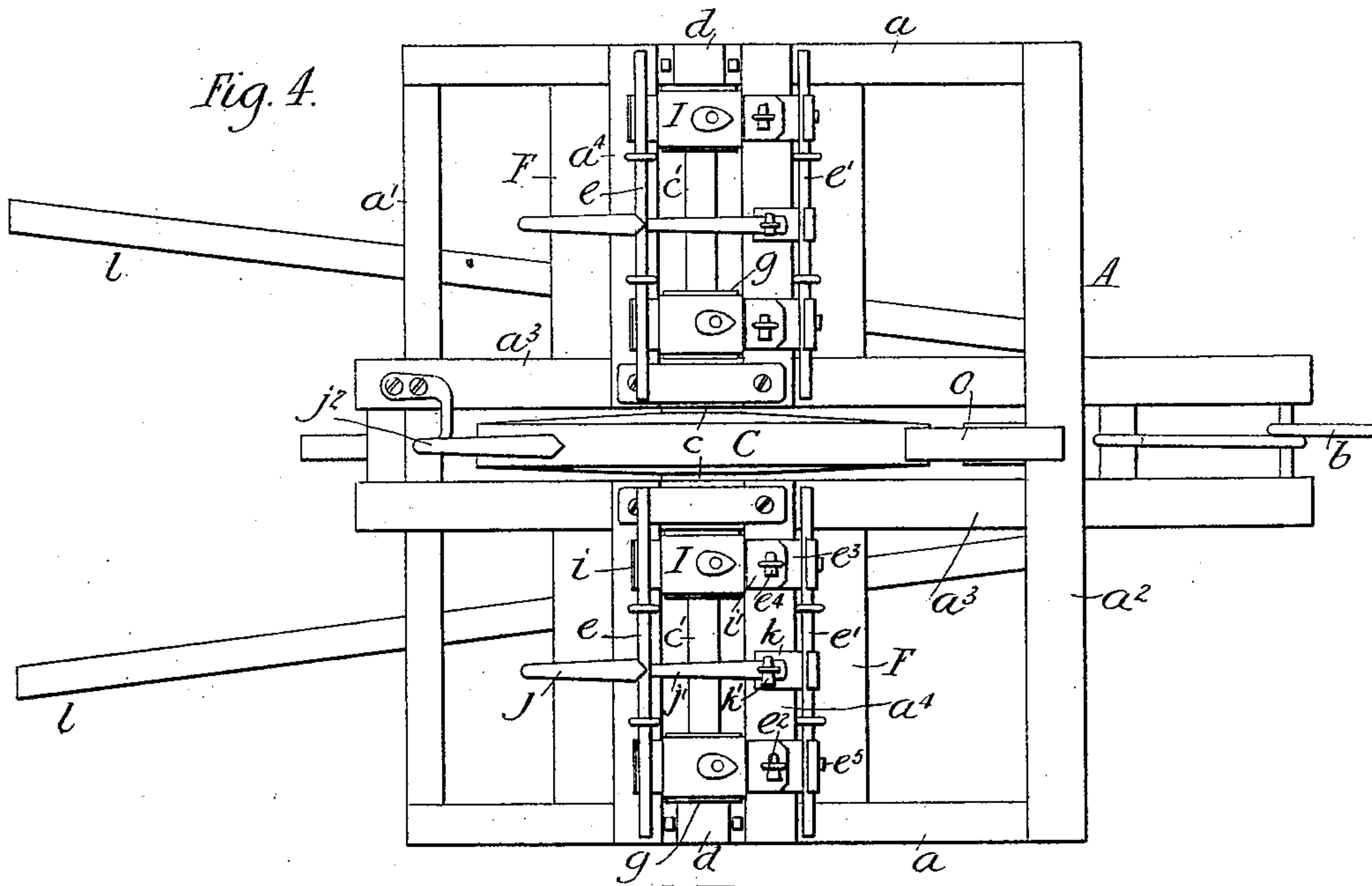
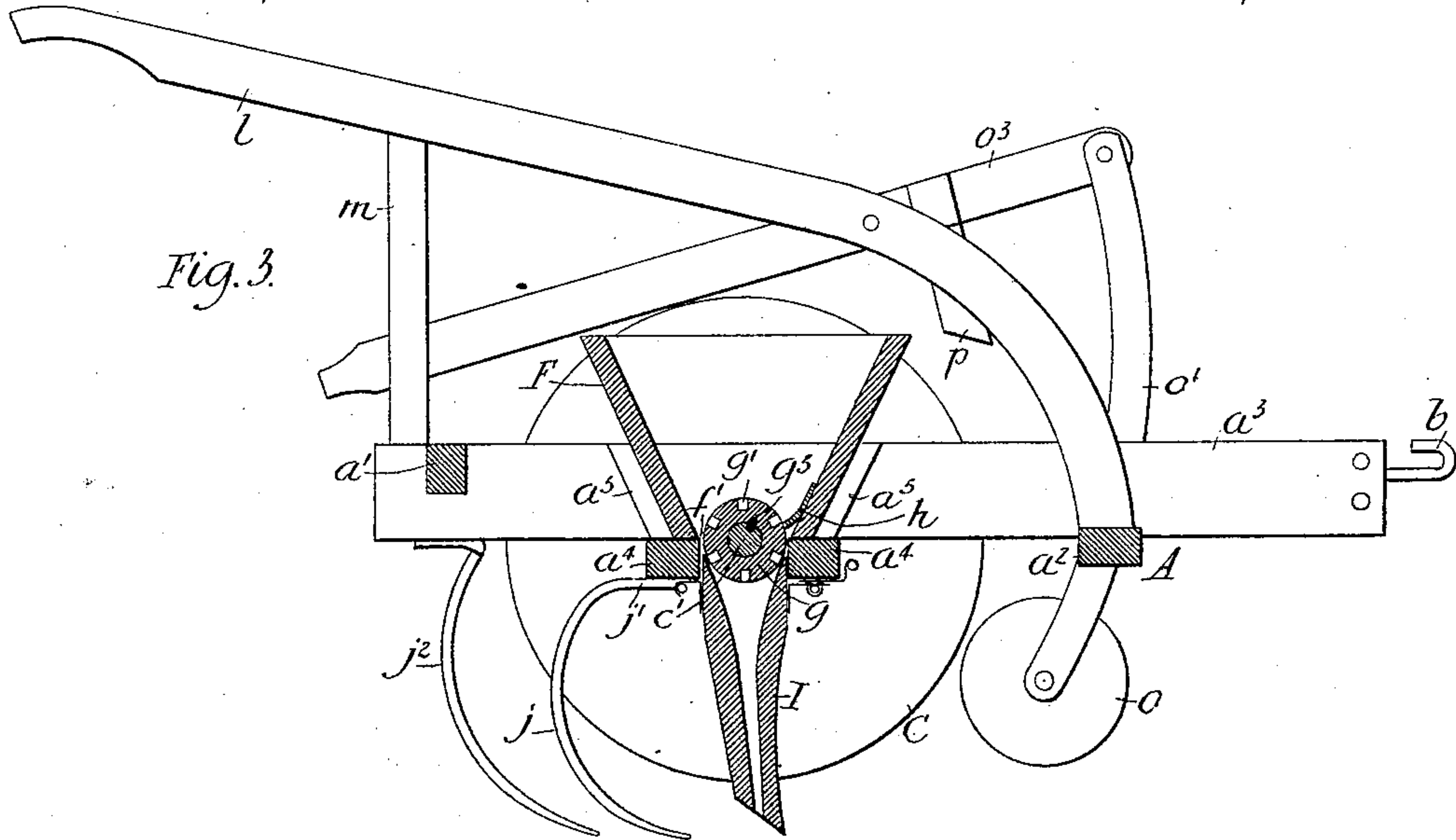
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WITNESSES

Ben Temple Webster;
Arthur Browning,

INVENTOR

Charles H. Whitney

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his Attorneys

UNITED STATES PATENT OFFICE.

CHARLES H. WHITNEY, OF COOKEVILLE, TENNESSEE.

COMBINED PLOW, PLANTER, AND CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 605,767, dated June 14, 1898.

Application filed February 4, 1898. Serial No. 669,056. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. WHITNEY, a citizen of the United States, residing at Cookeville, in the county of Putnam and State of Tennessee, have invented certain new and useful Improvements in a Combined Plow, Planter, and Cultivator; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention is directed to improvements in agricultural appliances, and has for its object the production of a simply and durably constructed machine which is adapted to perform in a highly efficient manner the operations of plowing, planting, and cultivating, thereby dispensing with the necessity of employing a separate machine for the performance of each of the stated acts, and thereby materially reducing the time and labor incident to the utilization of the present methods.

The invention consists in the construction and relative arrangement and operation of the several parts of the machine, all of which will be found fully and clearly set forth in and by the following description and specifically pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a side elevation of a machine embodying the invention. Fig. 2 is a top plan view. Fig. 3 is a longitudinal sectional view taken in line 4 4 of Fig. 2. Fig. 4 is a top plan view. Fig. 5 is an enlarged detail sectional view of a seed ring and drill. Fig. 6 is a detail view of the brake-lever and its locking-guide.

Referring to the said drawings by letter, A denotes the main frame of the machine, which comprises the side bars a , the end cross-bars a' , and the centrally-disposed draft-beams a^3 , to the forward end of which latter is secured the draft-hook or clevis b . Between the draft-beams and at or about the longitudinal center of the frame is a single supporting and driving wheel C, provided at opposite sides with hubs c , journaled in bearings in the under side of the beams, and from said hubs extend shaft-axles c' , jour-

naled in bearings d in the under side of the side bars a and a^3 . The bearings d are constructed and applied to be removed from the frame and the axles without disturbing the latter, for a purpose to be presently explained.

a^4 are transversely-disposed bars secured to the side bars and draft-beams at each side of the axle and parallel thereto. On the under side of each of the rear bars a^4 is secured a rod e , and at the outer side of each of the forward bars a^4 is secured a rod e' .

F F denote the seed-hoppers, supported at opposite sides of the frame on the bars a^4 and held in position by inclined blocks a^5 on the beams a^3 . Centrally of the hopper is a deflecting-plate f , which directs the grain, seed, or other contents of the hopper equally to the lower discharge-openings f' . Removably secured on the axles are seed-rings g , which occupy the openings f' of the hopper and operate to feed the seed in predetermined quantity to the drills. Each of the seed-rings g is provided with a plurality of seed-cups g' , which are in the nature of recesses or depressions formed equidistant in the periphery of the ring, and means are provided for adjusting the depth of the cups consisting of set-screws g^2 , which by reference to Fig. 5 may be turned to provide any desired depth of cup or to entirely close the same. This feature of adjustment enables the operator to vary the number or character of seed to be planted and also by closing certain of the cups to vary the distance between the deposits, thereby greatly enhancing the efficiency of the machine and enabling the planting of different kinds of seed, or in lieu of employing the improved seed-ring described rings of ordinary construction may be used, and when a change in the character of seed or in the distance between deposits is desired other rings may be substituted. It is to effect this substitution that I employ the removable bearings d for the axles c' . Said bearings are, as previously stated, secured to the under side of the side bars a , screws being employed for this purpose, and when the screws are withdrawn the bearings are slid transversely, leaving the end of the axle free and permitting the seed-rings to be withdrawn and other rings to be inserted. This construction of bearing has also another ad-

vantage, of which mention will be presently made. The seed-rings are prevented from turning on the shaft by keys g^3 g^3 , which engage a groove c^2 , formed lengthwise in the axles c' . Secured to the hoppers at their openings are brushes h h , which contact with the seed-rings and preclude the retention in the cups of an excess of seed. This brush, which is preferably of rubber, also reduces to the minimum the liability of the seed becoming fractured or broken.

I I denote the drills, which are supported from the bars a^4 and are concaved at their upper ends to afford close contact with the seed-rings, whereby the latter discharge directly into the drill-passage. Each of the drills carries at its upper rear side a hook i , which engages the rod e , and at the forward side of the drill is an apertured lug i' , which engages a staple e^2 on a plate e^3 , swiveled on the bar e' . A break-pin e^4 is passed through the staple and completes the engagement. e^5 is a set-screw for securing the plate e^3 . This manner of securing the drills enables them to be readily disconnected, and the employment of the pins e^4 , which are of wood, results in the saving of the drills intact when subjected to undue strain, as any extraordinary shock will cause the pins to break and release the drill, as will be understood. Another advantage due to the peculiar supporting means for the drills is that the latter are not rigid with the frame, but have a slight freedom of movement in all directions, whereby they accommodate themselves to any unevenness of ground or to stones or other obstructions. The main advantage due to this construction, however, is that the drills may be adjusted to plant different-spaced rows by being moved to or from each other, such adjustment being made possible owing to the facility with which the drills, their hooks, and the plates e^3 may be slid along the bars e and e' . This adjustable feature of the drills is of vast importance, as the capabilities of the machine are thereby largely increased, and where but narrow-spaced rows are required it is obvious that additional drills may be inserted, it being understood that with every additional drill a new seed-ring is required and that every facility is afforded whereby the change can be made.

Intermediate of the drills is provided a coverer j of tooth form and provided with a shank j' , held between the rod e and bar a^4 and apertured at its end for connection with a staple carried by a plate k , hung on the bar e' in a manner similar to the plates e^3 . A break-pin k' completes the connection. The coverer thus supported is capable of vibration for the purpose of accommodating itself to inequalities or obstructions, but more for the purpose of enhancing the covering operation, as the coverer is thus enabled to travel from side to side, instead of in the direct line which would result in the use of a rigidly-mounted coverer. To the rear of the wheel

C is a coverer j^2 , also of tooth form, secured to the under side of one of the beams.

The machine is designed to be propelled by a horse or other animal and is guided by handles l l , grasped by the operator or driver. The handle-bars extend forwardly and are secured to the beams at the front of the frame and elevated at the rear by a standard m and a cross-bar n , the standard being secured at its lower end to the rear bar a' . The machine, as before stated, is supported on a single central wheel C, and said wheel is employed to rotate the seed-rings and thereby feed the seed to the drills. The employment of a single wheel enables the machine to be readily propelled and guided and readily turned. For turning the machine, however, I prefer to employ a caster-wheel o , which is, when idle, elevated above the tread of the wheel C, but which is adapted to be brought below said wheel C to bring the latter above the ground and thereby cut off the seed deposits. The wheel o to this end is mounted in the lower end of a curved arm o' , which is movable in a guide o^2 on the frame and connected at its upper end to a lever o^3 , said lever being pivoted on a rod o^4 on the handle-bars. The other end of the lever is confined in a guide-slot m' in the standard m and is adapted to be held in its raised and lowered positions by engaging offsets m^2 m^3 of the slot m' . One of the sides of each of the offsets is inclined and is engaged by a corresponding inclination l' , formed in the lever, whereby the latter is locked against accidental dislodgment. The lever carries near its forward end a brake-shoe p , which is brought into engagement with the wheel C when the lever is moved to lower the caster-wheel, the object being to lock the wheel C against rotation while the machine is being turned on the wheel o . Under ordinary circumstances the locking of the wheel C is necessary, as in turning said wheel is free from contact with the ground. Where the ground is rough or uneven, however, there is liability of the wheel C contacting with an elevation, and if no means were provided for locking it against rotation seed deposits would result.

From the foregoing it will be observed that every provision is made to insure effectiveness of operation and increased capabilities.

The machine combines in its construction all of the essentials which go to make a plow, a planter or seeder, and a cultivator, and yet by the employment of so few and simply-constructed parts as will enable the machine to be cheaply made and to be durable and not liable to disorder.

I claim as my invention—

1. In a machine of the class described, the combination of a frame, a wheel supporting said frame, axles carried by the wheel and journaled in bearings the outer ones of which are laterally removable whereby the ends of the axle may be free, seed-rings slidably adjustable and removably mounted on the axles,

seed-hoppers above the rings, and drills at said rings adjustably secured to the frame, substantially as set forth.

2. In a machine of the class described, the combination of a frame, a wheel supporting said frame, axles carried by the wheel and journaled in bearings the outer ones of which are laterally removable whereby the ends of the axle may be free, seed-rings adjustably and removably mounted on the axles, seed-hoppers above the rings having deflectors and brushes as described, and drills having concaved upper ends located at the rings, said drills being adjustably and removably secured to the frame, substantially as set forth.

3. In a machine of the class described, the combination of a frame, a wheel supporting said frame, axles carried by the wheel and journaled in bearings the outer ones of which are laterally removable whereby the ends of the axles may be free, seed-rings mounted on the axles to be adjusted and removed longitudinally thereof, each seed-ring having seed-cups and set-screws therein to adjust the depth thereof, seed-hoppers above the rings, drills at said rings, coverers at the rear of the drills, and means for adjustably and removably attaching said drills and coverers to the frame to permit of vibration, substantially as described.

4. In a machine of the class described, the combination with a frame carrying transverse

rods, of a drill provided at its upper end with a hook slidably and removably connected with one of the rods, a plate slidably connected with the other rod and carrying a set-screw and staple, an eye on the drill engaging the staple, and a break-pin for the latter, substantially as described.

5. In a machine of the class described, the combination with a frame and a single supporting-wheel therefor, of a caster-wheel in advance of the aforesaid wheel, a lever for elevating and depressing said wheel as described, and means for locking the lever in its positions, substantially as set forth.

6. In a machine of the class described, the combination with a frame and a single supporting-wheel therefor, of a caster-wheel in advance of the aforesaid wheel, carried by an arm, a lever connected to said arm, a brake-shoe carried by the lever and adapted to be brought into engagement with the supporting-wheel when the caster-wheel is depressed, and means for locking the lever consisting of a slotted guide having offsets provided with inclined sides, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES H. WHITNEY.

Witnesses:

W. T. NORTON,
ARTHUR BROWNING.