(No Model.)

# J. BENBOW.

## WIRE DRAWING BLOCK.

No. 346,709. Patented Aug. 3, 1886.

Fig. 1.

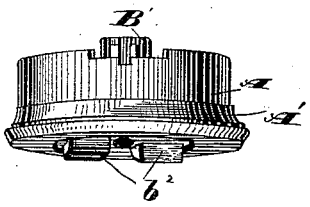



Fig. 2.

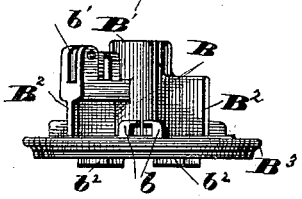



Fig. 3.

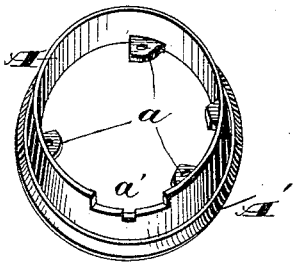
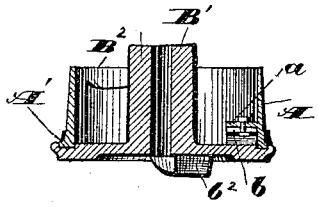



Fig. 4.




WITNESSES

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# UNITED STATES PATENT OFFICE.

JOHN BENBOW, OF CLEVELAND, OHIO, ASSIGNOR OF ONE-HALF TO THE HAYES MANUFACTURING COMPANY, OF SAME PLACE.

## WIRE-DRAWING BLOCK.

SPECIFICATION forming part of Letters Patent No. 346,709, dated August 3, 1886.

Application filed March 6, 1885. Serial No. 157,919. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN BENBOW, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Wire-Drawing Blocks; 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 pertains to make and use the same.

My invention relates to improvements in "wire-drawing blocks," so-called, the object being to provide a rim and flange detachable from the spider or other driving mechanism.

With this object in view my invention consists in certain features of construction and in combination of parts hereinafter described, and pointed out in the claims.

In operating wire-drawing blocks the wire as it is drawn from the reducing-dies first engages the block at or near the junction of the rim and flange, and each successive coil as it is wound on the block forces the previously-wound coil along up the face of the block, the greater strain and consequent wear coming on the narrow annular surface where the wire first engages the block, and after a time an annular groove is worn in the block at this part, that when it reaches any considerable depth interferes with and eventually prevents the wire from traveling up the face of the block as required. When the blocks become thus worn, it is necessary to remove them from the machine and dress off the respective faces.

Previous to my invention the rim, flange, and spider were usually cast integral. Such blocks, especially the larger sizes, were too heavy to conveniently handle, and when the rim was worn out by frequent dressing the whole block was worthless, except for scrap.

With my improved block the rim and flange are light and easily handled, and when worn out may be cheaply replaced with new ones. There is usually considerable fitting required on the spider to fit it to the driving-shaft, and to attach the usual mechanism for holding the wire, &c. The making, repairing, and adjustments of the spider and attachments are much more conveniently and cheaply done with the rim and flange removed; also, with the spider cast separate from the rim, it may be made of soft iron that is easily fitted, and thus greatly reduce the initial cost. On the other hand, the rim may be quite thin and of chilled iron, and thrown away when it becomes grooved, or if the rim is made thick with a view to dressing it it may still be made of metal about as hard as can conveniently be dressed, and thus greatly increase its durability beyond that of a rim made of iron sufficiently soft to be suitable for a spider. When a detachable rim becomes grooved so as to require dressing, it may be removed from the spider and its place supplied by another rim, detaining the machine only a few minutes.

In the accompanying drawings, Figure 1 is a view in perspective of my improved wire-drawing block. Fig. 2 is a side elevation of the spider detached from the rim and flange. Fig. 3 is a view in perspective of the rim and flange. Fig. 4 is an elevation in section of the spider, rim, and flange, showing a preferable means of securing the parts.

A represents the rim or drum, and A′ the connected flange. I usually cast these parts integral, although they may be cast separate and joined circumferentially, if preferred, and the rim made of chilled iron; but from my experience in the line of such construction I do not recommend it. Inside the rim has laterally-projecting ears *a*, pierced for bolts.

B is the spider, and consists, usually, of the hub B′, that is bored to fit the driving-shaft, and arms $B^2$, that fit the inside of the rim, and a flange, $B^3$, for supporting the rim. Lugs *b* are arranged in pairs, with undercut or offset inner faces, as shown, forming suitable seats for bolt-heads, and are arranged to register with the holes in the ears *a*. In Fig. 4 one of the bolts is shown in position. These bolts hold the rim down upon the spider. The rim on the inside may have ribs, lugs, or other devices to engage the arms of the spider to prevent the rim from turning, and thus relieve the bolts from excessive strain; but the ears *a* may be arranged to abut against the spider-arms, and will answer the same purpose. Some arrangement is usually had on one of the arms of the spider—for instance, such as shown at *b*′—for attaching the mechanism that holds the end of the wire, and the corresponding part

of the rim may be cut away, as shown at $a'$. The lugs $b^2$ on the bottom of the spider are for engaging a driver, (not shown,) that is rigidly attached to the driving-shaft and supports the spider, the almost universal custom being not to fasten the spider to the shaft, but to have the spider fit easily on the shaft, so that it may be quickly raised by suitable means—usually a stick—to disengage the lugs from the driver whenever it is desired to stop the block, as is frequently necessary in removing the wire, and for other purposes.

What I claim is—

1. In a wire-drawing-block, a detachably-attached rim, substantially as set forth.

2. In a wire-drawing block, a detachably-attached rim and flange, substantially as set forth.

3. In a wire-drawing block, the combination, with a spider mounted on the driving-shaft, of a detachable rim and flange mounted on the spider, with suitable mechanism, preferably as shown, for holding the parts together and causing the rim to revolve with the spider, substantially as set forth.

4. The combination, with a wire-drawing drum or pulley, of a frame or spider fitted within said drum and held removably attached thereto by cleats on the inner face of the drum, between which the extremities of the arms of the spider terminate, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 27th day of February, 1885.

JOHN BENBOW.

Witnesses:
CHAS. H. DORER,
ALBERT E. LYNCH.