



INTERNATIONAL  
CHANNELLING  
MACHINES LTD  
SHEFFIELD.

# INTERNATIONAL CHANNELLING MACHINES LIMITED

*SHEFFIELD:*

*SISKOL WORKS - PENISTONE ROAD*

*Telegrams:*  
"CUTTABIT, SHEFFIELD."

*Telephone Nos.:*  
43004 & 43005 OWLERTON.

CODES: A.B.C. 4TH & 5TH EDITIONS, WESTERN UNION,  
WESTERN UNION FIVE LETTER EDITION,  
MOREING AND NEAL.

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*LONDON: 1, BROAD STREET PLACE, E.C.2*

TELEPHONE No. 7727 LONDON WALL.

TELEGRAMS: "CUTTABIT."

1929



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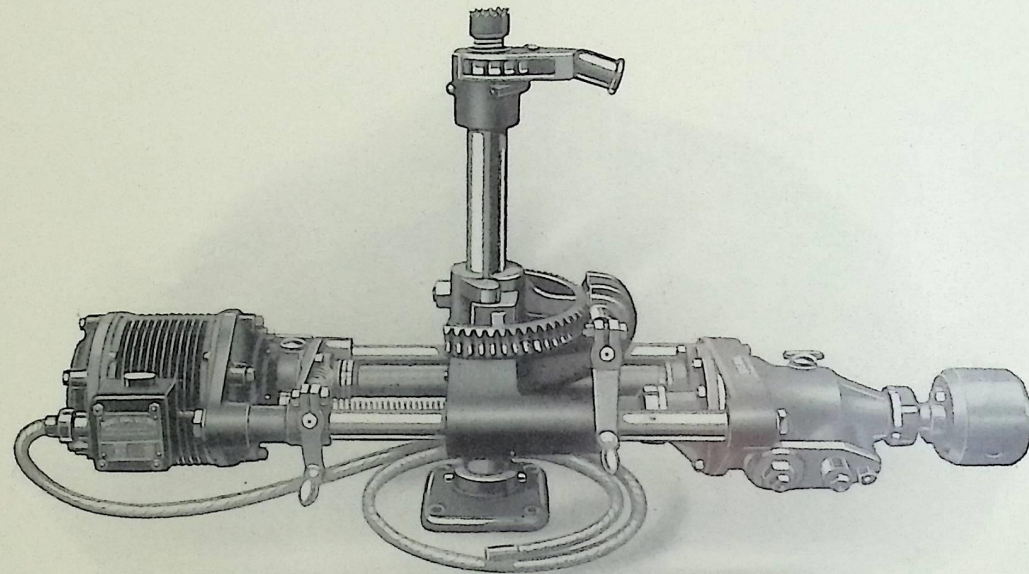
FOREWORD

UNTIL 1921 the only light portable coal-cutting machine for headings and other narrow work was the Percussive Machine driven by compressed air, and electrically equipped mines when in need of such a machine had to install an in-by air compressor. This necessitated not only a high first cost but a high running cost, as an in-by air compressor large enough to drive one Percussive Coal-Cutter required an electric motor of from 25 to 30 h.p. to drive it.

This necessity no longer exists, as the "SISKOL" Electric Header, which is illustrated and described in the following pages, will, with a 3-h.p. motor, do the same work as the Percussive Machine which requires a 30-h.p. motor at the air compressor.

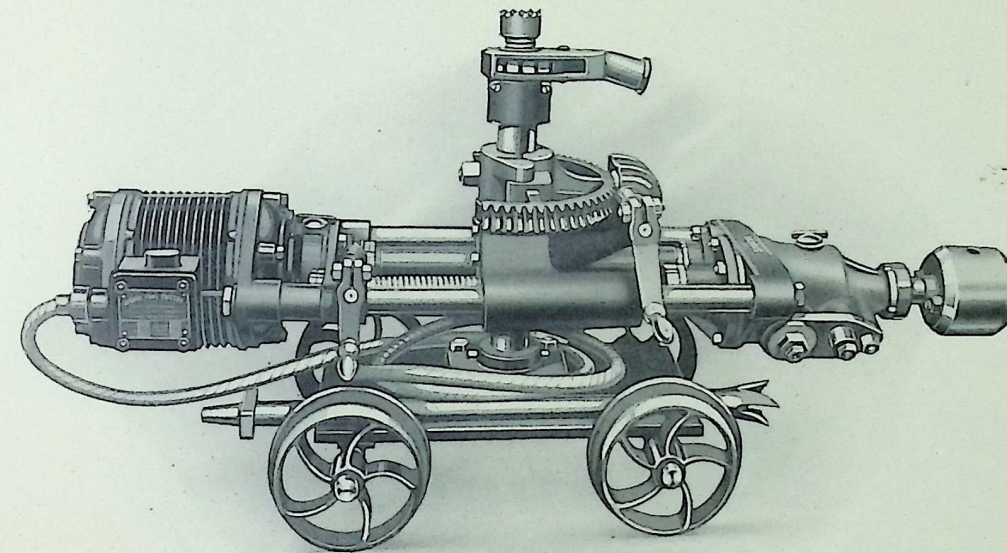


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"SISKOL" ELECTRIC HEADER. TYPE "B."

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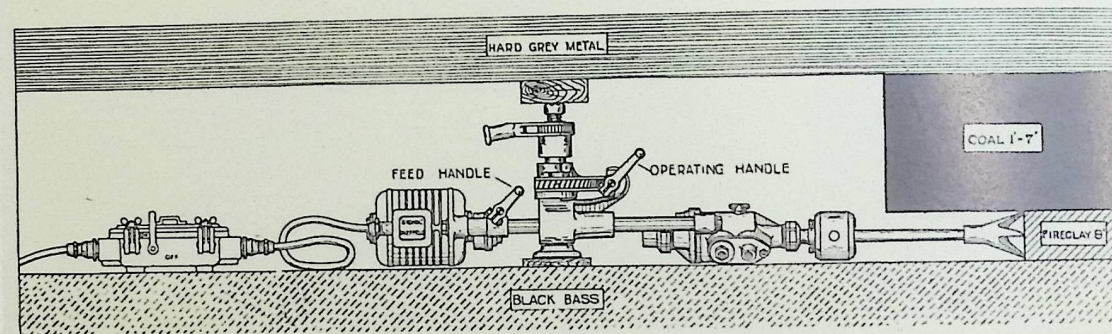


"SISKOL" ELECTRIC HEADER. TYPE "B." MOUNTED ON CARRIAGE FOR FLITTING.



*INTERNATIONAL CHANNELLING MACHINES Ltd.*

## THE "SISKOL" ELECTRIC HEADER



THE ILLUSTRATION SHOWS MACHINE CUTTING  
OUT FIRECLAY BAND AT FLOOR LEVEL.

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## "SISKOL" ELECTRIC HEADER TYPE "B"

AS will be seen from the illustration, the machine is operated from a column by means of a sector and swung to and fro across the coal face in the same way as the "SISKOL" Compressed-Air Machine but, whereas in the latter machine the primary motion is percussive, in the Electric Machine it is rotary.

All gears are of steel with machine-cut teeth and are enclosed in an oil-tight box, each part receiving a copious supply of lubricant independent of gradient.

A new type Chuck has been designed to ensure speedy changing of the extension rods.

Headings or Bords up to 20 ft. wide  $\times$  5 ft. deep can be cut by this machine from one setting of the column.

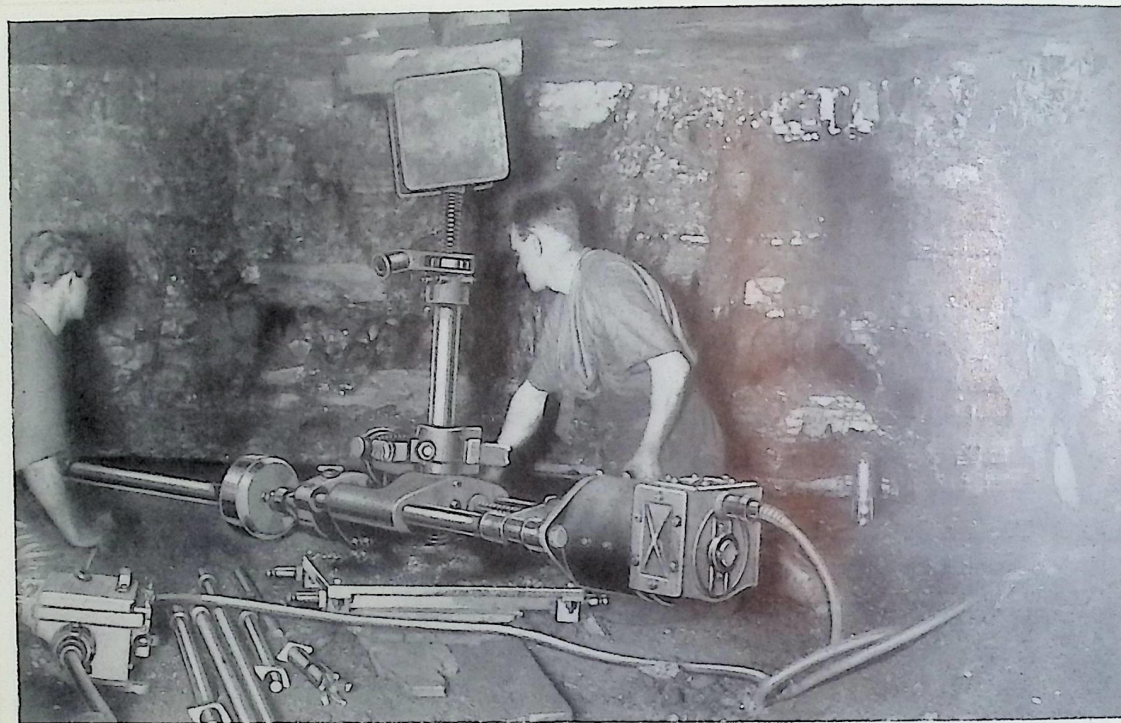
The machine can be arranged to cut anywhere between floor and roof and will work in seams as low as 18 inches.

It is easy to operate and weighs between 6 and 7 cwt.

Motor 3 h.p.



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THE "SISKOL" ELECTRIC HEADER UNDER WORKING CONDITIONS.

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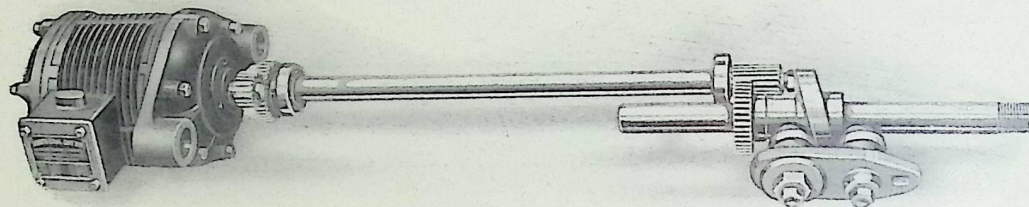
THE illustration opposite shows the "SISKOL" Electric Header at work in a Scottish Colliery where it is fitted with a flameproof direct current motor. At this colliery the "SISKOL" cuts regularly 4 places 12 ft. wide  $\times$  5 ft. 6 in. deep per shift, while at another colliery in the same district it cuts 6 places per shift, each place averaging 14 ft. wide  $\times$  6 ft. deep.

There are now in use several hundred "SISKOL" Electric Headers, working chiefly in headings and on bord and pillar work. They are also being used to advantage in heading round falls on long-wall faces.

In the illustration opposite a base plate with axles attached will be observed, while on page 5 the illustration shows the same type of base plate but with the wheels on for flitting the machine intact.



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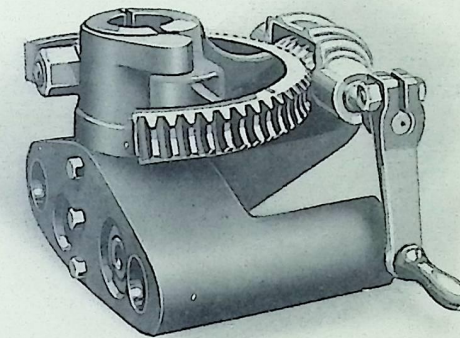


ABOVE is a skeleton view of the main and intermediate shafts with necessary gear wheels. The main shaft has a speed of 400 r.p.m. while the speed of the intermediate is 800. The gears can be made to deal with a motor speed of between 1,100 and 1,700 r.p.m. while still keeping the speed of the main shaft at approximately 400 r.p.m.

A specially designed cam is secured to the main shaft and as the latter rotates, the cam, passing between the twin rollers, imparts the reciprocating motion to the main shaft, on the screwed end of which the chuck for carrying the cutting rods is attached.

The pinion engaging the gear wheel on the main shaft is broad enough to keep this wheel in mesh during its lateral movement.

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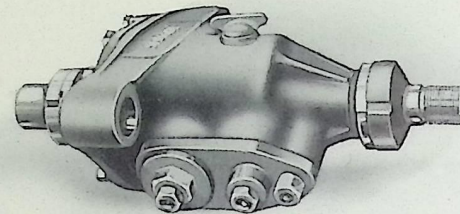


THE illustration on this page shows the quadrant, the principal parts of which are a malleable iron connecting arm and a hinged steel sector. The former has a casing provided for carrying the steel worm which engages in the machine cut teeth of the sector. It is also provided with two arms through which—as shown on page 4—slide the guide rods which connect the motor end of the machine with the front gear box. A clearance hole is provided in the arm of the quadrant through which passes the intermediate shaft connecting the motor with the gear box. The hinged sector is clamped to the column, but as the arm is free to move, the operator

by turning the handle on the end of the worm is able to impart the necessary radial motion to the frame of the machine. This is rendered easy by the fact that the cutter, on the backward stroke of the main shaft, comes clear of the coal.

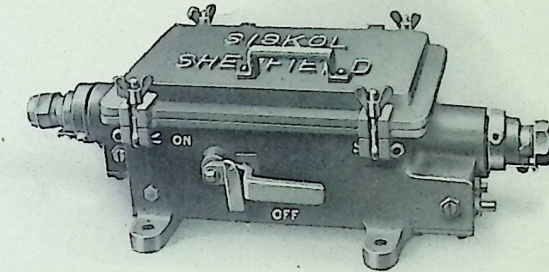


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THE illustration shown here is of the front gear box which carries the main shaft with cam, gears and rollers in an oil-tight chamber. It is a high quality malleable casting and is provided with suitable arms to connect to the guide rods. It is also provided with an attachment to take up any wear on the cam or rollers. This is done by bringing the centres of the rollers closer together. The swinging action of the cam as it rotates in the oil-tight gear box provides a thoroughly reliable splash lubrication.

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THE switch box starter here illustrated conforms in every respect with the Electricity in Mines Regulations and is provided with a simple and efficient interlocking device. With this device the box cannot be opened and the cable plugs cannot be withdrawn while the switch is on.

The cover must be screwed down tight and the cable plugs placed in position before it is possible to put the switch on.

The box is of cast-iron, of ample strength, with hinged lid, and is both flame and damp proof, the joint between box and lid having a broad machined surface.

The insulation throughout is thick mica, not less than  $\frac{1}{8}$  in. thick, with long leakage surfaces.



*INTERNATIONAL CHANNELLING MACHINES Ltd.*

SPECIFICATION OF THE  
"SISKOL" PATENT ELECTRIC COAL-CUTTER. TYPE "B"

GEAR BOX.

A casting of best malleable iron of great strength and fitted with gun metal bearings of ample dimensions forming an oil bath for the cam shaft and roller bearings.

CAM SHAFT.

Of high tensile steel, accurately machined, ground and screwed at outer end to receive the chuck.

CAM.

Cast steel forging, hardened and ground.

ROLLERS.

Made of high-class cast steel hardened and ground.

GEARS.

Nickel chrome steel, heat treated.

MOTOR.

By first-class maker to suit any electric current, fitted with cone gland and 12 ft. of cab-tyre cable.

*INTERNATIONAL CHANNELLING MACHINES Ltd.*

SPECIFICATION—*continued*

SUPPORTING FRAME FOR GEAR BOX AND MOTOR.  
Built up with rods of high tensile steel carrying the feed screw.

SECTOR.

Built up of malleable iron and steel castings of ample strength and fitted with steel worm and spindle.

SUPPORTING COLUMN.

Of the reversible ratchet type with a buttress thread screw and column tube of best Siemen's acid steel with forged ball race to take the thrust.

CHUCK.

Made of forged steel and of design which ensures quick changing of the extension rods.

EXTENSION RODS.

Forgings of high tensile steel; 6 to a set.

CUTTING BITS.

Of best quality cast steel, hardened and tempered.

MACHINING.

All parts are accurately machined to fine limits, thus ensuring perfect interchangeability.

*All of British Manufacture.*



## *INTERNATIONAL CHANNELLING MACHINES Ltd.*

### INSTRUCTIONS FOR ERECTING AND OPERATING THE "SISKOL" ELECTRIC HEADER. TYPE "B"

#### ERECTING MACHINE.

In erecting the supporting column of the machine in position it is necessary to use a wooden block underneath the base of the column and a hard wood block on the top of the screw head. If the floor is hard the wooden block between the base of the column and the floor need not be any thicker than 1 in., and need only be of medium hardness, but should be at least as broad as the base of the column. The block on the top of the column should be of hard wood and not less than 3 in. in thickness, otherwise there is danger of the block splitting. Before tightening up the screw, care should be taken to see that the base of the column is lying evenly on the wooden block ; which means the column must be at right angles to the floor. The position for fixing the column should be the middle of the heading and about 4 ft. 6 in. back from the coal face.

#### OILING.

Before starting up the machine, care should always be taken to see that the gearbox is not less than half full of oil. Thin lubricating oil only should be used. If there is a leakage tighten the glands slightly.

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### INSTRUCTIONS—*continued*

#### OPERATING.

The operator from his position behind the column should see that the machine runs in a clockwise direction. The angle of the prongs on the cutting bit will indicate the direction of rotation. The extension rods should be inserted in the chuck and turned round against and under the head of the two fastening bolts in such a way that these bolts will prevent the extension rods from turning round in the chuck when the machine is cutting. These bolts should be tightened up in such a way as to secure the tapered end of the extension rod tightly into the chuck. Start up the machine and feed forward by means of the feed handle until the cutting bit comes in contact with the coal at the nearest point. Swing the machine slowly across the face by means of the operating handle. At the end of each swing advance the machine a suitable distance depending on the nature of the holing. By this means a continuous channel is made in the coal. When the machine has been advanced the full distance of the extension rod the next longer rod is placed in position and fed in the same manner. This operation is repeated until the cut is the required depth.



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### INSTRUCTIONS—*continued*

#### SCRAPING OUT.

During the cutting operation the *cut should be kept clear of chips* by means of scrapers ; this is most important.

#### STARTING SWITCH.

Test through the earth connection. The switch is so arranged that it is impossible for the operator to get a shock ; this is obtained by interlocking the handle with each plug and also with the lid. *To open the box or remove either or both of the plugs the switch handle must be in the off position, i.e., horizontal. Do not use force.*

On the page opposite is a facsimile of the certificates granted by the Mining Department of the Sheffield University.

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UNIVERSITY OF SHEFFIELD  
MINING DEPARTMENT,  
UNIVERSITY OF SHEFFIELD  
ST. GEORGE'S SQUARE,  
SHEFFIELD.

TELEPHONE 4705  
CERTIFICATE  
NO. 155.

CERTIFICATE OF TEST AS TO FLAMEPROOF ENCLOSURE.

This is to certify that a  
"SISKOL" THREE-POLE GATE-END BOX  
(capacity 30 amps. at low and  
medium tensions)

identical in all essential respects as to design, workmanship and  
material with that indicated on Drawing No. 1550 E.M. has been  
submitted by

THE INTERNATIONAL CHANNELLING MACHINES, LIMITED

for test to prove compliance with the definition of flameproof  
enclosure (B.S.S.A. Publication No. 229-1926) and has been found  
to satisfy the requirements in all respects.

A full report of the tests carried out has  
been furnished to The International Channelling Machines, Limited.

*J. C. A. Statham*  
Professor of Mining.

April 25th, 1927.

UNIVERSITY OF SHEFFIELD  
MINING DEPARTMENT,  
UNIVERSITY OF SHEFFIELD  
ST. GEORGE'S SQUARE,  
SHEFFIELD.

TELEPHONE 4705  
CERTIFICATE  
NO. 156.

CERTIFICATE OF TEST AS TO FLAMEPROOF ENCLOSURE.

This is to certify that a  
"SISKOL" TYPE A.A.4 A.C. COAL-CUTTER MOTOR  
(capacity 3 B.H.P. continuously at 220 volts,  
3 phase, 50 cycles, 1460 r.p.m.)

identical in all essential respects as to design, workmanship and  
material with that indicated on Drawing No. 77404 (dated January 12th,  
1927) has been submitted by

THE INTERNATIONAL CHANNELLING MACHINES, LIMITED

for test to prove compliance with the definition of flameproof  
enclosure (B.S.S.A. Publication No. 229-1926) and has been found  
to satisfy the requirements in all respects.

A full report of the tests carried out has  
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*J. C. A. Statham*  
Professor of Mining.

April 30th, 1927.



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