

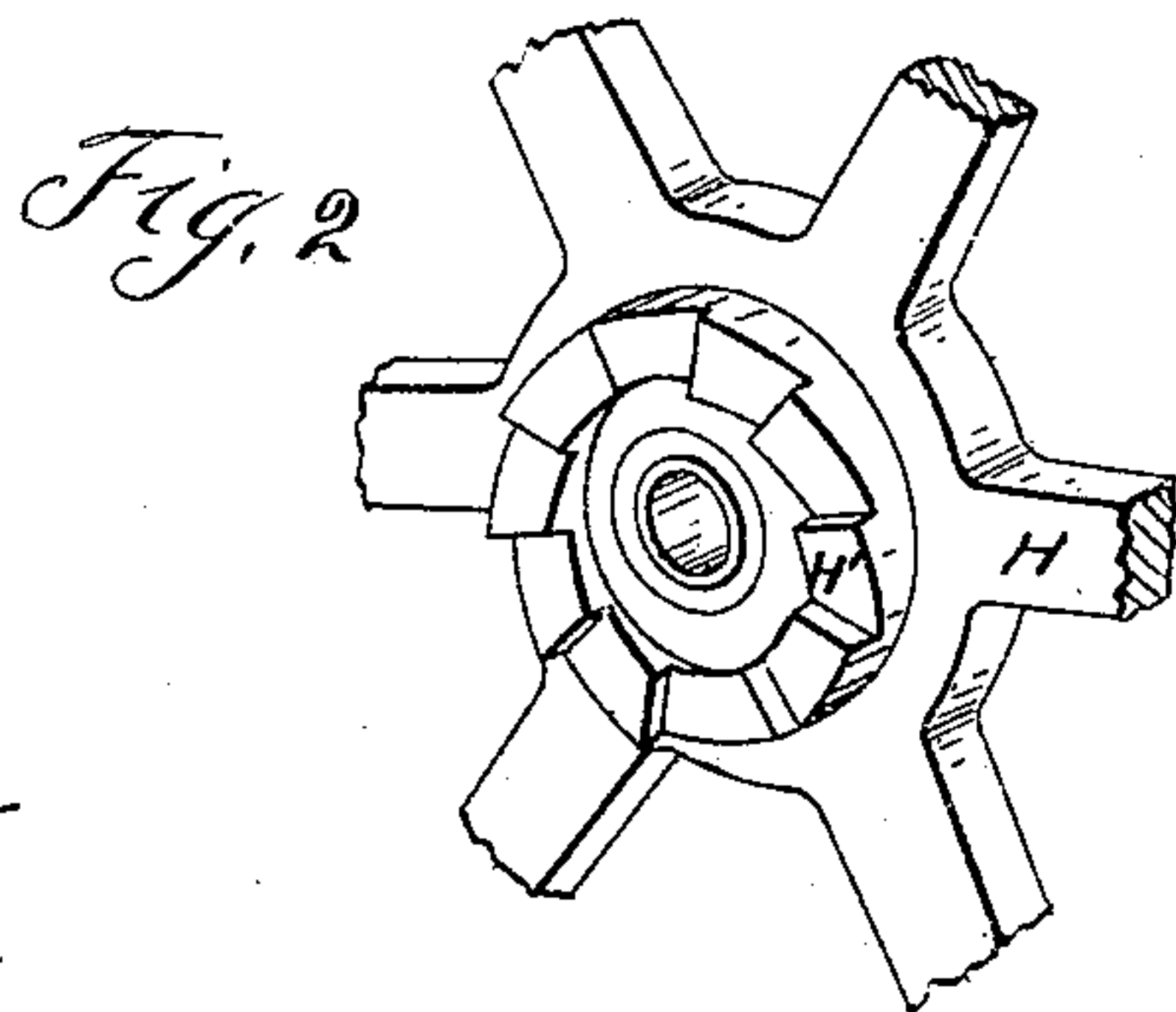
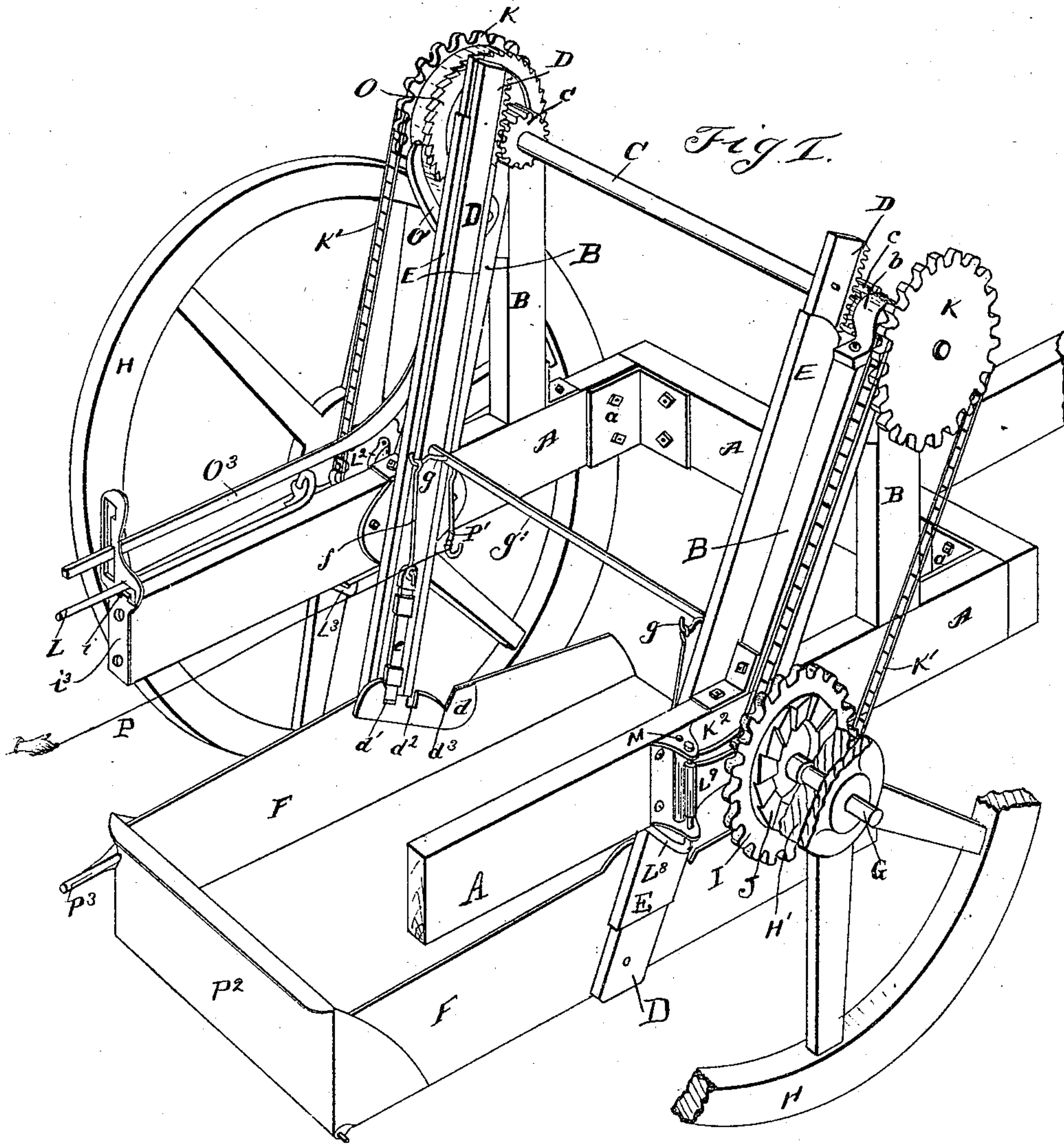
(No Model.)

2 Sheets—Sheet 1.

E. H. RYON.
WHEELED SCOOP.

No. 451,074.

Patented Apr. 28, 1891.



WITNESSES:
G. J. Crossin
Wm. E. McLean

INVENTOR
E. H. Ryon
BY *Fred W. Bond*
ATTORNEY.

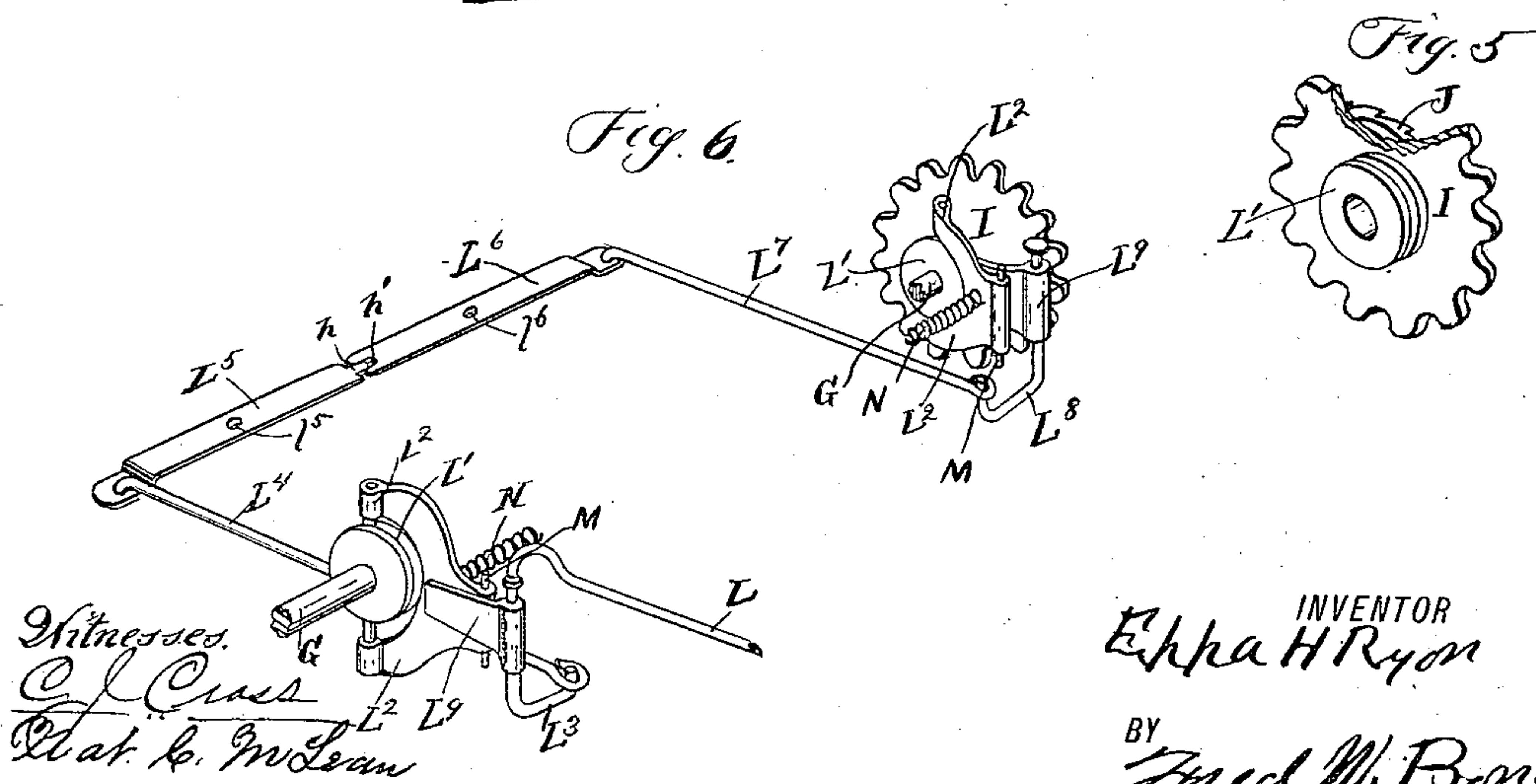
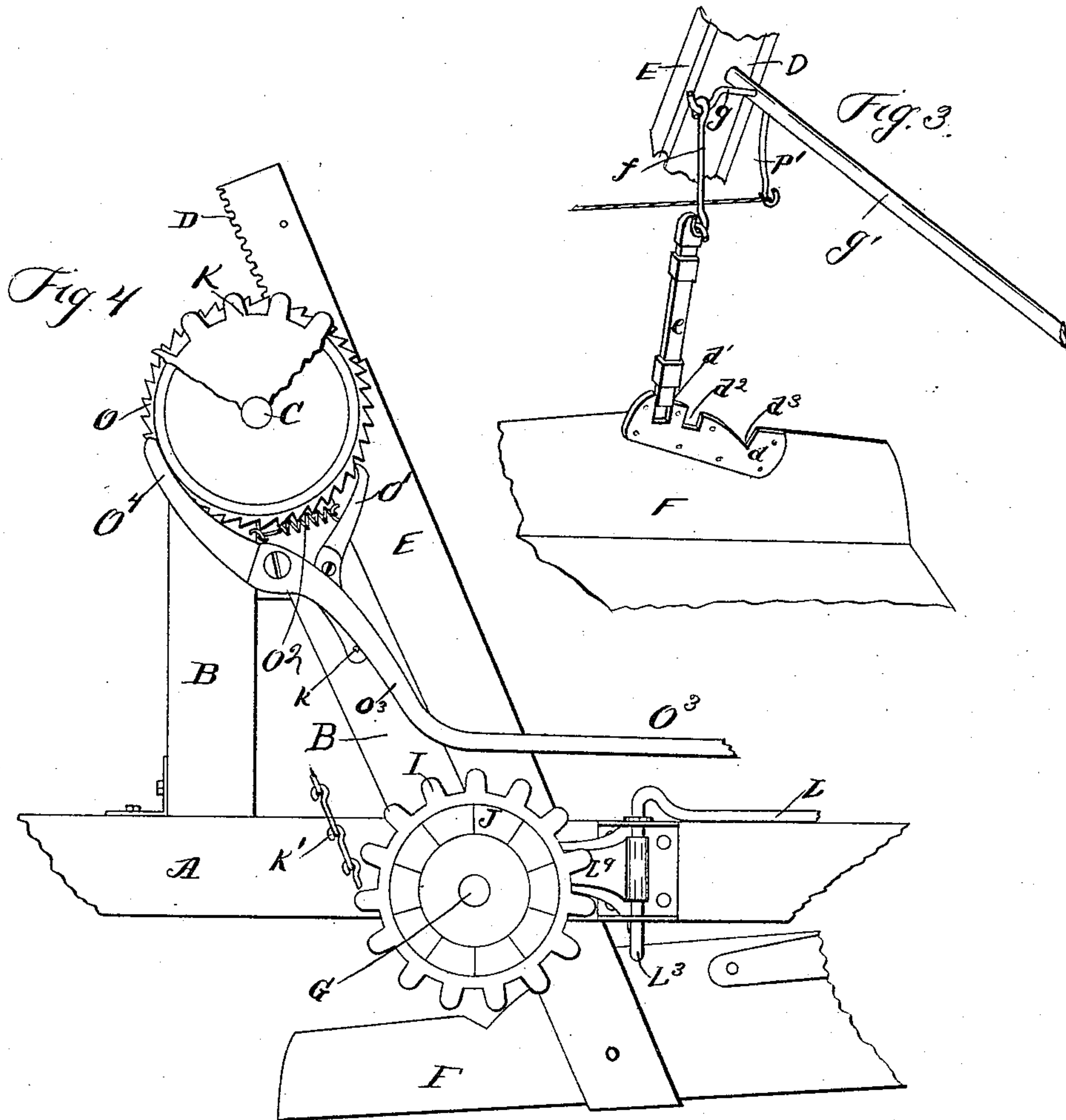
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C. J. Cross
Chas. E. McLean

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BY
Fred W. Bond
ATTORNEY.

UNITED STATES PATENT OFFICE.

EPPA H. RYON, OF CANTON, OHIO.

WHEELED SCOOP.

SPECIFICATION forming part of Letters Patent No. 451,074, dated April 28, 1891.

Application filed December 1, 1890. Serial No. 373,142. (No model.)

To all whom it may concern:

Be it known that I, EPPA H. RYON, a citizen of the United States, residing at Canton, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Wheeled Scoops; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 is a perspective view. Fig. 2 is a view of a portion of one of the vehicle-wheels, showing one portion of one of the clutches. Fig. 3 is a view of a portion of the scoop or scraper, its notched bar, and connected mechanism. Fig. 4 is a general view of the lifting and retaining mechanism. Fig. 5 is a detached view of one of the lower sprocket-wheels partially broken away to show a portion of one of the clutches. Fig. 6 is a view of one of the lower sprocket-wheels and the mechanism for throwing said sprocket-wheels in and out of gear.

The present invention has relation to self loading and dumping excavators; and it consists in the different parts and combination of parts hereinafter described, and particularly pointed out in the claims.

Similar letters of reference indicate corresponding parts in all the figures of the drawings.

In the accompanying drawings, A represents the frame, which is formed of sufficient strength for the purpose designed, and is substantially of the form shown in the drawings. For the purpose of strengthening the frame A the corner-irons *a* are provided, which are bolted or otherwise attached to the frame A. To the frame A are securely attached, in any convenient and well-known manner, the four posts or standards B, the two posts or standards upon either side being securely attached together at their top or upper ends. To the top or upper ends of the posts or standards B are attached the journal-boxes *b*, which boxes are for the purpose of providing bearings for the lifting-shaft C. To the lifting-shaft C are securely attached or keyed the pinions *c*, which pinions mesh with the rack-bars D, substantially as illustrated in Fig. 1.

For the purpose of holding the rack-bars D in proper position the guides E are provided, which guides are attached to the frame A and the posts or stands B in any convenient and well-known manner. To the bottom or lower end of the rack-bars D is pivotally connected the scoop or scraper F, which scraper is substantially of the form shown in Fig. 1.

To the sides of the scoop or scraper F are securely attached the notched plates *d*, provided with the notches *d'*, *d''*, and *d'''*, said notches being for the purpose of engaging the bottom or lower ends of the bolts *e*, sliding in the rack-bars D. To the top or upper ends of the sliding bolts *e* are attached the connecting-rods *f*, the top or upper ends of said connecting-rods being hooked or pivotally attached to the arms *g*, said arms *g* being rigidly attached to the shaft *g'*, which shaft is journaled in the rack-bars D.

To the frame A are securely attached the trunnions or axles G for receiving the traveling or vehicle wheels H and their ratchet-collars or clutch-jaws H'. The traveling or vehicle wheels are so journaled upon the axles G that they cannot slip or move laterally. Upon the axles G are loosely mounted the sprocket-wheels I, having ratchet-collars or clutch-jaws J, said sprocket-wheels and ratchet-collars being formed integral with each other. The sprocket-wheels I are for the purpose of communicating motion to the sprocket-wheels K and the lifting-shaft C by means of the sprocket-chains K'. When it is desired to throw the sprocket-wheels out of gear, the clutch-jaws J are disengaged from the opposing jaws H' by means of the lever L and the grooved collars L' and the yokes L². For the purpose of holding the ratchets J and H' out of gear, the notch *i* is provided in the plate *i'*, which notch receives and holds the lever L, as illustrated in Fig. 1.

For the purpose of causing both of the yokes L² to operate at one time, and thereby simultaneously disengage the two clutches, the lever L is provided with the right-angled portion L³, (see Fig. 6,) and to this is pivotally connected the connecting-bar L⁴, which is pivotally connected at its opposite end to the lever L⁵, which lever L⁵ is fulcrumed to the bottom or under side of the frame A at *l*. The lever L⁵ is provided with the projection

h, which is received into the notch or recess h' in the lever L⁶, which lever L⁶ is fulcrumed to the frame A at l⁶. To the opposite end of the lever L⁶ is pivotally attached the connecting-rod L⁷, said connecting-rod being pivotally attached to the arm L⁸. To the vertical portion of the lever L and to the arm L⁸ are securely attached the arms L⁹, said arms being for the purpose of operating against the yokes L², and thereby moving the yokes L² upon their pivots M. For the purpose of holding the ratchets or clutches in contact with each other when it is desired to communicate rotary motion to the sprocket-wheels I, the springs N are provided, and are located so as to press against the yokes L² and the frame A, said springs being for the purpose of assisting in holding the clutch-jaws H' and J together, and thereby preventing any slipping of the teeth.

When it is desired to fill the scoop or scraper F with earth or other material, the scraper is lowered so as to come in contact with the ground or material designed to be scraped. Then the entire excavator is moved forward until the scraper is sufficiently filled. Then the sprocket-wheels I are turned into gear with the traveling or vehicle wheels H by means of the lever L and its connected parts, thereby communicating motion to the elevating-shaft C, which in turn elevates the rack-bars D by means of the pinions c, and when the scraper F is elevated to the required height the sprocket-wheels I are turned out of gear with the traveling wheels H by means of the lever L and its connected parts.

For the purpose of holding the scoop or scraper in an elevated position the ratchet-wheel O is provided, which ratchet-wheel is securely attached to the elevating-shaft C and engages the detent O', which detent is pivotally attached to one of the guides E or posts B, and for the purpose of holding the detent O' in contact with the ratchet O the spring O² is provided. The lever O³ is pivotally attached to one of the guides E or posts B and extends upward, as illustrated in Fig. 1. When it is desired to disengage the detent O' from the ratchet O, the rear end of the lever O³ is pressed downward, when the curved portion of said lever O³ comes in contact with the pin k on the detent O' and causes the detent to be disengaged from the ratchet-wheel O. As the lever O³ is pressed downward the arm O⁴ comes in contact with a smooth face on the ratchet-wheel, thereby providing a brake for regulating the lowering of the scraper F after its load has been discharged to receive another load.

For the purpose of preventing the scraper F from turning on its pivotal points the notched plates d are provided, having the

notches d' and d² and d³, and when it is desired to set the scraper F in substantially a horizontal position the sliding bolts e are set in the notches d², and when it is desired to tilt the scraper F for the purpose of discharging its load the sliding bolts e are elevated by means of the connecting-rods f and the arm g, the movements of the sliding bolts e being communicated by means of the cord P, which cord is attached to the arm P', said arm being attached to the shaft g'.

It will be understood that when it is desired to unload the scraper the end-gate P² should be turned down, thereby opening the rear end of the scraper. For the purpose of holding the end-gate P² in the position illustrated in Fig. 1 the spring-catch P³ is provided.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the frame A, mounted on vehicle-wheels, the clutch-pieces J and H', the lever L, provided with the arm L³, the connecting-rods L⁴ and L⁷, the levers L⁵ and L⁶, the yokes L², the grooved collars L', the arms L⁹, and lever L⁸ for connecting the lever L and the rod L⁷ each with one of the yokes L², substantially as and for the purpose specified.

2. The combination of the frame A, mounted on vehicle-wheels, the rack-bars D, movable longitudinally in the grooves E, the scraper F, pivoted to the rack-bars, the plates d, fixed to the scraper F and provided with the notches d', d², and d³, the sliding bolts e, the bars f, the arms g, and the shaft g', substantially as and for the purpose specified.

3. The combination of the yokes L², the operating-lever L, the collar L', the connecting-rods L⁴ and L⁷, the jointed levers L⁵ and L⁶, the arms L⁹, the lever L⁸, the clutches J H' and J H', the scraper F, the vehicle-wheels each connected to one part of one of the clutches, and means connected to the other parts of the clutches for elevating the scraper, substantially as and for the purpose specified.

4. The combination of the yokes L², the grooved collars L', the arms L⁹, the springs N, the clutches H' J and H' J, the sprocket-wheels I and K, the elevating-shaft C, means connected with the shaft C for elevating the scoop, the sprocket-chains K', the scoop or scraper F, and the wheels H, substantially as and for the purpose specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

EPPA H. RYON.

Witnesses:

CHARLES G. MCLEAN,
F. W. BOND.