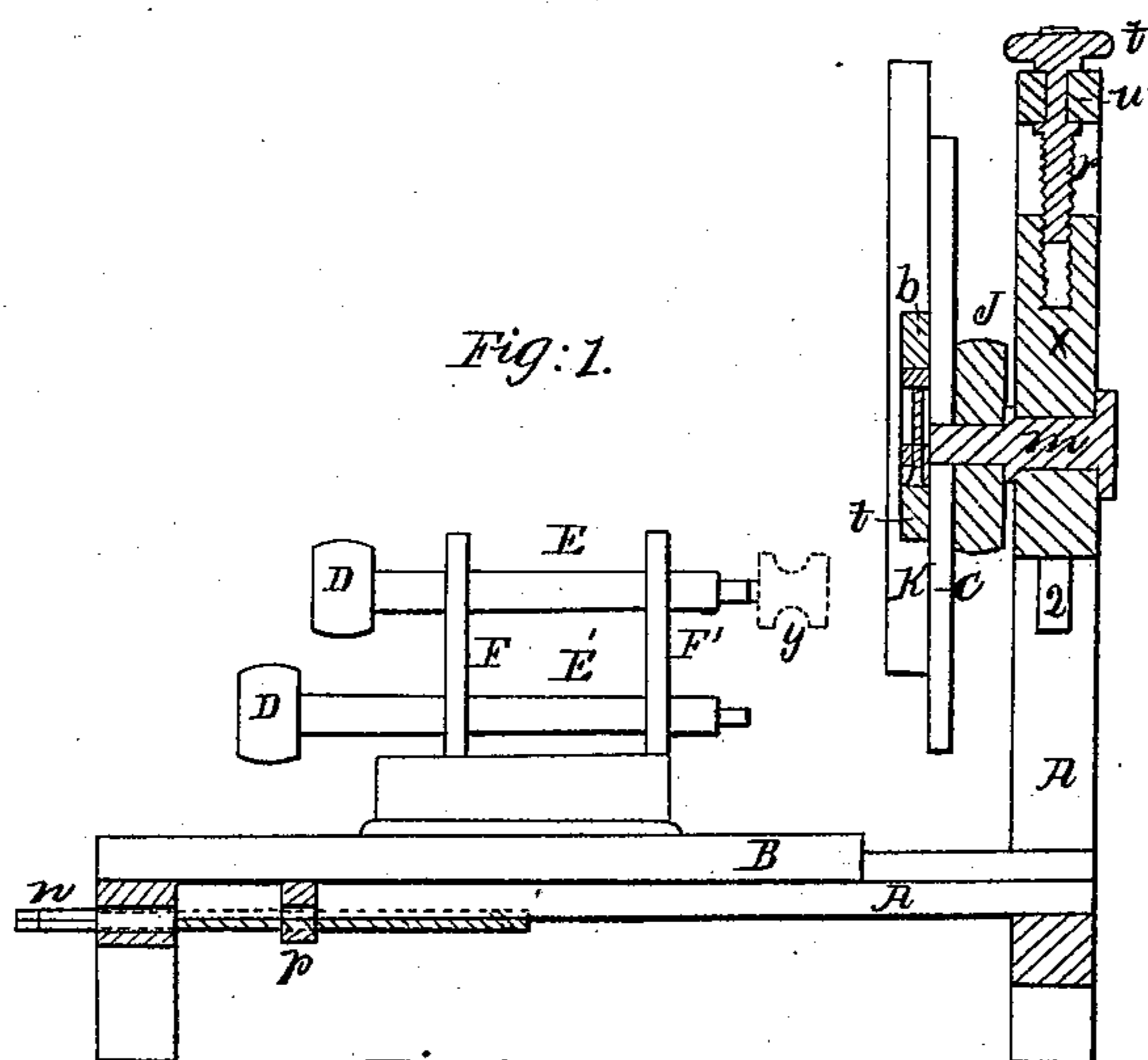


*F. Smith,*

*Turning Orals;*

*No. 52,900,*

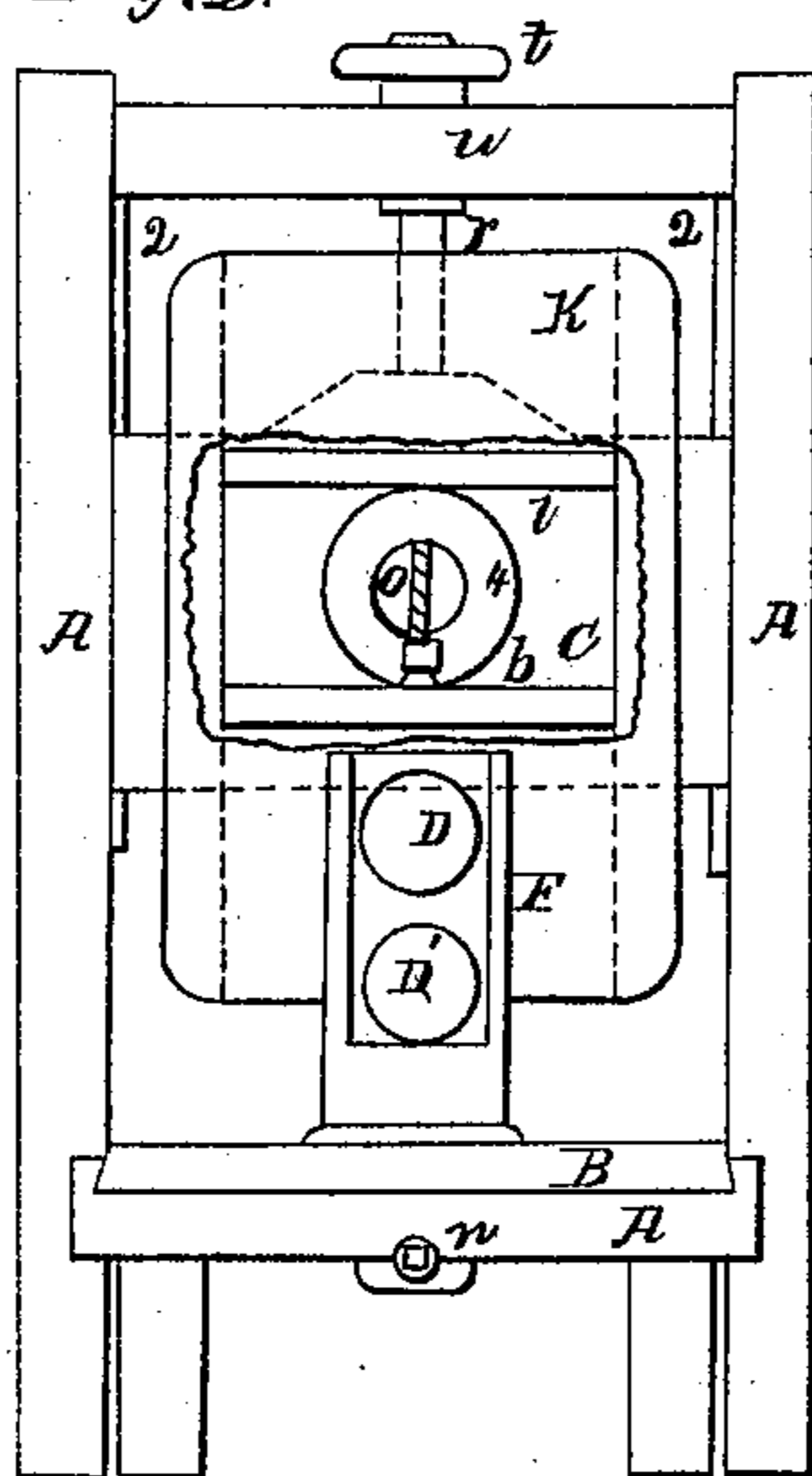
*Patented Feb. 27, 1866.*



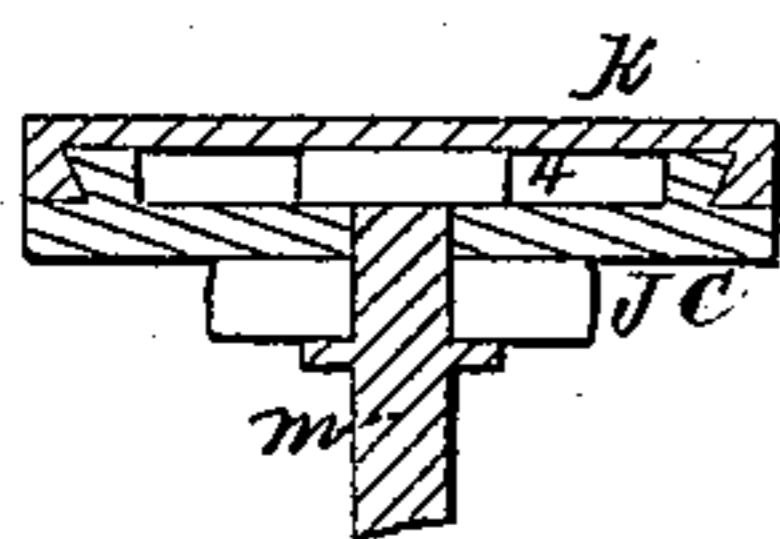
*Fig. 4.*



*Fig. 2.*



*Fig. 3.*



*Witnesses:*  
*James G. Johnston.*  
*Wesley Johnston.*

*Inventor:*  
*Frederick Smith.*

# UNITED STATES PATENT OFFICE.

FREDERICK SMITH, OF ALLEGHENY CITY, PENNSYLVANIA.

## IMPROVEMENT IN LATHES FOR TURNING OVALS.

Specification forming part of Letters Patent No. 52,900, dated February 27, 1866.

*To all whom it may concern:*

Be it known that I, FREDERICK SMITH, of the city and county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Machines for Turning Oval Frames, &c.; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in the combination and arrangement of the various parts hereinafter described, for the purpose of turning oval frames and making what is termed the "under-cut."

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

In the accompanying drawings, Figure 1 represents a longitudinal section of my improved machine for turning oval frames, &c. Fig. 2 represents an end elevation of the same. Fig. 3 represents a section of plates K and C and adjustable cam 4, for operating them; also pulley and shaft connected therewith. Fig. 4 represents a section of a frame having what is termed an "under-cut," the red lines in said figure showing that the cutters must move on a horizontal line to their work, and the frame must be moved up and down to the cutters (indicated by the dotted lines Y) by means of the elevating and depressing head X.

In the accompanying drawings, A represents the frame of the machine, the construction of which will be readily understood by reference to Figs. 1 and 2.

B represents a sliding table, which is furnished with suitable guides. To this table is secured bearings F F' for the shafts E E' of the cutters y, the cutters and shafts being driven by suitable belts placed on pulleys D D'. The table B is moved up toward and back from the revolving plates K and C by means of the screw n, which works in a nut marked p, which is attached to the under side of the table B.

X represents a movable head, which moves on guides, (marked 2,) and is elevated and depressed by means of the screw r, which is operated by turning the lever t. In the head-piece X is secured a shaft, m, on the end of which is secured an adjustable cam, 4, which is made to give the desired throw by means of a set-screw, o. This cam 4 operates against bars l, which is secured to the plate K, which moves back and forward on slides which are so arranged as to hold it to the plate, (marked C,) which is secured to the pulley, (marked J,) which plate C and pulley J are arranged with relation to shaft m so as to turn on it. Now, by a suitable belt placed on the pulley J, it and the plates K and C may be revolved, and the cam 4, being stationary, the plate K will be moved back and forward on the plate C, so as to harmonize the two motions and allow the cutters to cut out a true oval of the stuff placed on the plate K, which stuff may be secured to said plate by any known means. The variation in the oval of the frame will be in accordance with the throw of the cam, which throw is given to it by means of the set-screw o. As the cutters y move to their work on a line with the face of the table B the under-cut must be given by elevating and depressing the revolving plates K, &c., on shaft m, which is secured to the head X, which head is operated by means of the screw r and lever T.

Having thus described the nature, construction, and operation of my improvement in machines for turning oval frames, &c., what I claim as of my invention, is—

The arrangement of the frame-bed composed of the plates K and C, adjustable cam 4, with its adjusting-screw, and stationary shaft m, said parts being raised and lowered by means of screw r, and operated by pulley J, substantially as and for the purpose described.

FREDERICK SMITH.

Witnesses:

JAMES J. JOHNSTON,  
ALEXANDER HAYS.