

The Archaeology of the Clay Tobacco Pipe

X. Scotland

edited by
Peter Davey

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2:2 Thomas Davidson & Co., Glasgow.

D. Gallagher & R. Price.

Abstract.

Thomas Davidson & Co. manufactured clay pipes in Glasgow from 1862-1911. A contemporary description of their factory survives, as does a catalogue of their products.

Historical Background

In 1835 William Murray expanded his Caledonian Pottery in Garngad Hill, Townhead, Glasgow, by erecting the Caledonian Pipe Works adjacent to the factory (Glasgow P.O. Directory, 1835). He established a wide market for his pipes: in 1858 he was supplying the Hudson Bay Co., and pipes bearing his name have been found in such diverse locations as North America, Australia, Easter Island and West Africa (Walker, 1977, 343; Walker, 1975, pl. XXVII).

Thomas Davidson jr. became a managing partner of the Company in 1850, and following Murray's retirement in 1862 he took over the whole business, which thereafter traded as Thomas Davidson jr. & Co., Caledonian Tobacco Pipe Works (Quail, 1978, 25; Quail, 1982, 15). A team of reporters from the Glasgow Weekly Mail visited the factory in c. 1864 and their account survives (People's Palace, Glasgow: Industry in Glasgow G600). It shows a works that ranks alongside the major Glasgow pipemaking establishments and gives an excellent description of the premises:

"THE PREMISES OF MESSRS DAVIDSON, JUN. & CO."

Consists of a large three-storey brick building, with several out-houses and open areas in connection therewith. In the basement storey are carried on the works of the various furnaces; the preparation of the clay, with the storing of the same; box-making, with box store; and where also are the mould stores and business chambers of the works. The second floor up is devoted to pipe moulding and the partial drying of the pipes; and on the third floor, the operations of smoothing and trimming the goods before they are conveyed to the kilns. The several floors are in communication for the operations of the manufacture by a pair of compound hoists, which are so constructed as mutually to assist each other in carrying up and down the materials under hand. About 170 persons are employed on the spot. This number consists of youths and men in one department, and of young girls and grown women in the other. The firm is of old standing, and its present proprietors are the second in the order of time who carry on business here. They have extensive business connections with the United Kingdom, and with British dependencies all over the world. A chief part of their trade has been and continues to be with the North American States, and they, like many others, have suffered not a little from the present troubles in America.

They send goods also to East and West Indies.

THE CLAY USED IN THE MANUFACTURE OF PIPES

Comes from Dorsetshire, where it is found chiefly in the Isle of Purbeck, and from Devonshire at Newton Abbot. The store of this raw material kept at the Caledonian Pipe Works contains always several hundred tons for use and sale. It is distinguished when dry by its perfectly white colour, and its great adhesion to, or capillary action on, the tongue after it is baked. This is no doubt due to the presence of alumina in it in considerable quantity. The clay arrives in a moist state and in irregular cubical lumps, which, as a first stage to their final use in the making of pipes, are dried at a pretty high temperature over or around the steam boiler in the works. The blocks break up more readily in the pug mill, to which they are then transferred from this partial drying. The pug mill consists of a vertical shaft driven at the top by bevelled gearing, and provided below with four arms, having alternate rows of stout and short upright blades fixed along their length. This shaft with its arms revolves with considerable speed within a cylindrical vessel or tub, into which the clay is put, and where it is first cut and tortured to atoms, and then kneaded into a compost, and finally banked up close by ready for the moulder. The refuse clay produced in the moulding shop in the upper floor is run down a slope into this same apartment, and again worked in economically with the rest. The prepared clay passes up by a hoist to the moulding shop, where it is laid hold by the several workers as required.

THE MOULDING SHOP

Contains about 14 benches capable of accommodating about six workers each, three on either side, and in all, when in full operation, 84 persons. Each worker prepares his own clay for moulding, and this he does by taking a small ball of clay from the heap, and rolling it out with the palms of his hands into a slender cylinder of a length corresponding to that of the mould, and with a lump on one end to form the bowl of the pipe. This operating is repeated till he makes as many of such cylinders as will serve him for half a week's work at moulding - if it be a man worker about 30 gross is prepared at once. These clay cylinders are put temporarily together in lots to prevent them from becoming too dry, and for this latter reason half-weekly spells of fashioning the material is taken. A dexterous workman will mould from 50 to 60 gross of pipes of average length per week.

THE PIPE MOULDS

In their manufacture, and more particularly in the great number and variety of them that are here either in the hands of the workers or in store ready for use, form a large element in the cost of carrying on a smoking-pipe-factory. The mould of course is everyway the reverse of the pipe. It is formed of folding halves of cast iron, which are hinged together and open longitudinally. It is channelled inside of the shape of the stem and bowl of the pipe, and the two sides when thrown open are each the reverse of a half pipe. The surface is worked with to a great degree of smoothness. There are pins on one side of the mould corresponding to holes on the other, which compel the sides to correspond with the utmost precision. The interior of the bowl is formed by a shaped plug or stopper, which is

7,200 - 8,640 @ 144/gross

9,600 - 11,520 @ 192/gross

(10 hrs per day, 6 days per week = 3,600 mins. 7,200

p. 129 = 1 per
30 sec, non
stop!)

attached and worked by a lever that operates in an axis fixed by a stout pair of cheeks to the table on the left hand of the worker. This plus is tapering and roughened at the bottom so as to prevent the adhesion of the soft clay from atmospheric pressure to it when it is urged home by the lever. The operation of moulding is elegant and requires considerable dexterity. The workman takes one of his clay cylinders and passes into its stem a long oiled wire, which has a slight button extension on its end; he then lays the clay on the shaped groove of one of the jaws of the mould, with the wire in position, and applies the other jaw, bringing the parts smartly together; and he then unties them firmly by a vice action in the apparatus on the table. The lever is now quickly brought down, carrying the oiled stopper to form the bowl, the wire being meanwhile thrust up to the stopper to keep the tube formed by it open. The superfluous clay is cut off by a knife from the mouth of the pipe; the wire is withdrawn and the mould laid open, and the now perfectly formed pipe is taken out and laid on a board. Boards of trays filled with pipes in this stage are passed into racks in the roof of the shop, for receiving them, whence they are carried to a moderately warm steam-heated stove, where the pipes are stiffened a little by drying.

THE FINISHING SHOP.

Here the stems and bowls of the pipes are smoothed by implements made for the purpose, and the work is done by girls and grown women. The moulds at this junction leave certain asperities or roughnesses which are shaved off with great facility by edge tools from the still soft pipes. Here they are again removed to a drying stove, whence they are taken by a decending hoist to

THE POTTING SHOP.

The pots, saggars, or crucibles of the pipe-maker are quite similar in make and use to those of the potter, and when charged are disposed in a similar manner in the pipe kiln. About five gross of the pipes are put into one saggar, and the arrangement is a matter requiring some considerable skill.

THE PIPE KILN.

On being charged with its quantity of filled saggars, it is of importance to communicate an equal heat to every part of its interior. The temperature is slowly raised to permit of this equal diffusion of heat, and for a period of 12 hours only a moderate temperature is excited in the kiln. Afterwards for 10 hours a heat rather above a cherry red is maintained, so that for about 22 hours the heat with varying energy is kept up. About two tons of coal are consumed for the charge of each kiln, and there are three kilns employed here in the work of firing. It is of consequence to exclude the cold air from the kiln, as any current setting in on a point deteriorates the quality of the goods greatly. All apertures, including the door by which the kiln is charged, is carefully plastered up with clay. Hot air penetrates and pervades the interior which is made hot by passing through the several furnaces, or by a hot air flue open in the bottom of the kiln. A peep-hole to inspect the state of the interior is all the opening left whilst the kiln is in full operation. The goods on

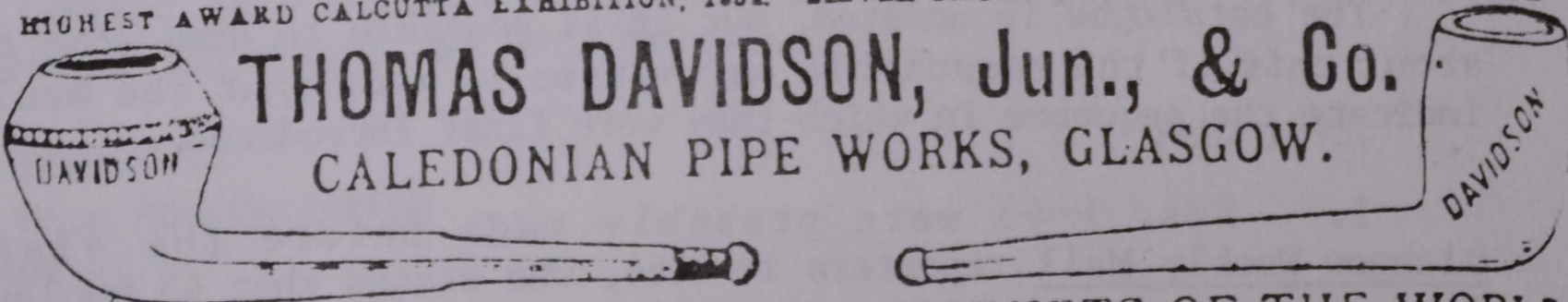
cooling are removed from the kiln, and afterwards properly packed in boxes for the market. In instances where it is desirable to glaze the mouthpiece of the pipe, this is done at a furnace constructed for this purpose, and a mixture of salt and letharge are used for the purpose. The ends of the pipes are dipped into this mixture and then raised to a red heat through exposure to a fire, when an agreeably coloured glass is formed on the part.

THE BOX MAKING SHOP.

The sizes of the pipes, whether, "cutties" or "longs", have to do with form and dimensions of the box, and here this diversity is very well shown. Machine power is employed in this department of the work for squaring the wood, and the immense quantities of cut wood on hand, and the boxes in store, point at the large demand of goods of the kind made here which the firm is in the habit of supplying. In their trade list there are altogether 43 sorts of pipes enumerated, all of which differ from each other in one or more features to meet the fancy of different countries or of various smokers. Any new pattern or style of clay pipes which may be demanded they are ready to execute, and to inscribe the name of the buyer or inventor upon the mould by which the pipe is formed. In the list we found six styles of "cutty", three "Baltics", three "Dublins", three "billiards" and two "couriers", and a medley of names local, fanciful, and complimentary, which are known to the trade and to the devotee sufficiently well. Altogether the sorts of pipes made at the Caledonian Pipe Works are meant for the many, and for every day's convenient use. All the conditions for producing a good serviceable smoking pipe is attended to, and the great world of smokers show their appreciation of the quality of the manufacture here carried on by their continued and extended patronage of the same. We have to thank the Messrs Davidson for their obliging attentions on the occasion of our visit."

Davidson expanded his business, and from 1872-95 he produced pottery under the name 'St. Rollox'. The firm continued to produce pipes and maintained its export trade to America, where its products have been excavated in Pennsylvania (Alexander, 1983, 222). Davidson exhibited in the Calcutta Exhibition of 1884, in which he apparently won the highest award, and in the Glasgow International Exhibition of 1888. He advertised in the catalogue for the latter exhibition, and evidently took pride in the quality of his products:

HIGHEST AWARD CALCUTTA EXHIBITION, 1884. SILVER MEDAL AND FIRST-CLASS CERTIFICATE



THOMAS DAVIDSON, Jun., & Co.
CALEDONIAN PIPE WORKS, GLASGOW.

CLAY TOBACCO PIPES FOR ALL MARKETS OF THE WORLD
 In White, Red, Black, and "Terra Cotta" Clays, etc. etc.

CLAY AND BATHBRICK MERCHANTS.

Agents	{	LONDON,	J. ABERCROMBIE, 2 King William Street, E.C.
		LIVERPOOL,	R. EDWARDES, 10 Cook Street, Commercial Buildings.
		BIRMINGHAM,	J. B. CUTHRIE, SONS & Co., 82a New Street.

In 1895 Davidson moved his premises to Millerfield St., Dalmarnock, and continued to concentrate on the production of pipes (Quail, 1978, 26). During the period c. 1864-1900 the number of types of pipe available rose from 43 to approximately 400 - a full list of his later products is cited hereafter.

The Wellcome Museum of the History of Medicine (a department of the Science Museum of the History of Medicine (a department of the Science Museum, London) possesses a catalogue produced by Davidson & Co. It was originally sewn together, but it now consists of 11 separate sheets, the cover being missing. Each sheet measures 49.0 x 35.8 cm, folded down the middle to give a page size of 24.5 x 35.8 cm. They are printed on one side only and are so arranged that the following pages occur in pairs: 2/23, 3/22, 4/21, 5/20, 6/19, 7/18, 8/17, 9/16, 10/15, 11/14, 12/13. Every page carried at the top the title 'THOS. DAVIDSON JUNr. & Co., GLASGOW' and at the bottom 'MANUFACTURED FROM THE FINEST CLAYS'. The printed pipes are set within a straight-line frame measuring 22.4 x 29.5 cm which has a swag at each corner. Its condition is good except that page 2 is damaged and parts of the bowls of three pipes are missing (118, 125 and one un-numbered).

Correlation between the numbers given in the 1900 list (cf. below pp. 154-157) and those illustrated in the catalogue is good. There is no doubt about the identification of decorated pipes such as No. 24 'Dog Cutty', No. 27, 'Claw Crop' etc. As for those which are not decorated, in most cases there is no reason to disagree with the name assigned in the list. There are occasional anomalies, eg. No. 210 'Rose' which the pipe shows as a steeplechase scene, but overall one can be confident about the names of the types illustrated.

The catalogue does not show all the pipes on the list. In numerical sequence the highest number is 255. It also includes some from the end of the list, eg. Nos. 1½, 8½ etc. From 1-255 the following 49 types are not illustrated: 1, 9, 16, 22, 30, 32, 36, 43, 46, 48, 49, 54-6, 66, 71, 88, 96, 136, 137, 140, 143, 145-7, 150, 152-7, 159, 161-4, 166, 167, 169, 180, 205, 206, 214-7, 236, 246. However, some of the pipes in the catalogue are shown in more than one variant: Nos. 2C, 2D, 2E, 2F, 2G, 2H, 2J; 5C, 5D, 5E; 6A, 6B; two of each of Nos. 17, 58 and 248.

As far as is known, the drawings of the pipes are at natural size. To fit in with the page layout, some drawings were printed as a mirror image. The name 'Davidson' would normally be on the left-hand side of the stem, but it is often shown on the right. The reversal of the other lettering is shown in, for example, Nos. 12 and 34.

The catalogue is undated, but it is possible to draw some conclusions about this if the reasonable assumption is made that the mould numbers indicate the sequence in which they were first introduced.

1. Nos. 1-43 were probably made before the visit of the Glasgow Weekly Mail reporters in 1864, who stated that 43 moulds were then in use.

2. Nos. 158 and 178, 'Livingstone' and 'Stanley', were probably introduced shortly after 1871, when H M Stanley's expedition to Africa locate the supposedly lost Dr. Livingstone (Dictionary of National Biography, 1975, 1229). This implies that all that sequence was made in the early 1870s.

3. No. 183, 'St Rollax' was probably designed after Davidson moved his factory in 1872.

4. No. 232, 'Beaconsfield' probably celebrated the Earldom of Beaconsfield awarded to Benjamin Disraeli in 1876 (Dictionary of National Biography, 1975, 544).

5. Nos. 297 and 298, 'Prince Leopold' and 'Beatrice' must refer to the two youngest children of Queen Victoris, 'Victoria' being No. 299. Leopold died in 1884 and Beatrice married Prince Henry Maurice of Battenburg in 1885, thereafter assuming the title Princess Henry of Battenburg (Dictionary of National Biography, 1975, 2248). It is likely that these pipes were introduced before 1884.

6. Nos. 303, 312 and 314, 'Madhi', 'Gordon Field' and 'Gordon Memorial' probably refer to the Sudanese War in which General Gordon fought the Mahdi at Khartoum and met his death in 1885 (Dictionary of National Biography, 1975, 805).

7. No. 328, 'Jubilee Balm', probably commemorated Queen Victoria's Golden Jubilee in 1887.

8. All the moulds were in existence when the list was drawn up in 1900.

From the foregoing, the last pipe in the catalogue (255) must have been produced between 1876 and 1884. It is concluded that the catalogue was issued in c.1880.

The format of the original catalogue is larger than an A4 page, and to reproduce the illustrations. — *they have been reduced* —

However, Davidson & Co., suffered, as did all clay pipe factories, from the increased popularity of briar pipes, and when Thomas Davidson died in 1911 the factory closed (Quail, 1978, 26).

The Pipes

Davidson, in common with other manufacturers, paid his workers a fixed rate depending on how many of each type of pipe they made. In order to be in line with the usual rates of pay he sought the advice of McDougall's, one of the largest manufacturers in Scotland. Their reply survives (Huntly House Museum, Edinburgh; HH 4283/685/80):

From D. McDougall
Glasgow Pipe Manufacturing
18 Charles Street
Glasgow

Feb. 1895.

To

Thomas Davidson Garingad Hill

Dear Sir,

Our understanding of the Agreement in force for years regarding changes of moulds is that when a man has more than one setting within one week he is entitled to a 6d for said extra setting and also 6d for each additional setting he may have to make within said week.

Yours Truly,

D. McDOUGALL & Co

JOHN WALDIE & COY.

WM. WHITE & SON.

It seems that the Society of Scotland and Ireland Associated Tobacco Pipe Makers had agreed a fixed rate of pay which was to come into force on 20th August 1900. This list survives (Huntly House Museum, Edinburgh; HH 4283/685/80). It is reproduced on pp. 154-157 of this volume.

Acknowledgements

Thanks must go to:

Mrs. P. Martin and Dr. D. Caldwell for drawing our attention to the importance of the catalogue.

Dr. E. Bracegirdle of the Wellcome Museum of the History of Medicine (Science Museum, London) for permission to publish the catalogue.

THOS DAVIDSON JUN^R & CO, GLASGOW.

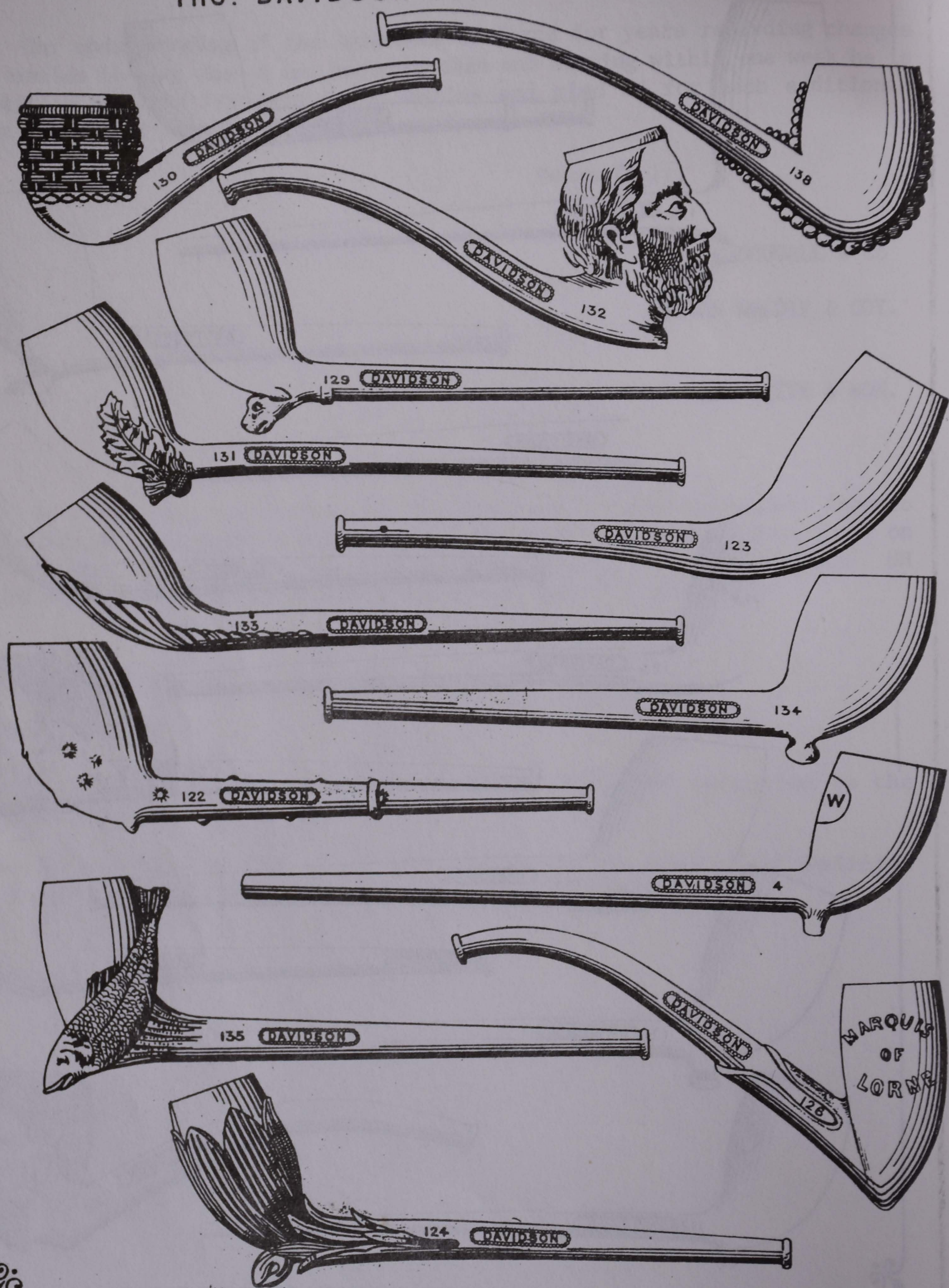
MANUFACTURED FROM THE FINEST CLAYS.

Fig. 1

117

CATALOGUE OF 1880
 THERE WERE 43 PATTERNS IN
 1864

THOS DAVIDSON JUNR & CO, GLASGOW.



MANUFACTURED FROM THE FINEST CLAYS.

Fig. 2

THOS DAVIDSON JUNR & CO, GLASGOW.



MANUFACTURED FROM THE FINEST CLAYS.

Fig. 3

THOS DAVIDSON JUN^R & CO, GLASGOW.



MANUFACTURED FROM THE FINEST CLAYS.

Fig. 4

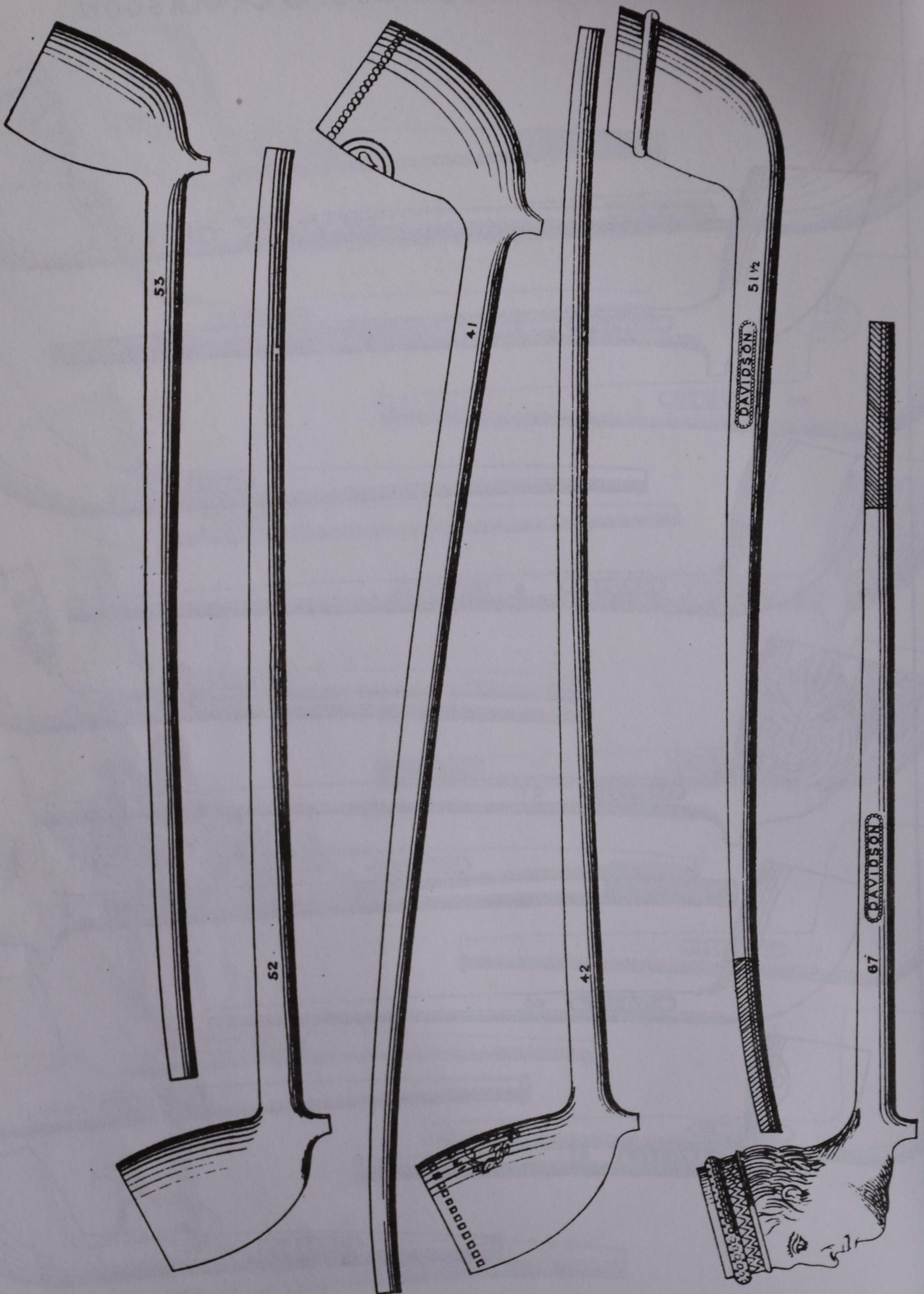
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Fig. 5

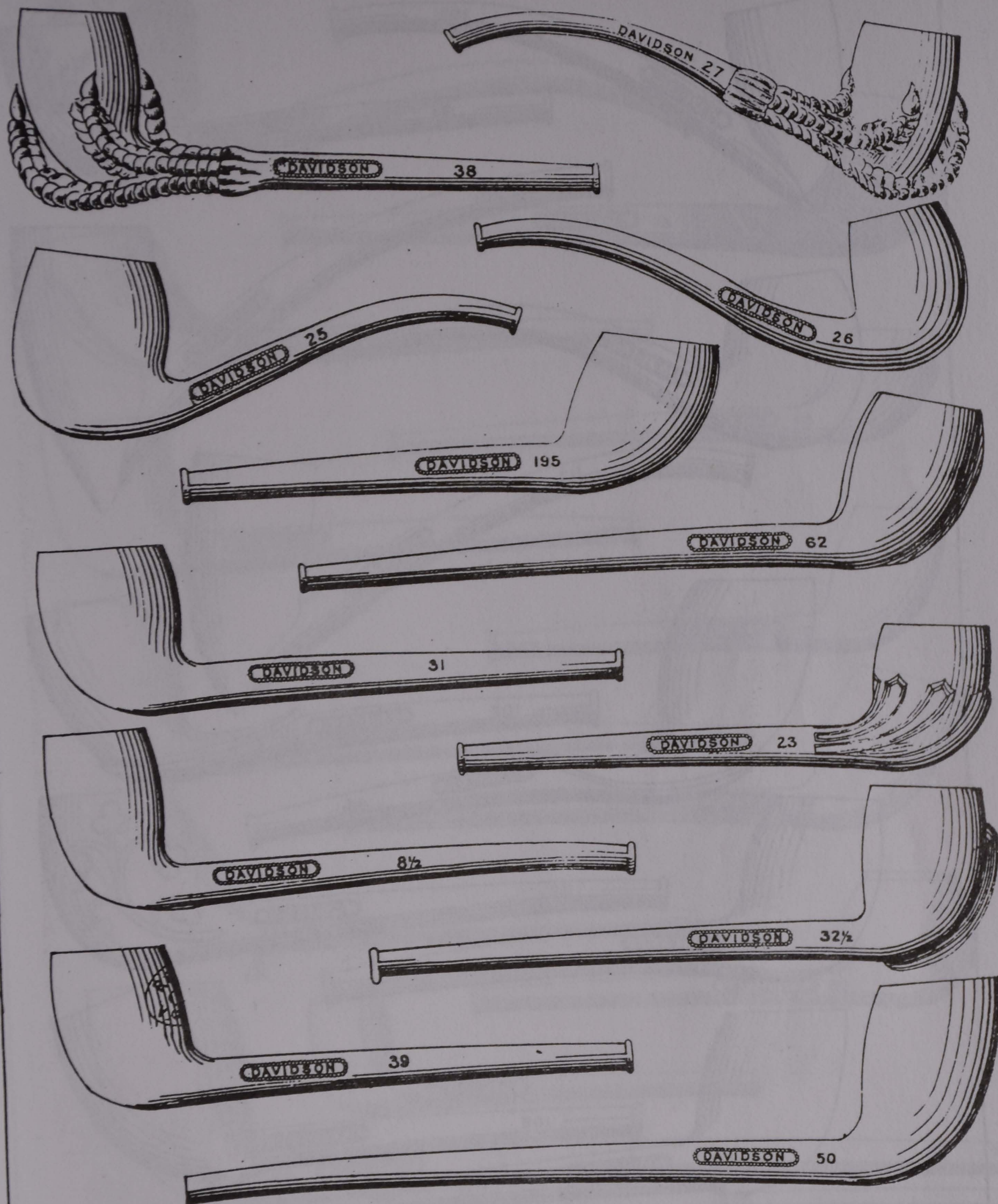
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Fig. 6

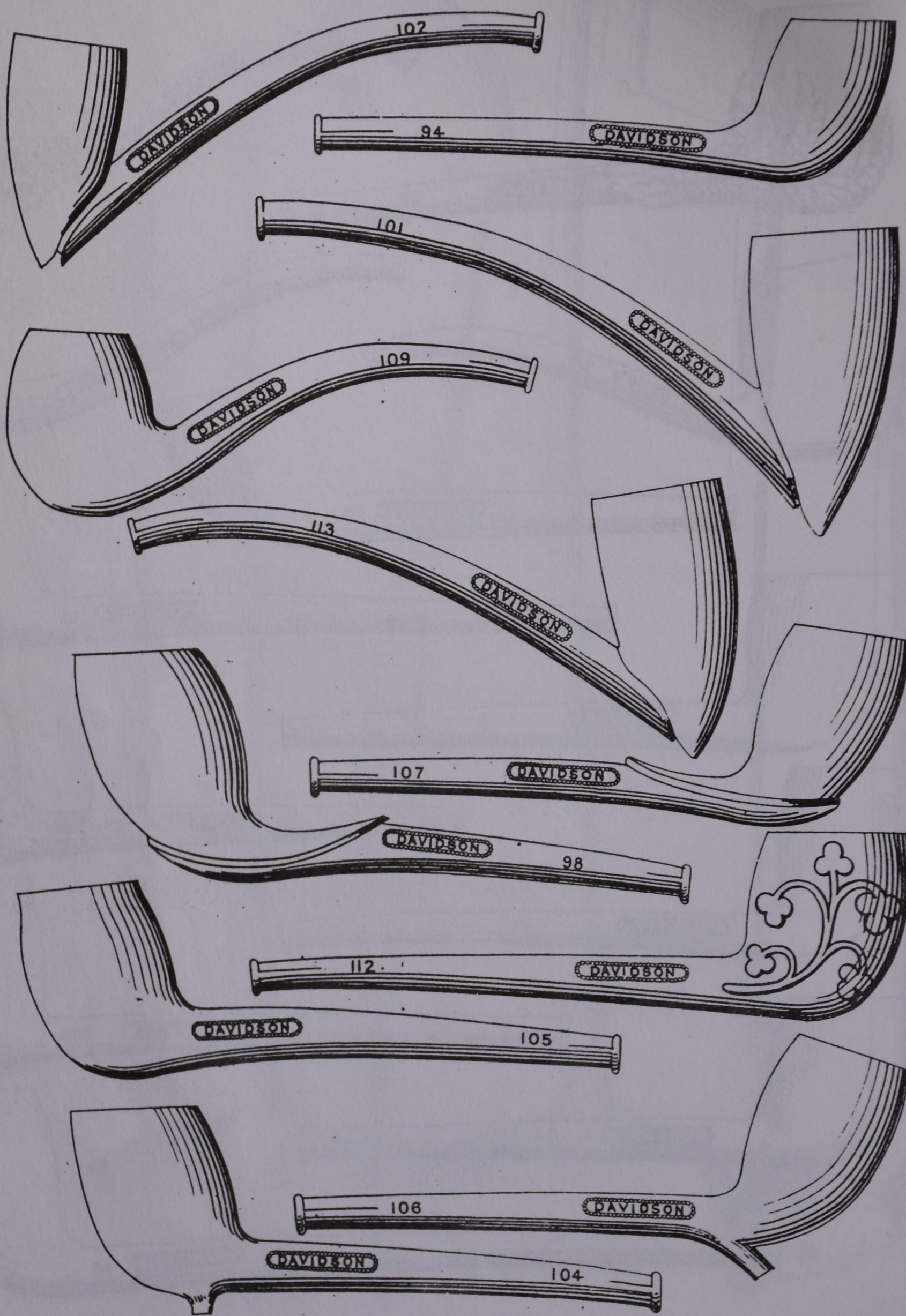
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Fig. 7

THOS DAVIDSON JUNR & CO, GLASGOW.



MANUFACTURED FROM THE FINEST CLAYS.

Fig. 8

THOS DAVIDSON JUNR & CO, GLASGOW.



MANUFACTURED FROM THE FINEST CLAYS.

Fig. 9

THOS DAVIDSON JUN^R & CO, GLASGOW.



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Fig. 10

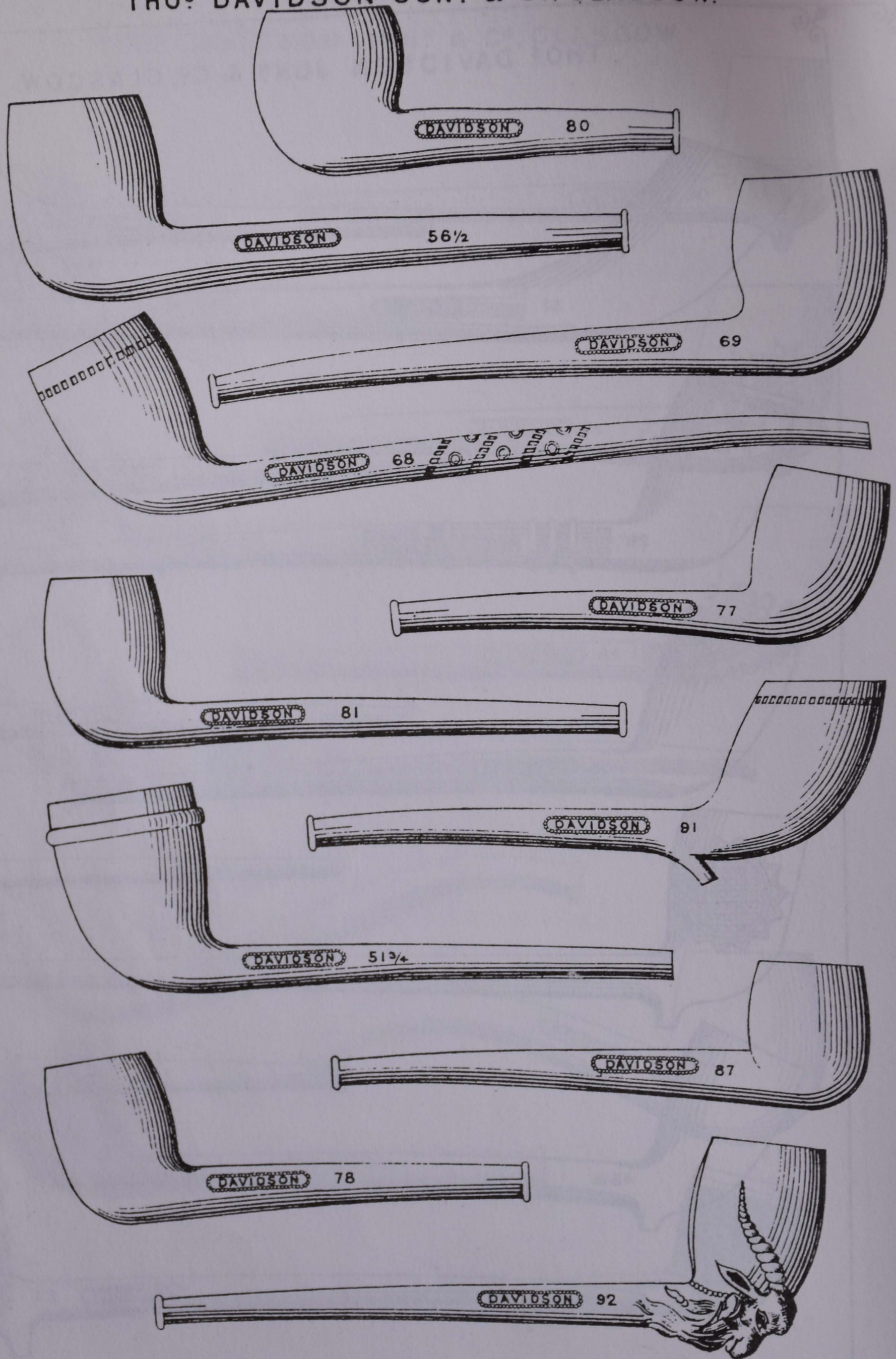
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Fig. 11

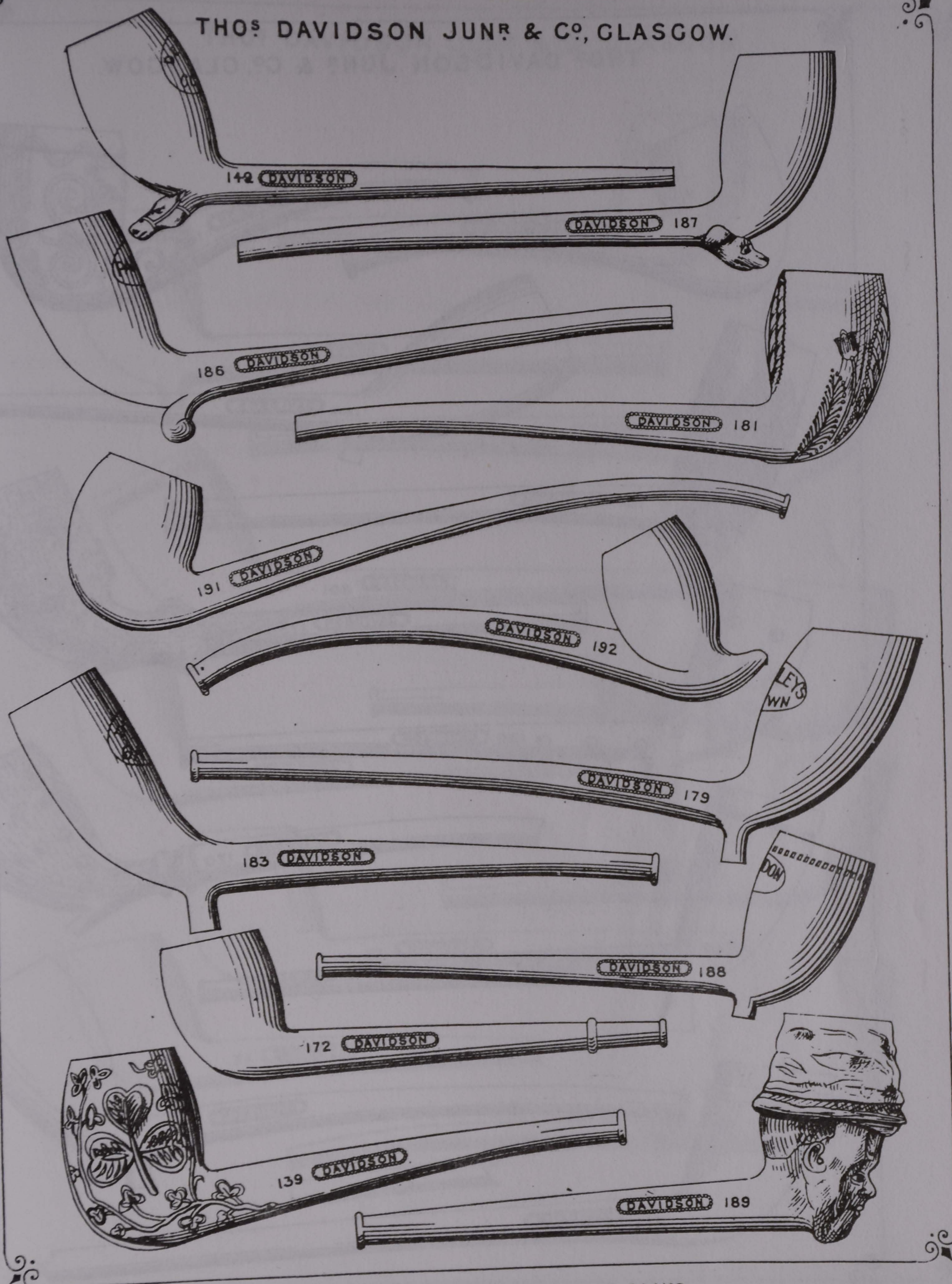
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Fig. 12

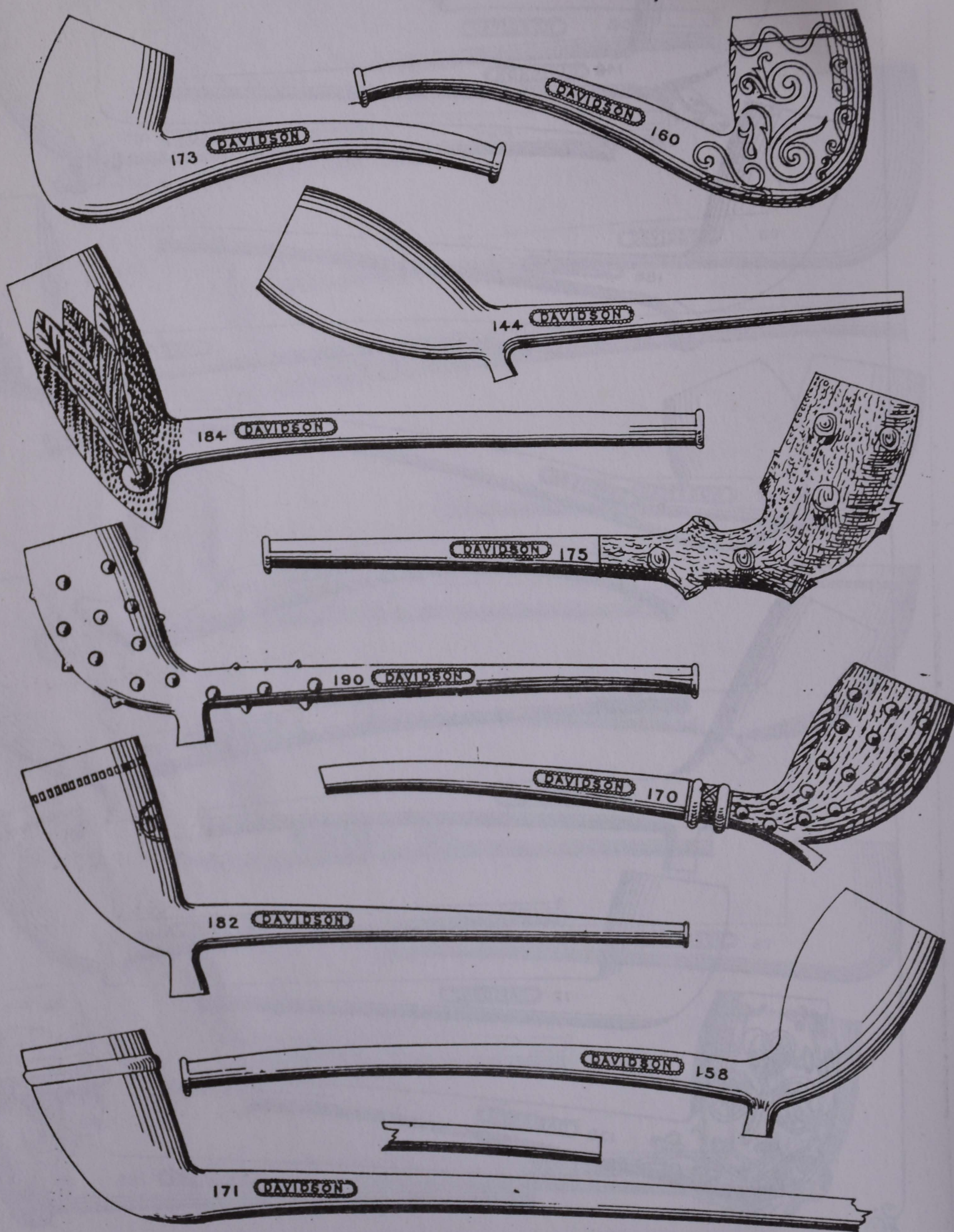
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Fig. 13

THOS DAVIDSON JUNR & CO, GLASGOW.



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Fig. 14

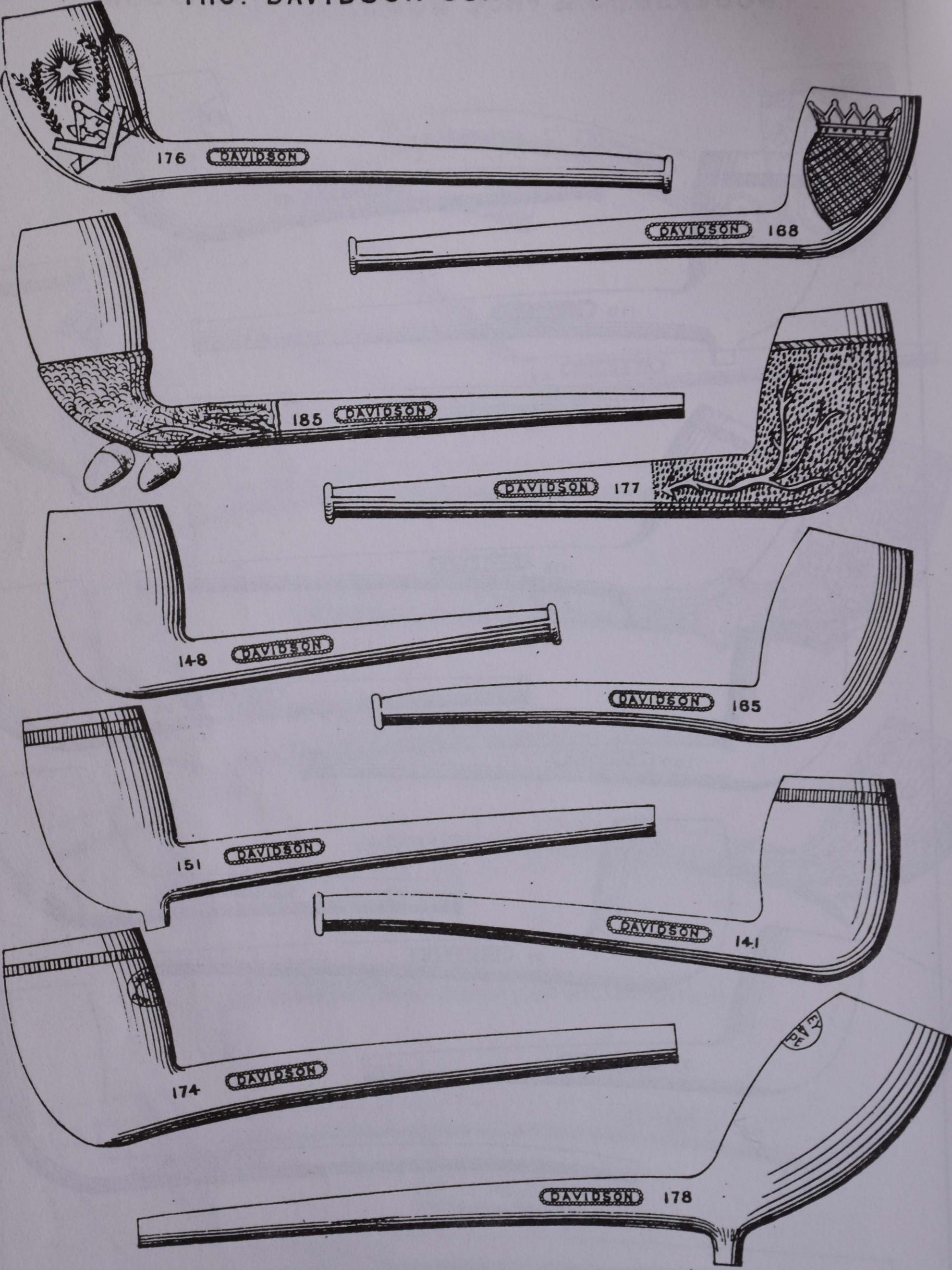
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Fig. 15

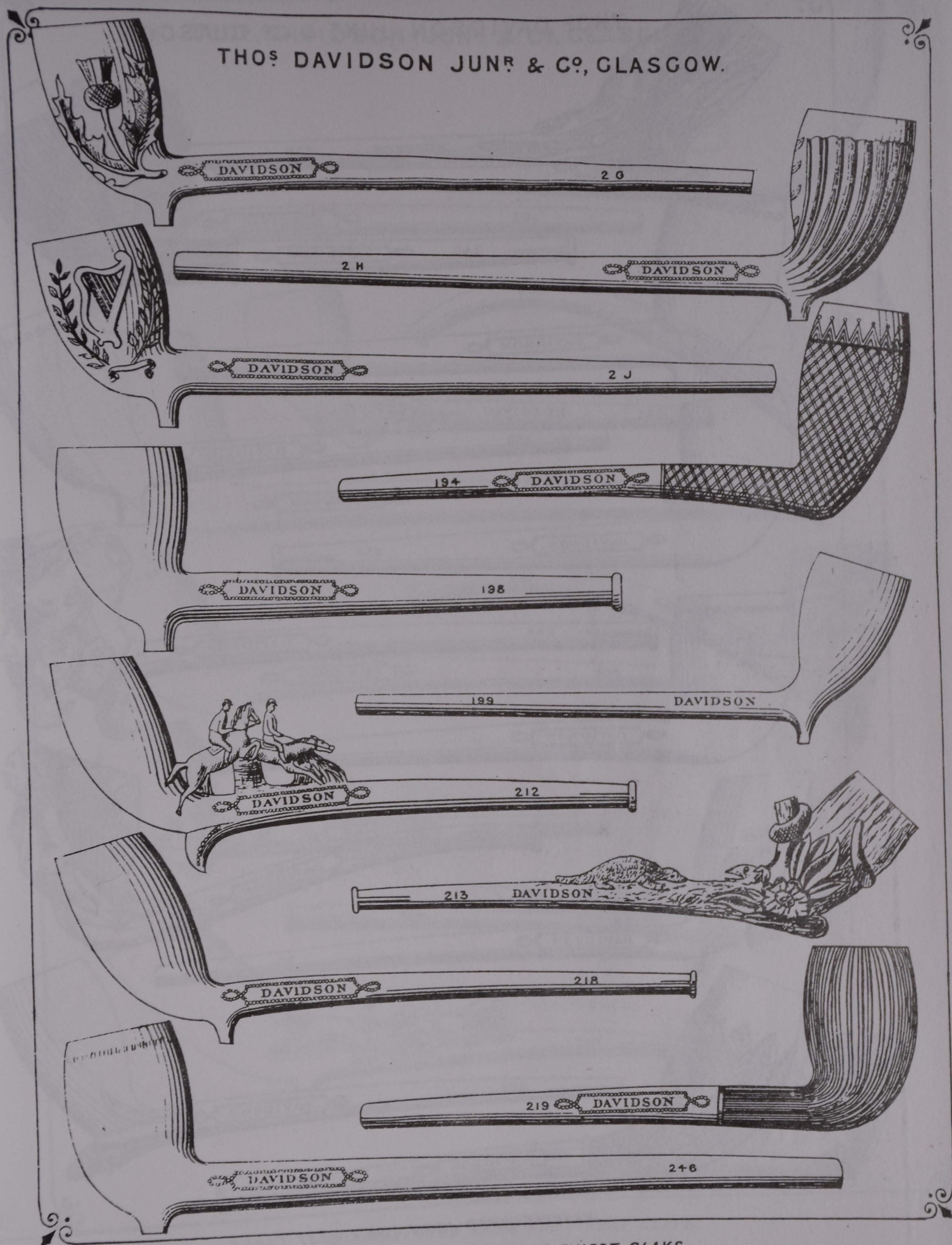
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Fig. 16

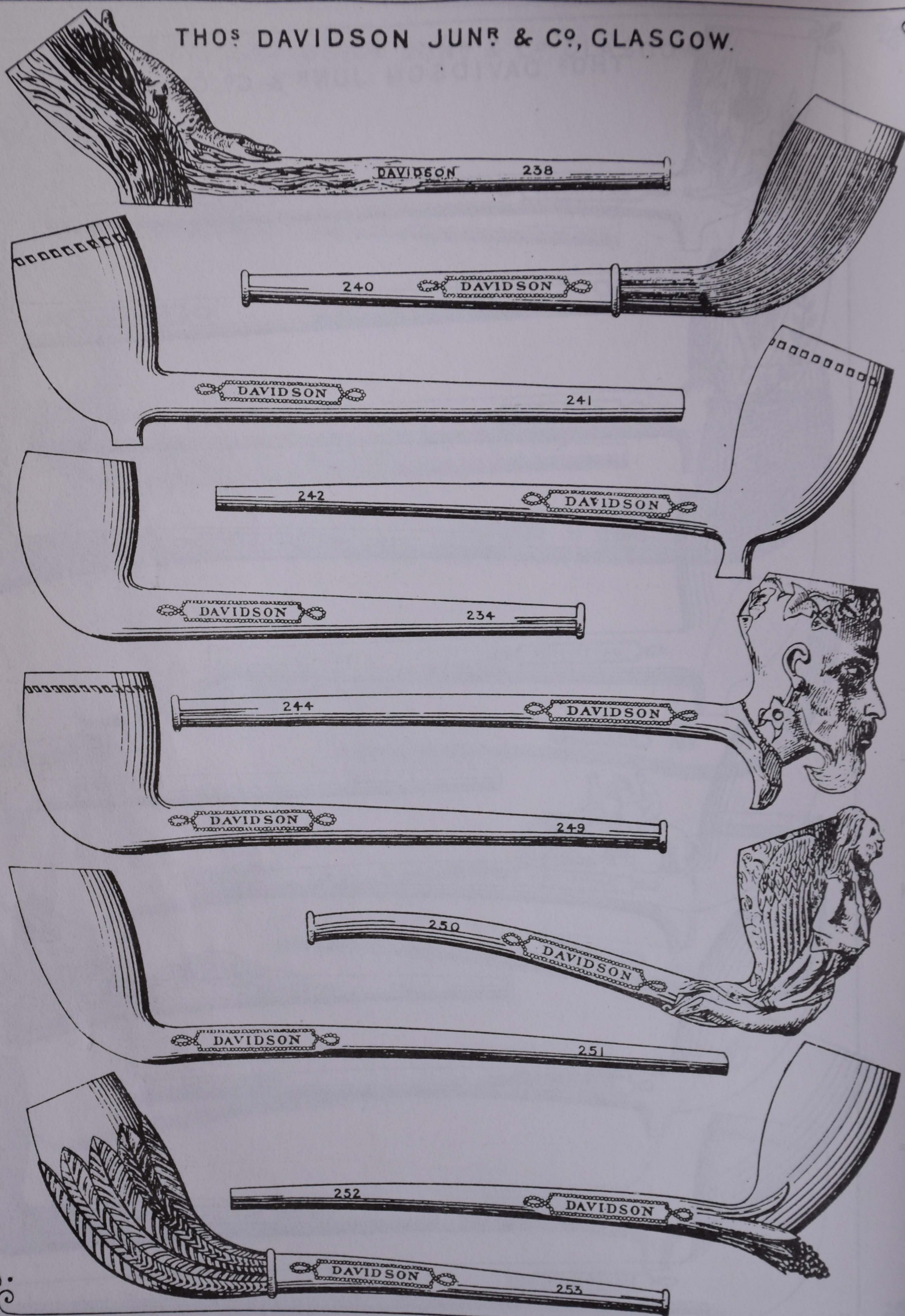
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Fig. 17

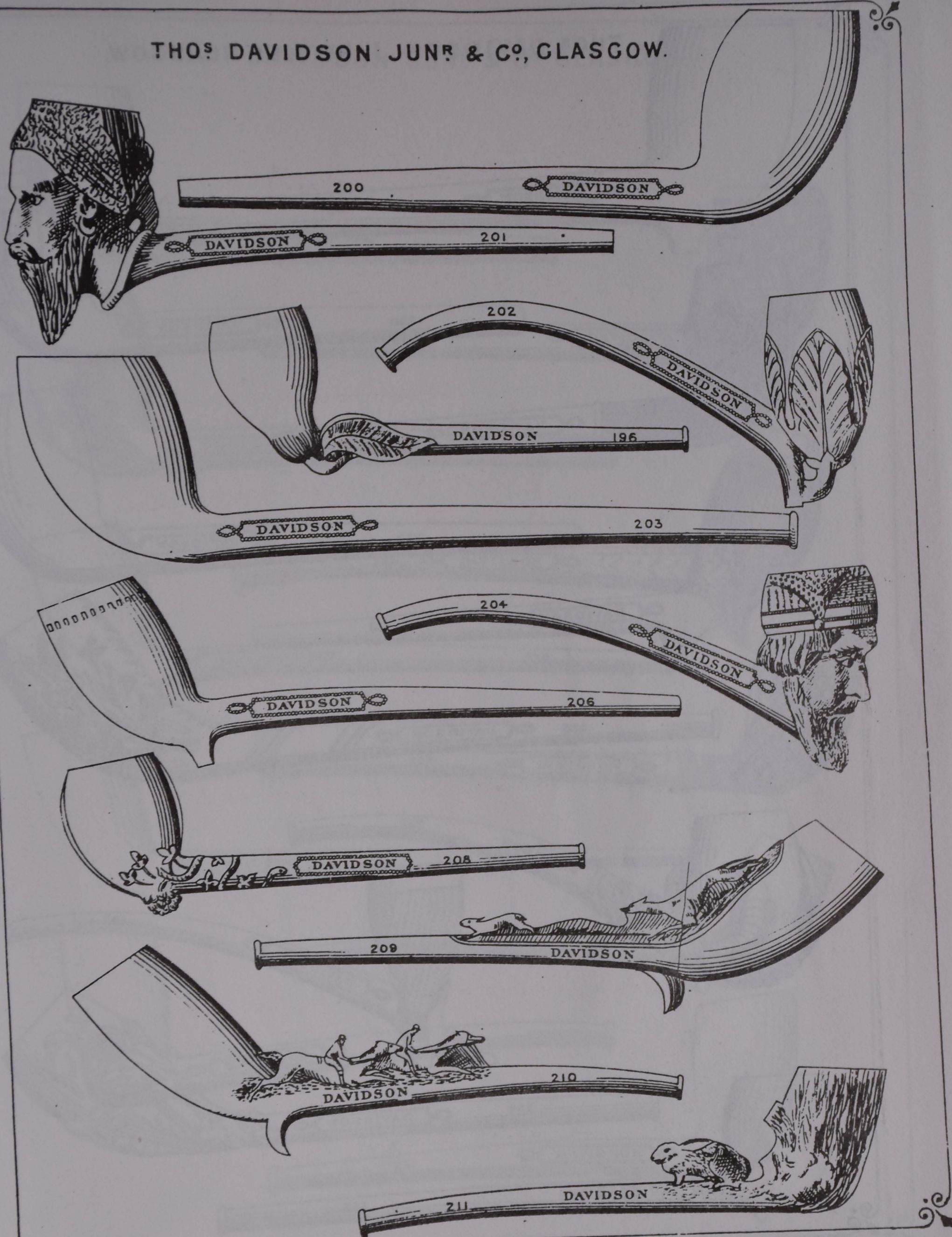
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Fig. 18

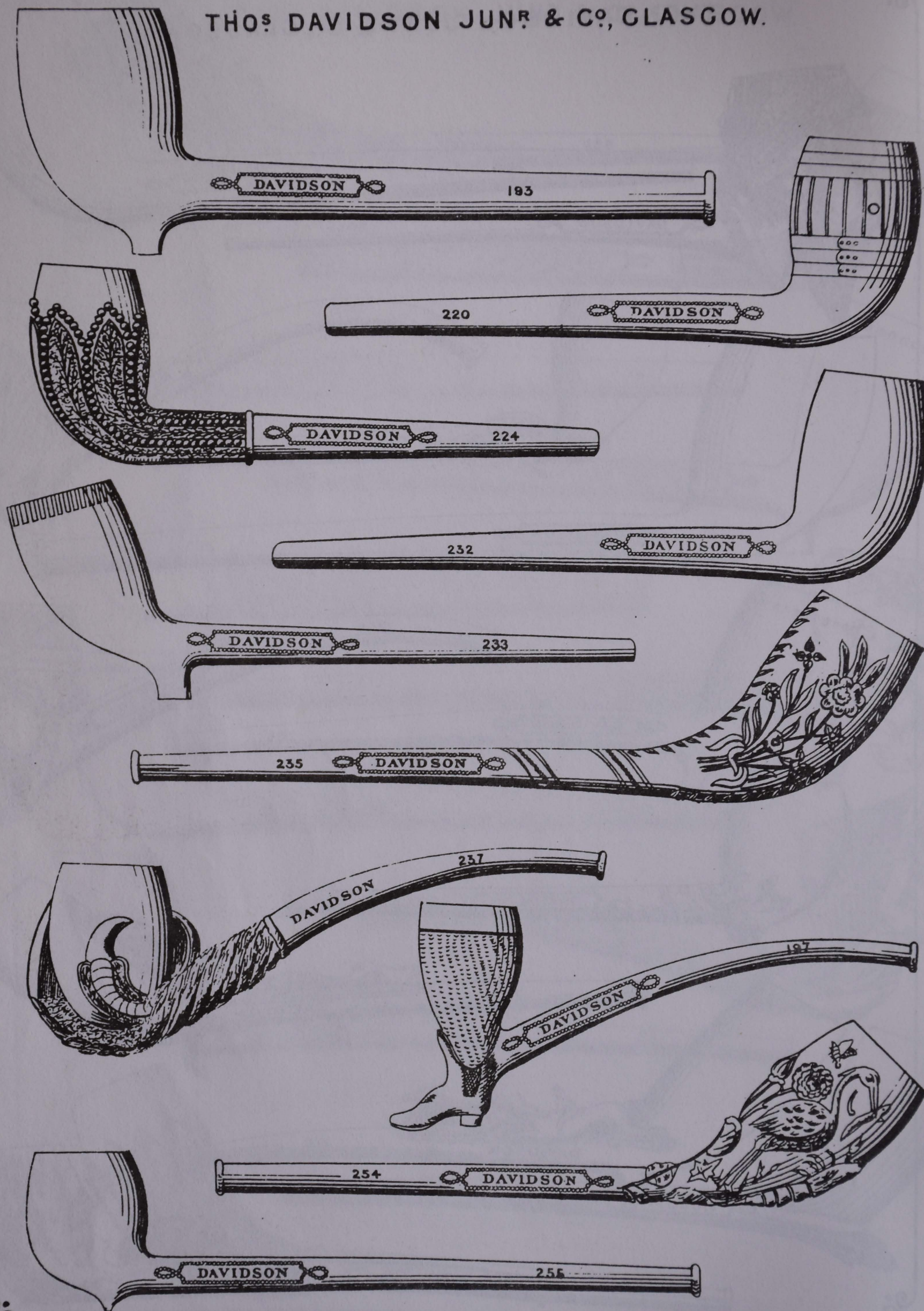
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Fig. 19

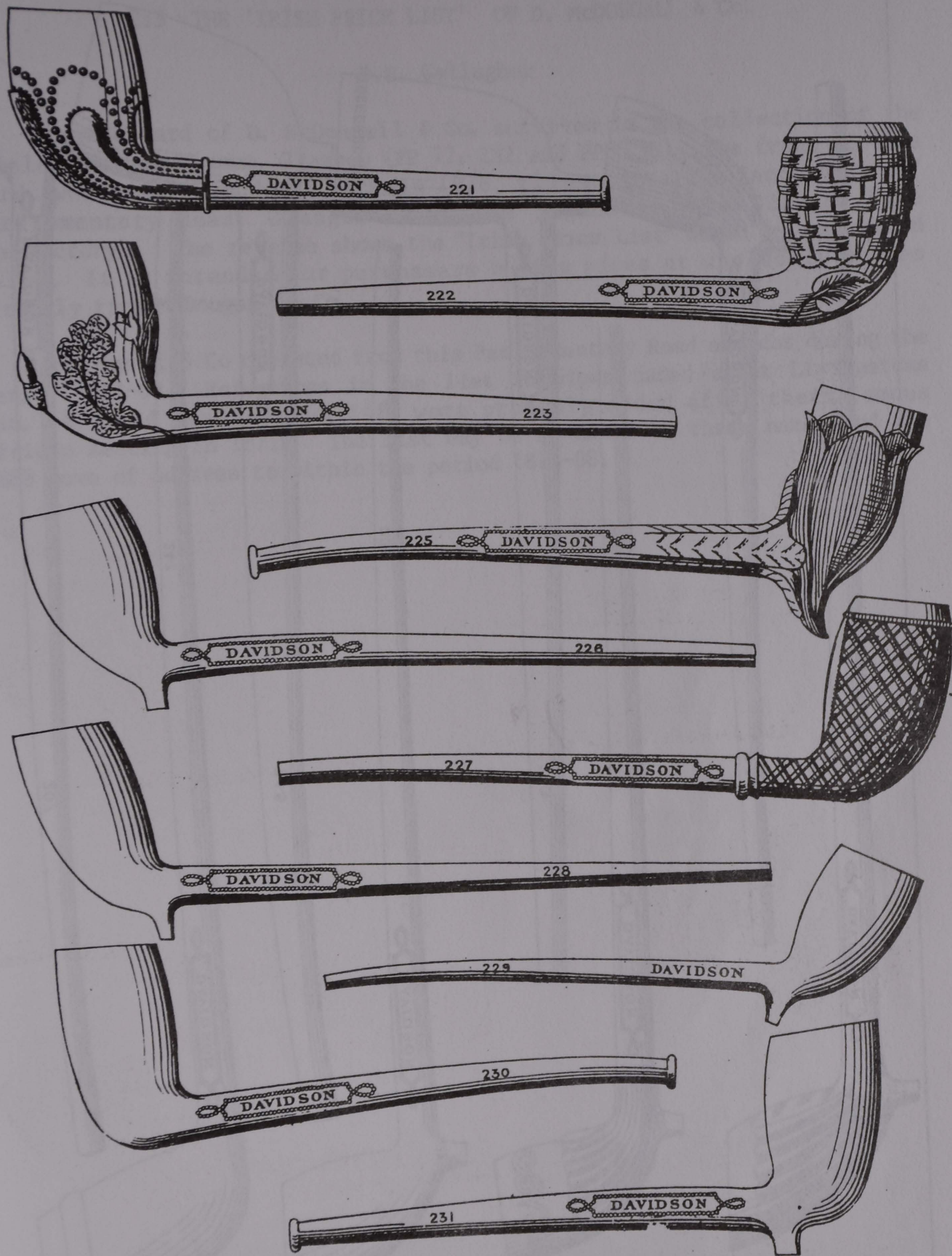
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Fig. 20

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Fig. 21

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Fig. 22