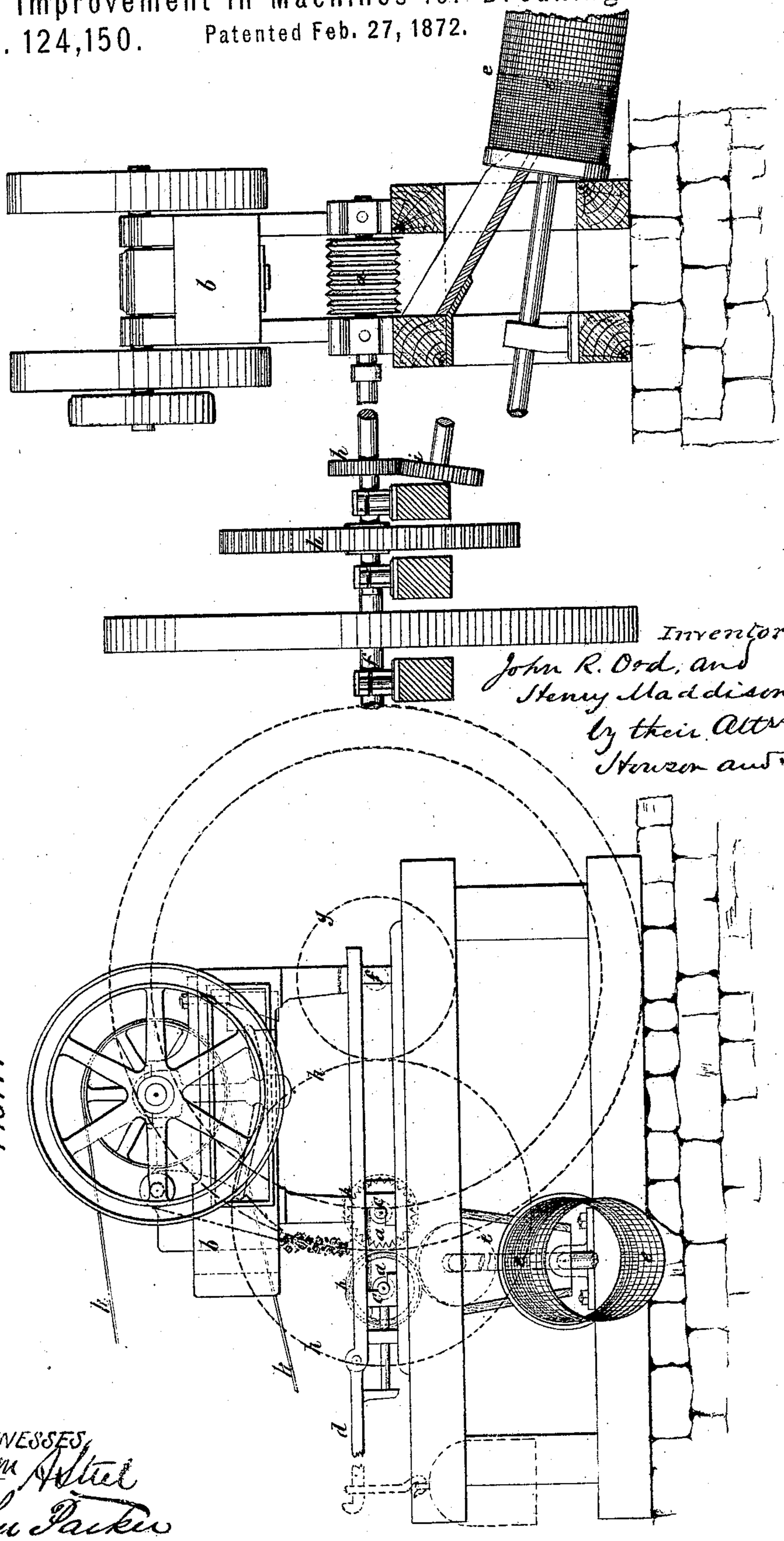
2 Sheets--Sheet I.

J. R. ORD & H. MADDISON.

Improvement in Machines for Breaking Stone.

No. 124,150. Patented Feb. 27, 1872.

FIG. 2.



Inventors.
John R. Ord, and
Henry Maddison
by their Attys.
Howson and Son

FIG. 1.

WITNESSES
Wm. Aldred
John Packer

J. R. ORD & H. MADDISON. 2 Sheets--Sheet 2.

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FIG. 4.

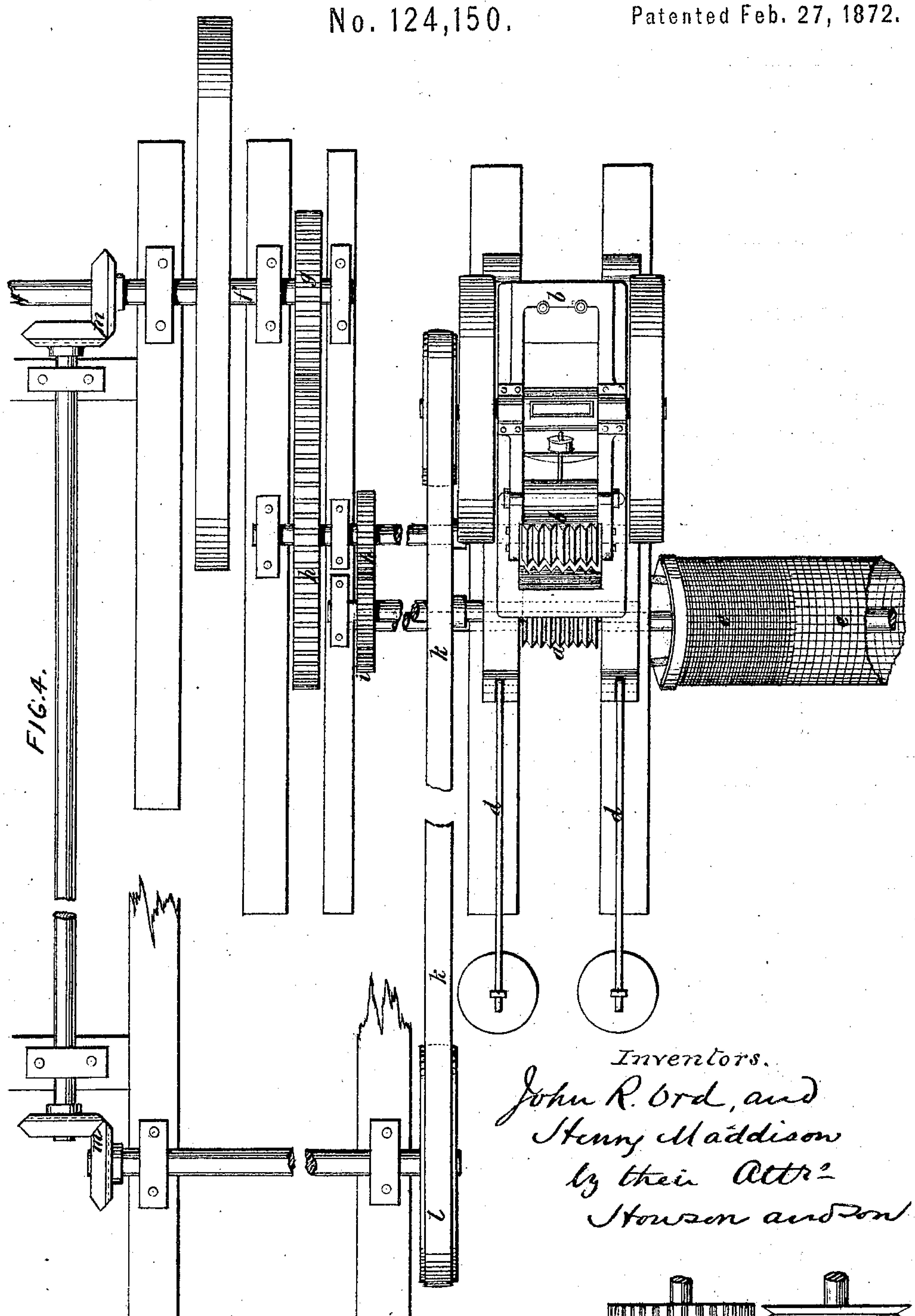

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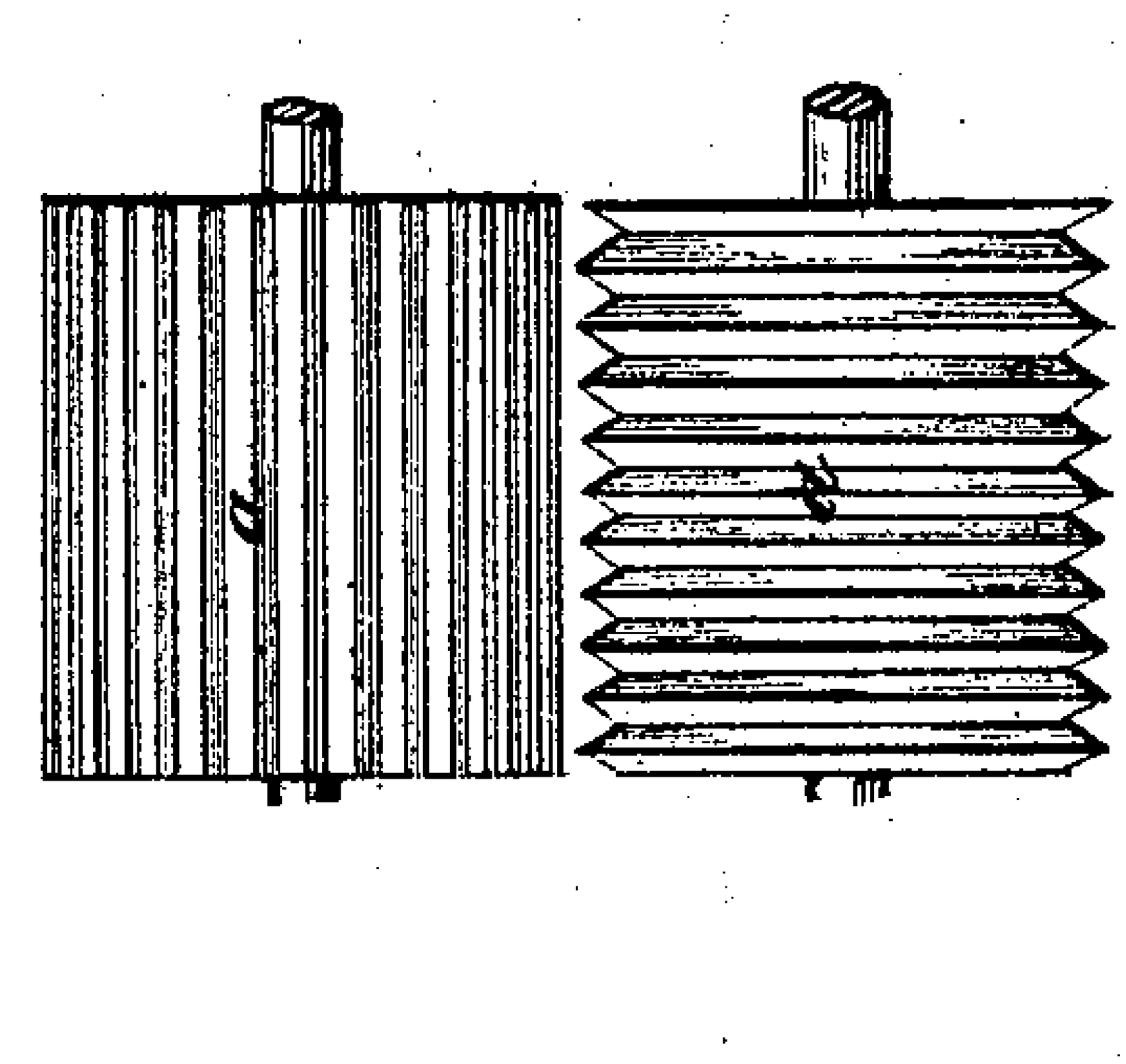
FIG. 3.



Witnesses { Wm A. Steel
John Parker

UNITED STATES PATENT OFFICE.

JOHN ROBERT ORD AND HENRY MADDISON, OF DARLINGTON, GREAT BRITAIN.

IMPROVEMENT IN MACHINES FOR BREAKING STONE.

Specification forming part of Letters Patent No. 124,150, dated February 27, 1872.

SPECIFICATION.

We, JOHN ROBERT ORD and HENRY MADDISON, both of Darlington, in the county of Durham, Kingdom of Great Britain and Ireland, have invented "Improvements in Machinery or Apparatus used for Breaking Stone," of which the following is a specification:

This invention relates to certain improved apparatus, to be used in connection with "Blake's Stone-Breaker," or other similar machine used for breaking stone, (or "metal," as it is called,) for road-making purposes; and consists, principally, in the employment, in combination with such machines, of one or more pairs of corrugated rollers of chilled iron or steel, as hereinafter described, through which the stone passes, after being broken by the machine, by which it becomes further broken or "macadamized," and rendered peculiarly fit for road-making purposes.

Such being the nature and object of our said invention for improvements in machinery or apparatus used for breaking stone, in order to enable others skilled in the art to make and use the same we will now proceed to describe more in detail the manner in which the same is to be or may be carried into practical effect, which will be readily understood from the following explanation thereof, reference being had to the annexed drawing and to the figures and letters marked thereon.

Figure 1 in the drawing represents a side elevation; Fig. 2, a front view of a "Blake's stone-breaker," showing our improvement as applied thereto; and Fig. 3 is a plan view, on a larger scale, of a pair of the corrugated rollers, detached from the machine.

These rollers, *a a*, are mounted horizontally beneath the jaws of the stone-breaking machine *b b*, so that the stone, as it is roughly broken by the latter, falls between the two rollars *a a*, one of which is grooved or corrugated longitudinally and the other is grooved or corrugated in the direction of the circumference, as shown clearly at Fig. 3, and by means of these rollers it becomes further reduced in size. These two rollers are mounted and revolve in suitable bearings, *c c*, one of which is fixed and the other is forced against it by means of a powerful weighted lever, *d d*, or by a strong spring, which allows the movable roller to give way and prevents the breakage of the machine in case any piece of stone or metal should be too large or too hard to yield to the crushing power of the corrugated rollers. From these rollers the broken stone or metal falls into the revolving inclined screen *e e*, whereby it is delivered in different sizes into wagons or receptacles beneath in the usual manner.

This combined apparatus may be driven in any convenient manner; but we prefer to drive it by the gearing shown in the plan view, Fig. 4. *f f* is the fly-wheel shaft of the steam-engine, upon which is keyed a spur-pinion, *g g*, driving the corrugated rollers *a a* by means of the spur-gearing *h h*. A spur-wheel, *i i*, gearing into one of the roller-pinions, drives the revolving screen *e e;* the stone-breaker *b b* being driven by means of a strap, *k k*, passing round a pulley, *l l*, which is also actuated from the fly-wheel shaft by means of the bevel-gearing *m m*.

We would here remark that although for the sake of illustration only one pair of corrugated rollers is shown in the drawing, yet two or more pairs of these rollers may be employed if preferred.

Claim.

We claim as our invention—

The combination, with a "Blake's stone-breaker," or other similar machine used for breaking stone, of a pair or pairs of corrugated rollers, one roller of each pair being corrugated longitudinally and the other circumferentially, substantially as and for the purposes hereinbefore described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JOHN ROBERT ORD.
HENRY MADDISON.

Witnesses:

WILL SHARPE,
JOHN J. PEMBERTON,
Attorney's Clerks, both of Stockton-on-Tees, in the county of Durham, in the United Kingdom of Great Britain and Ireland.