(No Model.) 2 Sheets—Sheet 1.

W. E. BADGER.

MACHINE FOR CUTTING WIRE INTO SECTIONS.

No. 394,950. Patented Dec. 25, 1888.

Fig. 1.

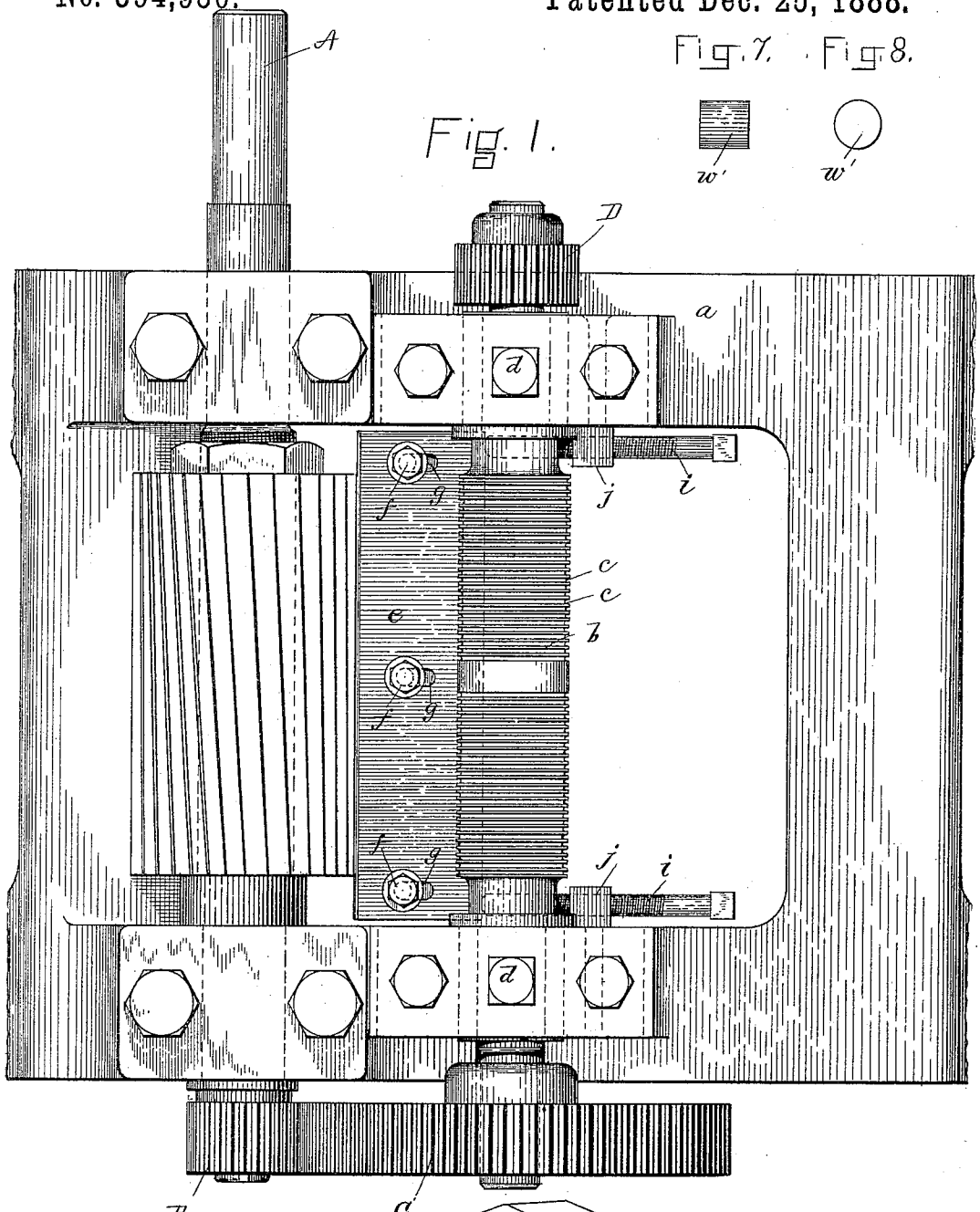
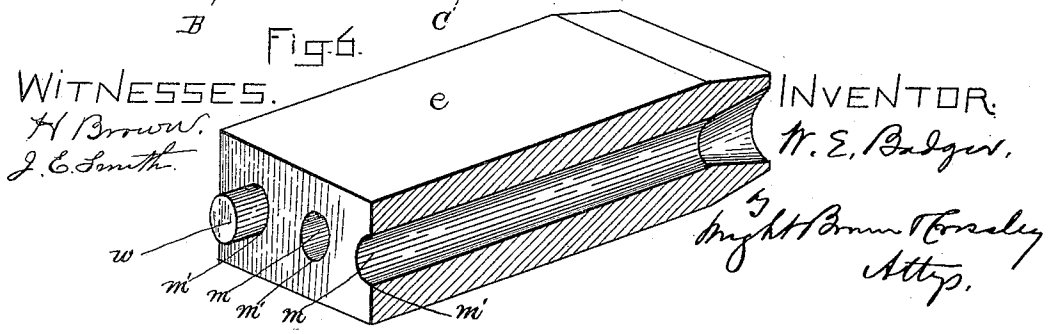


Fig. 7.

Fig. 8.

Fig. 6.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.

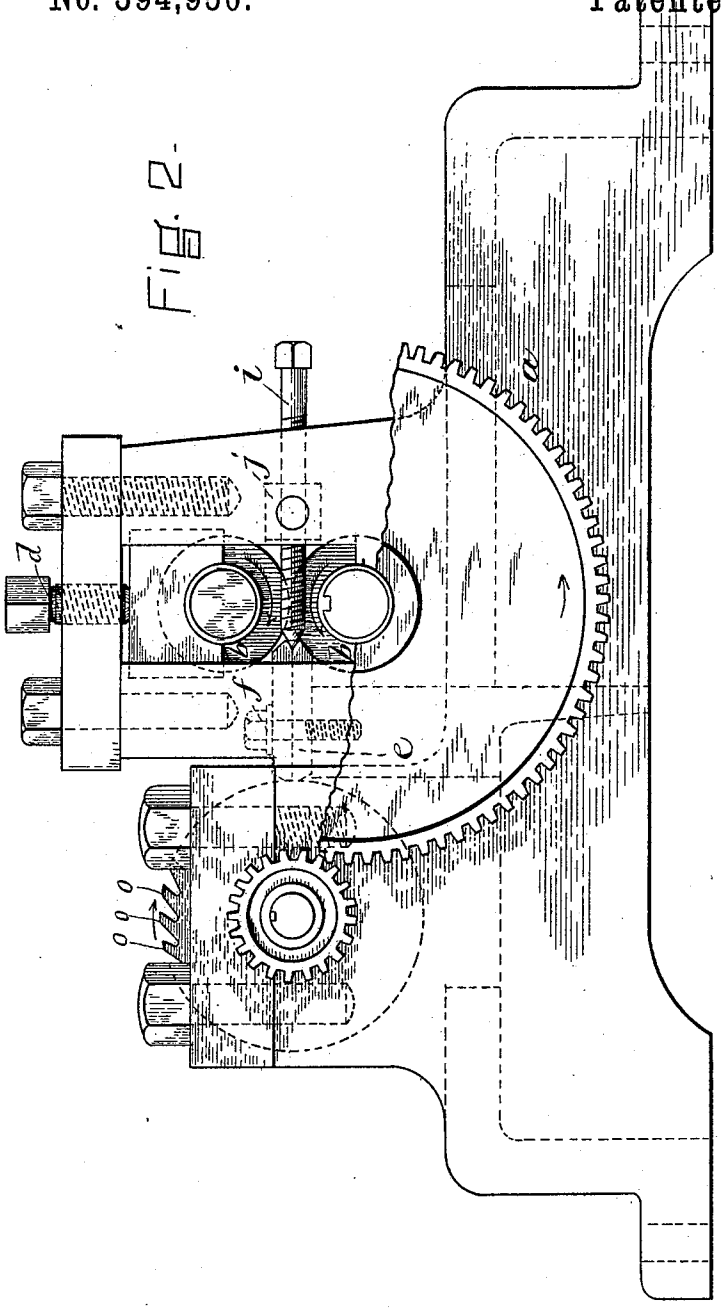


Fig. 3.

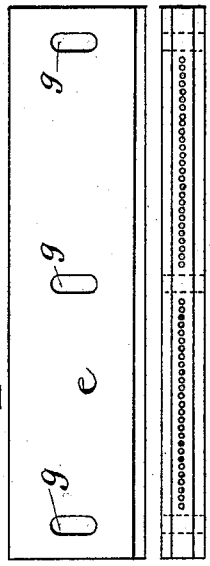


Fig. 4.

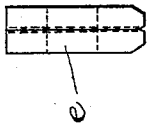


Fig. 5.

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UNITED STATES PATENT OFFICE.

WILLIAM EZRA BADGER, OF QUINCY, MASSACHUSETTS.

MACHINE FOR CUTTING WIRE INTO SECTIONS.

SPECIFICATION forming part of Letters Patent No. 394,950, dated December 25, 1888.

Application filed February 29, 1888. Serial No. 265,775. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM EZRA BADGER, of Quincy, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Machines for Cutting Wire into Sections, of which the following is a specification.

This invention has for its object to provide an improved machine for cutting a plurality of wires into short lengths or sections to be used conjointly with saw-blades, rubbing-tools, &c., as a material for cutting or reducing stone. Said lengths or sections form the subject of another application for Letters Patent, filed February 29, 1888, Serial No. 265,774. The sections are equal in length to the diameter of the wire, their cut ends being at right angles with the original length of the wire.

The invention consists in certain details of construction, which I will now proceed to describe.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a top view of my improved machine. Fig. 2 represents a side elevation of the same. Figs. 3, 4, and 5 represent, respectively, top, end, and front views of the channeled bed-knife. Fig. 6 represents a sectional and perspective view of the bed-knife enlarged and a wire in one of the channels thereof. Figs. 7 and 8 represent enlarged end and side views of one of the sections formed by the machine.

The same letters of reference indicate the same parts in all the figures.

In the drawings, *a* represents a supporting-frame of suitable construction, and *b b'* represent feed-rolls journaled in bearings supported by said frame. The rolls *b b'* are positively rotated in the directions indicated in Fig. 2 by a suitable connection with a driving-shaft, and are preferably provided with a series of peripheral grooves, *c*, formed to receive wires of the size or gage suitable for the sections above referred to, said wire being preferably No. 22, as stated in my other application. The upper roll is movable vertically, and its upward movement is limited by screws *d*, which may be adjusted to permit any desired separation between the rolls and to press the upper roll closely down on the wires introduced between the rolls.

e represents a bed-knife, affixed to the bed of the frame *a* by set-screws *f* passing through slots *g* in said bed-knife, so that the latter can be adjusted up to the rotary cutter, hereinafter referred to, to compensate for wear, the bed-knife being adjusted forward by horizontal set-screws *i i*, working in nuts *j j*, affixed to the frame *a* and bearing against the rear edge of the bed-knife, so that by turning the screws *i i* the bed-knife can be moved forward to any desired extent.

The bed-knife is provided with a series of orifices or channels, *m m*, extending through it from its rear to its front edge, said channels being formed to receive the wires passing through the grooves of the feed-rolls. The intersection of the front end of each channel with the front edge of the bed-knife constitutes a stationary concave shearing-edge, *m'*, Fig. 6, which supports the wire and co-operates with the knives *o* of the rotary cutter. Said cutter is journaled in bearings in the frame *a*, and is rotated in the direction indicated by the arrow in Fig. 2. Its knives *o* are arranged to pass over the edge *m'* of the bed-knife and co-operate with the same in severing the ends of the wires *w*, which are caused by the feed-rolls to project from said edges.

The knives *o* are here shown as slightly spiral, so that they operate with a shearing cut. It is obvious, however, that the knives *o* may be straight, and that the cutter may have but one cutting-edge instead of a series, as here shown. The moving cutting knife or knives *o* may be formed to reciprocate across the fixed bed-knife instead of revolving, my invention not being limited to any particular form or kind of moving knife.

The feed-rolls should be timed with relation to the moving knives so that the sections of wire cut off will have a length equal to the diameter of the wire.

It will be seen that the channels of the bed-knife support the periphery of the wire against the pressure of the moving cutting-edge, so that the sections are cut squarely off without distorting the ends thereof. The wire sec-

tions *w'*, Figs. 7 and 8, are therefore formed without variation of diameter from end to end, and are not flattened at their ends, as they would be if they were supported by a straight-edged bed-knife.

The moving cutter may be adjusted endwise to present different portions of its cutting-edges to the wires on the bed-knife, so that all portions of said cutting-edges may be utilized.

Power is applied to the shaft A of the rotary cutter by a driving-belt or otherwise. Said shaft has a pinion, B, which meshes with a gear, C, on the shaft of the lower feed-roll. The shafts of the feed-rolls are provided with small gears of equal size. One of said gears is shown at D, Fig. 1. Rotary motion is therefore communicated from the rotary cutter to the feed-rolls.

The bed-knife may be made in two sections, as indicated in Figs. 2 and 4, or in a solid piece, as indicated in Fig. 6.

I claim—

The combination of the supporting-frame, the bed-knife having a series of channels and adjustably secured to the frame, the feed-rolls, the movable cutter, and the adjusting-screws *i i*, whereby the bed-knife may be adjusted to the movable cutter, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 23d day of February, A. D. 1888.

WILLIAM EZRA BADGER.

Witnesses:
A. D. HARRISON,
ARTHUR W. CROSSLEY.