

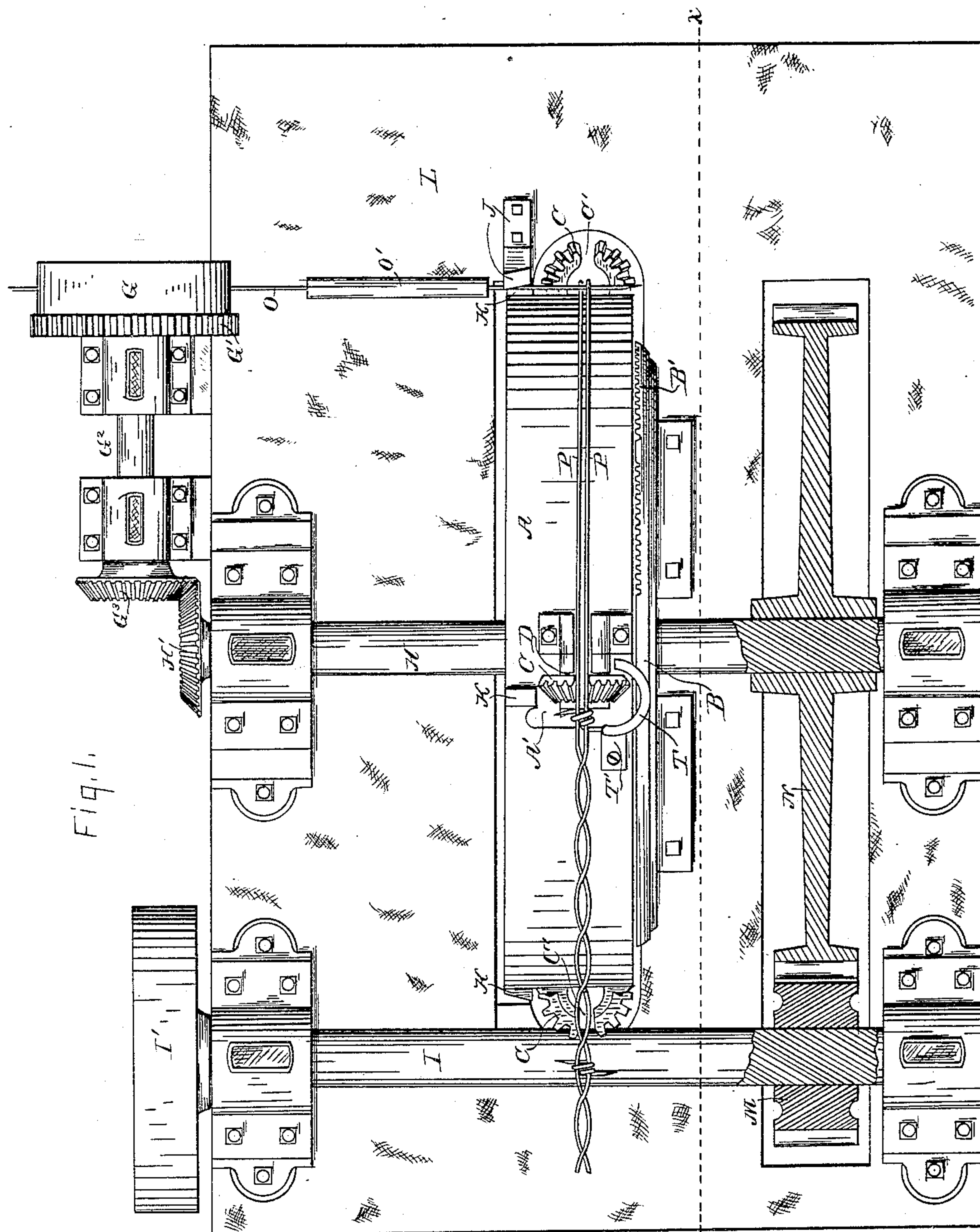
(No Model.)

3 Sheets—Sheet 1.

O. O. KITTLESON.
WIRE BARBING MACHINE.

No. 318,002.

Patented May 19, 1885.



WITNESSES:

Cyrus Kehr,
Charles H. Roberts.

INVENTOR:

O. O. Kittleson
By Manahan & Ward
His Atty's

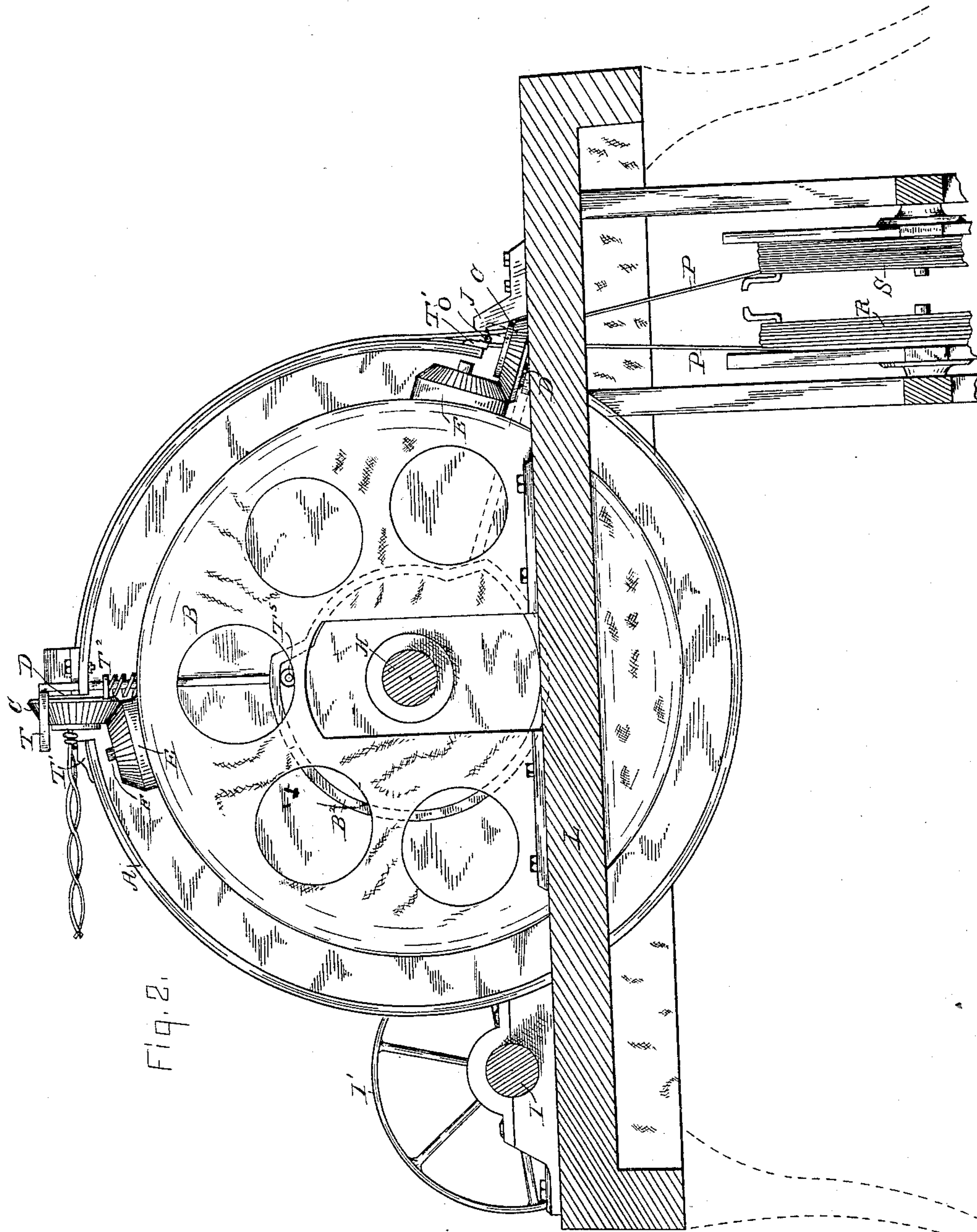
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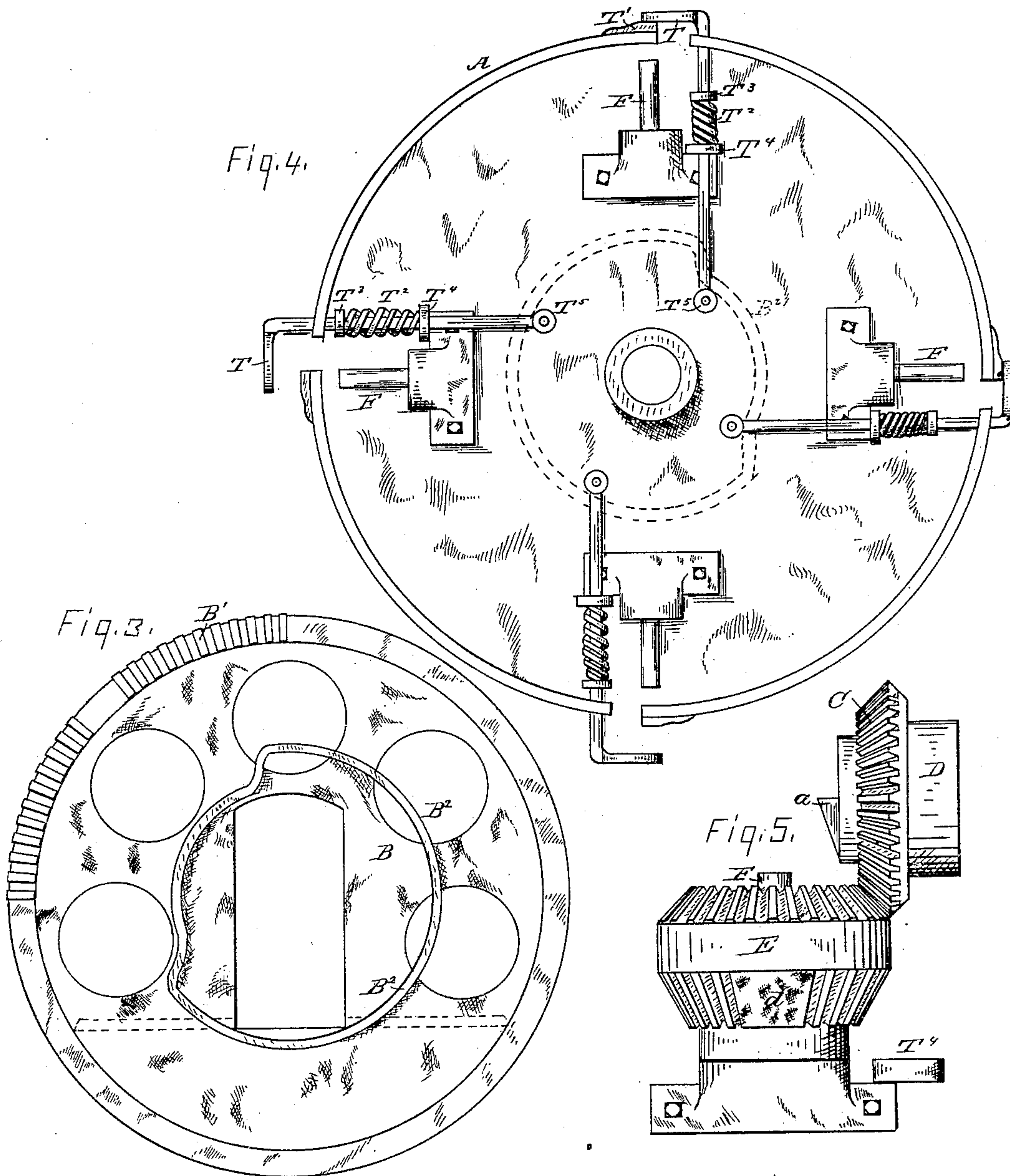
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UNITED STATES PATENT OFFICE.

OLE O. KITTLESON, OF ROCK FALLS, ILLINOIS.

WIRE-BARBING MACHINE.

SPECIFICATION forming part of Letters Patent No. 318,002, dated May 19, 1885.

Application filed October 17, 1884. (No model.)

To all whom it may concern:

Be it known that I, OLE O. KITTLESON, a citizen of the United States, residing at Rock Falls, in the county of Whiteside and State of Illinois, have invented certain new and useful Improvements in Wire-Barbing Machines; and I do hereby 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 letters or figures of reference marked thereon, which form a part of this specification.

My invention pertains to improvements in wire-barbing machines; and it consists more especially in certain novel mechanism for seating the barbs by twisting them around the main wires, as hereinafter described and claimed.

My machine will be more readily comprehended from a preliminary statement of its main features. The fence-wires are progressed by means of a main wheel, on the upper periphery of which such wires are carried. In the rim of such wheel are seated small bevel-gear wheels having their revolution in a line perpendicular to the axis of revolution of such main wheel, such small wheels being placed at the intervals desired for the barbs, and in their revolution not only coiling and thereby seating the barbs, but also, by reason of being behind such barbs, serving as clutches to draw the main wires forward.

In the drawings, Figure 1 is a plan view of a machine embodying my invention. Fig. 2 is a vertical section thereof in the line $x x$ of Fig. 1. Fig. 3 exhibits the stationary mutilated gear for actuating the coiling-pinions and the fixed cam-edge for giving direction to the barb-clamps T, which project outwardly through the periphery of the main wheel, before referred to. Fig. 4 shows the position and mode of operation of the clamps T above mentioned. Fig. 5 is a detached view of the pinions C and E.

L is the frame of the machine, to which the several parts of the latter are attached.

I is a revolving shaft by which power is communicated to the other parts of the machine. The shaft I is revolved by a belt pass-

ing over the belt-wheel I', rigidly seated on such shaft outside of the machine, or in any other suitable manner. A pinion, M, rigidly seated on the shaft I, engages and actuates a gear-wheel, N, fixed on the revolving shaft H, which latter shaft carries with it the main wheel A, before mentioned.

In the periphery of the wheel A, at such intervals as it may be desired the barbs shall occupy upon the main wire, are placed the coiling-pinions C. Such pinions C are seated transversely of the wheel A upon fixed spindles D, the latter extending about one-half of their diameter beyond the periphery of the wheel A, whereby the longitudinal center line of the coiling-pinions C is coincident with the periphery of such wheel A. This necessitates, of course, a recess, A', in the periphery of the wheel A, of sufficient size to receive the pinions C, and to afford room for the circular movement of the barb in the process of coiling. The pinions C are rotated by engagement with the outer gear-face of the double-faced pinions E, seated on the radial spindles F, fixed within and to the web of the wheel A.

B is a fixed mutilated gear attached to the frame L in such relation and proportion to the inner gear-face of the pinions E as to cause two complete revolutions of the latter during its passage from the plane of the frame L to the highest point of the wheel A—i. e., during a one-quarter revolution of the latter.

All that part of the face of the gear B not occupied by the cogs B' is on a plane, but slightly below the crest of such cogs, and in the inner gear-face of the pinions E is formed a flat face, d , which traverses all of the annular face of B not occupied by the cogs B', and is thus held from rotating, save when actuated by the cogs B'.

Midway of the series of cogs B', Fig. 2, will be seen a vacant interval to admit the face d on the inner gear-face of the pinion E. The engaging faces of the pinions E and C have the same number of cogs, so that with each revolution of the wheel A each pinion C in the quarter-revolution of the wheel A, from the plane of the frame L to the highest of such wheel, makes two complete revolutions. The web of the wheel A is placed sufficiently back of the center of such wheel to permit the rota-

tion of the wheel E. The fence-wires P P are fed to the wheel A from the spools R and S, placed in line with such wheel, the spool S on the outside. By this arrangement the wire from the spool R is first to reach the periphery of the wheel A, giving time and opportunity for the passage of the barb-wire O on the outside of the wire from the spool R before the wire from the spool S comes in contact with the periphery of the wheel A and on the outside of the barb-wire O. The wire O is fed transversely to the wheel A by being passed between two mutually-acting rollers, G, (the under one not shown,) each provided with a mutually-engaging annular gear, G'. The upper roller, G, is rigidly affixed to a rotating shaft, G², provided at its opposite end with a bevel gear-wheel, G³, fixed upon the shaft G² and engaged and actuated by a bevel-gear, H', attached to the outer end of the shaft H. A tube, O', attached to the frame L, guides the wire O to the cutting and coiling devices. A slot, C', in the pinions C and their spindles D permits the fence-wires to lie upon the periphery of the wheel A, the action of the pinions C being so regulated that such slot shall be always uppermost at the point where the wires P P and barb O are received, and after such pinions make two revolutions to seat the barb, by which time they have passed to the top of the wheel A, such pinions are stopped with the slot C' uppermost to permit the wires P P to pass out, and such slot is held uppermost during three-fourths of the revolution of the wheel A, and until they receive again the wires P P by means of the smooth portion of the face of the mutilated gear L abutting against the face d of the pinion E. A clamp, T, is radially seated in the periphery of the wheel A, and in a sleeve, T⁴, in the spindle F, and such clamp is provided at its inner end with a friction-roller, T⁵, which traverses a cam-edge, B², fixed on the adjacent face of the gear B in such position that such clamp (which at its outer end is furnished with a half-circular head) will have its head drawn down upon the bridge T', formed in the periphery of the wheel A, Fig. 3, and clamp the forward end of the barb between such clamp and bridge at the point where such barb is interposed between the wires P P, Fig. 1, and hold such end of the barb until the top of the wheel A is reached, when the clamp will be forced outward, releasing such barb, and will be so held outward until the wheel A has performed a three-fourths revolution, and such clamp has again reached the point for seizing another barb. The clamp T is thrown outward, and its friction-roller T⁵ kept against the inner face of the cam-edge B² by means of the coiled spring T² on the shank of such clamp and seated between the fixed collar T³ on such shank and the sleeve T⁴.

The fractions of revolutions of the wheel A, herein spoken of, are named on the basis of four equidistant pinions, C; but if pinions

more or less than four be used the aforesaid fraction would be proportionately changed.

On the front face of the pinion C is formed the spur a, in such relation to the slot C' that when such slot is upward the spur is directly under the barb O.

J is a knife fixed on the frame L at the point where the barb O is first projected between the wires P P.

K K are knives fixed on the periphery of the wheel A, in such relation to the bridge T' and clamp T that when the front end of the barb is seized between such clamp and bridge the knife K will have coincidently moved against the fixed knife J and severed the barb with an oblique cut, which will leave the severed ends pointed. At this instant the inner face of the gear E will engage the outer cog of the mutilated gear B and start the pinion C. The spur a on such pinion being directly under the free end of the cut barb, will, during the transit of such pinion to the top of the wheel A, have passed such free end of the barb twice around the wires P P, thus giving such barb a double coil around such wires. At this point the pinion E will have passed the last cog on the gear B, and with its face d against the annular smooth face of such gear will hold the pinion C in such position, with the slot C' upward, until the wires P P at the point thereon where the barb is fixed will have passed out of such pinions and until such pinion shall again have received such wires preparatory to the seating of another barb.

The devices for twisting and winding the wire, after being barbed, upon spools is not shown, because the same are well known and nothing new is claimed in regard to such twisting or winding of the wire after the latter has been barbed.

As before suggested, the wheel A can be made of any desired size, and can be furnished with any desired number of barbing-pinions.

The machine is comparatively simple, is easily worked, is very efficient, and by increasing the size or number of the wheels A is practically unlimited in capacity.

The machine is adapted to seat barbs on a single wire or any number of wires.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. The combination of the wheel A, pinions C, pinion E, and a gear for operating the last-named pinion, substantially as shown, and for the purpose described.

2. In a wire-barbing machine, the combination of the wheel A, coiling-pinions C, double gear-faced pinions E, and mutilated gear B, substantially as shown, and for the purpose described.

3. In a wire-barbing machine, the combination of the wheel A, coiling-pinions C, pinion E, gear B, clamp T, and cam-edge B², substantially as shown, and for the purpose specified.

4. The combination of the wheel A, provided with bridges T', pinions C, provided

with spur or lug *a*, pinion E, having face *d*,
and gear B having a portion of its working face
fitted with cogs, and the residue of a smooth
impacting surface, substantially as shown, and
5 for the purpose mentioned.

5. The combination of the wheel A, pro-
vided with bridges T', clamp T, cam-edge B²,
and spring T², substantially as shown, and for
the purpose described.

10 6. The combination of the wheel A, carry-

ing pinions C and E, and the fixed mutilated
gear B, substantially as shown, and for the
purpose specified.

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

OLE O. KITTLESON.

Witnesses:

WALTER N. HASKELL,
GEO. B. QUIGLEY.