

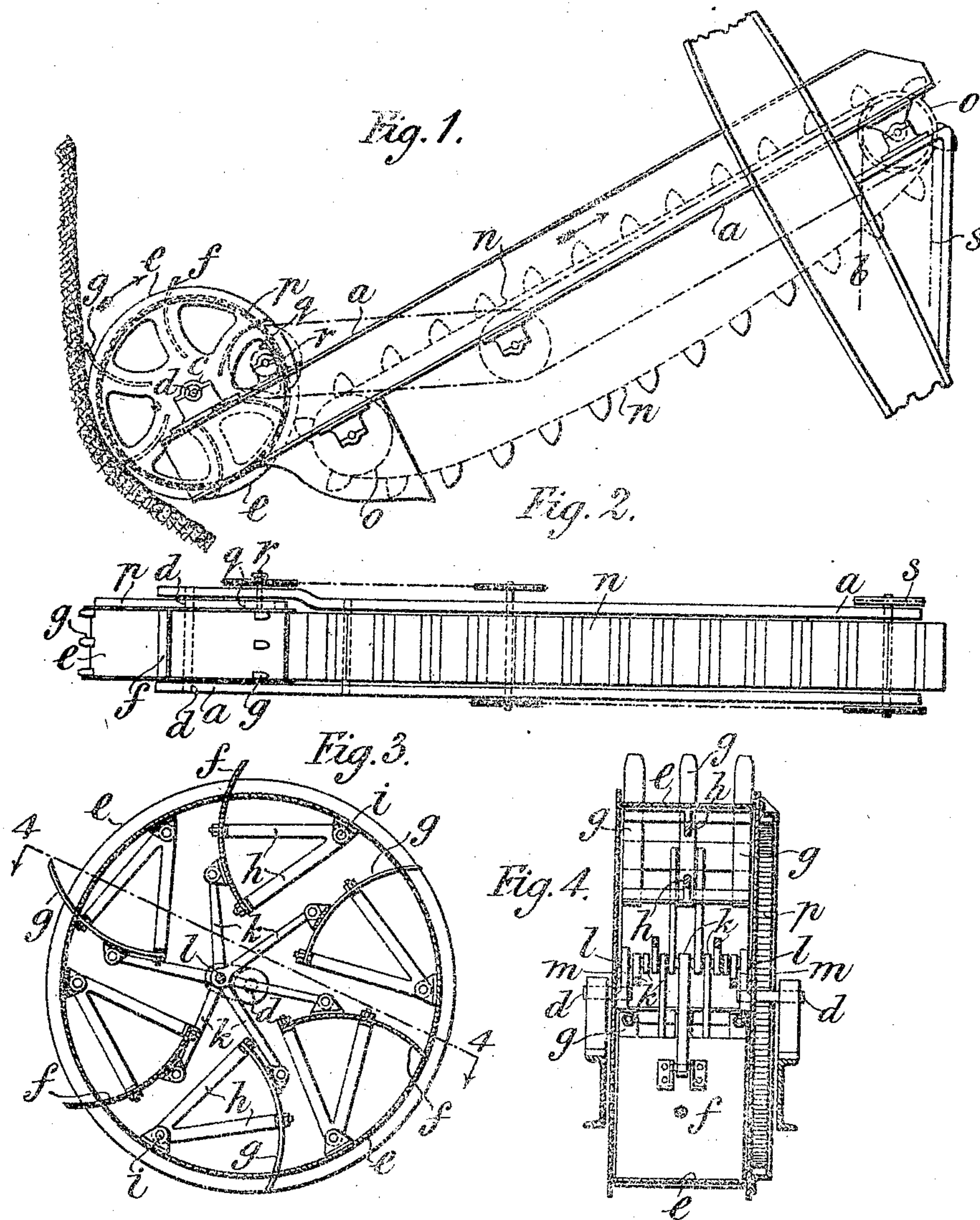
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PATENTED MAR. 19, 1907.

A. E. GROSSMITH.

EXCAVATOR.

APPLICATION FILED JULY 23, 1906.



Witnesses.
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UNITED STATES PATENT OFFICE.

ALFRED ROGER GROSSMITH, OF CORBY, NEAR KETTERING,
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EXCAVATOR.

No. 847,330.

Specification of Letters Patent.

Patented March 19, 1907.

Application filed July 23, 1906. Serial No. 327,407.

To all whom it may concern:

Be it known that I, ALFRED ROGER GROSSMITH, works manager of Lloyds Ironstone Company, Limited, a subject of the King of Great Britain, residing at Corby, near Kettering, England, have invented certain new and useful Improvements in Excavators and the Like, of which the following is a specification.

The object of this invention is to provide an improved excavator, dredger, or the like, such as are used for the removal of earth in mines, railway and canal cuttings, docks, harbors, and for excavating generally.

I construct an excavator of a revolving drum from which protrude digging-tools, such as teeth, or blades or both. In connection with the drum is a conveyer onto which the digging-tools deliver the material to be removed, and means are provided for withdrawing the tools into the interior of the drum as they pass the conveyer.

Figure 1 of the drawing is a side elevation, and Fig. 2 a plan, of an excavator made according to this invention. Fig. 3 is a longitudinal section of the drum to a larger scale; and Fig. 4 is a section on the line 4 4, Fig. 3.

a is the frame, carried by a jib-arm *b* in the usual way. At the outer end of the frame are bearings *c*, supporting fixed axles *d*, on which turns a drum *e*, provided with blades *f* and teeth *g*, which protrude through apertures cut in the periphery of the drum.

The digging-tools may be arranged as most suitable for the particular work in hand. The excavator shown in the drawings has blades and teeth arranged alternately, and this is found very convenient, but the drum may have blades only or teeth only. These blades and teeth are carried by arms *h*, turn-

ing on centers *i*, and are linked by links *k* to a pin *l* on cranks *m*, fixed on the axles *d*, the whole being so arranged that as the drum revolves the teeth and blades are thrust out from the drum as they approach the bank which is being operated on, but are afterward withdrawn into the drum so as to clear the conveyer *n*, passing over pulleys *o*.

The drum *e* is provided with an internal ring of teeth *p*, gearing with a pinion *q* on a spindle *r*, driven by chain-and-sprocket gear from the shaft of the inner pulley *o*, which is driven by the engine by the chain *s*. This arrangement of a directly-driven digging-drum constantly delivering onto a conveyer, which again may deliver the material into wagons by means of a chute or onto another conveyer, is an extremely-efficient method of excavating.

What I claim is—

1. In an excavator the combination of a drum, means for rotating it, tools carried by it, and means for causing the tools to protrude from the drum.

2. In an excavator the combination of a drum, a fixed axle, means for rotating the drum on the axle, a fixed crank on the axle, tools pivoted to the drum, and links connecting the tools to the crank.

3. In an excavator the combination of a conveyer, a drum situated at one end thereof and delivering material thereonto, means for rotating the drum, tools carried by the drum, and means for causing the tools to withdraw into the drum as they pass the conveyer.

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Witnesses:

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