

VI.—GATEWAYS OF FORTS ON HADRIAN'S WALL.

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More than a century has now passed since the first examples of the fort-gateways of Hadrian's Wall were excavated by the Rev. John Hodgson at Housesteads.¹ Since then, other gateways have been exposed and are still open to view at Birdoswald,² Chesters³ and Great Chesters;⁴ while excavations of gateways not now to be viewed have been made at Rudchester⁵ and Halton.⁶ There is, however, no study of the resultant group; and such a study is the more needed because the remains vary considerably in preservation, while each one has features which add to the common stock of knowledge about them.

The first requirement is a comparison of ground plans (fig. 1). Detailed examples of these are furnished by all the sites above mentioned except Rudchester, where an examination of the published⁷ plans, not here reproduced, shows

¹ Housesteads, west gate, AA⁴ xiv, 178-180; south gate, *op. cit.*, 180-184, AA² xxv, 282-285; east gate, Hodgson, *Hist. Northumberland*, 186-187; north gate, Bruce, *Roman Wall*, 2nd ed., 186-187.

² H. Glasford Potter, AA¹ iv, 70-75 (south gate), 141-149 (east gate).

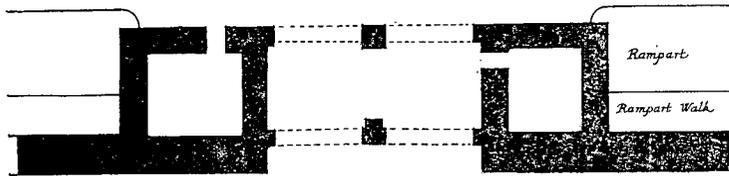
³ Chesters, east gate, AA² vii, 171-176; south gate, AA² viii, 211-213; the excavation of the north and west gates has been nowhere recorded in detail.

⁴ J. P. Gibson, AA² xxiv, 26-32, an account somewhat lacking in precision, but well illustrated. The plan, facing p. 62, is disappointing.

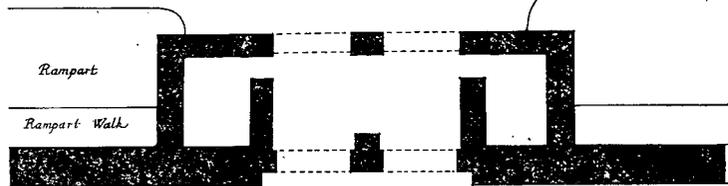
⁵ Parker Brewis, AA⁴ i, south gate, 94-97; west gate, 103-107; also NCH xii, 14-16. It will be seen that at the west gate the dimensions of the guard-chambers are entirely conjectural, while at the south gate only one dimension is imperfectly established. The conjectural plans are not alike, which is unparalleled at other forts.

⁶ AA⁴ xiv, 154-162.

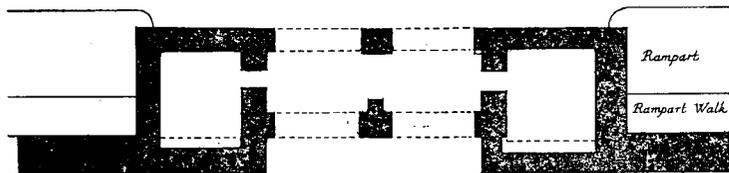
⁷ See note 5 above.



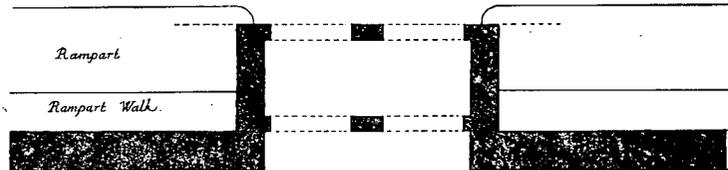
Birdoswald. East Gate.



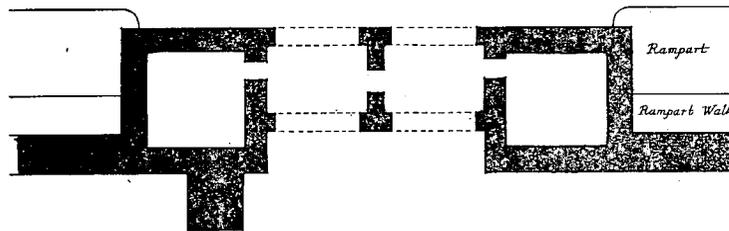
Housesteads. West Gate.



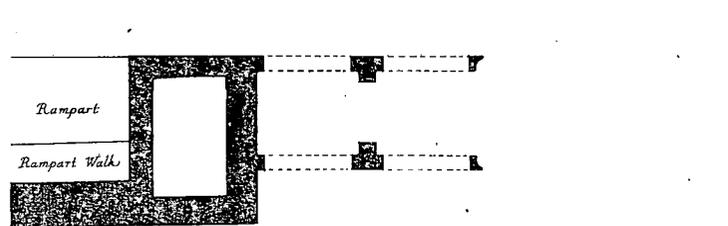
Great Chesters. West Gate.



Bewcastle. West Gate.



Chesters. East Gate.



Halton Chesters. West Gate.

Scale of Feet.



FIG. I.

that further details are required at numerous points. These plans, moreover, are undoubtedly related to a common design. The intention has been to furnish each gateway with twin portals, placed side by side and flanked by guard-chambers; and each portal has been closed at the front by a door of two leaves closing against a common door-stop and working on pivots set behind the jambs. Each gateway, too, was originally flanked by the rampart-backing of the fort-wall, of which the kerbed base, unless later removed, juts a shade behind it, as was found at Birdoswald⁸ and Benwell.⁹ The application of this general scheme, however, was not achieved without introducing considerable minor differences (see fig. 1), which may be tabulated as follows: (1) The central piers between the portals vary in size and plan. At Rudchester, Halton and Chesters both piers have complementary responds, while at Birdoswald, Great Chesters and Housesteads a respond occurs on the front pier only. (2) The façade of the portal is sometimes deeply recessed, as at Halton and Chesters; sometimes less deeply, as at Birdoswald and Great Chesters; once hardly at all, as at Housesteads. (3) Guard-chambers vary considerably in size and proportion. At Halton and Housesteads they are long from back to front and narrow from side to side, though Halton is very considerably the longer. At Birdoswald, Great Chesters and Chesters, on the other hand, they are almost square. (4) The outer wall of the guard-chambers varies in thickness. At Benwell, Housesteads and Birdoswald it is as thick as the fort-wall.¹⁰ At Halton, at Chesters and at Great Chesters it is no thicker than the other walls of the chamber. (5) The doorways of the guard-chambers usually open from the portals. At Birdoswald, except in the north tower of the east gate, they lie in the back wall, next to the portals. (6) At all gateways so far discovered, except Housesteads, the jambs of the

⁸ CW² xxxiii, fig. 12, p. 259.

⁹ J. A. Petch, AA⁴ iv, 142.

¹⁰ For Benwell, see AA⁴ xix, 9.

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ROMAN FORT AT CHESTERS THE EAST GATE RESTORED

Scale of Feet

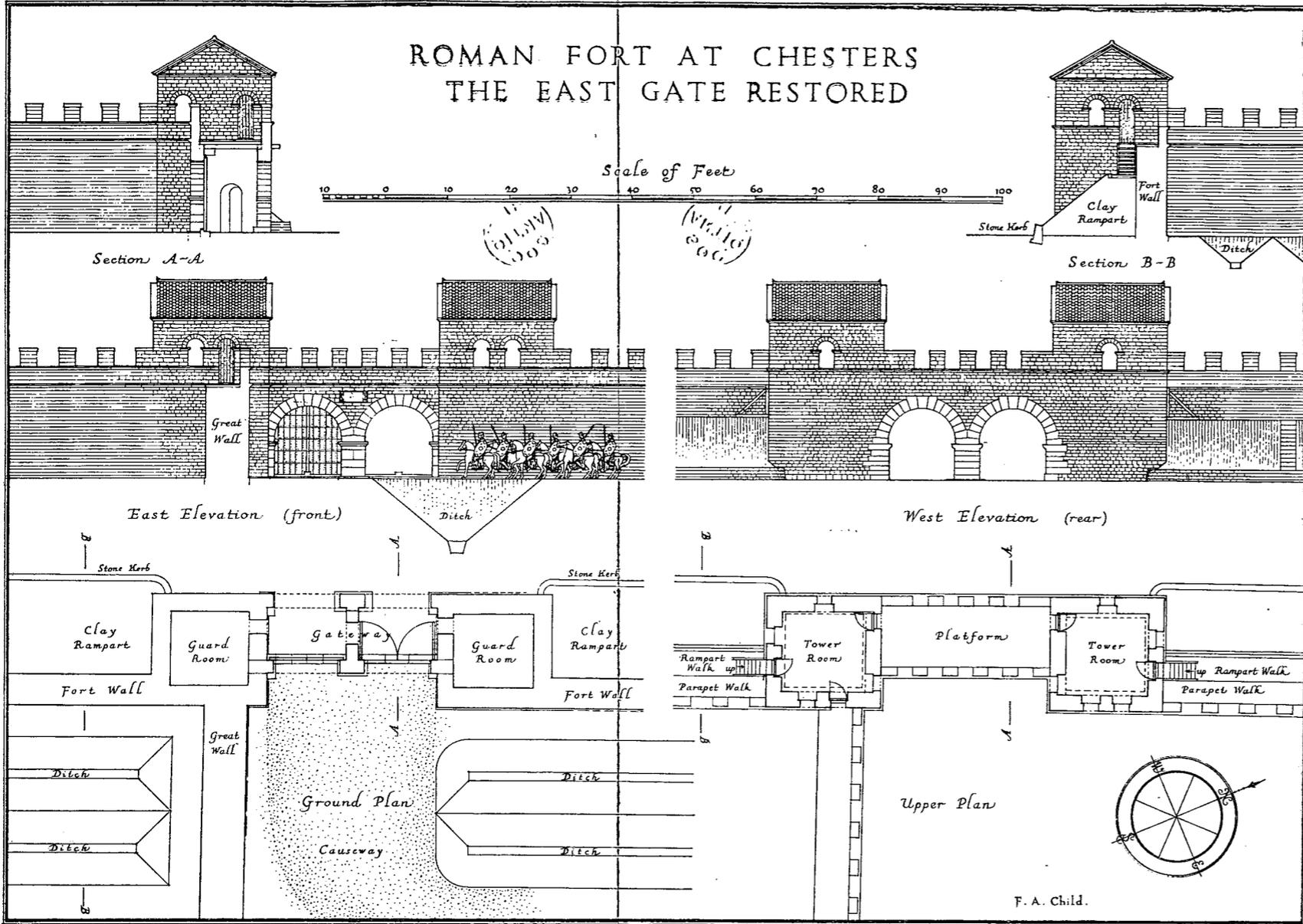
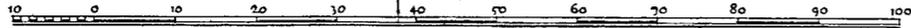


FIG. 2.

rearward portal project into the portal. At Housesteads they are flush with the inner side-walls of the guard-chambers.

No immediate explanation of these variations is as yet to be offered. True, the differences in plan discernible in mile-castle-gateways of Hadrian's Wall have been plausibly connected¹¹ with the three different legions at work on the barrier; and construction by different units is probably the explanation of these variations also. But clear grounds for this view are not yet established. For example, while mile-castles of Hadrian's Wall have yielded no less than five¹² dedication-stones connected with the legions, fort-gateways have so far produced only the single stone¹³ of the Sixth Legion at Halton. It is evident, too, that the variations are more complex than those at the milecastles and do not themselves admit of any simple explanation. Nor must it be forgotten that at Carvoran an auxiliary cohort has recently been shown¹⁴ to have built in stone its own fort-wall and gateways, to the exclusion of legionary labour. All these points must induce a cautious attitude towards the problem. For the meantime it may suffice to have defined it.

In relation to the superstructure the variations at first appear of little significance; indeed, one of them at least is positively misleading. The fact that in some forts the outer wall of the guard-chambers is as thick as the fort-wall would suggest that the front wall was actually a continuation of the fort-wall, to which the rest of the guard-chamber had been added. This, however, was not so at any stage in construction. Both Great Chesters and Housesteads exhibit a marked difference between the foundations of guard-chamber and fort-wall, while above foundation level the fort-wall bonds by a raking joint with the guard-chamber wall, showing the latter to have been erected first as a distinct unit. Similar differences also appear at the angle-

¹¹ AA⁴ xiii, 266-268.

¹² C. 660, 661, 662, 663; CW² xxxv, 229-31.

¹³ AA⁴ xiv, 161.

¹⁴ PSAN⁴ ix, 250-255.

towers and interval-towers of Housesteads.¹⁵ Like the milecastles and turrets on the Wall itself, the gateways and towers of forts are thus evidently to be considered as distinct structural units which the fort-wall was to link.

Having thus established the unity of the gateway structure as a whole, we may turn to consider its aspect (fig. 2). As at the milecastles, the gateway arches are built of massive ashlar, dressed with rock face and chisel-drafted margins. The blocks thus fit exactly and at the same time retain the rugged finish suited to their grim function and wild environment. Roman architects, however, favoured this treatment for most of their utilitarian buildings of magnitude, as, for example, the aqueducts¹⁶ of Rome, the storehouses¹⁷ of Rome and Ostia, or the monumental enclosing-walls¹⁸ of the Roman *fora*. We are thus dealing not with unfinished work, but with a deliberate choice of style which relates Hadrian's Wall to Roman architectural fashion. No other Roman structure in Britain is so vast as this one, and in none were the builders so prodigal of effort; in scope and execution it ranks with the great monuments of the Roman world. The manner of building is clear. The great stones were lifted into position by a crane and gripped by a lewis,¹⁹ for which the holes are visible and easily to be distinguished from dowel-holes. There is no reason to think, however, that once in position they were otherwise bonded than by a thin layer of mortar. The method of dressing has already been noted. To accommodate the mortar and to ensure a close fit at the edges the bedding planes of the blocks are slightly concave, an age-old treatment defined by Hellenistic architects as *anathyrosis*.²⁰

¹⁵ Housesteads, see PSAN⁴ ix, 253.

¹⁶ Ashby, *Aqueducts of Ancient Rome*, pl. viiia; Delbrück, *Hellenistische Bauten in Latium* i, 1, pl. i, of 144 B.C.

¹⁷ G. Calza, *Ostia antica*; Lugli, *La zona archeologica*, 144.

¹⁸ Anderson, Spiers and Ashby, *Architecture of Ancient Rome*, pl. xxxi.

¹⁹ AA⁴ i, pl. xvii, figs. 26, 27.

²⁰ Anderson, Spiers and Ashby, *Architecture of Ancient Rome*, 180.

The imposing external effect thus created was not, however, the ultimate reason for the choice of this large ashlar. The fort-wall and towers were built in grouted rubble, faced with small ashlar in approximately eight-inch or nine-inch courses. At Housesteads and Great Chesters these courses are horizontally interrupted at about every five feet by a bonding-course of thin slabs,²¹ which help to tie face and core. Masonry of this kind is, however, liable to sag and settle both during and after construction, and Roman architects much distrusted²² its capacity to bear strain. For large arches, piers or exposed quoins they preferred²³ large ashlar of undoubted solidity.

Within the framework thus provided by the massive masonry the doors turned²⁴ upon iron pivots riding in iron shoes. The shoes were set in pivot-holes, themselves cut in the stone slabs forming the base of the jamb or impost. These pivot-holes are often heavily worn, but attain this state only when pivots and shoes have worn out or have rusted together, and so great must have been the wear that even continual oiling would hardly prevent this from happening. The sole surviving example of an upper pivot-block²⁵ comes from the outer central pier of the south gate at Chesters, where a discarded example, which had held both gates attached to the pier, was used afresh as a building stone in a late reconstruction. This example shows that while the lower pivot-holes were relatively shallow, often being furnished²⁶ with run-ways to guide the pivot into position when the gate was inserted, the upper pivot-holes were very deep, in order to allow an extra upward thrust of the upper pivot at the moment when the lower pivot was lifted into position.

²¹ Noted at Great Chesters, AA² xxiv, 39; Housesteads, AA² xxv. 246, fig. 21.

²² *Vitruvius*, ii, 8, 1-3 is devoted to the weakness of such building.

²³ *Vitruvius*, ii, 8, 17, where *pilis lapideis* and *parietibus caementiciis* are in opposition.

²⁴ AA⁴ i, pl. xviii, fig. 29, for illustrations of iron sockets.

²⁵ AA² viii, 212.

²⁶ As at Chesters east and south gates.

The doors themselves were no doubt of wood, but those of city-gates are known²⁷ to have been iron-plated, against fire. It seems reasonably certain that this precaution against the most obvious of dangers would also be taken on the frontier: and a hint in this direction is supplied by the heavily calcined threshold and jambs of the west gate at Risingham,²⁸ where the great heat developed is best explained by the necessity of getting iron-plated doors red-hot before they would burn. City-gates were provided²⁹ also with locks and keys: but stout bars were required to reinforce them against the battering-ram. Bar-holes exist at Housesteads, Chesters and Birdoswald, showing that two bars were provided behind the lower half of the doors. Each was slipped into matching sockets in the masonry on either side of the gate, and the top of one set of sockets has a run-way for moving the bar easily into position, as is seen also at milecastles³⁰ 37 (north gate) and 42 (south gate). Between jamb and bar, allowing for slight play, the door must have measured some four inches in thickness, and this implies that it was solidly framed like the doors of large medieval gateways.

The main elements in the framework necessary for holding these massive doors and for resisting an attack upon them are thus the front impostes and arches. But an important minor part is played by the rearward arches also. The pier between them was linked with the front pier by a subsidiary arch serving virtually as a flying-buttress.³¹ This was in fact the link which converted the portals into

²⁷ Procopius, B.G., iii, .24; see Richmond, *City Wall of Imperial Rome*, 42.

²⁸ AA⁴ xiii, 186.

²⁹ Procopius, B.G., iii, 20, a very careful description of locks and bars; see Richmond, *op. cit.*, 40.

³⁰ Milecastle 37, AA⁴ xi, pl. xvi, 2, and p. 108; milecastle 42, AA⁴ xiii, 270.

³¹ The flying-buttress proper, with pinnacles forming a counterpoise, is unknown to Roman architecture; but the arch was frequently used with this intention, as in the radial walls of large theatres or amphitheatres.

a pair of box-like structural units, and the emphasis laid by the builders upon this feature in the design is shown by their variant planning of this part of the gate. Cautious and bold attitudes towards the problem are reflected by the differences in planning introduced (see fig. 1).

Embellishment has no place in this bold functional architecture. The arches spring from simple impost-mouldings, chamfered so as to throw off rain-water and prevent creep, and serving structurally as seatings for the timber centering³² temporarily used in building or repairing the arches. Sockets in which the timbers themselves were held appear on the upper surface of the surviving example at the south-west jamb in the east gateway at Chesters. But the impost-moulds have normally been removed by stone-robbers, together with the arch, and the only other surviving³³ example on Hadrian's Wall is at the east gate of Birdoswald. Both are at the same height, 6 feet 1 inch, above ground-level. Aesthetically regarded, the thinner line of the impost-mould broke the solid mass of masonry and focussed attention upon the great arches. The suggestion of movement implicit in their curves is then checked and brought to rest at the sides by the massive forms of the towers, while at the centre the same sense of solidity is imparted by planting in the spandrel the weighty mass formed by the dedication-tablet of the gateway. This bold 5½-foot ansate panel, 2½ feet high, proclaiming in monumental lettering the authors of the work, is the topmost feature in the superstructure which we are compelled to assume by surviving remains. The single known example was found, where it had fallen, at the foot of the spandrel of the west gate at Halton.³⁴

The general aspect, however, of the vanished superstructure is undoubtedly implicit in the ground-plan. The

³² Slots or corbels for centering are a frequent feature of large-scale Roman masonry, as on the Pont du Gard.

³³ A third example once remained on the west impost of the south gate at Birdoswald, see AA¹ iv, plate facing p. 70.

³⁴ AA⁴ xiv, 158.

guard-chambers correspond to the angle-towers and interval-towers of the fort-walls, and no one has ever seriously doubted that they carried towers. If proof were required, it is supplied by the north gate of Fendoch fort, which yielded³⁵ the wooden structures that were the prototypes of these gateways in stone. This was supplied with twin wooden towers connected by a platform covering the entrance between them, and the tops of all were defended by crenellations. There is no difficulty in translating these elements into masonry, thus solving the problem before us. But the discovery of roof-tiles in the gateways of Gellygaer³⁶ shows that some towers were provided not with flat tops but sloping roofs. The reason for this difference is probably that the wooden tower could not be built conveniently so high as its counterpart in stone, nor was its roof likely to be of fire-proof material.³⁷ The flat top was therefore needed to gain height and to deal with incendiary missiles.³⁸ The towers with sloping roofs would serve primarily as sentry-boxes in the rampart-walk, and only secondarily as points of concentration in defence.

The form of the roof is governed by practical considerations no less valid in Roman times than now. For tiles a gabled roof is indicated, since the hipped form demands the manufacture of specially-shaped tiles adjacent to the ridges, and such have not been found. It is, further, much more convenient for the ridge of the gabled roof to lie parallel with the rampart, since missiles, rolling off it, will then fall either upon the berm in front of the gate or upon the ground behind the tower, instead of endangering defenders³⁹ of the gateway-curtain or rampart-walk. The gable-ends are

³⁵ *Proc. Soc. Ant. Scot.* lxxiii, 115-120.

³⁶ *The Roman fort at Gellygaer*, 39ff.

³⁷ The roofs of wooden towers on the Danube frontier appear to be thatched, with wooden finials, or at best shingled; see *Papers of the British School at Rome*, xiii, 35.

³⁸ For the use of incendiary missiles see Caes. B.G., v, 35, and cf. *Proc. Soc. Ant. Scot.*, xxxii, 458-459, for examples from Ardoch.

³⁹ This is one respect in which the restoration of AA⁴ ix, pl. xxiv, is open to criticism; the gable would be more suitably placed parallel with the Wall.

finished with bold stone tables in order to proof the building against water and fire. The apex of the ridge may have been provided with antefixes, but this is not certain and is at all events solely a matter of taste. The tower thus roofed required windows to provide it with light, since there is no doubt that it would be furnished with strong doors in order that the tower might be held as an isolated unit if other parts of the defences were overwhelmed. These are supplied at the side, so as to enfilade the rampart-walk, while the front of the tower is furnished with two windows, and the back with one, placed so as to avoid silhouetting the defenders against the sky. The windows are restored as arched, according to normal Roman tradition, as old as Sulla at Terracina,⁴⁰ and appearing in such Augustan examples as Porta Palatina at Turin,⁴¹ or under Marcus Aurelius at Regensburg⁴² and Aurelian (A.D. 271-275) at Rome.⁴³ The monolithic arcuate lintels which are a feature of such forts as Housesteads, Birdoswald or Chesters appear to come from gates, but the fashion is a late one and it seems likely that these belong to a later reconstruction.⁴⁴ It may be noted that voussoirs suited to window or doorway are to be seen at Birdoswald south gate, where they were found in front of the gate. They have formed an arch approximately $2\frac{1}{2}$ feet in diameter.

The gateway-curtain, between the towers, is treated as an uncovered crenellated platform open to the sky. This is the simplest form available, and the most likely to have been followed. A covered chamber is only suitable for housing portcullis machinery, with which these gates were not provided. The merlons are spaced differently at back

⁴⁰ Lugli, *Forma Italiae*, Reg. I., vol. i, fasc. 1, p. 80.

⁴¹ *Papers of the British School at Rome*, xii, 56, fig. 7, where the ramifications of this type of gate are traced in some detail.

⁴² For a good illustration, Koepf, *Römer in Deutschland* (1905), 47, fig. 37.

⁴³ Richmond, *City Wall of Imperial Rome*, 96, pl. viii, b.

⁴⁴ For arcuate lintels see Richmond, *op. cit.*, 259-260. The example shown in position at Birdoswald was arbitrarily placed, see AA¹ iv, 145; for the small voussoirs, *op. cit.*, 45.

and front in order to avoid silhouetting the defenders. The sole ornamental feature is the string-course at rampart-walk and parapet-level which is carried through from the fort-wall and unifies the whole design. Not to multiply examples,⁴⁵ this occurs on gates at Fano, Regensburg and Rome.

Finally, the fort-wall and its relation to the gateway should be observed. Its rampart-backing, retained at the foot against slipping by a low stone revetment⁴⁶ preserved at Benwell and Birdoswald, is carried up at the angle of rest until its width is reduced to a five-foot rampart-walk (cf. fig. 8). The parapet-walk on the wall itself is about $3\frac{1}{2}$ feet wide, that is, 5 feet wide less the width of the merlons, which is calculated at 18 inches. This calculation is a generous one, based upon a merlon-cap from High Rochester,⁴⁷ which is 16 inches wide, and on merlons⁴⁸ from Vindobona, which are monoliths 12 inches thick. The merlons are three feet long with rather larger embrasures; but it should be remarked that Roman custom⁴⁹ also knew of much wider embrasures, for defence with shield and spear. It is thought, however, that since Hadrian's Wall and its fort-ramparts were primarily designed for patrols,⁵⁰ small embrasures will have been found more suitable.

The double rampart-walk as thus restored (figs. 2, 8) is based upon two considerations. In the first place it is impossible to carry the bank higher unless it were retained at a much steeper angle, involving the revetment of the

⁴⁵ Fano, Richmond, JRS xxiii, pl. xvii, 1 (after Rossini); Regensburg, Koepf, *Römer in Deutschland*, loc. cit.; Rome, Richmond, op. cit., 98, 102, 186.

⁴⁶ See notes 8 and 9.

⁴⁷ The stone is 19 inches long and 16 inches broad. It is almost semi-circular in section and 6 inches high.

⁴⁸ These were measured by the first writer in the Museum Vindobonense at Vienna, through the kindness of the curator, Dr. Polaschek, in 1927. They are 2' long and 40" high, including coping; merlons at Carnuntum measure 9" thick, 2' long and 27" high.

⁴⁹ *Papers of the British School at Rome*, x, pls. vi and viii (*Castra Praetoria*); op. cit., xiii, 20 (Terracina and Fondi); Richmond, *City Wall of Imperial Rome*, 58; figs. 7, 9; pl. iii, a, b, c.

⁵⁰ R. G. Collingwood, *Vasculum*, viii (1922), 4-9.

entire bank in stone, a feature of which no trace⁵¹ has ever been found. Secondly, the arrangement survives in its entirety at York,⁵² where cobbled rampart-walk and stone parapet-walk are still visible. The advantage of the system is that the rampart-walk permits circulation under cover without inconvenience to defenders or sentinels on the parapet-walk.

At York the parapet-walk communicates with the towers, while the rampart-walk stops dead at their walls. On Hadrian's Wall the width of the tower-wall, even allowing for an offset at first-floor level, seems to preclude (see fig. 8) the convenient⁵³ introduction of a door leading to the parapet-walk. It is therefore suggested that a door placed at this level was supplied to communicate with the rampart-walk by means of wooden stairs which could be dismantled if the tower were in danger of attack. Either a landing or the topmost step on these stairs would provide the required communication with the rampart-walk.

Calculation of the height of the parapet-walk is based upon the following points: (1) It is to be considered so likely as to be virtually certain that the first floor of the gateway will have coincided with the parapet-walk of the fort-wall and that the whole floor will have run through at one level in order to avoid confusion during operations. On this assumption the height of the gateway-arch will be relevant to that of the fighting-platform surmounting it. This is calculable at approximately $11\frac{1}{2}$ feet, comprising 6 feet 1 inch to the top of the impost and an arch-radius of 4 feet $7\frac{1}{2}$ inches (Housesteads), 5 feet 3 inches (Chesters and Great Chesters) or 5 feet $6\frac{1}{2}$ inches (Birdoswald). At Birdoswald there is also a visible stilt of 4 inches to be taken into account. We may next add 2 feet for voussoirs,

⁵¹ The nearest approach to anything of the kind is the treatment of the late rampart at Birdoswald, CW² xxxiii, 261.

⁵² S. N. Miller, JRS xv, pl. xxvi, section C-D and pp. 177-178; xviii, pl. vi, 2, and p. 68.

⁵³ There is, for example, no adequate room for insertion of the arch over the door.

of which examples survive at Birdoswald and Great Chesters, while setting-out lines indicate 2 feet 7½ inches for the springer at Chesters. Finally, enough space is required to include the dedication-tablet (see fig. 9) placed in the spandrel of the arch, a sufficiency to be calculated at some

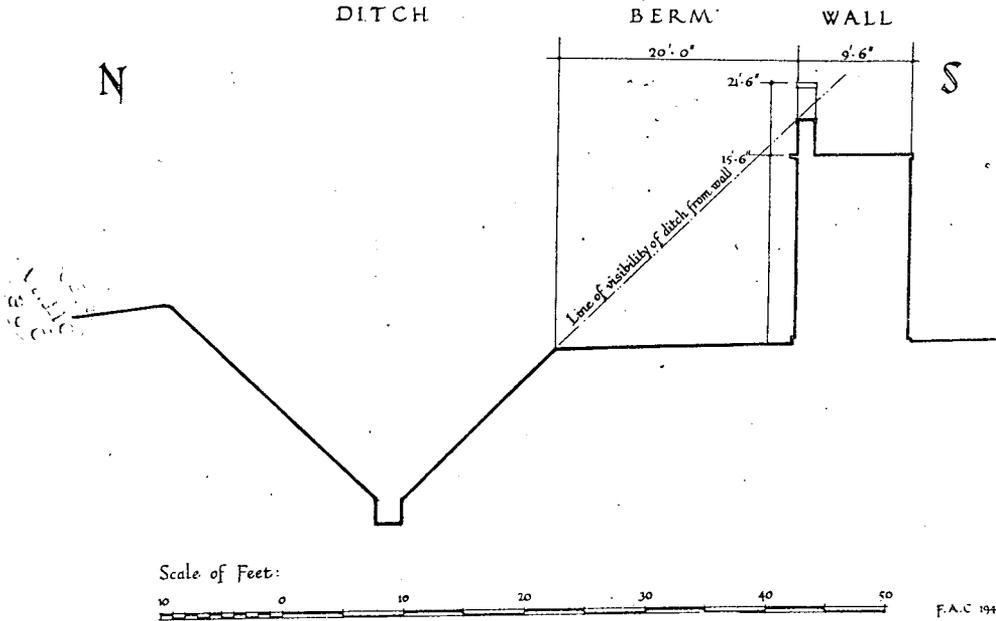


FIG. 3.

2 feet. The total height to first-floor level would thus be approximately 15½ feet. (2) The fort-wall is noted⁵⁴ at Great Chesters and Housesteads to be built in regular stages of 5 feet. Two of these are visible, and the allowance of a third on the same scale would give a height of about 15 feet. (3) The figure for the height of the Great Wall, based upon the calculated height⁵⁵ of a staircase at milecastle 48, is

⁵⁴ See note 21.

⁵⁵ F. G. Simpson, CW² xi, 424, pl. i, section c-d, where the drawing is more reliable than the calculation on p. 420.

15½ feet from ground-level to parapet-walk. (4) In connexion with the Great Wall, it will further be recalled⁵⁶ that a minimum height (fig. 3) of 15 feet is required in order that the whole ditch, 27 feet wide and 13½ feet deep, situated 20 feet in front of the Wall, may be kept in view from the parapet-walk. The case for a height of 15-15½ feet is thus cumulatively very strong, and short of a stated figure, such as an inscription might conceivably provide, is the nearest approach to the truth that we are likely to get. The height of the towers above the first floor is conjectural and no basis of calculation is available. The ten-foot scale here adopted is based upon common sense.⁵⁷

Comment has already been made upon the evidence of roof-tiles, which shows that in some forts the gate-towers were provided with sloping roofs. Evidence of this kind is not forthcoming from the forts of Hadrian's Wall, and its absence tends to show that flat roofs were provided. This view is supported by another consideration. At Housesteads⁵⁸ gate-towers, angle-towers, and interval-towers are furnished with water-tanks at ground-level, and although this would at first seem to have little to do with the roofing problem it is certain that the relationship of water-tank to roof-type was in fact very close. For it is evident that at Housesteads these tanks were not supplied⁵⁹ by a pipe-line; and while it is always possible that they were replenished by fatigue-parties using buckets, the alternative possibility of rain-water supply must have required no stressing under British climatic conditions, reckoned somewhat wetter in Roman times than now. But the Roman sloping roof normally had no eaves-trough and therefore offered no possibility of concentrated water collection. Water was

⁵⁶ A point first made by Brewis, AA⁴ iv, 115-116.

⁵⁷ Monumental gateways, as at Rome and elsewhere, are of little help as analogies since they had vaults which considerably increased the height between the floors.

⁵⁸ AA² xxv, 248-252.

⁵⁹ It will be observed that, while the tank at the south-east angle is associated with many gutters, all these are overflow channels at ground-level, completely dissociated from water-level inside the tank.

drained away, if at all, in open gutters at ground-level. Thus, the flat roof, provided of necessity with a concentrated discharge-spout (see figs. 8, 9), was the only method available for water-collection, and the concentration of water-tanks at the Housesteads towers undoubtedly implies its presence there. A water-tank similarly placed has been observed⁶⁰ at the north gate of Halton. At Chesters, where at least two aqueducts⁶¹ served the fort, the provision is absent. Evidence elsewhere is to seek, though Oberaden⁶² provides some suggestive parallels, in timber, of the Augustan Age.

If, therefore, we are to restore flat-topped towers at the gateways of Housesteads, it is well to inquire whether any other distinctions may be made. It has already been observed that these gateways differ from others on the Wall in that the portals are much less deeply recessed (fig. 4). The recess becomes a mere set-back, punctuating the change from small-scale masonry to large rock-faced ashlar. But at the point of transition from tower to gateway-curtain there is a much more significant detail of planning. The flanking walls of the portals, which are normally designed to carry round the walls of the tower, are here so placed (fig. 5) that at the point of junction between the front archways and the tower insufficient thickness is provided to carry a tower-wall, unless a fantastic and irrational double kink is assumed. The plan (figs. 4, 5) is plainly designed to allow for a continuation of the front tower-walls across the curtain. This implies that the structure formed one large gate-house (figs. 6, 7, 8, 9) with a gallery on the upper floor above the portals.

The resultant design is a striking one, recognizably based upon the monumental city-gates⁶³ of the Augustan

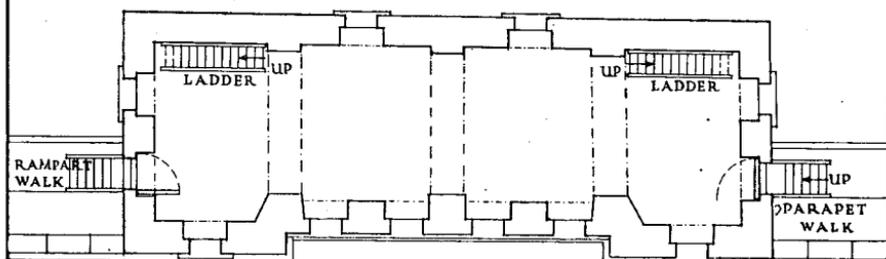
⁶⁰ AA⁴ xiv, 163-164.

⁶¹ The western aqueduct is described by Bruce, *Handbook to the Roman Wall*, 3rd edition, 86. The northern is seen at the north gate.

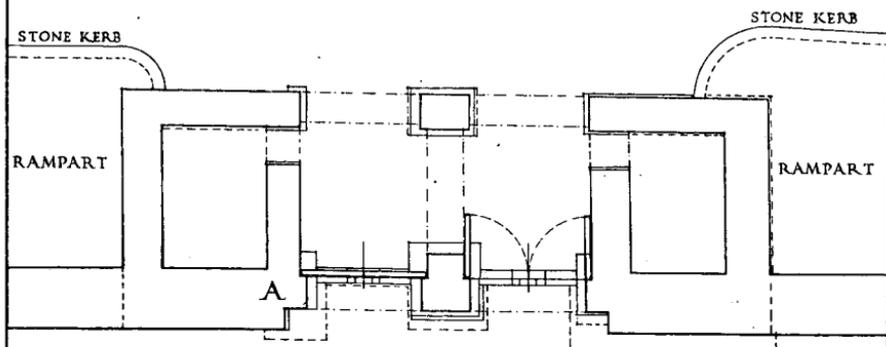
⁶² *Veröffentlichungen aus d. Städt. Mus. Dortmund*, vol. ii, Taf. 6, 7, 25, 35, 36.

⁶³ *Papers of the British School at Rome*, xii, 52-62; JRS xxiii, 149-174.

ROMAN FORT AT HOUSESTEADS THE WEST GATE RESTORED



UPPER FLOOR PLAN



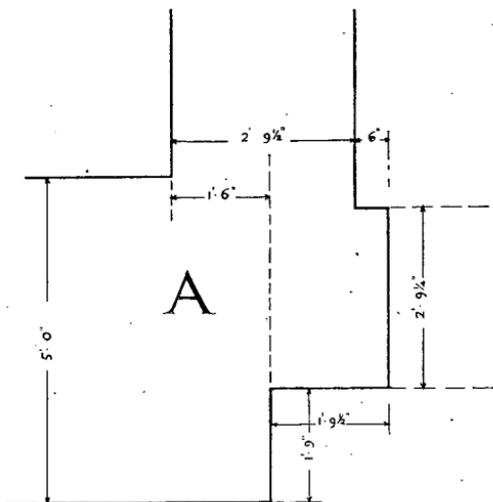
GROUND PLAN

F. A. Child . 1940.



FIG. 4.

age in Italy and Gaul, or upon such contemporary town-gates in Britain as the Balkerne Gate at Colchester⁶⁴ or the south-west gate of Verulamium⁶⁵ at St. Alban's. In such gates, as at Spello or Turin, the towers were normally carried up for several storeys and higher than the curtain



SCALE OF FEET

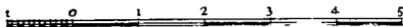


FIG. 5. DETAIL AT A ON FIG. 4.

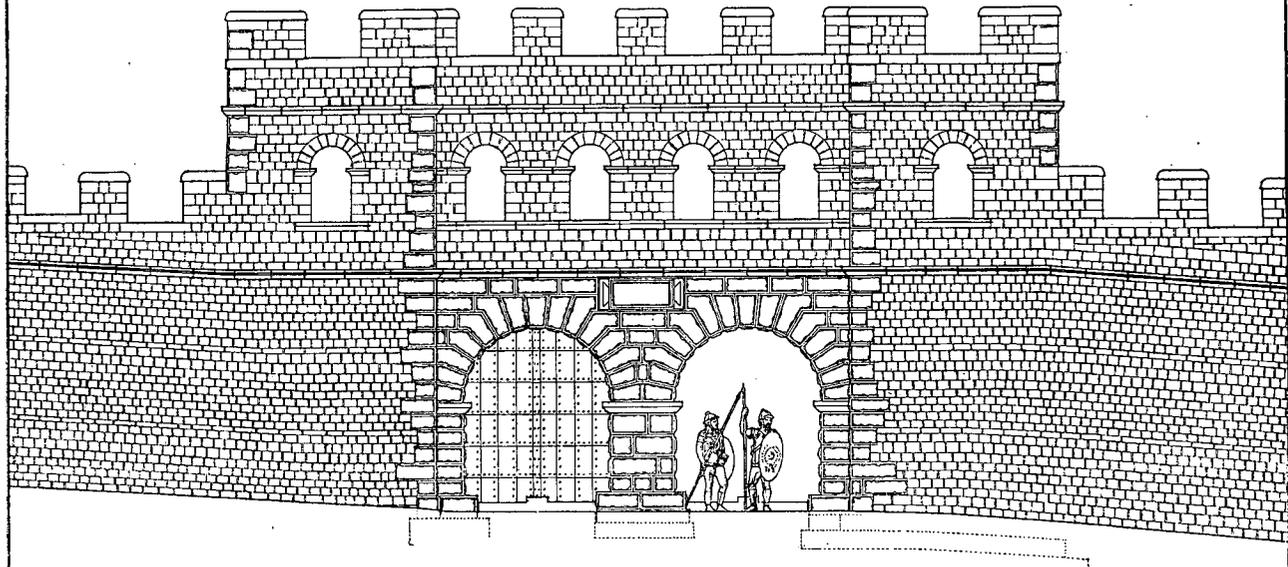
between them. But the Balkerne Gate is probably a much closer parallel than a first glance at the plan would suggest, since it is possible to mount a continuous gate-house and impossible⁶⁶ to base a convincing design for towers upon

⁶⁴ JRS ix, 142, fig. 13.

⁶⁵ Wheeler R.E.M. and T.V., *Verulamium, a Belgic and two Roman cities*, 72, pl. xxiv.

⁶⁶ Haverfield, *Brit. Acad. Suppl. Papers*, ii, 21, sensed with his customary acumen the difficulty of fitting towers to the quarter-circle guard-chambers.

ROMAN FORT AT HOUSESTEADS THE WEST GATE RESTORED



WEST ELEVATION

F. A. Child. 1940.

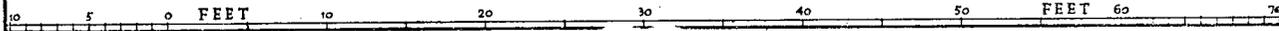
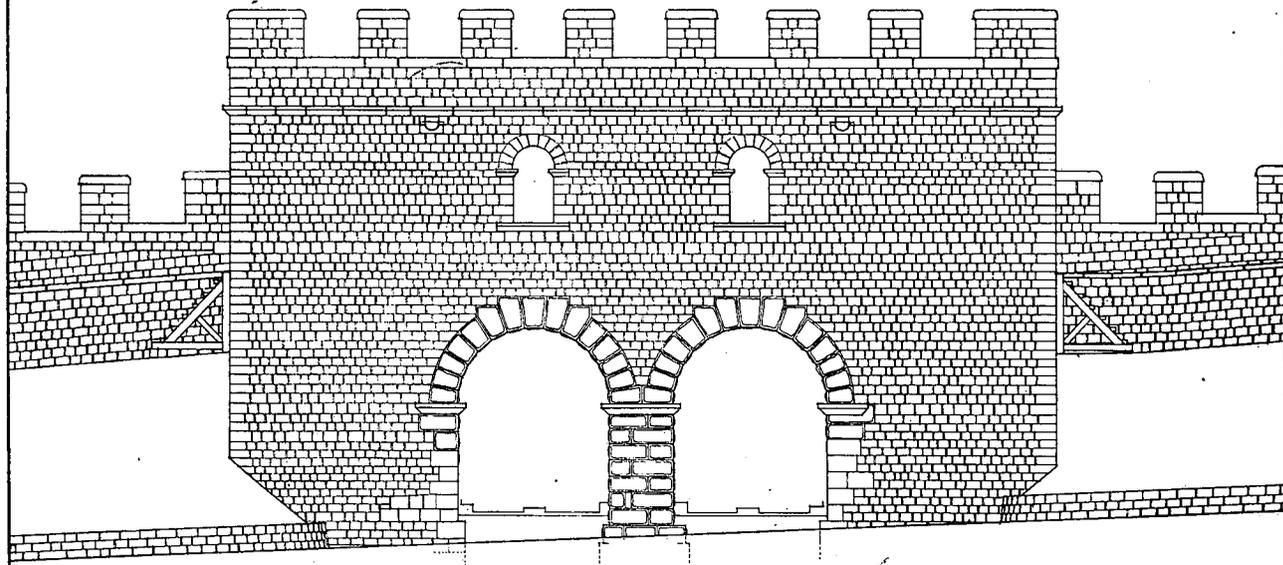


FIG. 6.

ROMAN FORT AT HOUSESTEADS
THE WEST GATE RESTORED



EAST ELEVATION

F. A. Child. 1940.

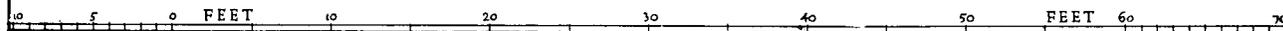
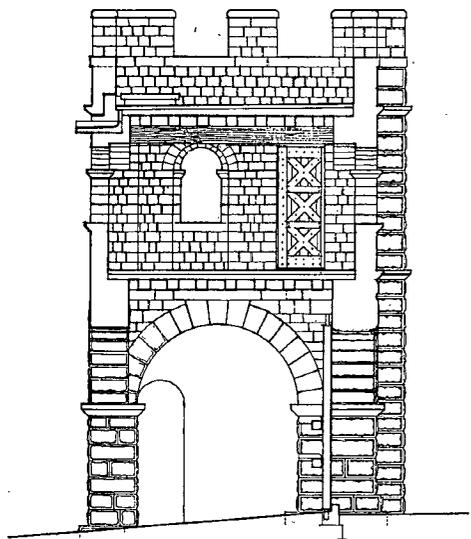
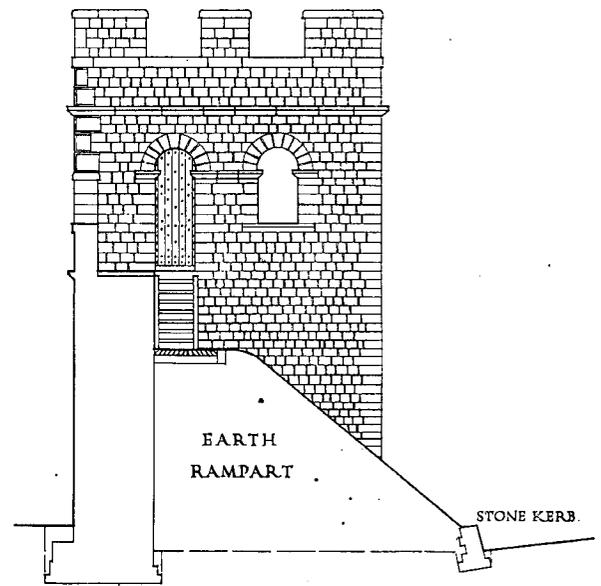


FIG. 7.

ROMAN FORT AT HOUSESTEADS THE WEST GATE RESTORED



SECTION LOOKING SOUTH



SOUTH ELEVATION & SECTION OF FORT WALL

F. A. Child. 1940.

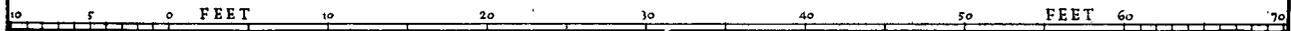


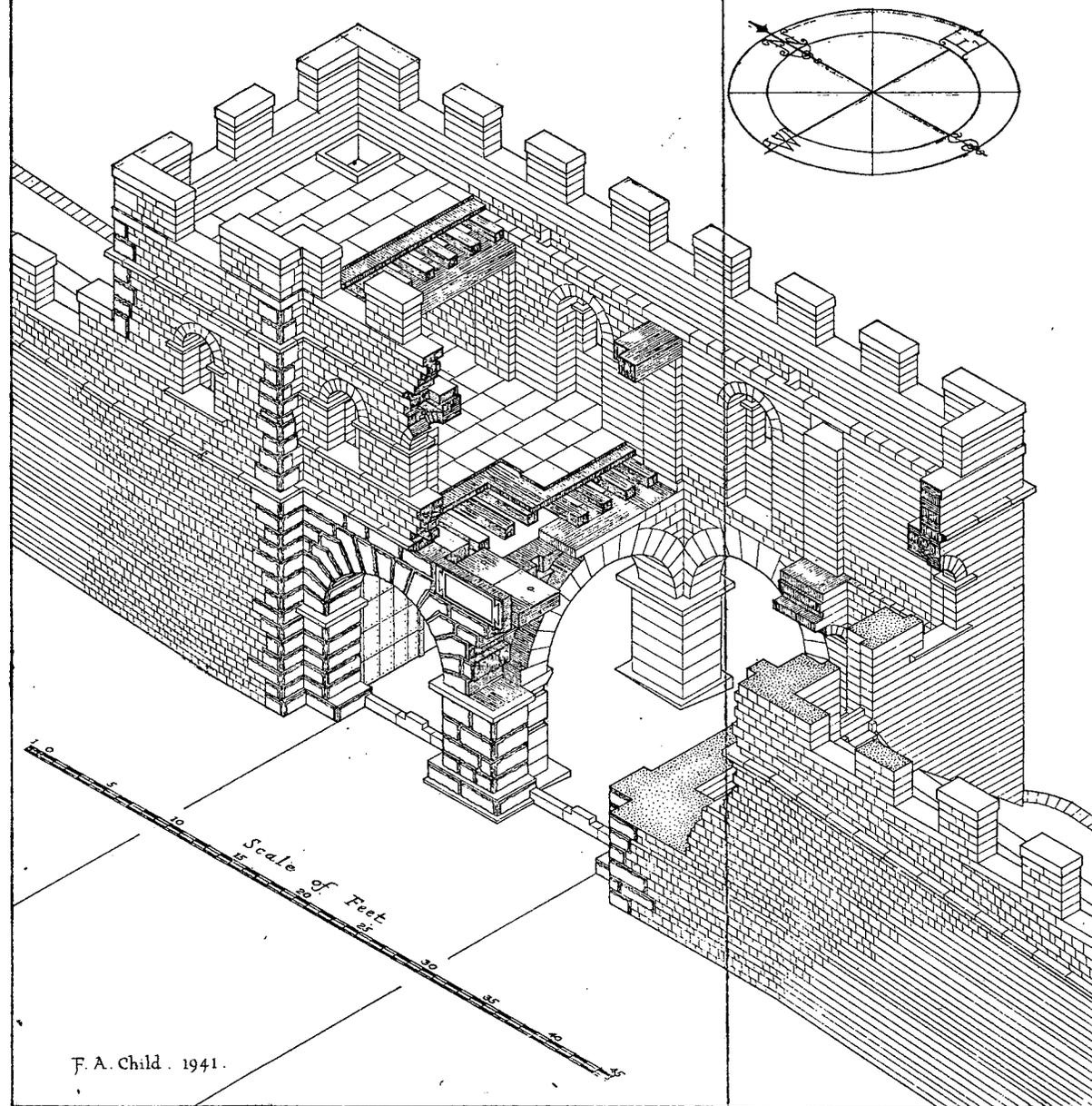
FIG. 8.

its quadrant-shaped guard-chambers. Thus, in such a town-gateway as the Balkerne Gate, the Roman architects had already evolved the prototype upon which the Housesteads gateway-plan is based. But the Housesteads gates are simplified versions of the scheme, boldly and harmoniously adapted to use in a frontier-fort. The design is both strong and compact, and gains in unity from the unusual narrowness of the tower frontages. The towers were required in the scheme only because their lower storeys provided guard-chambers; on the upper floor they merge with the great gate-house which is the dominant feature.

No other gateway yet excavated on Hadrian's Wall appears to have followed the Housesteads design. The guard-chambers at Halton, though long and narrow, are associated with a deeply recessed curtain (fig. 1), probably of the normal single-storeyed crenellated type. But the west gate at Bewcastle,⁶⁷ an outpost fort of the wall, provides an example of a still further simplification of the type. The gate in question belongs to the fort as rebuilt in the early third century, probably under Severus. It consists of a double portal without guard-chambers, and at the time of discovery its antecedents were found difficult to discern. It is now self-evident that the plan is evolved from such examples as Housesteads. Bewcastle (fig. 1) is therefore added to the group for purposes of comparison.

⁶⁷ CW² xxxviii, 213-214, and 202, fig. 4.

ROMAN FORT AT HOUSESTEADS THE WEST GATE RESTORED



F. A. Child. 1941.

FIG. 9.

